

# INSTALLATION & OPERATING INSTRUCTIONS



## WATER SOFTENER CATION EXCHANGE RESIN

Pacific Water water softeners are supplied with high purity premium grade bead-form conventional gel polystyrene sulfonate cation exchange resin designed expressly for the treatment of foodstuffs, beverages, potable waters, and water used in the processing of food.



Pacific Water recommend coarse, kiln dried water softener salt for softener regeneration

## WATER SOFTENER

Models

WTWSC7

WTWSC9

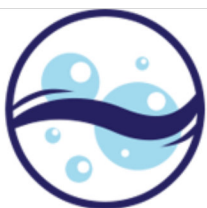
WTWSC10



CLACK CONTROL VALVE



CABINET SOFTENER



PACIFIC WATER TECHNOLOGY



PACIFIC WATER TECHNOLOGY

27 STAPLE STREET  
SEVENTEEN MILE ROCKS QLD 4073  
P: 1300 CLEAN WATER

E: [sales@pacificwater.com.au](mailto:sales@pacificwater.com.au)

W: [www.pacificwater.com.au](http://www.pacificwater.com.au)

# INSTALLATION RECORD



Please complete the following as a record of purchase for warranty and service purposes.

- SOFTENER MODEL :**
- WTWSC7
  - WTWSC9
  - WTWSC10

**SERIAL NO. :** .....

**PURCHASED FROM :** .....

**DATE PURCHASED :** .....

**DATE INSTALLED :** .....

**INSTALLED BY :** .....

**HARDNESS SETTING :** .....



Congratulations on the purchase of your Fully Automatic Water Softener.

Please take the time to read the following. It will familiarise you with the design principals and workings of your new softener.

### **WATER HARDNESS**

The principal hardness minerals, calcium and magnesium, accumulate as a white scale in piping, jugs, heat exchangers, water heaters, boilers and steam equipment. Removing the scale delivers better use of energy, lower running costs and maintenance, improved laundry and dishwashing and protection for water-contact appliances.

### **FUNCTION OF A WATER SOFTENER**

A softener 'exchanges' hardness ions for harmless sodium ions, leaving soft water. A special softener resin is the exchange medium and softener salt is the regenerant. When the resin becomes laden with hardness ions the softener regenerates using a salt water solution, (sodium chloride + water). The high concentration of sodium ions introduced dislodges and displaces the hardness ions with sodium ions. The hardness and chloride ions are sent to the drain. When the process is complete the softener is regenerated and ready again to deliver soft water. Twin Tank softeners comprise a large capacity salt storage tank and tall resin tank for increased void space for efficient backwash and brining. All functions are fully automatic with only a periodic top-up of salt required.

### **WHAT CONTROLS THE REGENERATION?**

The Microprocessor Demand Control Valve. The hardness level and resin capacity of the softener are programmed into the control which then calculates the amount of soft water the softener can supply before a regeneration is required. The valve includes an in-built water meter that, with the control, monitors actual water flow and usage. The control automatically initiates a regeneration when the calculated soft water volume is reached. The control compensates for high and low usage patterns ensuring the water remains soft until the next regeneration.

The control uses safe 12 volt power from the wall-mount transformer supplied.

### **COMPONENTS OF A WATER SOFTENER**

The softener comprises of a 5-cycle control valve, bypass valve, fibreglass pressure vessel containing softener resin and distributor system, and a salt/brine tank.

### **WHAT ARE THE STAGES OF THE REGENERATION CYCLE?**

#### ***1st Stage - Service Position***

In this position the softener delivers soft water for usage. The softener is in this position prior to commencing the backwash cycle.

#### ***2nd Stage - Backwash Position***

The water flow is reversed to lift and wash the resin bed clean of entrapped sediment and particulate matter prior to brining.

#### ***3rd Stage - Brine Position***

The softener valve draws in brine solution from the brine tank to regenerate the softener resin.

#### ***4th Stage - Fast Rinse Position***

The softener fast-rinses the resin bed to remove residual brine solution.

#### ***5th Stage - Brine Refill Position***

The softener valve refills the brine/salt tank with sufficient water to make brine for the next regeneration.

The Regeneration Cycle is now complete and the unit will return to the Service Position.

All the functions of your softener are fully automatic.



# INSTALLATION & OPERATING INSTRUCTIONS

**CAUTION !**

The softener is not designed to remove microbiologically unsafe contaminants from the water supply. If the water is for potable use it should be disinfected prior to use.

**IMPORTANT. FAILURE TO COMPLY COULD VOID WARRANTY !**

- a. All plumbing must conform to Australian Standards guidelines and Local Council regulations.
- b. For softeners subjected to permanent hydrostatic pressure an integral non-testable backflow prevention device in accordance with AS3500.1 and complying with AS 2845.1 Clauses 3.6.3, 3.6.4, 7.3.1 and 7.3.3 should be fitted in the inlet line.
- c. For softeners subject to hydrostatic pressure in excess of 700 kpa a suitable pressure control device should be fitted in the influent line.
- d. Where the hot water system is a mains pressure storage type, a cold water relief valve of suitable rating should be fitted (if not already installed), between the non-return valve and the cold water inlet of the hot water system.
- e. For installations subject to excessive or prolonged water hammer, a water hammer arrestor should be fitted.
- f. Waste connections should comply with minimum air gap requirements as per AS3500.1, Table 4.5.

**IMPORTANT. FOR TANK FILLING OR OPEN-DISCHARGE APPLICATIONS ONLY !**

The automatic control valve must have a positive back pressure during the backwash and rinse cycles to ensure effective backwashing and also prevent unfiltered water going to service.

If using the filter to fill a storage tank (or any other open-discharge application) a 'No Hard Water Bypass Valve' must be used. Picture below. Contact your local Purion dealer or Dowdens for pricing.



**GENERAL SPECIFICATIONS**

Minimum Operating Pressure	280 kpa (40psi)
Maximum Operating Pressure	700 kpa (100psi)
Minimum & Maximum Operating Temperature	4°C to 43°C
Inlet & Outlet Connections:	25mm male BSP
Valve Drain Fitting:	20mm male BSP
Mains Power Requirement:	240 Volt, 10 amp
Control Valve Power:	12 Volt AC supplied by wall mount transformer supplied
Transformer Output Current:	500mA

Maximum Intermittent Flow Rate, litres per minute @105kpa loss:

WTWSC7	19.0
WTWSC9	28.0
WTWSC10	38.0



## LOCATE THE SOFTENER:

### ✓ CHECKLIST

- \_ 1. It is advisable to locate the softener in a protected environment. If the unit is to be installed outside, or in the open, a protective shelter or shed is recommended.
- \_ 2. The distance between the softener and a drain or waste outlet should be as short as possible.
- \_ 3. The softener should be in an easily accessible area for access to the control valve, for salt refilling and to facilitate servicing.
- \_ 4. Hot water can severely damage the softener. If installing near a hot water service ensure a minimum of 2 metres of piping between the outlet of the softener and inlet of the heater to help avoid heat transfer. Ensure a non-return valve on the inlet of the hot water system is present and functional.
- \_ 5. Do not install softener where it or its connections (including drain and overflow lines) will ever be subjected to ambient temperatures under 1°C or over 49°C.
- \_ 6. Do not install the softener near chemicals or chemical fumes.
- \_ 7. The softener will require a standard 3 pin 240 volt 10 amp grounded power outlet.

## MEDIA LOADING & SOFTENER ASSEMBLY:

The softener is pre-loaded with softener resin:



MODEL	RESIN LITRES
WTWSC7	14.0
WTWSC9	21.0
WTWSC10	28.0

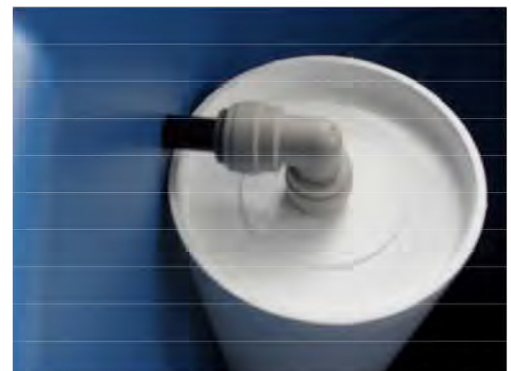
\_ 8. Remove the nut from the brine elbow on the control valve (Fig.A). Insert the 3/8 tube through the nut. Slide the olive onto the tube with the conical end of the olive facing out. Insert the white plug into the end of the tube and hand tighten the assembly onto the brine elbow thread.

\_ 9. Fit the other end of the tube into the brine elbow inside the brine tank (Fig.B). The brine tube should run straight to the brine tank and not be looped or rise higher than the brine elbow on the valve, cut to length if necessary. Push-fit the 3/8 tube into the brine elbow located on the brine riser pipe in the brine tank. Ensure the end of the tube is not frayed or damaged and is pushed all the way into the elbow.

Fig. A



Fig. B





**✓ CHECKLIST**

**WATER CONNECTION:**

- \_ 9. If not fitted, fit the bypass valve (Fig C) to the control valve inlet and outlet by screwing on the knurled nuts to the male threads of the control valve. Hand tighten only.
- \_ 10. Fit the inlet and outlet adaptors (Fig C) to the bypass valve. Hand tighten only.

Fig C



- \_ 11. Connect the incoming and outgoing water lines to the inlet & outlet adaptors. Looking front-on at the valve the inlet is at the back of the valve on the right hand side and the outlet on the left hand side. Flow direction arrows are moulded on the valve barrels to show the correct flow direction.

**LOAD SALT:**

- \_ 12. Remove the lid from the softener brine tank and pour softener salt in to the tank (Fig D). A minimum of 1 bag of salt is required, however the tank can be loaded with salt to the top of the brine well.
- \_ 13. Pour approx. 15 litres of water into the brine tank.

Fig. D



**DRAIN & OVERFLOW LINE CONNECTIONS:**

- \_ 14. If ideally located, the softener will be above, and not more than 6 metres, from the drain. Connect 20mm (3/4") hose and hose clamp (not supplied) from the valve drain fitting to the drain (Fig. E)

**IMPORTANT:** Support the hose or tube to prevent kinking. A kinked hose will prevent proper backwash and regeneration.

- \_ 15. If the softener is located where the drain lines must be elevated, you may elevate the lines up to 2 metres providing the run does not exceed 5 metres and the water pressure at the softener is not less than 280kpa. You can elevate an additional 610mm for each additional 70kpa pressure.
- \_ 16. Where the drain line is elevated but empties into a drain below the level of the control valve, form a 180mm loop at the far end of the line so that the bottom of the loop is level with the valve drain line connection. This will provide an adequate siphon trap.
- \_ 17. Where a drain empties into an overhead sewer line, a sink-type trap must be used.



Fig. E



**CAUTION !**

Never connect the drain line or overflow line direct into a drain, sewer line or trap. Always allow an air gap between the drain line and the wastewater to prevent the possibility of sewage being back-siphoned into the softener (Fig.F)

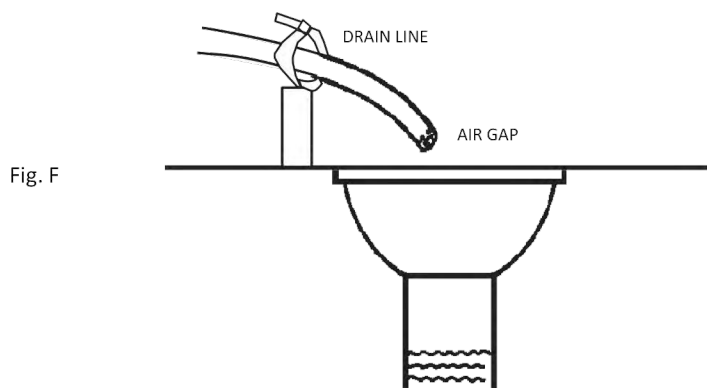
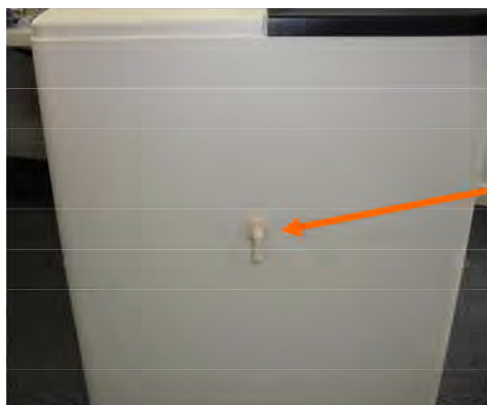


Fig. F

\_18. Fit a 12mm (1/2") hose onto the overflow elbow on the side of the brine tank (Fig G) . The hose should run to drain. Allow an air gap between the hose end and the drain as per (Fig F).

FIG. G



BRINE TANK OVERFLOW ELBOW

**Final Steps:** Set 'Time Of Day' and regenerate softener



# INSTALLATION & OPERATING INSTRUCTIONS

## SYSTEM START-UP

The final steps before putting the softener into service:

- Set the actual time of day into the control valve
- Regenerate the softener



### Setting Time of Day

Push NEXT until time of day screen is displayed. Press and hold ▲ or ▼ until the SET indicator is displayed, and the hour flashes. Press ▲ or ▼ until the correct hour is displayed.

Then press NEXT. The minutes will flash. Press ▲ or ▼ until the correct minute is displayed.

Press NEXT to return to the Display Screens. Time of day should only need to be set after power outages lasting more than 8 hours, if the battery has been depleted and a power outage occurs, or when daylight saving time begins or ends. If a power outage lasting more than 8 hours occurs, the time of day will flash on and off which indicates the time of day should be reset. If a power outage lasts less than 8 hours and the time of day flashes on and off, the time of day should be reset and the battery replaced.

## Regenerate the Softener

1. Press and hold the REGEN button for three seconds until the drive motor starts.
2. Open the inlet water supply valve very slowly allowing water to fill the tank in order to expel air. CAUTION: If water flows too rapidly, there could be a loss of media out of the drain.
3. When the water is flowing steadily to the drain without the presence of air, fully open the water supply inlet valve.
4. Allow the softener to complete the regeneration cycle.

## INSTALLATION COMPLETE.

### IMMEDIATE REGENERATION FEATURE:

A regeneration can be initiated at any time by pressing and holding the REGEN button for 3 seconds.

NEXT button



REGEN button





**A HARDNESS TEST IS SUPPLIED WITH YOUR SOFTENER.  
IT IS A SIMPLE COLOUR-CHANGE TEST TO DETERMINE IF THE  
WATER SOFTENER IS DELIVERING SOFT OR HARD WATER.**



## PROCEDURE:

1. OPEN THE NEAREST TAP AFTER THE SOFTENER
2. ALLOW WATER TO RUN FOR AT LEAST 30 SECONDS
3. 1/2 FILL THE PLASTIC TUBE WITH WATER
4. ADD ONE YES/NO TABLET TO THE SAMPLE WATER AND SHAKE UNTIL THE TABLET HAS FULLY DISSOLVED

## RESULTS:

- IF THE WATER SAMPLE TURNS **GREEN** THE WATER IS SOFT & THE SOFTENER IS FUNCTIONING CORRECTLY
- IF THE WATER SAMPLE TURNS **RED** THE WATER IS HARD. REGENERATE THE SOFTENER AND RE-TEST THE WATER. IF IT IS STILL HARD REFER TO THE SOFTENER TROUBLESHOOTING GUIDE

