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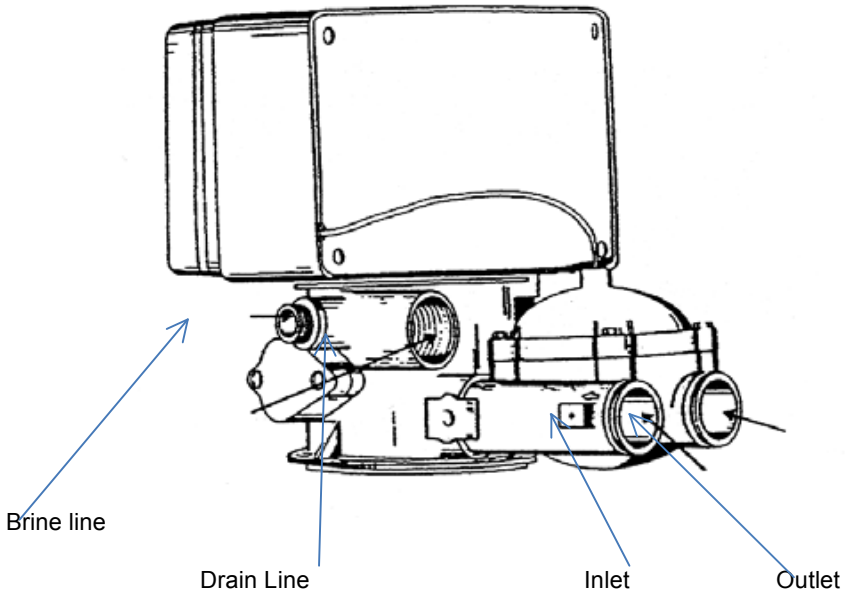
Water Conditioner Operation Manual

How Your Water Conditioner Works

Hard water enters your home through the main supply line, enters your water conditioner, and passes down through a bed of ion exchange resin which softens and filters the water as well. An ion exchange process takes place in which the resin beads capture and hold calcium and magnesium, the hardness impurities, while the water takes on sodium ions. The soft water then flows up and into your household water line.

Your meter initiated water conditioner is set by aligning the number of people with the grains of hardness on the program wheel.

On the days your conditioner regenerates, the resin is automatically recharged by passing a brine solution (salt water) through it. This reverses the ion exchange process, charging the resin with sodium and freeing the hardness minerals. These minerals and the brine solution are then flushed away through the drain line followed by a rapid rinse. The resin bed is again ready to soften water. The proper volume of water is returned to the brine tank to dissolve enough salt for the next regeneration. All this is performed automatically.



Operating Instructions

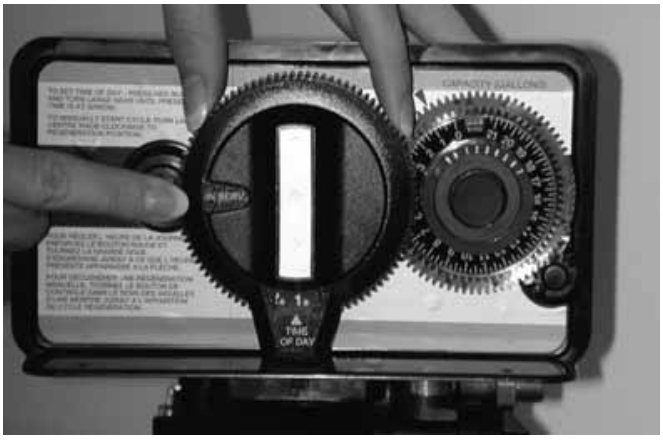


Figure 3

Setting the Time of Day (Figure 3)

This is a 24-hour timer and must correspond with the correct time on your wrist watch to ensure proper cycling of your conditioner. Disengage the drive gear by pressing and holding in the ***RED BUTTON*** on the left side of the control. Now turn the large 24-hour gear until the actual time of day is at the time of day arrow at the bottom of the panel. Release the red button to re-engage the drive gear. The correct time of day on the 24-hour clock has now been set.

Time of Regeneration

The time of regeneration is factory set at 2:00 a.m.

Figure 4

Manual Regeneration Cycle (Figure 4)

Should you run out of soft water due to inadequate frequency of regeneration or inadequate reserve capacity, power failure, lack of salt, or excessive usage because of unexpected company, you can initiate a manual regeneration simply by turning the manual regeneration knob on the front of the control to "REGEN" position. The conditioner will now automatically complete a regeneration cycle and return to service. Be sure there is adequate salt and salt brine in the brine tank for a satisfactory regeneration.

Setting the Regeneration Frequency

There are only two methods for setting the program wheel, use only one of the following methods.

Setting the Program Wheel – Method 1 (See Figure 5)

Figure 5

Set the program wheel by lifting the "people" dial and rotating it so the number of people in the household is aligned with the grains per gallon water hardness scale. Release the dial and check for firm engagement at setting. (This method will provide reserve capacity based on 75 gallons per person per day.)

Setting the Program Wheel – Method 2

The frequency of automatic regeneration can alternatively be set by using the gallon label and the small white dot on the program wheel. Set the program wheel by lifting the "people" dial and while pulling it towards you, turn it until the desired number of gallons is aligned with the white dot on the circumference. The number of gallons is read by multiplying the number on the label by 100. To determine the number of gallons of softened water that can be produced between regenerations, use the following formula.

Step 1

Capacity between regenerations; Example: Model 5600MI30 = 27,000 grains @ 10 lbs. of salt. Assume 25 grains/gal, divided by grains of hardness in water sample which equates to the number of gallons between regenerations.
Example: 27,000 ÷ 25 = 1,080 gal.

Step 2

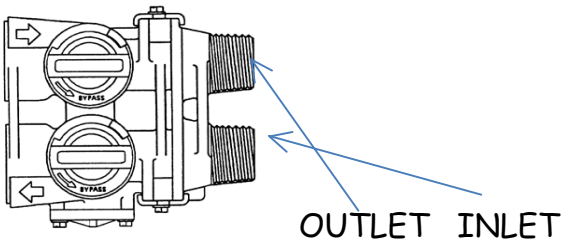
The advantage to setting the program wheel by method 2 is that you decide how much reserve capacity you want your unit to have.
Method 1 assumes water usage of 75 gallons per day. However, if you want more or less reserve, simply assume more or less water usage per person a day. The next step in the example assumes that the water usage will be less and therefore, the unit will not need the extra reserve capacity.
Number of gallons between regeneration
– Reserve capacity (Number of people x 75 gallons)
= Number of gallons at which to set the program wheel
NOTE: Add one person if you have a dishwasher.
Frequency of Automatic Regeneration Meter
Initiated Models Only

Automatic Bypass

The regeneration cycle lasts approximately 2-1/2 hours, after which soft water service will be restored. During regeneration, hard water is automatically bypassed for use in the household. Hot water should be used as little as possible during this time to prevent hard water from filling the water heater. This is why automatic regeneration is set for some time during the night and manual regenerations should be performed when little or no water will be used in the household. You may notice new sounds as your water softener operates. During this time you may hear water running intermittently to the drain.

Safety Float

The brine tank is equipped with a safety float which prevents your brine tank from overfilling as a result of a malfunction such as a power failure.



Manual Bypass

In the case of emergency, such as an overflowing brine tank, you can isolate your water softener from the water supply using the bypass valve located at the back of the control. In normal operation the bypass is open with the on/off knobs in line with the inlet and outlet pipes. To isolate the softener, simply rotate the knobs clockwise (as indicated by the word BYPASS and arrow) until they lock.
You can use your water related fixtures and appliances as the water supply is bypassing the softener. However, the water you use will be hard.
To resume soft water service, open bypass valve by rotating the knobs counterclockwise.

Stainless Steel Bypass

In normal operation the bypass lever is aligned with the inlet/outlet with the pointer on SERVICE. To isolate the filter, rotate lever counter clockwise until it stops and pointer indicates unit is in bypass.
You can use your water related fixtures and appliances as the water supply is bypassing the filter. However, the water you use will be unfiltered.
To resume filtered water service, open the bypass valve by reversing the rotation of the lever.

Maintenance

Checking the Salt Level

Check the salt level monthly. Remove the lid from the cabinet or brine tank, make sure salt level is always above the brine level (you should not be able to see water).

Adding Salt

Use only clean salt labeled for water conditioner use, such as crystal, pellet, nugget, button or solar. The use of rock salt is discouraged because it contains insoluble silt and sand which build up in the brine tank and can cause problems with the system's operation. Add the salt directly to the tank, filling no higher than the top of the brine well.

Caution

Liquid brine will irritate eyes, skin and open wounds - gently wash exposed area with fresh water. Keep children away from your water conditioner.

Bridging

Humidity or wrong type of salt may create a cavity between the water and the salt. This action, known as *"bridging",* prevents the brine solution from being made, leading to your water supply being hard. If you suspect salt bridging, carefully pound on the outside of the brine tank or pour some warm water over the salt to break up the bridge. This should always be followed up by allowing the unit to use up any remaining salt and then thoroughly cleaning out the brine tank. Allow four hours to produce a brine solution, and then manually regenerate the softener.

Care of Your Softener

To retain the attractive appearance of your new water softener, clean occasionally with mild soap solution. Do not use abrasive cleaners, ammonia or solvents. Never subject your softener to freezing or to temperatures above 110°F (43°C).

Trouble Shooting Guide

*Before calling for service, follow the steps below, then **MANUALLY REGENERATE** your conditioner*

PROBLEM	CAUSE	CORRECTION
1 Softener delivers hard water	A. Bypass valve is open	A. Close bypass valve.
	B. No Salt in Brine Tank	B. Add salt to brine tank and maintain salt level above water level.
	C. Insufficient water flowing into brine tank	C. Check salt setting and clean brine line flow control if plugged.
	D. Salt bridged	D. Break salt bridging - see page 8
	E. Loose brine line	E. Tighten connections at control valve and at brine valve
	F. Plugged injector assembly	F. Clean/replace injectors and screen.
2. Intermittent Soft Water	A. Control will draw brine properly	A. Maintain water pressure at 20 psi minimum. Check for restrictions in drain line. Clean or replace injector assembly. Check for air leaks between control valve and air check valve and tighten connections.
	B. Using hot water during regeneration cycle	B. Avoid using hot water at this time as water heater will fill with hard water.
	C. Incorrect Salt setting	C. Adjust salt setting
	D. Softener capacity too small	D. Increase capacity by replacing with larger unit.
3. Conditioner regenerates at wrong time	A. Power failure or incorrect setting	A. Restore power and reset time of day
4. Unit uses too much salt	A. Improper salt setting	A. Check salt usage and salt setting
	B. Excessive water in brine tank	B. Remove water. Clean drain line flow control, brine line flow control, injector system and brine valve.
5. Loss of Water pressure	A. Inlet to control blocked with iron buildup or foreign matter	A. Clean line to water conditioner. Remove piston and clean control
6. Iron in conditioned water	A. Fouled Resin bed	A. Check backwash, brine draw and brine tank till. Clean control and add resin cleaner to resin bed.
7. Conditioner fails to draw brine	A. Drain line flow control is plugged.	A. Clean drain line flow control
	B. Brine line flow control is plugged.	B. Clean drain line flow control
	C. Injector assembly is plugged	C. Clean/replace injectors and screen.
	D. Line pressure is low low	D. Increase line pressure. Line pressure must be at least 20 psi (139.9 KPa) at all times.
	E. Internal control leak	E. Change seals and spacers and/or piston assembly.
8. Drain flows continuously	A. Foreign material in control	A. Remove piston assembly and inspect bore, remove foreign material and check control in various regeneration positions.
	B. Internal control leak	B. Replace seals and /or piston assembly
	C. Control valve is jammed in brine or backwash position	C. Replace piston and seals and spacers
	D. Drive motor stopped or jammed	D. Replace drive motor
9. Softener fails to regenerate	A. No salt in brine tank	A. Add salt
	B. Injector assembly plugged	B. Clean/replace injectors and screen.
	C. Salt bridged	C. Break salt bridging – see page 8
	D. Insufficient salt used per regeneration	D. Check and adjust salt setting
	E. Softener capacity too small	E. Replace conditioner with larger unit.
10. Softener regenerates every night	A. Softener capacity too small	A. Replace with larger unit.