

Installation And Start-Up Procedures

Each water conditioning appliance includes water test strips and 8' of drain line.

CAUTION: Be sure the controller is firmly “locked” onto the drive end cap assembly. The four tabs on top of the drive end cap will allow the clips on the bottom of the controller case to lock onto the end cap tabs. (See detail diagram on page 16. Fig. 11.)

1. Placement: Place your appliance in desired location. Turn off electricity and water supply to water heater. Make sure inlet/outlet and drain connections meet the applicable local codes. Check arrows on valve to be sure water flows in proper direction. See figures 1, 2, & 3.

CAUTION: DO NOT PLUMB APPLIANCE IN BACKWARD. See page 6

2. Drain Line: must be a minimum of 1/2"-5/8" I.D. tubing and should make the shortest run to a suitable drain. The drain line may be elevated up to 8 feet from the discharge on the appliance as long as the water pressure in your appliance is 40 psi or more. If drain line is 25' or longer, increase drain line to 5/8" I.D. Also, the end of the drain line must be equal in height or lower than the control valve. See figure 1.

3. Flushing: Before placing your appliance in service, it is very important to flush the cold water lines of any debris. Turn on water supply, open the nearest cold water tap and let the water run for 2 to 3 minutes or until the water flows clear. Then put the by-pass in the Service position. See figures 4 through 6.

4. Check Leaks. Close faucet and check for leaks. If leaks are found, turn off main water supply and open the nearest cold water faucet to depressurize lines. Close faucet to eliminate siphoning action. Repair leaks. Turn on water supply and electricity to water heater. Place the bypass valve in the Service position. See figures 4 and 6.

5. Connect Overflow Line. The overflow line must end at a drain that is at least 3" lower than the bottom of the overflow fitting. It is a gravity line and cannot be run overhead. See figure 7.

6. Complete The Installation. Open a cold water tap and allow the appliance to flush for 20 minutes or until approximately 72 gallons has passed through the appliance per NSF requirements.

7. Plug In Transformer. See figure 8.

**When calling the HelpLine, please have this guide and the serial number available. From 8 am to 5 pm EST, call 1-800-437-8993.
Your serial number may be found on top of your valve assembly.**

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8. Setting Number. For **Models 700, 900, and 550** for municipally-supplied water, determine your controller setting number. Do not guess at the setting; continued water quality problems or damage to the appliance could result.

Municipal water - call your local water company to determine your water hardness in grains per gallon. This will be your setting number. Or, follow the instructions on the hardness test strip provided with your **Model 550** to determine your hardness reading. This will be your setting number.

Well water - follow the instructions on the pH and hardness test strips provided with your appliance to determine the pH and hardness of your water.

Iron adjustment: if pH is 7 or above and you know your water has iron, add 15 to your hardness reading in grains per gallon and enter the result as your setting #.

Example: hardness in grains per gallon from test strip is $20 + 15 = 35 =$ setting #.
This is a temporary setting until you have an accurate water test.

If the result of your hardness test strip reaches the test maximum of 25 grains per gallon, mix 1 cup tap water with 1 cup distilled water, then retest for hardness. Multiply your reading x 2 and use this number as your setting number. If the test strip result is still 25 grains per gallon, call your HelpLine. Or, contact the company below to test for hardness, iron and pH.

WATERSCREEN
National Testing Laboratories, Inc.
1-800-458-3330 - 9 am - 5 pm EST

If you feel you have an abnormal amount of iron, push the powerClean® button for **Models 700 and 900** only. Also, be sure to use salt with an iron-cleaning additive. Be aware that model **Model 550** for municipally-supplied water is not designed to treat water with iron. If pH is below 7, Call your HelpLine.

9. Adding Water & Salt. Be sure to remove any packaging or installation materials before adding salt. Next, add no more than 2 gallons of water to the brine cabinet. Then add salt to the brine cabinet, wait 2 hours then push the immediate recharge button and hold for 5 seconds. A regeneration cycle will begin and continue as follows: **Model 900** , 48 minutes; **Model 550** for municipally-supplied water, 27 minutes; and **Model 700** 33 minutes. After the first regeneration, your softener will automatically refill the correct amount of water in the brine cabinet. See figure 10.

10. Refill Salt when the salt level drops below the water level in the brine cabinet. Always keep salt above water level. See figure 10

CAUTION! Failure to install, operate and maintain your water treatment appliance as instructed will VOID the product limited warranty.

NOTE! Make sure the Owner's Limited warranty Card is filled in and mailed within 30 days of installation. NO POSTAGE REQUIRED.

Setting The 4 Button Controller

DEMAND REGENERATION

You won't have to worry about vacation settings or extra guests because the controller measures water usage and regenerates based on need. The appliance will regenerate using only the necessary amount of water and salt. If power has been turned off, your appliance will retain programmed settings indefinitely. See figure 9.

1) ENTERING YOUR HARDNESS SETTING

See page 12 for determining your setting number. Push the "SET" button for about 5 seconds. Now, the water hardness setting number shown in the digital readout will increase 1 grain each time you push the "CHANGE" button. After 70 grains for **Model 700** (90 grains for **Model 900** and 25 grains for **Model 550**) the read-out will return to 03, and continue to count up until the display number matches the hardness number. Press the "SET" button to save the hardness number. To recheck the hardness, hold down the "SET" for about 5 seconds.

2) GALLONS REMAINING

After setting water hardness, gallons remaining until the next automatic regeneration is shown in the digital display. NOTE: Gallons remaining are in hundreds. 12=1,200 gallons

3) RECHARGE/REGENERATION STATUS

Regeneration cycle numbers are shown during regeneration. The read-out will flash with the cycle number. The flashing regeneration numbers are:

First cycle:	(01) First Backwash
Second & Third cycles:	(02) Brine/Slow Rinse
Fourth cycle:	(03) Second Backwash
Fifth cycle:	(04) Brine Refill
Sixth cycle:	(HO) Service

To quickly advance through the regeneration cycles, press and hold the Regenerate button for 2 seconds. Wait for the cycle to begin, after 20 seconds press and hold the Regenerate button until the cycle number changes (about 2 seconds.) Each cycle can be advanced in this manner.

4) waterMizer

The waterMizer® wheel will turn whenever water is being used. See figure 9.

5) REGENERATE

To start an immediate regeneration, press The "Regenerate" button and hold for 3 seconds. The Regenerate button is used when starting your water conditioner, to start an immediate regeneration, or to restore capacity if you have run out of salt. If your appliance has run out of salt, you may not have soft water available. Open the salt lid and add salt. Wait two hours, then press the "REGENERATE" button and hold for 3 seconds. See figure 9.

6) POWERCLEAN™

The powerClean™ feature is a service/maintenance step for water supplies that have an excessive amount of iron. Activating this feature is a simple push of the powerClean™ button on the controller. PowerClean™ will appear in the display when this feature is activated. The appliance will regenerate every other day with five pounds of salt. Leave the powerClean™ feature on for a minimum of two weeks. The frequent regeneration will eliminate iron buildup in the resin bed. The use of salt with an iron cleaning agent or iron out cleaner is recommended for continuous use as a preventive measure against iron fouling of the resin bed. To deactivate this feature, simply press the powerClean™ button. Use this feature every six months as a part of your routine maintenance procedure to insure a long service life for your water treatment appliance. See figure 9.

Setting The Controller - Continued

ADVANCED CUSTOMER SETTINGS:

Your appliance can be programmed for High Capacity (HC) or High Efficiency (HE). High Capacity means the appliance will regenerate less often, but use more salt. High Efficiency will make the appliance regenerate more often and use less salt. See Specification/Capacity Chart, pg. 25.

1. Hold down SET and CHANGE for 3 seconds to enter advanced customer settings mode. While SET and CHANGE are being held down, the display should show only the controller type. After the 3 seconds, the entire screen is lit for a half second, and then "HC" will appear.
2. Pressing and releasing the CHANGE button will toggle the digit display between "HC" and "HE". Pressing and releasing the SET button will advance programming to the next step. Default is "HC".
3. The controller will now display "Demand Mode." Each press of the CHANGE button will switch between "Demand Mode" and "Delayed Mode".

Delayed Mode allows regeneration at a specific time (e.g. at 2 am when less water is being used.) Demand Mode triggers a regeneration as soon as softening capacity is exhausted.

Pressing and releasing the SET button will advance programming to the next step. Default is "Demand Mode".

4. "96 Hours" is now displayed. Pressing and releasing the CHANGE button will toggle this on and off.

If "96 Hours" is selected, the unit will work no more than 4 days without a regeneration.

Note: If there is iron in your water, select this option.

Pressing and releasing the SET button will advance programming to the next step. Default is for "96 Hours" to be ON.

5. "Gallons X100" is now displayed. Pressing and releasing the CHANGE button will toggle between "Gallons X100" and "Liters X1000". Choosing gallons sets the controller to English units, and choosing liters sets it to metric units. Pressing and releasing the SET button will advance programming to the next step.

6. If "Gallons" was chosen "12" is now displayed. If "Liters" was chosen "24" is displayed. Pressing and releasing the CHANGE button will toggle between "24" and "12". This controls the selection of a 12-hour (AM/PM) or 24-hour clock. If 24-hour, 00=midnight. Default is "12".

Setting The Controller - Continued

7. "Set Time" and "12" is now lit. To set the time, press and hold the CHANGE button to advance the numerical display, and switch from "PM" to "AM" if appropriate. Note: set the time to the nearest hour. Pressing and releasing the SET button will save the time displayed and advance to the next menu. Pressing and releasing the SET button will advance programming to the next step. Default is 12 PM.

8. "Set Reg. Time" and "02" is now displayed. To set the regeneration time, press and release the CHANGE button to advance the numerical display. Pressing and releasing the SET button will save the "regen. time" displayed and put the unit into operation. Default is 2 AM.

PROGRAMMING IS NOW COMPLETE

4 Button Error Descriptions

"E1" Home magnet not found: Cycle power by unplugging the transformer and plugging it back in and it will look for Home again.

"E2" Motor not plugged in: Plug motor in and cycle power. If it is plugged in, then motor wiring or the motor plug is defective.

"E3" Home offset error: Disk didn't start in proper home location. Controller will automatically try to reset itself by finding Home and continuing the regeneration.

"E4" Magnet stuck at Home: Gear teeth aren't engaged, gear stripped, something is jammed in the valve. Cycle the power to reset.

"E5" Memory error: Replace board.

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