

# User and installer handbook

Tapworks Water Softeners models  
NSC9PRO, NSC11PRO and NSC14PRO  
with EasyFit all-in-one kit

A dynamic splash of water with numerous bubbles, overlaid with several semi-transparent grey circles of varying sizes, creating a modern, clean aesthetic.

For technical support call Tapworks Water Softeners: **01494 480 621**  
Please retain this handbook for future reference.



# Installation of your water softener

## WARNING: FAILURE TO MEET THE FOLLOWING REQUIREMENTS CAN CAUSE DAMAGE TO THE WATER SOFTENER, OR RESTRICT ITS OPERATION.

We recommend your water softener is professionally installed. Your installation must conform to water and electrical regulations and local plumbing codes.

### SPECIFICATION

- Maximum water temperature 49°C
- Maximum daytime working pressure 5 Bar
- Minimum working pressure 1.3 Bar
- Minimum system flow 0.06m<sup>3</sup>/hr
- Maximum system flow 3.18m<sup>3</sup>/hr

### PRESSURE

Night time pressure will be much higher than day time pressure.

If day time pressure exceeds 5 bar, a pressure reducing valve should be fitted. The water softener is tested to a maximum day time static pressure of 8.5 bar, therefore the pressure reducing valve can be adjusted to a maximum of 6 bar static pressure.

### GRAVITY FED PLUMBING SYSTEMS

If the water flow is less than 1 litre per minute, for the water softener to operate as originally designed we recommend a delayed action ball valve is fitted within your storage tank.

### UNVENTED OR COMBINATION BOILERS

The water softener and 22mm installation kit is compatible with unvented or combination systems.

### ELECTRICAL REQUIREMENTS

The water softener requires a 240 volt 50 Hz electrical supply taken off a power supply, not a lighting circuit. Power is supplied via a 24 volt 50 Hz transformer. You must use the transformer supplied with the softener.

### HARD WATER TAP

Fitting a separate hard water drinking water tap is currently recommended by the UK Dept of Health and the UKWTA. Fitting of a separate hard water drinking tap is only required in exceptionally hard water areas (above 400 mg/l) where sodium content of the treated water (increased due to the softening process) exceeds the level laid down in the Water Supply (Water Quality) Regulations 2000. Drinking softened water is not recommended for people on a low sodium diet or babies on formula feed.

### CENTRAL HEATING SYSTEMS

Central heating systems should always be treated with a suitable corrosion inhibitor regardless of being filled with softened or hard water.

### RECOMMENDATION FOR SITING THE WATER SOFTENER

- Install close to the rising main
- Keep drain point as short as possible
- Keep overflow to outside wall as short as possible with a constant fall
- Allow for any required hard water draw off points
- Place on a sound base
- Allow space above the valve cover lid for servicing (recommended 75mm)
- Protect the softener and all associated pipework against freezing, as this could cause flooding
- Protect against condensation in enclosed areas

### LEAD PIPEWORK

Where lead pipework exists downstream of the proposed location of the water softener, we advise you to ask the local water authority for advice on the replacement of lead pipework. Water softeners should not be used with lead pipework.

### DRAIN HOSE

- With pressure of 3 bar, the maximum drain run is 3m with a constant fall before entering an air gap
- The maximum height above the softener should be not more than 2m
- The drain hose must enter the regulation air gap to prevent back fill
- It is not recommended to discharge the waste into a pumped drain

### OVERFLOW

The overflow needs to pass through an outside wall so that it can be seen. In accommodation without a suitable outside wall it may be appropriate to use a suitable tundish with the existing overflow provision.

### INLET/OUTLET HOSES

Refer to the Water Softener Kit Installation Guide (single sheet) included with the installation kit.

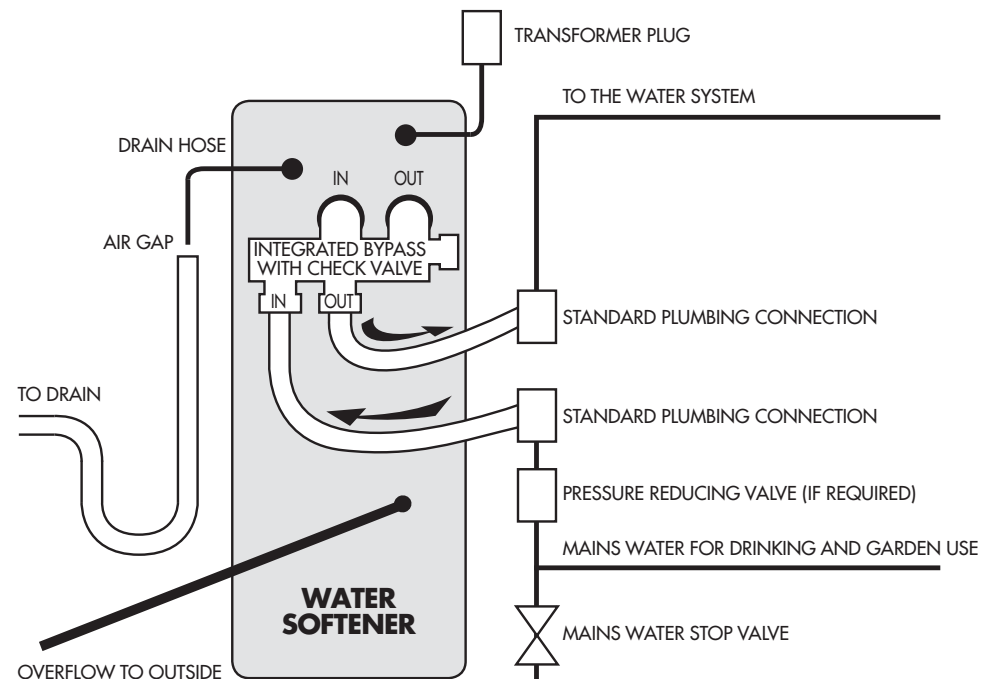
The hoses are 500mm length with 22mm push-fit connections.

You may need reducers or spigot elbows to fix to your existing plumbing.

### FITTING THE SOFTENER

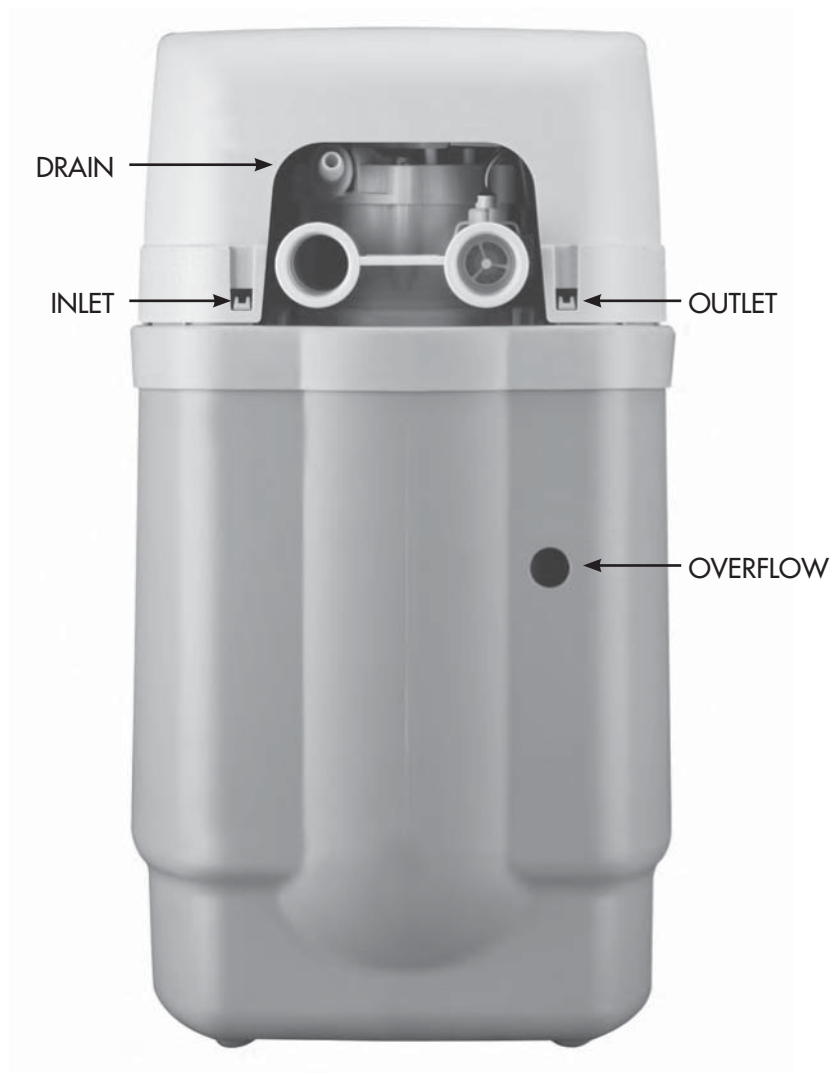
The following instructions are recommendations. You may need to adapt the order for particular siting and plumbing systems.

### DO NOT INVERT THE INTEGRATED BYPASS



**Please Remember** – Only use tablet or pellet salt in your softener!

# Water softener plumbing connections



# Connecting the water softener to the home's plumbing

**MAKE SURE THE INLET AND OUTLET HOSES ARE CONNECTED CORRECTLY TO THE PLUMBING AND TO THE INLET/OUTLET POINTS OF THE BYPASS.**

**FAILURE TO FIT THE HOSES CORRECTLY CAN DAMAGE THE WATER SOFTENER.**

**Note:** If you need to remove the valve cover for ease of installation, remove the salt lid, then simply release the two catches behind the valve cover and tilt top end towards you slowly, taking care not to pull off the wire connections.

**Please note** that the valve cover is connected to the valve motor, so cannot be removed fully.

## PLUMBING

Turn off the water supply at the incoming mains.

**Note:** The non-return-valve is already fitted in the integrated bypass.

## FITTING THE HOSES TO THE BYPASS AND PLUMBING

The hoses come with a standard push-fit. Unlock the screws on bypass and fully push the hoses into the inlet and outlet points of the bypass. To secure, twist the nut until the gap is closed to secure the hose in position.



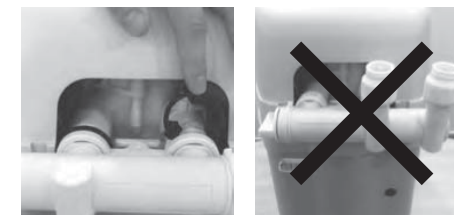
You may want to connect hoses to the plumbing first before securing hoses in position.

## FITTING THE BYPASS TO THE WATER SOFTENER

Fit the bypass into the water softener's inlet and outlet points. **ONLY FIT WITH HOSE INLET/OUTLET FACING DOWN.**

Secure the bypass with the two large adaptor clips, from the top down. Be sure they snap firmly into place so that the bypass will not pull out. Pull on the bypass to ensure a tight fit has been achieved.

**It is important to fit correctly otherwise the water softener can be damaged.**



## CONNECT HOSES TO THE PLUMBING

Connect hoses to the plumbing using standard plumbing connections.

On the bypass, if not already done, secure hoses by twisting the nut until the gap has closed.

Make sure the bypass is open to allow water into the house while finishing installation. ('Hard' is the top position on the bypass – see page 8)

Turn on mains water.

**Please Remember** – Only use tablet or pellet salt in your softener!

# All-in-one bypass

**TURN THE HANDLE TO OPEN OR CLOSE THE BYPASS. THE HANDLE TURNS 180°**



## **FOR SOFT WATER (IN SERVICE)**

The water will pass through the water softener when SOFT is at the top.

**The upper surface of the handle will feel smooth.**



## **FOR HARD WATER (IN BYPASS)**

The water will bypass the water softener when HARD is at the top.

**The upper surface of the handle will feel rough.**

# Fitting drain and overflow hoses

## **DRAIN OUTLET/OVERFLOW CONNECTION**

**See page 5 on drain and overflow before fitting.**

**Cut tubing for drain and overflow to the required lengths.**

### **Fitting the overflow hose**

Insert the rubber grommet into the overflow socket situated two thirds of the way up the rear of the water softener cabinet, using the silicone grease provided. Insert the overflow elbow. Fit hose onto the overflow elbow and secure with the supplied metal clamp. Pass the overflow through an outside wall so that the end can be seen.

### **Fitting the drain hose**

Turn the drain line adaptor so that a straight connection can be made. Secure with the supplied metal clamp. The drain hose may be connected directly into an open drain or via the waste outlet similar to a washing machine. When connecting to a drain the regulation air gap is required to prevent backflow. Make sure the hose is not kinked as this will stop the operation of the softener.

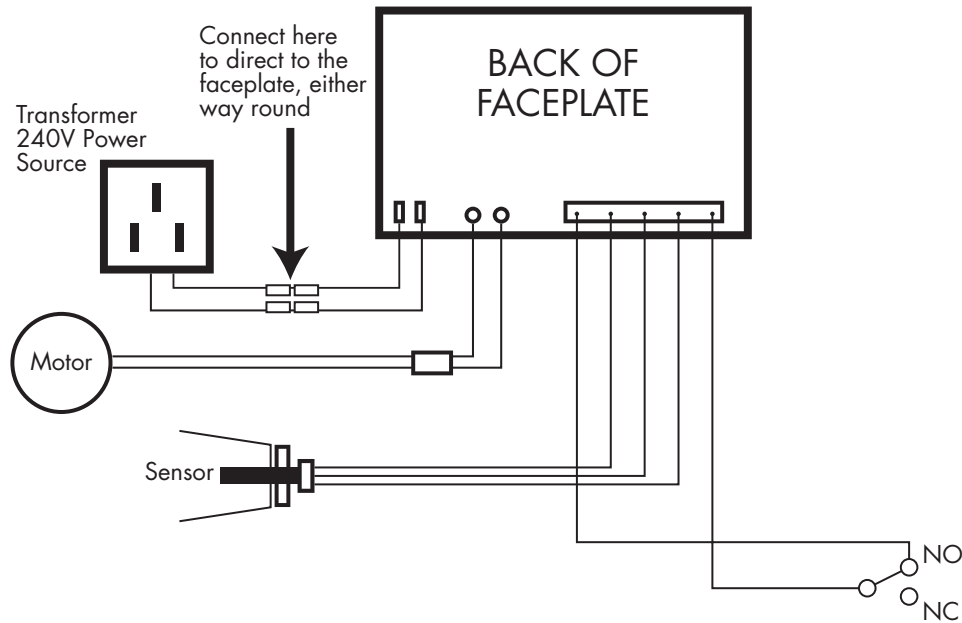
# Connecting to electricians

## ELECTRICAL INSTALLATION

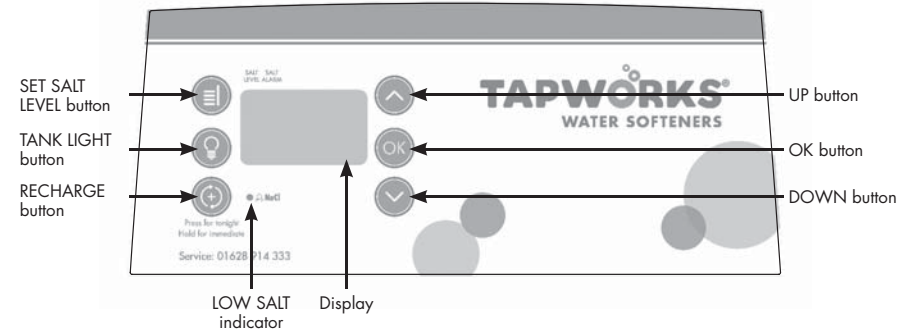
The water softener works on a 24 volt, 50 Hz electric power supply. You must use the transformer supplied into a 240 volt outlet only. Be sure that the electrical outlet you plug the transformer into is inside, as the transformer is not designed for outdoor use.

To connect the transformer to the controller board, push the female end plugs on to the male connectors as indicated below.

Should the faceplate fail to display or indicate an error code, please check that the connections are as per the diagram below. You will need to remove the valve cover to do this.

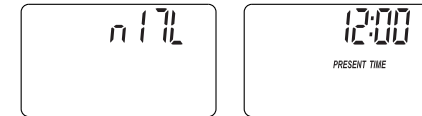


# Programming the water softener



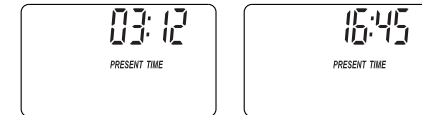
## PROGRAM THE SOFTENER

When the power supply is plugged into the electrical outlet, the model code and a software version number (example: J3.9) are briefly shown in the display. Then the words "PRESENT TIME" appear and 12:00 begins to flash.



## SET PRESENT TIME OF DAY

If the words "PRESENT TIME" do not show in the display, press the OK button a few times until they do.



- 1 Press the ▲ UP or ▼ DOWN buttons to set the present time. Up moves the display ahead; down sets the time back.

**NOTE:** Press buttons and quickly release to slowly advance the display. Hold the buttons down for fast advance.

- 2 When the correct time is displayed, press the OK button, and the display will change to show the "Hardness" screen.

## SET WATER HARDNESS NUMBER

If you completed the previous step, the word "HARDNESS" should show in the display. Otherwise, press the OK button several times until it does.



- 1 Press the ▲ UP or ▼ DOWN buttons to set the hardness of your water supply, in grains per gallon. The default is 25.

WATER HARDNESS	
ppm	Unit setting
(170)	10
(190)	11
(200)	12
(220)	13
(240)	14
(255)	15
(270)	16
(290)	17
(300)	18
(325)	19
(340)	20
(360)	21
(380)	22
(400)	23
(420)	24
(440)	25
(460)	30
(480)	30
(500)	35

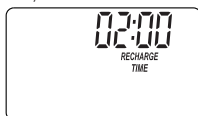
**Please Remember** – Only use tablet or pellet salt in your softener!

# Programming the water softener

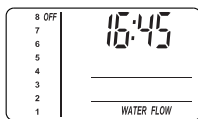
- 2 When finished setting your water's hardness number, press the OK button and the display will change to show the "Recharge Time" screen.

## SET RECHARGE (REGENERATION) START TIME

If you completed the previous step the words "RECHARGE TIME" should show in the display. Otherwise, press the OK button several times until they do.



- 1 The softener's default recharge start time is 2:00 AM. This is normally a time of day when water is not being used in the household. Hard water bypasses the softener if the household draws water during the recharge cycle. If a different recharge start time is desired, press the ▲ UP or ▼ DOWN buttons to change the time, in 1-hour increments. Be sure AM or PM is correct.
- 2 When the desired recharge start time is displayed, press the OK button and the display will return to the normal run (time of day) screen.



## EXTRA RECHARGE

Sometimes a manually initiated recharge (regeneration) may be desired or needed. Two examples are:

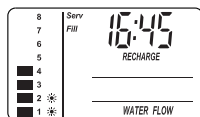
- You have used more water than usual (guests visiting) and you may run out of soft water before the next automatic regeneration.
- You did not add salt to the softener before it ran out. Add salt to the softener before regenerating.

You can start a regeneration immediately, or you can set the controller to regenerate at the next preset recharge time (2:00 AM or as set).

## RECHARGE NOW

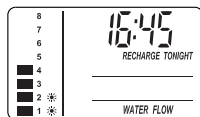
Press the RECHARGE button and hold for 3 seconds until the words "RECHARGE", "Serv" and "Fill" begin to flash in the display. The softener enters the fill cycle of regeneration immediately. This regeneration will take about 2 hours to complete. Then you will have soft water again.

**NOTE:** If the "Clean Feature" is set ON, the normal regeneration cycle is preceded by a cleaning backwash and rinse. The words "CLEAN" and "Bkwsh" or "Rinse" flash in the display, along with the minutes of the clean cycle remaining.



## RECHARGE TONIGHT

Press and release (do not hold) the RECHARGE button. "RECHARGE TONIGHT" will begin flashing in the display and the softener will begin regeneration at the next preset recharge time (2:00 AM or as set). If you decide to cancel the regeneration before it starts, press and release the RECHARGE button once more. "RECHARGE TONIGHT" will stop flashing in the display.



# Finishing installation

Your unit should now be fully plumbed and ready to use.

Having programmed your unit you will wish to ensure that the unit is functioning properly before you leave the site.

## NOTES TO THE INSTALLER – BEFORE YOU LEAVE

- Close the all-in-one bypass so that SOFT is at the top.
- Check that all the plumbing connections are secure and that there are no leaks.
- Check that the time of day is correct.
- Fill with salt** – you will require a 25kg bag of tablet or pellet salt. DO NOT USE GRANULAR SALT. Make sure that the brinewell cover is in place and secure as salt must not be allowed to enter the brinewell. Do not fill salt above the brinewell cover (see diagram on page 3).
- Initiate a recharge by holding down the TOUCH/HOLD button for about 3 seconds until RECHARGE flashes in the display. After a few minutes a small amount of water will enter the salt cabinet. This part of the recharge will take approximately 4-8 minutes.

**IMPORTANT – TAPWORKS WATER SOFTENERS HAVE 12 MONTHS PARTS AND LABOUR WARRANTY. YOU CAN EXTEND THIS TO 2 YEARS BY RETURNING THE GUARANTEE REGISTRATION CARD.**

(Terms and conditions apply)

**Thank you for choosing Tapworks.**

- The complete recharge process will take about 1 hour. As the recharge finishes water will run to drain. Check your drain connections.
- Softened water will gradually replace the hard water in the storage tank over a period of normally 7 days. However, this can take longer in larger houses.

- Please leave this handbook for the water softener owner
- Please complete the enclosed Guarantee Registration Card
- Remember reward points are available to plumbers who are members of the Team Tapworks Rewards Scheme.

## COMMON INSTALLATION FAULTS

- Crossed inlet-outlet hoses
- Kinked drain hose
- Bypass left in HARD position
- Failure to secure all-in-one bypass with adaptor clips

**Please Remember** – Only use tablet or pellet salt in your softener!



# Controller features

## SALT MONITOR SYSTEM

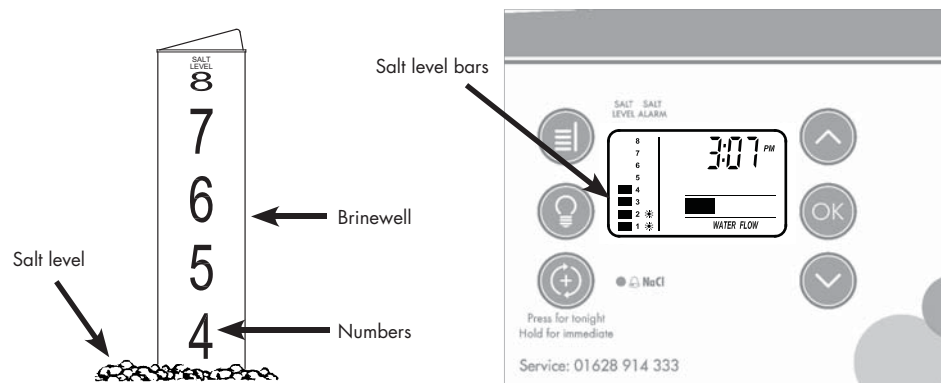
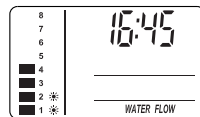
The water softener has a salt monitor indicator light to remind you to add salt to the storage tank.

**NOTE:** You must set salt level each time salt is added to the water softener.

**NOTE:** The salt monitor system estimates salt levels, and accuracy will vary with different salts.

### To set this monitor system:

- 1 Lift the salt lid and level the salt in the storage tank.
- 2 The salt level scale, on the brinewell inside the tank, has numbers from 0 to 4, 5 or 8, depending on the model (see diagram below). Observe the highest number the levelled salt is at or closest to.
- 3 Press the SET SALT LEVEL button as many times as necessary to make the salt level bars in the display (see diagram below) match the number on the brinewell. At level 2 or below, the "Low Salt" indicator will flash.
- 4 If you want to turn the salt monitor off, press the SET SALT LEVEL button past the highest number (4, 5 or 8, depending on the model) until "OFF" shows in the display next to the number 8.



# User information

## AFTER INSTALLATION

Now your Tapworks water softener is installed you can start to enjoy the benefits of soft water. Your Tapworks water softener is automatic, there is nothing you need to do but keep it topped up with tablet/pellet salt.

**DO NOT USE GRANULAR OR BLOCK SALT.**

Softened water will gradually replace the hard water in the storage tank over a period of normally 7 days. However, this can take longer in larger houses.

## TESTING YOUR WATER

You can test the water hardness from the softened supply using the test kit supplied. If within one or two drops the sample remains a blue colour this indicates soft water.

## WARRANTY CERTIFICATE

Please register your warranty online at [www.tapworks.co.uk](http://www.tapworks.co.uk)

## HELP LINE

Call **01494 480 621** during normal working hours if you have any queries about your water softener.

## THE USE OF SOFTENED WATER

**Washing machines** – you will need much less soap powder. In most washes one tablespoon will be sufficient. Too much lather and clothes will not rinse properly.

**Dishwashers** – you will no longer need to fill your unit with salt, as this was used to soften the water in the dishwasher.

**Cleaning sinks, baths and basins** – you will find that your cleaning chores are reduced and you will use less cleaning product, as cleaning becomes a quick wipe around. Occasionally 'spotting' may result but this is easily rinsed off and nothing to worry about.

**Hard water** – one household tap and any garden taps should be left on a hard water supply. Softened water contains a small amount of sodium. In four pints of softened water the sodium content is about the same as in ¼ pint of milk. Drinking softened water is not recommended for people on low sodium diets or babies on formula feed.

**Steam irons/car batteries** – only use distilled or deionised water, not softened water.

**Copper staining** – this can be caused by new pipework and should disappear after a short time, simply wipe away any deposit. If this persists, poor earthing may be allowing electrolytic corrosion – contact an electrical engineer.



# User information

## HOW YOUR WATER SOFTENER WORKS

When you use water it passes through a vessel of resin beads inside your water softener. The resin beads extract the hard minerals making your water soft. This process is not visible and happens within the softener. The salt cabinet (see page 3) is where you load the softener with tablet salt. You may see 1 or 2 inches of water at the bottom of the salt cabinet; this is normal, otherwise when the cabinet is full of tablet salt it will appear dry.

The water softener uses tablet salt for its cleaning process. The cleaning process flushes to drain the hard minerals that have collected inside the resin vessel and refreshes the resin beads so they are ready to make more soft water. This is automatic; all you need to do is keep the softener topped up with tablet salt.

## TOPPING UP WITH TABLET SALT

Tablet salt is used as the cleansing agent for your water softener's resin bed. The salt cabinet will need to be refilled. Do not fill the salt above the brinewell cover (see page 14).

IT IS ESSENTIAL THAT APPROXIMATELY 12CM OF SALT IS MAINTAINED AS A MINIMUM TO ENSURE OPERATING EFFICIENCY.

Failure to replenish salt will prevent the unit from cleansing itself on its recharge cycle and consequently it will be unable to soften water.

Pour the salt slowly into the cabinet. Ensure that the brinewell cap is secure, as no salt should be allowed to enter here. DO NOT use granular salt. ONLY USE TABLET OR PELLET SALT.

Your local water softener stockist will stock salt.

## SALT USAGE

Because your automatic demand water softener uses proportional brining, more frequent recharges are not at the expense of high salt usage. If you are a household with low water usage you will find after a few months that your water softener will become increasingly efficient as it adapts to suit your water usage.

## HOLIDAYS

We recommend that you bypass your water softener if you are away from your home for long periods of time. See page 8 on how to bypass your water softener.

## CLEANING

Your unit may be cleaned with a damp cloth and detergent. Do not use bleaches, solvents or spirits as this may cause damage.

## BUILDING A HISTORY

Because it has no historical data to base its logic on, your water softener will recharge quite frequently when first used to ensure continuous softened water. Within a few months it will settle into a more regular pattern.

## LARGE INFLUXES OF GUESTS

If you have people to stay and use more water than normal you will find that your automatic demand water softener recharges more frequently. As your household water usage returns to normal so too will the recharge frequency.

# User information

## POWER CUTS

If the electrical power to the water softener is interrupted, the time display will be blank but the 'memory' built into the electronics will keep the correct time for up to 48 hours.

The water softener will not recharge but will pass softened water. In the case of a power cut your demand for water will be less as most appliances will not work, so a recharge should not be necessary. When electrical power is returned, one of two things will happen:

### 1 Power off up to 48 hours

The display returns and is steady, no operation is necessary.

### 2 Power off over 48 hours

The display returns and flashes, only the time requires re-setting. The hardness and recharge time will not have been lost as they are stored. Even if the time is incorrect the water softener will continue to work but will recharge at what it believes the time to be.

## RE-SETTING THE TIME

Re-set the time as described in the programming section (see page 11).

## SHOULD AN ERROR CODE APPEAR

Check electrical connections are as per the configuration on page 10.



- Unplug transformer
- Check direct connections
- Replug transformer
- Wait for 6 minutes, if the error is rectified the error code will not appear

The softener may recharge immediately following a cleared error code.

# Problem solving

CHECKLIST	SOLUTION	PAGE NO.
<b>PROBLEM: Excessive salt usage</b>		
1. Check the hardness.	1. Reduce the unit setting if incorrect.	11
<b>PROBLEM: No water in cabinet or very low</b>		
1. This is quite normal. Unlike conventional water softeners only a few inches of water is at the bottom of the cabinet.	1. No action necessary.	
<b>PROBLEM: High water level in cabinet</b>		
1. Is the water level in the salt cabinet high?	1. Initiate an immediate recharge. If the problem does not return, there is nothing wrong.	
<b>PROBLEM: Water running down the overflow</b>		
1. Is the unit in recharge mode?	1. If yes, no action is required.	
<b>PROBLEM: Water running down the drain line constantly</b>		
1. Is the unit in recharge mode?	1. If yes, wait until it finishes, check the present time and recharge time settings, and adjust if incorrect.	11 & 12
2. Does an error code appear, e.g. 'ERR 01'?	2. Check all electrical connections are secure. Turn the power off for ten seconds, and then switch back on.	
<b>PROBLEM: Electronic faceplate</b>		
1. Is the faceplate blank?	1. Check the power is turned on and all connections are secure.	
2. Is the display stuck on one function?	2. Turn the power off for ten seconds and then switch back on.	
3. Does an error code appear, e.g. 'ERR 03'?	3. Check all connections are secure. Turn the power off for ten seconds and then switch back on.	

# Warranty terms and conditions general information

All Tapworks Domestic Water Softeners are fully covered by one year parts and labour warranty against manufacturing defects from the date of installation. **Proof of purchase may be required. No maintenance visit will be provided during this period unless it is the result of an operation fault.**

### This warranty does not affect the statutory rights of the consumer.

We undertake that within 12 months of the date of installation\* of the Tapworks Domestic Water Softener if it is proved to be defective by reason only of faulty materials or manufacturing defects, we will at our discretion repair or replace the same free of any charge for labour, materials or carriage on condition that:

- The unit is properly sized and purchased through an authorised Tapworks agent.
- The unit has been correctly installed in accordance with the manufacturer's installation instructions and operating specification including water pressure and water flow.
- The unit has been used for normal domestic purposes only using municipal water.
- The unit has been maintained in accordance with instructions.
- The unit has not been serviced, maintained, repaired, taken apart or tampered with by any person not authorised by us.
- All service work under this guarantee must be undertaken by an authorised service centre.
- Any unit or defective part replaced shall become the Company's property.

### DATA PROTECTION INFORMATION

We want to ensure that we keep the details we hold about you up to date and communicate with you fully in accordance with your wishes. Your data will be used for customer service and to make our services available to you. This information will only be used within this company or passed to an authorised service agent.

Our communication and marketing activities are by post, e-mail, telephone or text message, unless you indicate otherwise. If at any time your details change or you wish to add to or remove from the list of communications sent to you then please contact us.

### The guarantee does not cover:

- Damage resulting from transportation, improper use or neglect, including not being filled with tablet salt, using the incorrect salt.
- Any defect or damage occasioned by fire, lightning, power surge, explosion, flood, storm, tempest, impact or other extraneous causes.
- Units not installed in accordance with local regulations.
- Units installed in such a way that access for service is restricted.
- Resetting the programmer in the event of: power failure or incorrect programming, or when the influent water hardness or number of people in the household changes.
- Units which are improperly installed, faulty plumbing or faulty electrics.
- Units installed outside UK mainland.
- Units installed in commercial premises.

### Any faults which are not attributable to the water softener but to faulty installation or operation will be chargeable.

\*The guarantee period will commence from date of installation, unless the installation is made more than six months from the date on which the product was purchased, in which case the guarantee period will commence six months from the date of purchase.

The guarantee provided is applicable to the country in which the product was purchased. If the product is taken abroad the guarantee may be invalidated.

**Please Remember** – Only use tablet or pellet salt in your softener!



# Notes

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# WARRANTY REGISTRATION FORM

(or complete on-line at [www.tapworks.co.uk/warranty-registration](http://www.tapworks.co.uk/warranty-registration))

## TO RECEIVE YOUR FREE 2 YEAR WARRANTY

**YOU MUST REGISTER WITHIN 3 MONTHS OF INSTALLATION**

Terms and conditions apply

### Installation details

Date of installation:	
Customer's name:	
Address:	
City/Town:	Postcode:
Tel:	Mobile:
Email:	
Tapworks model*:	
Serial no. *:	

\*This information can be found under your water softener salt lid.

### DATA PROTECTION INFORMATION

We want to ensure that we keep the details we hold about you up to date and communicate with you fully in accordance with your wishes. Your data will be used for customer service and to make our services available to you. This information will only be used within this company or passed to an authorised service agent.

Our communication and marketing activities are by post, e-mail, telephone or text message, unless you indicate otherwise. If at any time your details change or you wish to add to or remove from the list of communications sent to you then please contact us.

- Please tick this box if you **do not** wish to receive information by these methods.
- Please tick this box if you **do not** wish your details to be passed to Total Softener Care.

### Installer's details

Trading name:	
Team Tapworks no.: (if known)	
Address:	
City/Town:	Postcode:
Tel:	Email:
Unit purchased from:	

**RETURN TO:** Tapworks Water Softeners, Unit 4, Kites Park, Summerleys Road,  
Princes Risborough, Buckinghamshire HP27 9PX  
(stamp required)