

## Four-Button Controller

This appliance features a four-button controller with an LCD display. The controller can be used to view the appliance's status, perform regenerations, and change settings. The controller must be set up correctly for the appliance to perform properly.

**Note:** Ensure that the bottom of the controller is firmly locked onto the four tabs on the top of the drive end cap assembly. See *Cabinet and Cover Assemblies* diagram later in this manual.



Figure 10: Four-Button Controller

Controller Part	Function										
<b>LCD Display</b>	Shows the status of the controller										
Demand Mode	The controller measures water usage and regenerates based on need, so you do not have to worry about vacation settings or extra guests. The appliance will regenerate using only the necessary amount of water and salt. If your power has been off, the appliance will retain programmed settings indefinitely <b>Note:</b> You should not need to change from Demand Mode										
Soft Water Remaining	Shows the gallons (or liters) of soft water remaining until the next automatic regeneration. Typically, each person in the household uses about 75 gallons (284 L) per day. Water remaining is in gallons in hundreds (or liters in hundreds or thousands, depending on how much capacity is remaining). For example 88 = 8,800 gallons (33 = 3,300 or 33,000 liters)										
Recharge/Regeneration Status	Shows regeneration cycle numbers during regeneration. The read-out will flash with the cycle number. The flashing regeneration numbers are: <table style="margin-left: 40px; border: none;"> <tr> <td>First cycle</td> <td>(01) First Backwash</td> </tr> <tr> <td>Second and Third cycles</td> <td>(02) Brine/Slow Rinse</td> </tr> <tr> <td>Fourth cycle</td> <td>(03) Second Backwash</td> </tr> <tr> <td>Fifth cycle</td> <td>(04) Brine Refill</td> </tr> <tr> <td>Sixth cycle</td> <td>(HO) Service (Briefly)</td> </tr> </table> <p>When regeneration is complete, the display shows the number of gallons in hundreds of soft water remaining. (See above) Regeneration typically is complete in about 30 minutes.</p>	First cycle	(01) First Backwash	Second and Third cycles	(02) Brine/Slow Rinse	Fourth cycle	(03) Second Backwash	Fifth cycle	(04) Brine Refill	Sixth cycle	(HO) Service (Briefly)
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waterMizer™	Indicates that water is flowing through the appliance; the waterMizer™ indicator turns whenever water is being used; useful for checking for proper plumbing and leaks										
powerClean™	Displays when feature is activated. See <i>Power Clean™ Button</i>										

## Four-Button Controller, Cont.

Button	Function
<b>Set</b>	Used to set Customer Settings
<b>Change</b>	Used to change Customer Settings
<b>Power Clean (700 and 900 only)</b>	<p>Activates/deactivates the powerClean™ feature, which is a service/maintenance step for water supplies that have an excessive amount of iron. "powerClean™" will display when this feature is activated. The appliance will regenerate every other day with five pounds (2.3 kg) 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. Use this feature every six months as a part of your routine maintenance procedure to ensure a long service life for your water treatment appliance</p>
<b>Regenerate</b>	<p>Used when starting your water conditioner to start an immediate regeneration, or to restore capacity if you run out of salt</p> <p><b>To Start an Immediate Regeneration</b></p> <ol style="list-style-type: none"> <li>1. Press and hold the Regenerate button for about five seconds.</li> <li>2. The appliance is in regeneration mode and will display the status of each cycle.</li> <li>3. After all regeneration cycles are complete, the display will return to normal operating mode.</li> </ol> <p><b>To Quickly Advance Through the Regeneration Cycles</b> (used when starting up or diagnosing the appliance only)</p> <ol style="list-style-type: none"> <li>1. Press and hold the Regenerate button for about five seconds until the cycle begins.</li> <li>2. The cycle position will display (for example, 01).</li> <li>3. If the controller does not advance to the next cycle position after 20 seconds, press and hold the Regenerate button until the cycle number changes (about 2 seconds).</li> </ol> <p>Each cycle can be advanced by pressing the Regenerate button. Always wait until the cycle position displays before advancing to the next cycle position.</p>

# Setting the Controller

## Step 1

### Determine the Controller Setting Number

- A. For municipal water, call the water department to determine the hardness and pH of your water supply.
- B. For well water, use the hardness test strips provided with your appliance or have a sample of your untreated water tested by a water testing laboratory.
  1. **Test Strips**—Follow the instructions on the test strips. If the color on your test strip is between two readings, use the higher number. Compare the colors as soon as you remove them from your water. This number gives the hardness in grains per gallon and parts per million (mg/L).
  2. **Testing Laboratory**—To ensure proper settings, have a sample of your untreated water tested for iron and pH. To find a facility to test your water sample, check your Yellow Pages under Water Analysis or Water Testing or contact the company below to conduct a test for you.



Figure 11: Hardness Test Strips

**WATERSCREEN**

National Testing Laboratories, Inc.

1-800-458-3330 from 9 a.m. to 5 p.m. EST

3. If the pH is below seven and you have a 700 or 900 unit, call the HelpLine listed in *General Information*.
- C. Use the following example to determine the controller setting.

	Your Water	Example	Metric Example
Enter hardness grains per gallon (mg/L)		20	342
If your water contains 3 ppm (mg/L) iron, add 15 (257)*	+	+ 15	257
The sum is your controller setting number		35	600 (rounded)

\*Increase your water hardness setting by 5 grains per gallon for every 1 ppm (mg/L) of ferrous iron.

## Step 2

### Enter Your Setting Number Into the Controller

- A. Press and hold the Set button for about 5 seconds until “25” displays.
  - B. Press the Change button until the display matches your compensated number. Once you pass “70” (models 700 and 950) or “90” (model 900), the display will reset to “03.”
  - C. Press Set to save the hardness setting number.
  - D. To recheck the hardness setting number, hold down the Set button for about 5 seconds.
- Note:** Refer to *Specifications* for the maximum water hardness that your appliance can handle.

**Your controller is now set.**

## Advanced Customer Settings

Most customers will want to use the factory default settings, so no changes are necessary. However, you can reset the controller settings if the factory default settings are not suitable for your needs.

**Note:** Be sure to check that the Time of Day is correct.

### Set High Capacity or High Efficiency

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. This is the default. The High Efficiency setting meets or exceeds the requirement some states have for salt efficiency.

#### To Enter Advanced Customer Settings Mode

- A. Press the Set and Change buttons for 3 seconds. The display should show only the controller type. After 3 seconds, the entire screen is lit for a half second, and then "HC" displays.
- B. Press Change to toggle the digit display between "HC" and "HE."
- C. When the desired value is displayed, press Set.

**Note:** HE ensures the appliance chooses salt settings that get 4,000 grains per pound (570 grams/kg) of salt for each regeneration or better. This choice meets or exceeds the requirement some states currently have in regards to salt efficiency.

**Note:** All models are equipped with patented capacity guard.

Once in HC or HE, you can set the mode, hours to next generation, gallons or liters, time format, time of day, and time of regeneration.

#### Step 1 **Set Mode**

Display reads "Demand Mode."

##### To Change Mode

- A. Press Change.
  - Delay Mode allows regeneration at a specific time (for example, at 2 a.m. when less water is typically being used).
  - Demand Mode triggers a regeneration as soon as softening capacity is exhausted. This is the default.
- B. When the desired mode is displayed, press Set.

#### Step 2 **Set Hours Until Regeneration**

Display reads "96 Hours."

##### To Change Setting

- A. Press Change to turn Off. If "96 Hours" is selected, the appliance will work no more than 4 days without a regeneration. Default is for "96 Hours" to be On.

**Note:** If there is iron in your water, select this option. If you are using model 950, on most municipal water supplies, turn this option Off.
- B. When the desired setting is displayed, press Set.

## Advanced Customer Settings, Cont.

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### Step 3 *Set Gallons or Liters*

Display reads "Gallons (or Liters) x 100."

#### To Set Gallons or Liters

- A. Press Change to toggle between gallons and liters. Choosing "Gallons" sets the controller to English units, and choosing "Liters" sets it to metric units.
- B. When the desired units are displayed, press Set.

### Step 4 *Set Time Format*

Display reads "12" if gallons were chosen or "24" if liters were chosen.

#### To Set Time Format

- A. Press Change to toggle between 24 and 12. This controls the selection of a 12-hour (AM/PM) or 24-hour clock. If 24-hour, 00=midnight.
- B. When the desired time format is displayed, press Set.

### Step 5 *Set Time of Day*

Display reads "Set Time" and "12" (or "24").

#### To Change Time of Day

- A. Press Change until the current time is displayed. Default is 12 PM.  
**Note:** Set time to the nearest hour.
- B. When the desired time is displayed, press Set.

### Step 6 *Set Regeneration Time*

Display reads "Set Reg. Time" followed by the current regeneration time that is set (02).

#### To Change Regeneration Time

- A. Press Change. Default is 2 AM.
- B. When the desired regeneration time is displayed, press Set.

**Note:** Whenever you experience an electrical outage, check your controller for the correct time. Make any necessary corrections.

**Programming is now complete.**