OWNER'S MANUAL

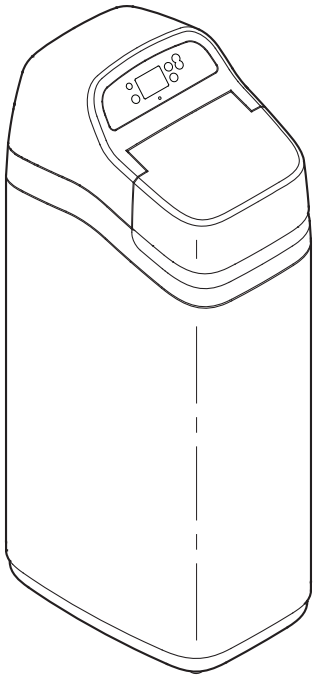
ECOWATER® SYSTEMS

Your Water. Perfected.

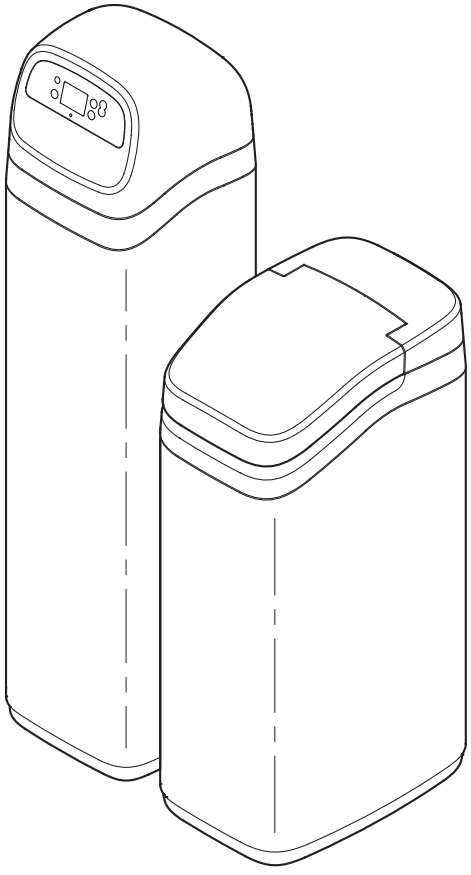
How to install, operate and maintain your

EcoWater Systems Electronic Demand Water Softener

Model
ESD2800R25



Models
ESD2802R30
ESD2802R39



Systems tested and certified by NSF International against NSF/ANSI Standard 44 for hardness reduction and efficiency, and reduction of barium and radium 226/228, and certified to NSF/ANSI/CAN Standard 372.

Systems tested and certified by the Water Quality Association against CSA B483.1.

Designed, Engineered & Assembled in the U.S.A.

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www.ecowater.com

7396800 (Rev. D 7/9/24)

TABLE OF CONTENTS

INSPECT SHIPMENT

The parts required to assemble and install the water softener are included with the unit. Thoroughly check the water softener for possible shipping damage and parts loss. Also inspect and note any damage to the shipping carton.

Remove and discard (or recycle) all packing materials. To avoid loss of small parts, we suggest you keep the small parts in the parts bag until you are ready to use them.

SAFETY GUIDES

Follow the installation instructions carefully. Failure to install the water softener properly voids the warranty.

Before you begin installation, read this entire manual. Then obtain all the materials and tools you will need to make the installation.

Check local plumbing and electrical codes. The installation must conform to them.

Use only lead-free solder and flux for all sweat-solder connections as required by state and federal codes.

Use care when handling the water softener. Do not turn upside down, drop, or set on sharp protrusions.

Do not locate the water softener where freezing temperatures occur. **Do not attempt to treat water over 120°F**. Freezing, or hot water damage voids the warranty.

The water softener requires a minimum water flow of 3 gallons per minute at the inlet.

Recommended **maximum allowable inlet water pressure is 125 psi**. If daytime pressure is over 80 psi, nighttime pressure may exceed the maximum. Use a pressure reducing valve if necessary. Be sure the addition of a pressure reducing valve will not reduce the flow to less than the 3 gallons per minute.

The water softener works on **24V DC** electrical power, supplied by a direct plug-in power supply (included). Be sure to use the included power supply, and plug it into a nominal **120V, 60 Hz** household outlet that is in a **dry location only**, grounded and properly protected by an overcurrent device such as circuit breaker or fuse.

This system is not intended to be used for treating water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

European Directive 2002/96/EC requires all electrical and electronic equipment to be disposed of according to Waste Electrical and Electronic Equipment (WEEE) requirements. This directive or similar laws are in place nationally and can vary from region to region. Please refer to your state and local laws for proper disposal of this equipment.

These models are efficiency rated. The efficiency rating is valid only at the minimum salt dose and the service flow rate. The softeners have a demand initiated regeneration (D.I.R) feature that complies with specific performance specifications intended to minimize the amount of regenerant brine and water used in their operation.

These softeners have a rated softener efficiency of not less than 3,350 grains of total hardness exchange per pound of salt (based on sodium chloride) and shall not deliver more salt than their listed rating or be operated at a sustained maximum service flow rate greater than their listed rating. These softeners have been proven to deliver soft water for at least ten continuous minutes at the rated service flow rate. The rated salt efficiency is measured by laboratory tests described in NSF/ANSI Standard 44. These tests represent the maximum possible efficiency that the system can achieve. Operational efficiency is the actual efficiency after the system has been installed. It is typically less than the rated efficiency, due to individual application factors including water hardness, water usage, and other contaminants that reduce a softener's capacity.

SPECIFICATIONS			
Model	**ESD2800R25**	**ESD2802R30**	**ESD2802R39**
Model Code	Sd25	Sd30	Sd39
Rated Softening Capacity (grains @ lb. salt dose)	12,200 @ 2.4 32,500 @ 9.0 41,200 @ 15.3	7,800 @ 1.7 20,700 @ 6.5 26,200 @ 11.2	12,000 @ 2.4 31,800 @ 8.9 40,200 @ 15.4
Rated Efficiency (grains / lb. @ minimum salt dose)	5,120 @ 2.4	4,520 @ 1.7	5,040 @ 2.4
Water Used During Regeneration @ Minimum Salt Dose	2.9 gal. / 1,000 grains	2.4 gal. / 1,000 grains	4.5 gal. / 1,000 grains
Amount of High Capacity Resin	59.3 lbs. (1.14 cu. ft.)	42.6 lbs. (0.82 cu. ft.)	58.8 lbs. (1.13 cu. ft.)
Resin Tank Nominal Size (dia. x height)	10 x 35 in.	9 x 35 in.	10 x 47 in.
Service Flow Rate	6.0 gpm	7.0 gpm	7.0 gpm
Pressure Drop at Rated Service Flow	8.0 psig	11.9 psig	7.0 psig
Intermittent Flow @ 15 psi ▲	14.6 gpm	13.6 gpm	11.8 gpm
Intermittent Flow @ 30 psi ▲	22.8 gpm	21.3 gpm	18.1 gpm
Water Supply Maximum Hardness	95 gpg	95 gpg	110 gpg
Water Supply Maximum Clear Water Iron ■	5 ppm	4 ppm	5 ppm
Min. - Max. Water Supply Pressure ◆	20 - 125 psi		
Min. - Max. Water Supply Temperature	40 - 120 °F		
Minimum Water Supply Flow Rate	3 gpm		
Max Drain Flow Rate	2.0 gpm		

▲ Intermittent flow rate does not represent the maximum service flow rate used for determining the unit's rated capacity and efficiency. Continuous operation at flow rates greater than the service flow rate may affect capacity and efficiency performance.

■ Capacity to remove clear water iron is substantiated by independent laboratory test data. State of Wisconsin requires additional treatment if water supply contains greater than 5 ppm clear water iron.

◆ Canada working pressure limits: 1.4 - 7.0 kg/cm².

These units conform to NSF/ANSI 44 for the specific performance claims as verified and substantiated by test data.

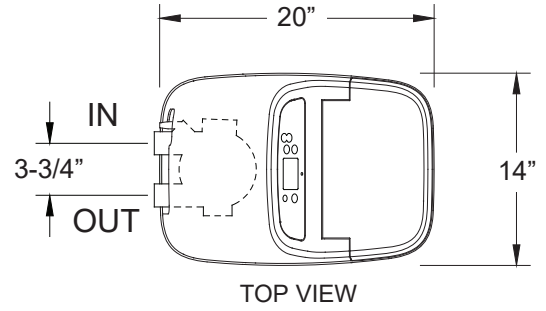
While testing was performed under standard laboratory conditions, actual performance of the system may vary based on local water conditions.

Test parameters include:

pH = 7.5 ±0.5, flow rate = 7.5 gpm, and dynamic pressure = 35 ±5 psig.

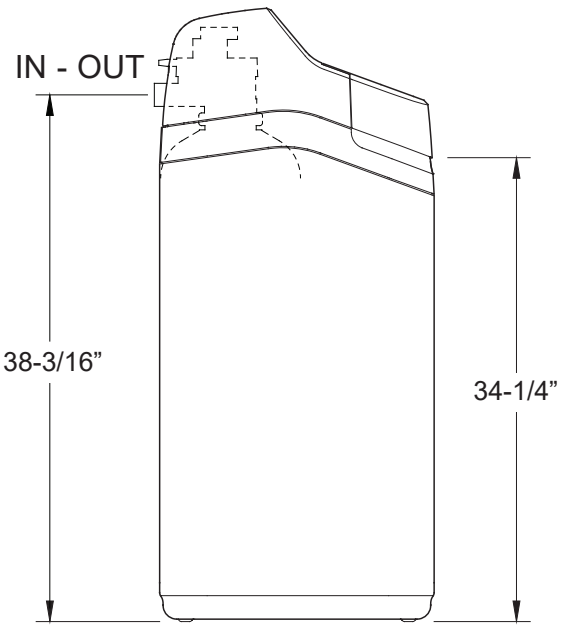
PERFORMANCE CLAIMS		
Contaminant	**Influent Challenge Level**	**Maximum Allowable Product Water Level**
Barium	10 ±10% mg/L	2.0 mg/L
Radium 226/228	25 pCi/L	5 pCi/L

ESD2800R25

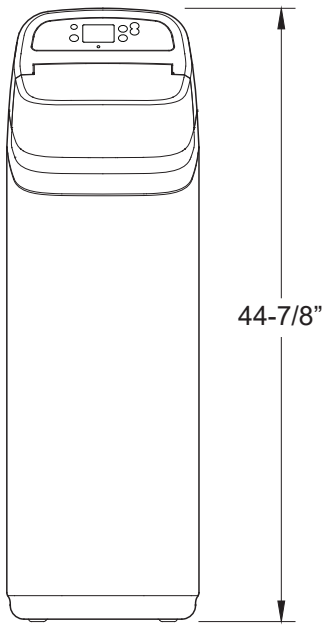


TOP VIEW

Model	Nominal Resin Tank Size
ESD2800R25	10” dia. x 35”



SIDE VIEW



FRONT VIEW

FIG. 1

ESD2802R30 & ESD2802R39

Model	Nominal Resin Tank Size	Dimension A	Dimension B
ESD2802R30	9” dia. x 35”	45”	38-3/16”
ESD2802R39	10” dia. x 47”	57”	49-7/8”

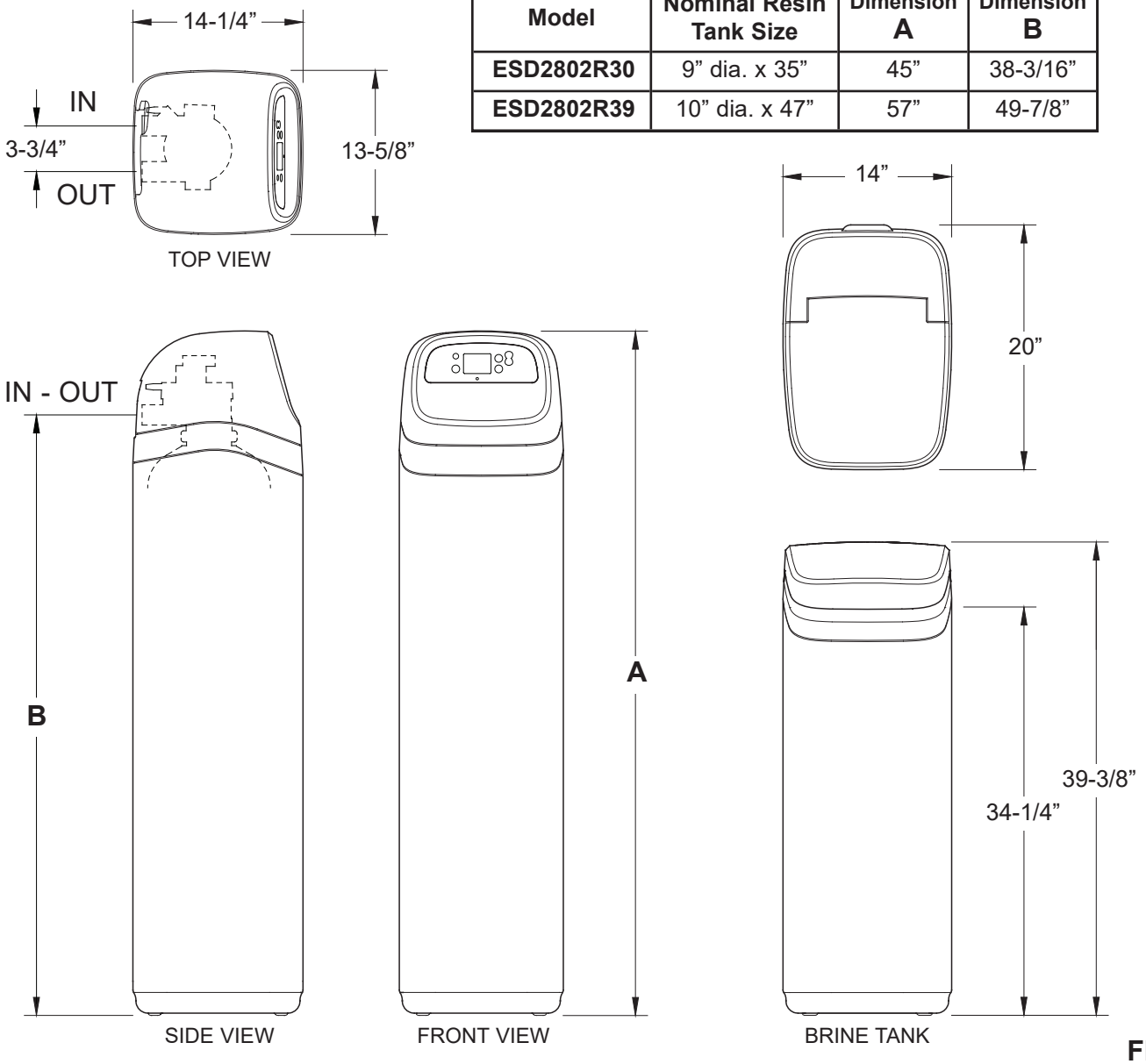


FIG. 2

WHERE TO INSTALL THE SOFTENER

- To soften all water in the home, install the water softener close to the water supply inlet, upstream of all other plumbing connections, **except** outside water pipes. Outside faucets should remain on hard water to conserve salt and softening capacity.
- Place the softener near a floor drain, or other acceptable drain point (laundry tub, sump, standpipe, etc.) to carry away regeneration discharge water.
- Connect the softener to the main water supply pipe UPSTREAM OF the water heater. DO NOT RUN HOT WATER THROUGH THE SOFTENER. The temperature of water passing through the softener must be less than 120°F.
- Do not install the softener in a place where it could freeze. Damage caused by freezing is not covered by the warranty.
- Put the softener in a place water damage is least likely to occur if a leak develops. The manufacturer will not repair or pay for water damage.
- A 120V, 60 Hz electrical outlet, to plug the included power supply into, is needed near the softener. Be sure the electrical outlet and power supply are in an inside location, to protect from wet weather.
- If installing in an outside location, you must take the steps necessary to assure the softener, installation plumbing, wiring, etc., are as well protected from the elements, contamination, vandalism, etc., as when installed indoors.
- A drain is needed for recharge discharge water. A floor drain is preferred, close to the water softener. A laundry tub, standpipe, etc., are other options. Be sure to provide a 1-1/2" minimum air gap, to prevent possible sewer water backup.

TOOLS, PIPE & FITTINGS, OTHER MATERIALS YOU WILL NEED

- ALWAYS install an EcoWater Systems bypass valve, or a 3-valve bypass system. Bypass valves let you turn off water to the softener for repairs if needed, but still have water available to the house pipes.
- Plastic inlet and outlet fittings are included with the softener, which allow water flow equivalent to 1 inch nominal pipe. To maintain maximum valve flow, 1" pipes to and from the softener fittings are recommended. Do not reduce the pipes to less than 3/4" size.
- Use copper, brass or PEX plastic pipe and fittings.
- Drain hose, 1/2" inside diameter minimum, is needed for the valve drain.
- If a rigid valve drain is needed, to comply with plumbing codes, you can buy the parts needed to connect a 1/2" minimum copper tubing drain.

NOTE: The Commonwealth of Massachusetts plumbing code 248-CMR shall be adhered to. A licensed plumber shall be used for this installation.

SINGLE BYPASS VALVE

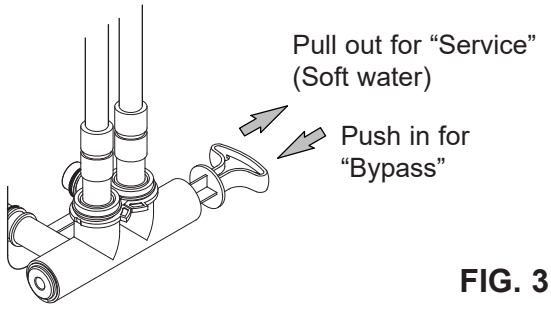


FIG. 3

THE PROPER ORDER TO INSTALL WATER TREATMENT EQUIPMENT

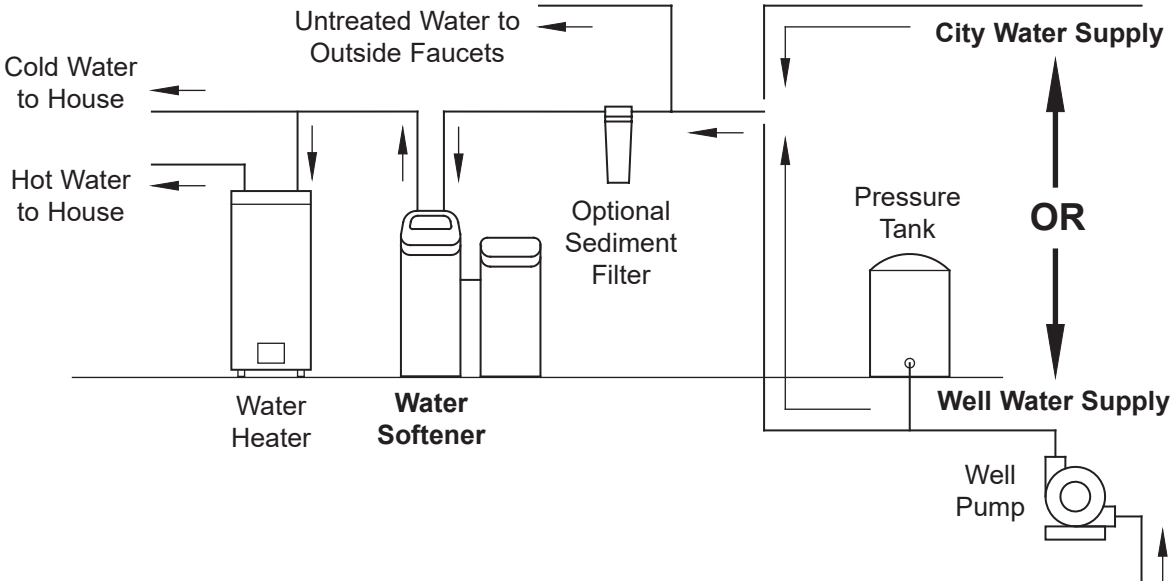
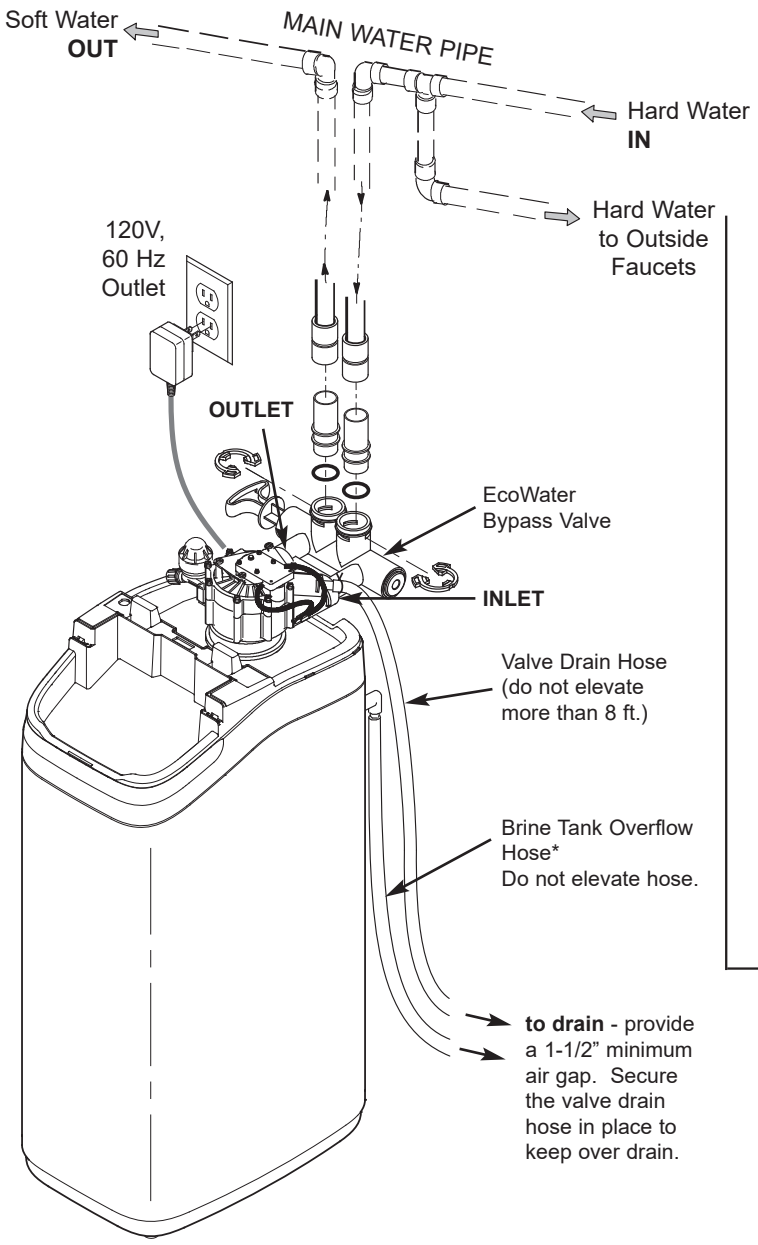


FIG. 4

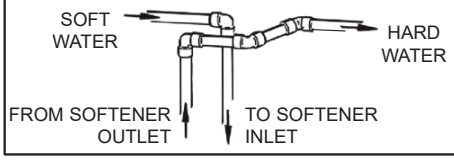
INSTALLATION USING ECOWATER BYPASS VALVE



*Do not connect the water softener valve drain hose to the brine tank overflow hose.

CROSS-OVER

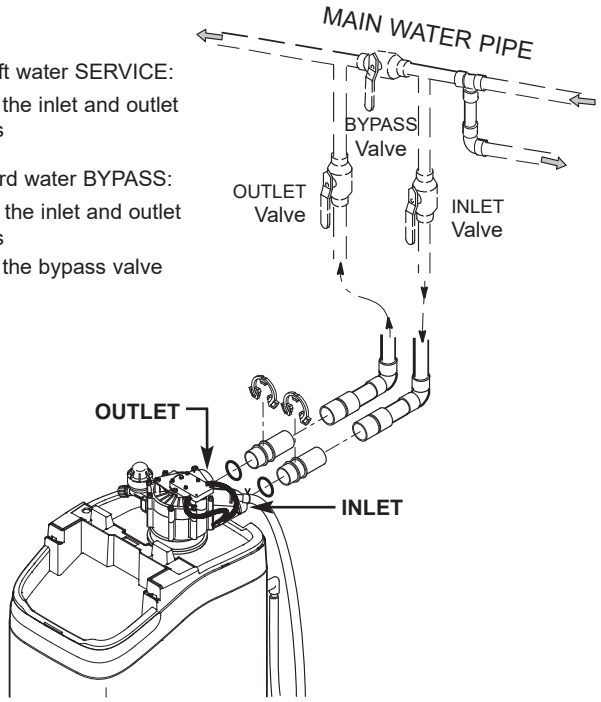
Use if water supply flows from the left.
Include single or 3-valve bypass.



INSTALLATION USING 3-VALVE BYPASS

For soft water SERVICE:
- -Open the inlet and outlet valves

For hard water BYPASS:
- -Close the inlet and outlet valves
- -Open the bypass valve



CONNECTING A RIGID VALVE DRAIN TUBE

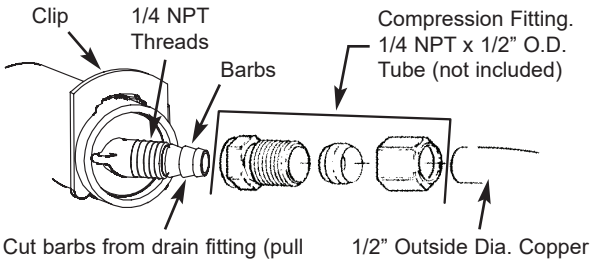
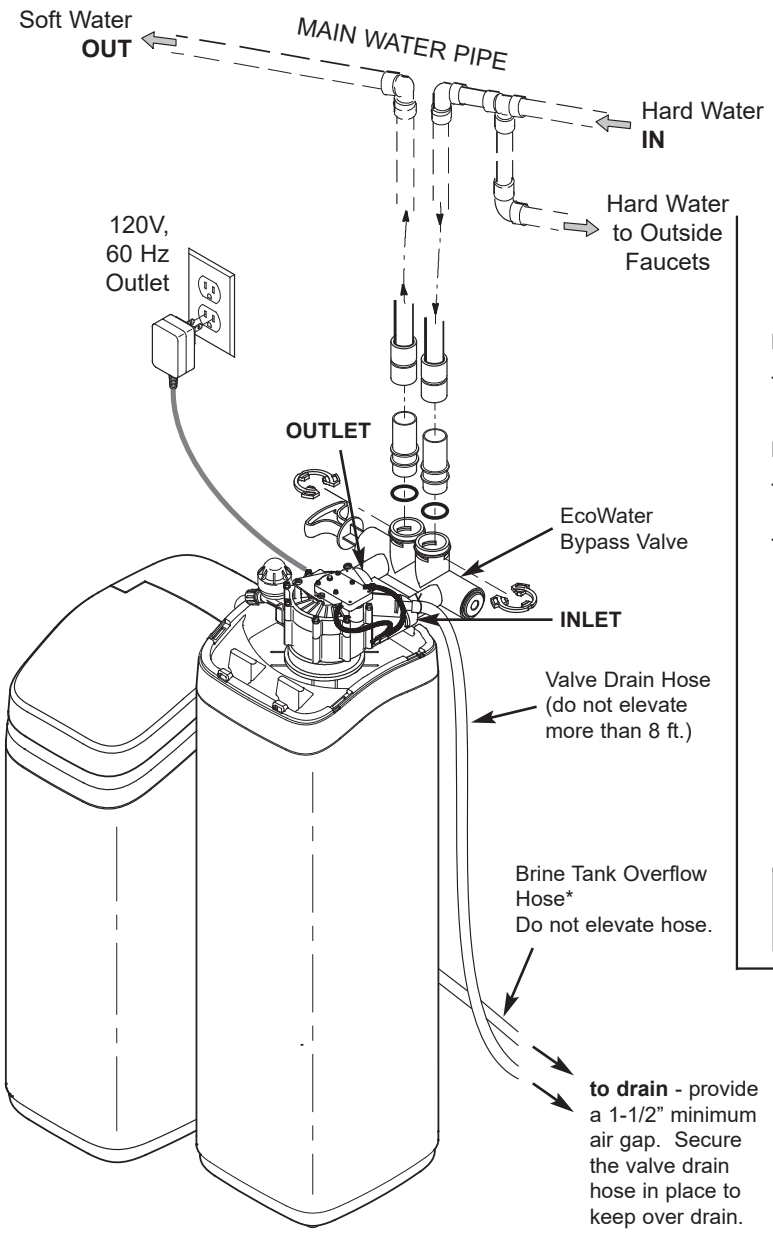


FIG. 5a

Typical Installation Illustrations (ESD2802R30 & ESD2802R39)

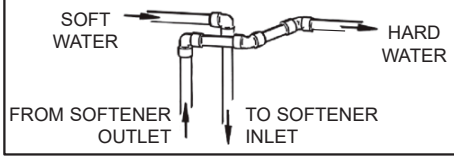
INSTALLATION USING ECOWATER BYPASS VALVE



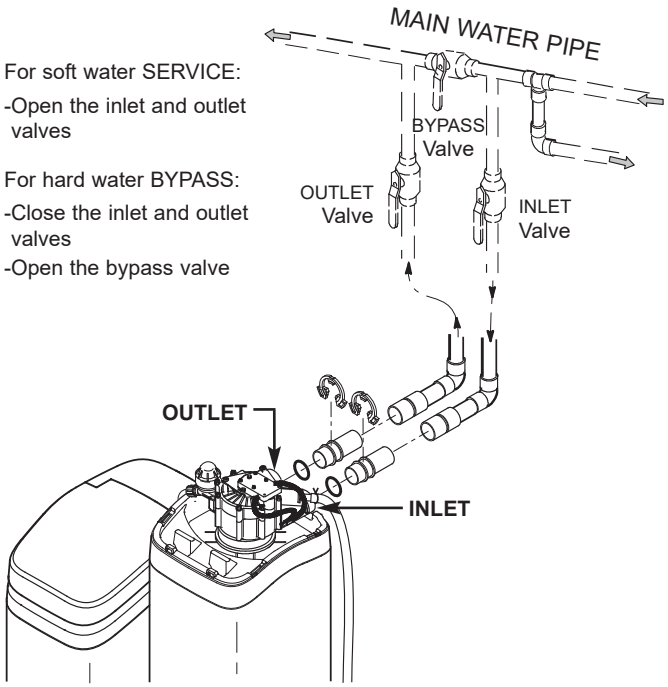
*Do not connect the water softener valve drain hose to the brine tank overflow hose.

CROSS-OVER

Use if water supply flows from the left.
Include single or 3-valve bypass.



INSTALLATION USING 3-VALVE BYPASS



CONNECTING A RIGID VALVE DRAIN TUBE

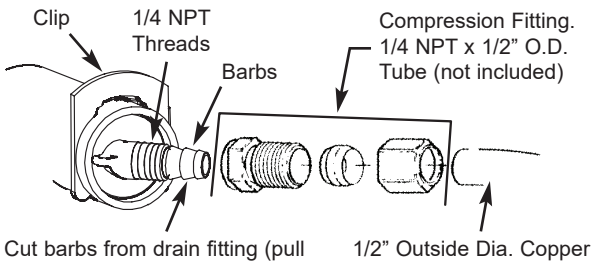


FIG. 5b

1. TURN OFF WATER SUPPLY

a. Close the main water supply valve near the well pump or water meter.

b. Shut off the electric or fuel supply to the water heater.

c. Open high and low faucets to drain all water from the house pipes.

2. INSTALL BYPASS VALVE AND/OR COPPER TUBES:

a. If installing a single bypass valve, push the bypass valve, with lubricated o-ring seals in place, into the valve inlet and outlet ports (See Figure 6).

- OR -

b. If installing a 3-valve bypass system, slide copper tubes, with lubricated o-ring seals in place, into the valve inlet and outlet ports, respectively (See Figure 6).

c. Be sure the turbine and support are in place in the valve outlet, as shown in Figure 7.

d. Snap the two large plastic clips in place on the inlet and outlet ports, from the top, down (See Figure 8). Be sure they snap into place. Pull on the bypass valve or copper tubes, to make sure they are held securely in place.

3. COMPLETE PLUMBING TO AND FROM THE SOFTENER

Using the “Typical Installation Illustrations” on pages 7 & 8 as a guide, observe all of the following cautions while you connect inlet and outlet plumbing:

- Be sure incoming, **hard water** is directed to the valve **INLET** port.
- Be sure to install bypass valve(s).
- If making a soldered copper installation, do all sweat soldering before connecting pipes to the filter fittings. Torch heat will damage plastic parts.
- Use pipe joint compound on all external pipe threads.
- When turning threaded pipe fittings onto plastic fittings, use care not to cross-thread.
- Support inlet and outlet plumbing in some manner (use pipe hangers) to keep the weight off of the valve fittings.

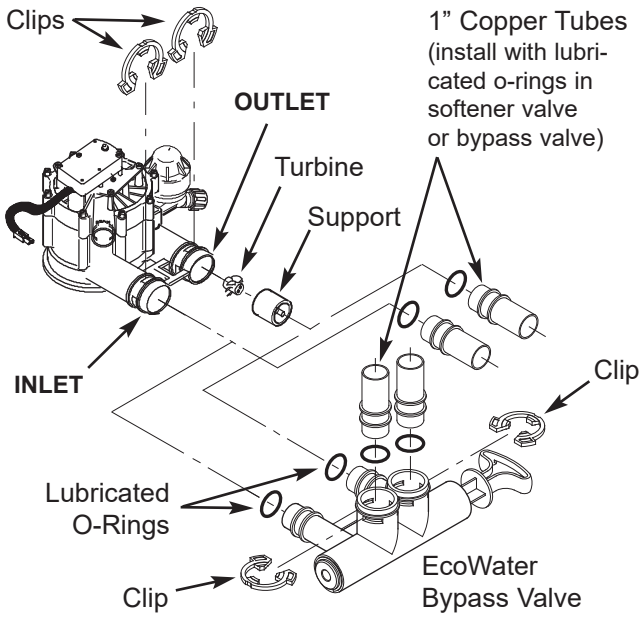


FIG. 6

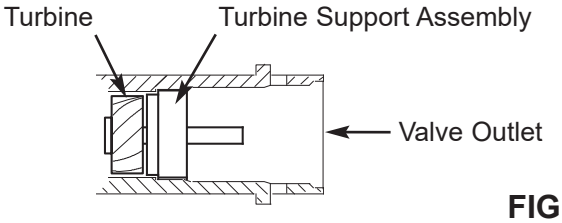


FIG. 7

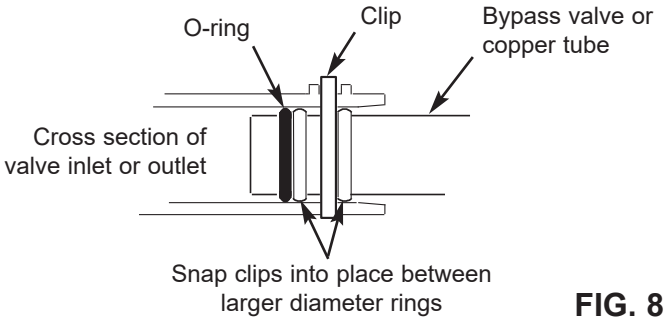
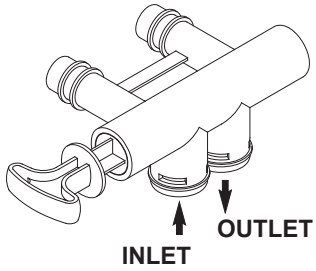


FIG. 8



Turn the bypass valve downward if connecting to floor level plumbing

FIG. 9

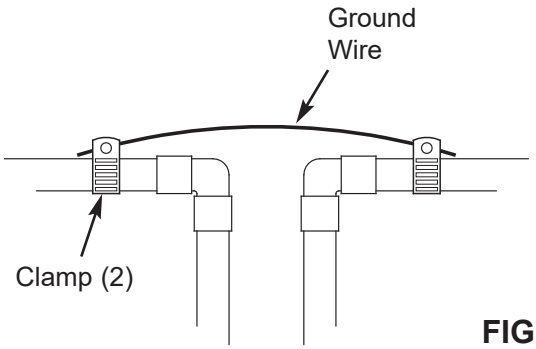


FIG. 10

4. COLD WATER PIPE GROUNDING

The house cold water pipe (metal only) is often used as a ground for the house electrical system. The 3-valve bypass type of installation, shown in Figures 5a & 5b, will maintain ground continuity. If you use the plastic bypass, continuity is broken. To restore the ground, do the following:

a. Install a #4 copper wire across the removed section of main water pipe, securely clamping at both ends (See Figure 10). Parts not included.

5. INSTALL VALVE DRAIN HOSE

a. Take a length of 1/2" inside diameter hose and attach to the valve drain fitting, securing it with a hose clamp (See Figures 5a & 5b on pages 7 & 8).

b. Locate the other end of the hose at a suitable drain point (floor drain, sump, laundry tub, etc.). Check and comply with local codes. Refer to Figures 5a & 5b if codes require a rigid pipe drain run.

IMPORTANT: Use high quality, thick wall hose that will not easily kink or collapse. The softener will not backwash properly if water cannot exit this hose during recharges.

c. Tie or wire the hose in place at the drain point. Water pressure will cause it to whip during the backwash portion of the recharge cycle. Also provide an air gap of at least 1-1/2" between the end of the hose and the drain point. An air gap prevents possible siphoning of sewer water, into the softener, if the sewer should back up.

d. If raising the drain hose overhead is required to get to the drain point, do not raise higher than 8 feet above the floor. Elevating the hose may cause a back pressure that could reduce backwash flow and proper resin bed cleaning.

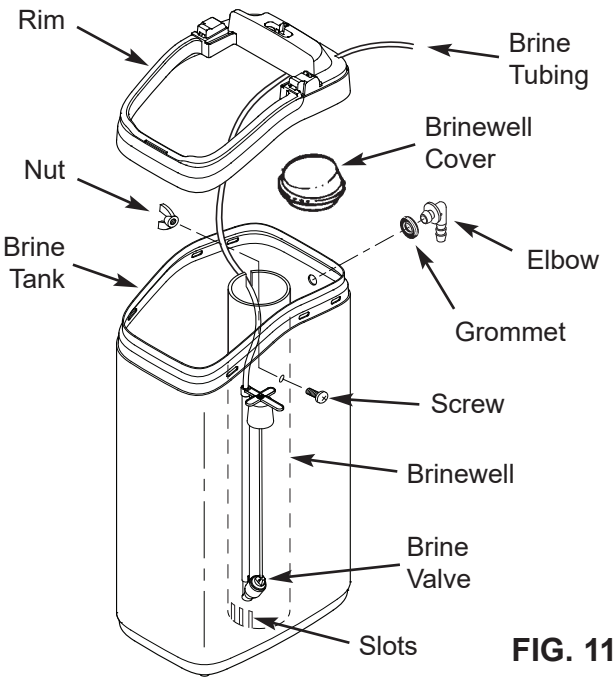


FIG. 11

6. BRINE TANK ASSEMBLY (ESD2802R30 & ESD2802R39 only)

a. Snap the rim into place on the brine tank (See Fig. 11).

b. Lower the brinewell, with the slots at the bottom, into the brine tank. Then use the screw and nut from the parts bag to fasten the brinewell in place along the side of the tank.

c. Lower the brine valve into the brinewell. Push the tubing into the brinewell top slot (Fig. 11) and route it out through the hole in the back of the rim.

d. Install the brinewell cover.

e. Take the rubber grommet and hose adaptor elbow from the parts bag. Push grommet into the hole in the back of the brine tank. Then insert the larger diameter end of the elbow through the grommet.

f. Snap the brine tank cover assembly onto the rim.

7. INSTALL BRINE TANK OVERFLOW HOSE

This drain is for safety only. If the brine tank should over-fill with water, the excess is carried to the drain.

a. Take the rubber grommet and hose adaptor elbow from the parts bag. Push grommet into the corresponding hole in the back wall of the brine tank. Then insert the larger diameter end of the elbow through the grommet.

b. Attach a length of 1/2" inside diameter hose to the drain elbow, installed in the previous step. Use a hose clamp to hold it in place.

continued on next page

c. Locate the other end of the hose at the drain point. Do not elevate this hose higher than the elbow on the brine tank. Do not tee this hose to the valve drain hose.

8. CONNECT BRINE TUBING (ESD2802R30 & ESD2802R39 only)

a. Route the tubing attached to the brine valve assembly out through the hole in the back of the rim (See Fig. 11). Use the slot in the brinewell to hold tubing in place.

b. Make sure end of brine tube is cut square and smooth. Within about 5/8" (16 mm) of the end, make sure outside of tube is not nicked, scratched, kinked or stretched out. Cut if necessary.

c. Connect brine tube by inserting end into push-to-connect fitting on the valve's nozzle & venturi assembly (See Fig. 13). Push it until at least 5/8" (16 mm) of tube is inserted (See Fig. 15).

NOTE: A common mistake is to stop pushing the tube when it hits the internal metal collar or o-ring (See Fig. 14). Make sure to push past these, until at least 5/8" (16 mm) of tube is inserted.

d. Pull on the tube to make sure it is secure.

9. PRESSURE TESTING FOR LEAKS, PROGRAMMING THE CONTROLLER & RINSING THE MEDIA

To prevent excessive air pressure in the water softener and plumbing system, do the following steps EXACTLY in order:

a. Fully open two or more **softened** cold water faucets nearby the water softener.

b. Place the bypass valve(s) in **bypass** position (See Figures 3, 5a & 5b).

c. Fully open the main water supply valve. Watch until the flow from the opened faucets becomes steady, with no spurting or air bubbles.

d. After about three minutes, open a hot water faucet for one minute, or until all air is expelled.

e. Close all faucets and check your plumbing work for leaks.

f. Make sure the softener's valve drain hose is hooked up and the open end directed to a floor drain, laundry tub or other suitable type of drain.

g. Make sure the softener's bypass valve is in the **bypass** position.

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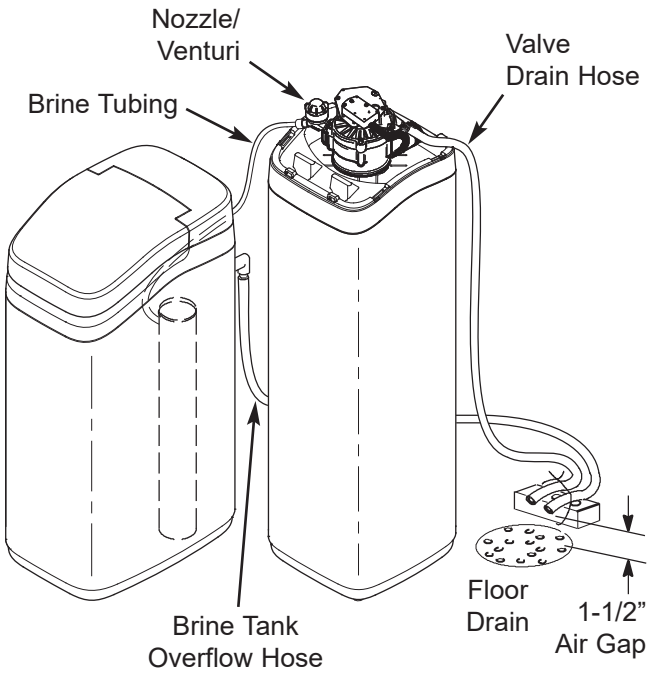

FIG. 12

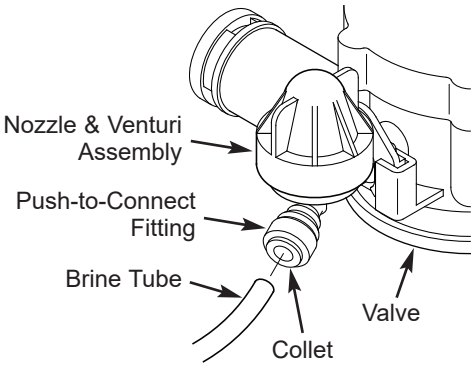

FIG. 13

INCORRECT - Not fully inserted

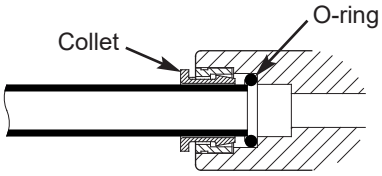

FIG. 14

CORRECT - Tube fully inserted

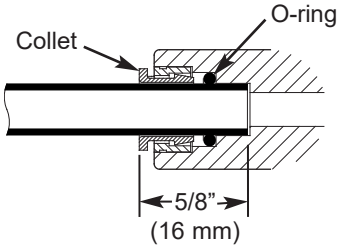

FIG. 15

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h. Plug in the power supply.

i. **Program the electronic controller:** Follow the steps on Pages 13 & 14 to program the electronic controller with basic operating information, such as time and water hardness. After completing these steps, continue with "j. Start a recharge", below.

j. **Start a recharge:** Press the RECHARGE button and hold for 3 seconds, until "Recharge Now" flashes in the display and you hear the valve motor run as the softener begins recharging.

k. Once the unit is in backwash, place bypass valve(s) into the **service** position, as follows:

(1) SINGLE BYPASS VALVE: **Slowly** move the valve stem toward **service** position, pausing several times to allow the unit to pressurize slowly.

(2) 3-VALVE BYPASS: Fully close the **bypass** valve and open the **outlet** valve. **Slowly** open the **inlet** valve, pausing several times to allow the unit to pressurize slowly.

l. Let the softener complete the backwash and fast rinse cycles (takes 10-12 minutes). When the recharge cycle ends, the softener valve returns to the service position.

10. ADD WATER AND SALT TO THE BRINE TANK

a. Using a pail or garden hose, add about 3 gallons of water into the brine tank. DO NOT pour into the brinewell.

b. Add salt to the brine tank. It is recommended to fill the brine tank no more than 1/2 full. Level the salt when finished adding. You can use most water softener salts, but it must be clean. Recommended nugget, pellet or coarse solar salts have less than 1% impurities.

NOTE: See page 19 for additional information on salt.

11. SANITIZING THE WATER SOFTENER

Care is taken at the factory to keep your EcoWater Systems water softener clean and sanitary. However, during shipping, storage, installing and operating, bacteria could get into the unit. For this reason, sanitizing as follows is suggested* when installing.

a. Remove the brinewell cover and pour about 1-1/2 oz. (2 to 3 tablespoons) of common household bleach into the softener's brinewell. Replace the brinewell cover.

b. Make sure the bypass valve is in the **service** position.

c. **Start a recharge:** Press the RECHARGE button and hold for 3 seconds, until "Recharge Now" flashes in the display and you hear the valve motor run as the softener begins recharging. This recharge draws the sanitizing bleach into and through the softener. Any air remaining in the unit is purged to the drain.

d. After the recharge has completed, fully open a cold water faucet, downstream from the softener, and allow 50 gallons of water to pass through the system. This should take at least 20 minutes. Close the faucet.

12. RESTART THE WATER HEATER

Turn on the electric or fuel supply to the water heater, and light the pilot, if applies.

NOTE: The water heater is filled with hard water and, as hot water is used, it refills with softened water. In a few days, the hot water will be fully conditioned. To have fully conditioned hot water immediately, wait until the recharge (Step 11) is complete, then drain the water heater until water runs cold.

*Recommended by the Water Quality Association. On some water supplies, the EcoWater Systems unit may need periodic disinfecting.

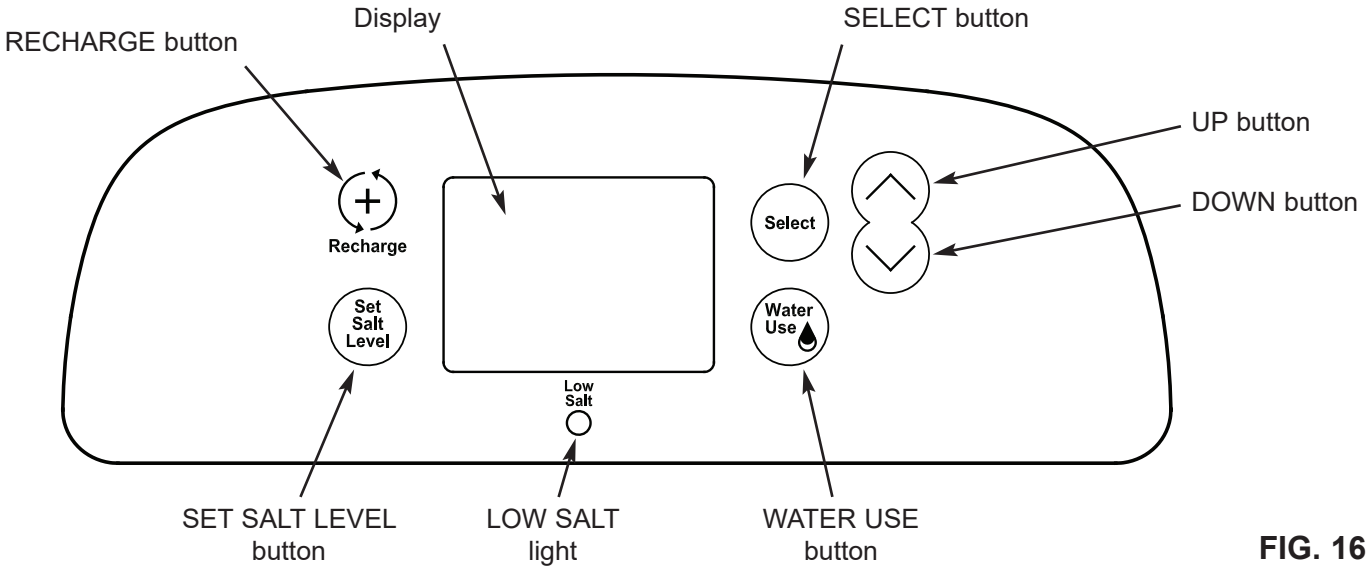


FIG. 16

LOW SALT LIGHT

When the EcoWater water softener is connected to electrical power, the low salt light on the control panel will be off during normal operation, except as follows:

- **Light flashing slowly, along with the salt level indicators in the display** - The salt monitor system indicates a low salt level and needs to be set. See “Salt Monitor System” on Page 15.

PROGRAM THE SOFTENER

When the power supply is plugged into the electrical outlet, the model code (see table below) and a software version number (example: J4.2), are briefly shown in the display. Then the words “PRESENT TIME” appear and 12:00 PM begins to flash.

Model	Code
ESD2800R25	Sd25
ESD2802R30	Sd30
ESD2802R39	Sd39

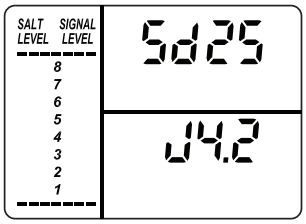


FIG. 17

SET PRESENT TIME OF DAY

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

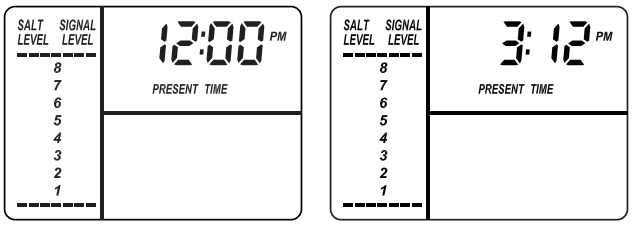


FIG. 18

1. Press the △ UP or ▽ DOWN buttons to set the present time. Up moves the display ahead; down sets the time back. Be sure AM or PM is correct.

continued on next page

continued from previous page

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 SELECT 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 SELECT button several times until it does.

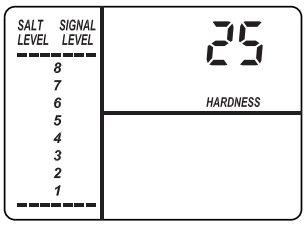


FIG. 19

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

NOTE: If your water supply contains iron, compensate for it by adding to the water hardness number. For example, assume your water is 20 gpg hard and contains 2 ppm iron. Add 5 to the hardness number for each 1 ppm of iron. In this example, you would use 30 for your hardness number.

	20 gpg hardness
2 ppm iron x 5 = 10	+10
(times)	30 HARDNESS NUMBER

2. When finished setting your water’s hardness number, press the SELECT 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 SELECT button several times until they do.

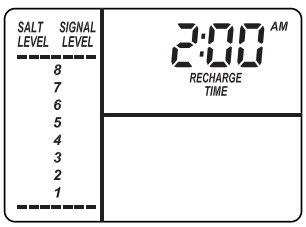


FIG. 20

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 SELECT button, and the display will return to the normal run (time of day) screen.

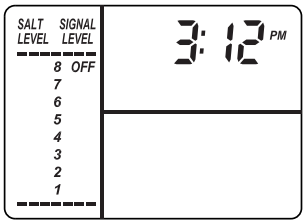


FIG. 21

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.

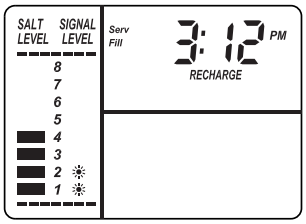


FIG. 22

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.

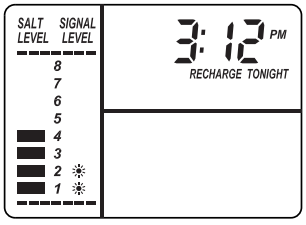


FIG. 23

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 8 (see Fig. 24). Observe the highest number the leveled salt is at, or closest to.

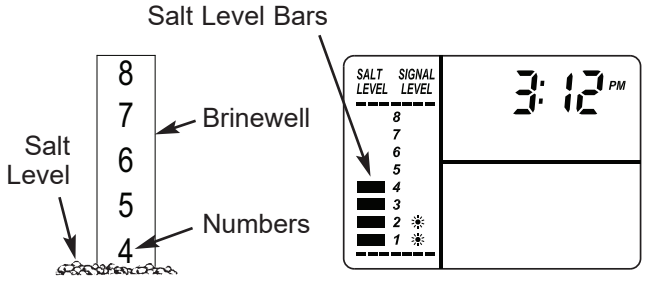


FIG. 24

3. Press the SET SALT LEVEL button as many times as necessary to make the salt level bars in the display (see Fig. 24) match the number on the brinewell. At level 2 or below, the Low Salt light will flash (See Page 13).
4. If you want to turn the salt monitor off, press the SET SALT LEVEL button past 8, until “OFF” shows in the display next to the number 8.

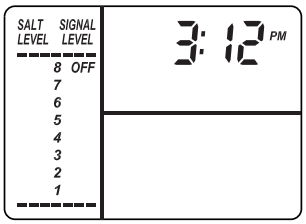


FIG. 25

NORMAL OPERATION

During normal operation, the present time of day shows in the display.

OPTIONAL SETTINGS:

- **SALT EFFICIENCY**
- **CLEAN FEATURE**
- **CLEAN FEATURE MINUTES**
- **GALLONS / LITERS**
- **MAXIMUM DAYS BETWEEN REGENERATIONS**
- **BACKWASH & FAST RINSE TIMES**

1. To set any of these options, press and hold SELECT for 3 seconds until "000" shows in the display. Then press (do not hold) SELECT again to display one of the "Salt Efficiency" screens shown below.

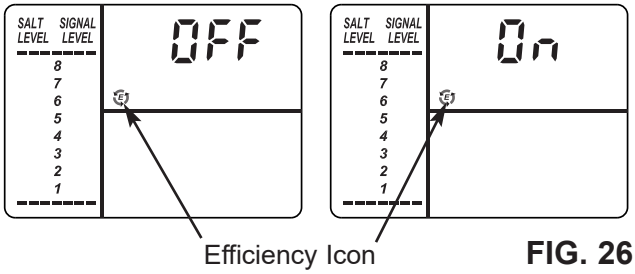


FIG. 26

SALT EFFICIENCY: When this feature is ON, the water softener will operate at salt efficiencies of 4000 grains of hardness per pound of salt or higher. The softener may recharge more often using smaller salt dosage and less water. This softener is shipped with the efficiency feature set OFF. Use the △ UP or ▽ DOWN buttons to change between OFF and ON. An efficiency icon will be displayed when this feature is ON.

California Efficiency Requirement

Your EcoWater water softener has a "High Efficiency" feature that can be set ON or OFF. This softener is shipped with the efficiency feature set OFF, which will utilize the maximum rated capacity while most often achieving maximum salt efficiencies. When installing this unit in the State of California, you MUST turn the efficiency feature ON. The softener may initiate more frequent recharges, but it will operate at 4000 grains per pound of salt or higher.

2. Press SELECT again to display one of the "Clean" screens shown below.

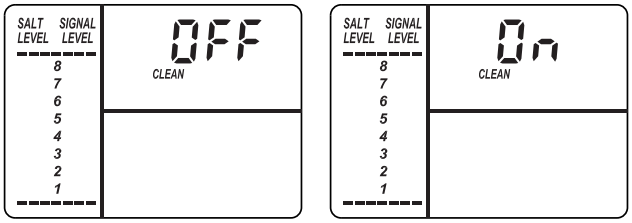


FIG. 27

CLEAN: This feature is beneficial on water supplies containing iron and/or high amounts of sediments (sand, silt, dirt, etc.). When set to ON, a backwash and fast rinse cycle will occur first, preceding the normal regeneration sequence. This provides extra cleaning of the resin bed before it is regenerated with the salt brine. To conserve water, if your water supply does not contain iron or sediments, be sure this feature is set to OFF. The default is OFF. Use the △ UP or ▽ DOWN buttons to change between OFF and ON.

3. Press SELECT again to display the "Clean Time" screen shown below.

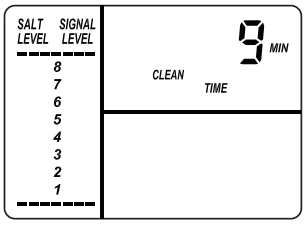


FIG. 28

CLEAN FEATURE MINUTES: If you have set the Clean Feature ON, the length of the extra backwash cycle automatically is set to a default value that depends on the model. However, you can adjust this time from 1 to 15 minutes in length. To change this cycle time, use the △ UP button to increase the time, or the ▽ DOWN button to shorten the time. If no change is desired, continue to next step.

4. Press SELECT again to display the “Gallons or Liters” screen.

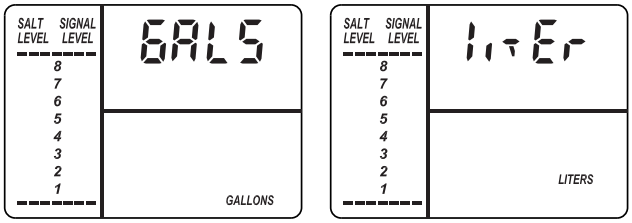


FIG. 29

GALLON OR LITER READINGS: Water usage and flow rate displays are shown in gallons at the default setting. If you prefer liters, change this setting from “Gals” to “Liter” by pressing the △ UP button.

5. Press SELECT again to display the “Recharge Days” screen.

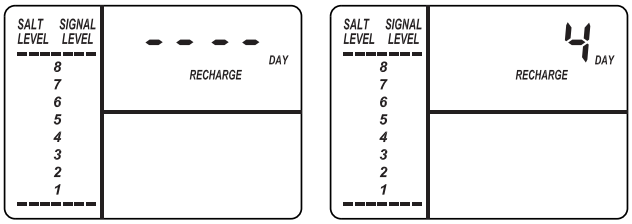


FIG. 30

MAXIMUM DAYS BETWEEN REGENERATIONS: The electronic controller automatically determines regeneration frequency. This provides the greatest operating efficiency and, under most conditions this feature will be left in its default mode. However, you can set this feature to force a regeneration every set number of days. You may want to do this if, for example, your water supply contains iron and you want the softener to regenerate at least once every few days to keep the resin bed clean. Use the △ UP or ▽ DOWN buttons to change the number of days (up to 15). If no change is desired, continue to next step.

6. Press SELECT again to display the “Backwash Time” setting screen.

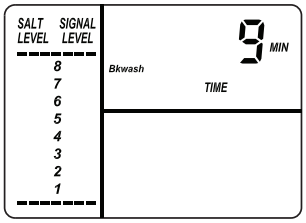


FIG. 31

BACKWASH & FAST RINSE TIMES: If you experience salty tasting water after regeneration, you may need to increase the backwash and fast rinse times. The default backwash and fast rinse times depend on the model. However, you may increase or decrease the backwash and fast rinse times, in 1 minute increments.

If you wish to change the backwash time, use the △ UP or ▽ DOWN buttons to set the backwash time between 1 and 30 minutes*. Then press SELECT to display the “Fast Rinse Time” setting screen.

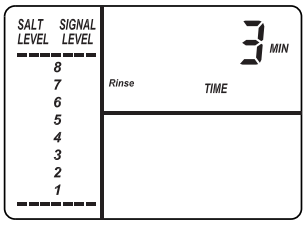


FIG. 32

If you wish to change the fast rinse time, use the △ UP or ▽ DOWN buttons to set the fast rinse time between 1 and 30 minutes.*

* Setting backwash and/or fast rinse times too low may result in salty tasting water after regeneration.

7. Press SELECT to return to the normal run (time of day) screen.

WATER FLOW THROUGH THE SOFTENER

To view the flow rate through the softener in liters (or gallons) per minute, press the WATER USE button. If soft water is in use, the flow rate will be displayed to the nearest tenth of a liter (or gallon). The display will show "0" when all faucets and water using appliances are off.

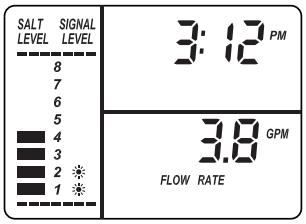


FIG. 33

AVERAGE DAILY GALLONS OR LITERS

Press the WATER USE button a second time to display the average number of gallons (or liters) of soft water that the household uses each day. This water usage figure is recalculated daily by the electronic controller. To turn this display off, press the WATER USE button once again.

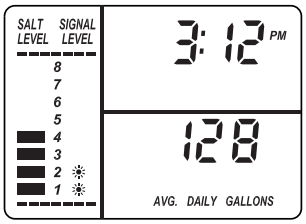


FIG. 34

RECHARGE TIME REMAINING & VALVE POSITION INDICATORS

One of the valve position indicators (Serv, Fill, Brine, Bkwsh, Rinse) is displayed while the softener is recharging. RECHARGE flashes in the display and, beginning with Brine, the minutes of recharge remaining before return to service appears in place of the present time. When the valve is moving from one cycle to another, both position indicators are flashing.

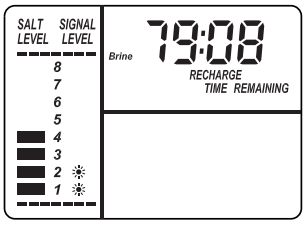


FIG. 35

POWER OUTAGE MEMORY

If electrical power to the softener's control is lost, internal memory will maintain most settings such as the hardness and recharge time. However, unless the power outage was very brief, the clock's present time will need to be reset. During a power outage, the display will be blank and the softener will not recharge. When electrical power is restored:

1. Check the display.

2a. If the present time is displayed steadily (not flashing), the controller did not lose time and you do not need to reset the clock.

2b. If a time is flashing in the display, then the clock needs to be reset to the correct present time. See "Set Present Time of Day" on page 13. The flashing display is to remind you to reset the clock. If you do not reset the clock, then recharges will most likely occur at the wrong time of day.

NOTE: If the softener was regenerating when power was lost, it will finish the cycle when power returns.

VACATION NOTE

EcoWater demand controlled water softeners regenerate only while water is being used and softening capacity must be restored. For this reason, the unit will not regenerate when you are away from home for extended periods.

REFILLING WITH SALT

If the softener uses all the salt before more is added, hard water will result. Remove the brine tank lid and check the salt level frequently. Until you have established a refilling routine, check the salt every 2 or 3 weeks. Be sure that the brinewell cover is on when adding salt.

NOTE: In humid areas it is best to keep the salt level less than half full and refill more often.

RECOMMENDED SALT: Cube, pellet, coarse solar, etc., water softener salt is recommended. This type of salt is high purity evaporated crystals, sometimes formed and pressed into briquets. It has less than 1% insoluble (not dissolvable in water) impurities. Clean, high grade rock salts are acceptable, but may require frequent brine tank cleaning to remove the "sludge" residue (insolubles) collecting at the bottom of the tank.

POTASSIUM CHLORIDE: If you choose potassium chloride (KCl) salt instead of standard sodium chloride (NaCl) water softener salt as a regenerant:

1) The hardness setting must be increased by 25%.
2) Place only one bag of potassium chloride (KCl) into your water softener at a time. The salt storage tank should never contain more than 60 pounds of KCl.

SALT NOT RECOMMENDED: Rock salt high in impurities, block, granulated, table, ice melting, or ice cream making salts, etc., are not recommended.

SALT WITH IRON REMOVING ADDITIVE: Some salts have an additive to help a water softener handle iron in the water supply. Although this may help keep the resin bed clean, it may also release corrosive fumes that will weaken and shorten the life of some EcoWater Systems softener electronic parts. Iron Out salt is safe to use on two-tank models.

BREAKING A SALT BRIDGE

Sometimes a hard crust or salt "bridge" forms in the brine tank. This is usually caused by high humidity or the wrong kind of salt. When the salt bridges, an empty space forms between the water and the salt. Then salt will not dissolve in the water to make brine. Without brine, the resin bed is not recharged and hard water will result.

If the storage tank is full of salt, it is difficult to tell whether there is a salt bridge. A bridge may be underneath loose salt. The following is the best way to check for a salt bridge:

Salt should be loose all the way to the bottom of the tank. Hold a broom handle, or like tool, up to the softener's brine tank, as shown in Figure 36. Make a pencil mark on the handle 1" - 2" below the top of the rim. Then, carefully push it straight down into the salt. If a hard object is felt before the pencil mark is even with the top, it is most likely a salt bridge. Carefully push into the bridge in several places to break it. **Do not try to break the salt bridge by pounding on the outside of the salt tank. You may damage the tank.**

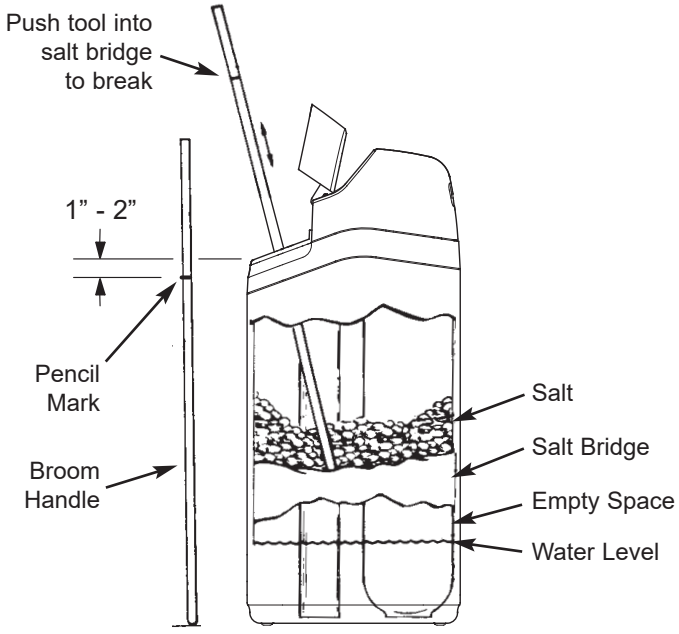


FIG. 36

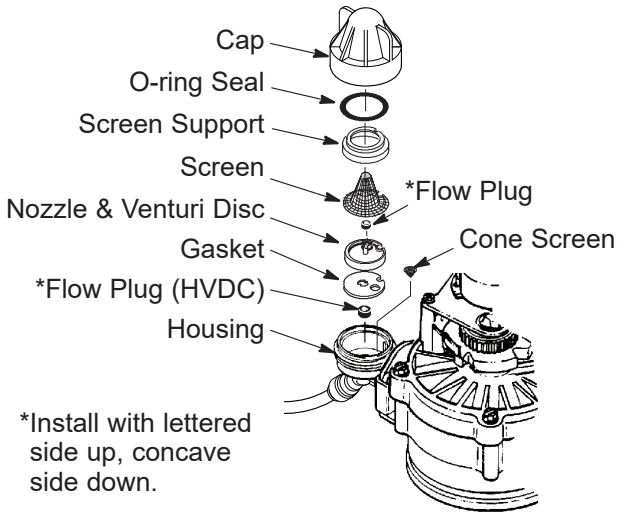
CLEANING THE NOZZLE & VENTURI

A clean nozzle & venturi (See Figure 37) is a necessity for the water softener to work properly. This small component creates the suction to aspirate (bring air into) the mineral tank during recharges. If it should become plugged with sand, silt, dirt, etc., the water softener will not work, and hard water will result.

To get access to the nozzle & venturi, remove the water softener's top cover. Put the bypass valve(s) into the bypass position. Be sure the water softener's main valve is in "service" position (no water pressure at nozzle & venturi). Then, holding the nozzle & venturi housing with one hand, unscrew the cap. Do not lose the o-ring seal. Lift out the screen support and screen. Then, remove the nozzle & venturi disc, gasket and flow plug. Wash the parts in warm, soapy water and rinse in fresh water. Be sure to clean both the top and bottom of the nozzle & venturi disc. If needed, use a small brush to remove iron or dirt. Do not scratch, misshape, etc., surfaces of the nozzle & venturi.

Gently replace all parts in the correct order. Lubricate the o-ring seal with silicone grease and locate in place. Install and tighten the cap by hand, while supporting the housing. Overtightening may break the cap or housing. Put the bypass valve(s) into "service" position.

Recharge the softener to reduce water level in the tank. This will also assure that the softener is completely recharged and ready to provide softened water again. Check the water level in the tank by looking down the brinewell. If the water level does not drop after a recharge, the problem has not been resolved.



IMPORTANT: Be sure small hole in the gasket is centered directly over the small hole in the nozzle & venturi housing. Be sure the numbers are facing up

FIG. 37

RESIN BED CLEANING

If the water supply contains clear water iron, regular resin bed cleaning is needed to keep the bed from coating with iron. Use resin bed cleaner, available from EcoWater Systems, following directions on the container. Clean the resin every six months, or more often if iron appears in the conditioned water supply.

PROBLEM	CAUSE	CORRECTION
No soft water	1. No salt in the storage tank.	Refill with salt and then use RECHARGE NOW feature.
No soft water & display is blank	1. Power supply unplugged at wall outlet, or power cable disconnected from back of electronic board or power supply malfunction.	Check for loss of power and correct. Reset electronic controls and then use RECHARGE NOW feature.
	2. Fuse blown, circuit breaker popped, or circuit switched off (See “Power Outage Memory” on Page 18).	Replace fuse, reset circuit breaker, or switch circuit on, and then use RECHARGE NOW feature.
	3. Electronic control board malfunction.	Replace electronic control board (See Page 27).
No soft water & salt level not dropping	1. Salt storage tank “bridged”.	Refer to “Breaking a Salt Bridge” section to break.
	2. Bypass valve(s) in “bypass” position.	Move bypass valve(s) to “service” position.
No soft water & salt storage tank full of water, water running to drain while unit is in the soft water cycle	1. Dirty, plugged or damaged nozzle & venturi assembly	Take apart, clean and inspect nozzle & venturi (See “Cleaning the Nozzle & Venturi” section.
	2. Inner valve fault causing leak.	Replace seals and rotor.
	3. Valve drain hose is plugged.	Hose must not have any kinks, sharp bends or any water flow blockage (See “Valve Drain Requirements” section.
	4. Valve drain line and Salt Storage Tank overflow drain connected together by a tee.	Disconnect tee and run separate drain lines.
	5. Low or high system water pressure (low pressure may disrupt brine draw during recharge, high pressure may cause inner valve parts failure).	If pressure is low, increase well pump output to a minimum 20 psi. If daytime pressure is over 100 psi, add a pressure reducing valve in the supply pipe to the softener. Contact a licensed plumber.
	6. Brine float dirty or broken.	Clean or replace Brine Valve Float Assembly.
	7. Leak between valve and resin tank.	Replace o-rings between resin tank and valve.
Water hard sometimes	1. Incorrect time set.	Check and change time setting.
	2. Incorrect water hardness set.	Refer to “Set Water Hardness” section to set correctly.
	3. Incorrect model code programmed.	Refer to “Program the Water Softener” section to set correctly.
	4. Hot water being used when softener is regenerating.	Avoid using hot water while the softener is regenerating, as the water heater will fill with hard water.
	5. Possible increase in water hardness.	Test untreated water for hardness and iron, and program the water softener accordingly (See “Set Water Hardness”) section to set.
	6. Leaking faucet or toilet valve. Excessive water usage.	A small leak can waste hundreds of gallons of water in a few days. Fix all leaks and always fully close faucets.
Iron in water	1. Clear water iron in water supply.	Test untreated water for hardness and iron, and program the water softener accordingly (See “Set Water Hardness”) section to set.
	2. Iron in soft water.	Clean resin bed with Resin Bed Cleaner. Follow instructions on package.
	3. Bacterial or organic bound iron.	Cannot be treated by water softener.
Resin in household plumbing	1. Crack in distributor or riser tube.	Replace resin tank assembly.
Salt storage tank leaking	1. Crack in brine tank.	Replace salt storage tank assembly.
Motor stalled or clicking	1. Motor malfunction or internal valve fault causing high torque on motor.	a. Replace rotor/seal. b. Replace motor & switch.
Error code Err1, Err3 or Err4 appears	1. Fault in wiring harness or connections to position switch.	Replace wiring harness or connections to position switch.
	2. Fault in switch.	Replace switch.
	3. Fault in valve causing high torque.	Replace rotor/seal.
	4. Motor inoperative.	Replace motor.
Error code Err5	1. Electronic control malfunction.	Replace electronic control board.

AUTOMATIC ELECTRONIC DIAGNOSTICS

This water softener has a self-diagnostic function for the electrical system (except input power and/or water meter). The water softener monitors electronic components and circuits for correct operation. If a malfunction occurs, an error code appears in the display.

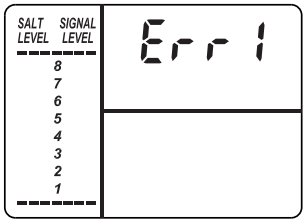


FIG. 38

While an error code appears in the display, all buttons are inoperable except the SELECT button. SELECT remains operational so the service person can perform the Manual Advance Diagnostics, see below, to further isolate the problem.

TO REMOVE AN ERROR CODE:

1. Unplug power supply from electrical outlet.
2. Correct problem.
3. Plug power supply back in.
4. Wait 8 minutes. The error code will return if the problem was not corrected.

MANUALLY INITIATED ELECTRONIC DIAGNOSTICS

1. To enter diagnostics, press the SELECT button and hold for three seconds. The display will change to show turbine count, valve cycle position, and position switch status (open or closed).

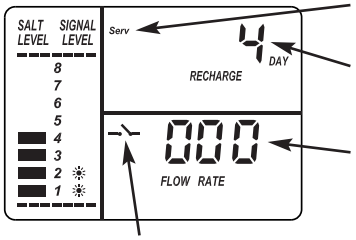


FIG. 39

TURBINE OPERATION: If no water is flowing through the softener, the turbine indicator displays three zeros. When water is flowing, a 000 to 140 count repeats for each gallon (3.8 liters) of water passing through the turbine. To check for positive operation of the turbine if zeros are shown, open a nearby soft water faucet and observe the turbine count. If you don't get a reading in the display with faucet open, pull the sensor housing from the valve outlet port (see Fig. 40). Pass

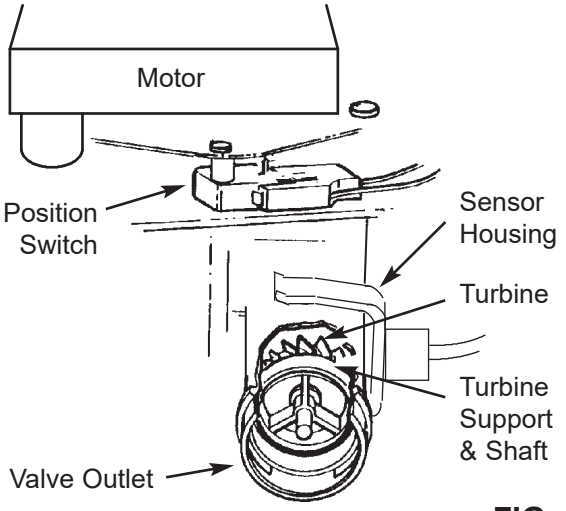


FIG. 40

a small magnet back and forth in front of the sensor. You should get a reading in the display. If you get a reading, unhook the inlet and outlet plumbing and check the turbine for binding.

POSITION SWITCH STATUS: With the valve in service, or any of the recharge cycle positions, the position switch indicator will show the switch open. While the valve is rotating from one position to another, the position switch indicator will show the switch closed. There is likely a problem if indications vary from this pattern.

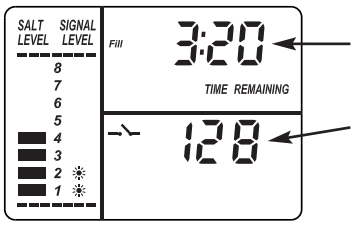


FIG. 41

OTHER INFORMATION: While in the diagnostics screen, the following information is available and may be beneficial for various reasons. This information is retained by the electronic controller from the first time electrical power is applied to the unit.

- Press and hold the △ UP button to display the number of days this controller has had electrical power applied.
- Press and hold the ▽ DOWN button to display the number of regenerations initiated by this controller since the model code number was entered.

NOTE: If the electronic controller is left in the diagnostic display (or a flashing display when setting times or hardness), the normal time of day display automatically returns if a button has not been pressed for 4 minutes. To return to the diagnostic display, repeat step 1, above.

RESETTING TO FACTORY DEFAULTS

To reset the electronic controller to its factory default for all settings (time, hardness, etc.):

1. Press the SELECT button and hold it until the display changes twice to show the flashing model code.

2. Press the △ UP button to display a flashing “SoS”.

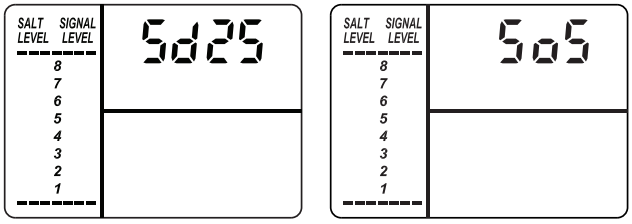


FIG. 42

3. Press the SELECT button, and the electronic controller will restart.

4. Set the present time, hardness, etc., as described on pages 13 & 14.

MANUAL ADVANCE REGENERATION CHECK

This check verifies proper operation of the valve motor, brine tank fill, brine draw, regeneration flow rates, and other controller functions. Always make the initial checks first, and perform the manually initiated electronic diagnostics.

NOTE: The display must show a steady time (not flashing). If an error code shows, first press the SELECT button to enter the diagnostic display.

1. Press the RECHARGE button and hold for 3 seconds. RECHARGE begins to flash as the softener’s valve advances from the service to fill position.

2. Shine a flashlight down the brinewell and observe fill water entering the tank.

3. If water does not enter the tank, look for an obstructed nozzle, venturi, fill flow plug, brine tubing, or brine valve riser pipe.

4. After observing fill, press the RECHARGE button to move the softener into brining. A slow flow of water to the drain will begin. Verify brine draw from the brine tank by shining a flashlight into the brinewell and observing a noticeable drop in the liquid level.

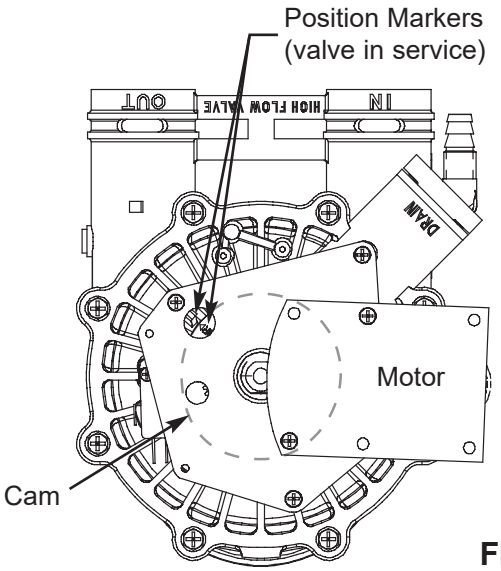


FIG. 43

5. If the softener does not draw brine:

- nozzle and/or venturi dirty
- nozzle and venturi not seated properly on gasket
- restricted drain (check drain fitting and hose)
- ineffective nozzle and venturi seal
- other inner valve problem (rotor seal, rotor & disc, wave washer, etc.)

NOTE: If water system pressure is low, an elevated drain hose may cause back pressure, stopping brine draw.

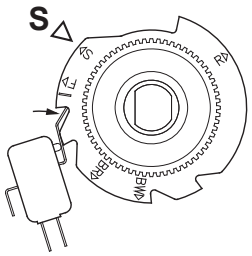
6. Again press RECHARGE to move the softener into backwash. Look for a fast flow of water from the drain hose.

7. An obstructed flow indicates a plugged top distributor, backwash flow plug or drain hose.

8. Press RECHARGE to move the softener into fast rinse. Again look for a fast drain flow. Allow the softener to rinse for a few minutes to flush out any brine that may remain in the resin tank from the brining cycle test.

9. To return the softener to service, press RECHARGE once more.

SERVICE

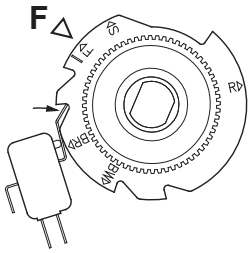


Position Switch

Valve Cam

FIG. 44

FILL

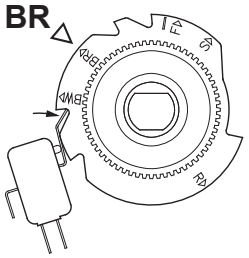


Position Switch

Valve Cam

FIG. 45

BRINING

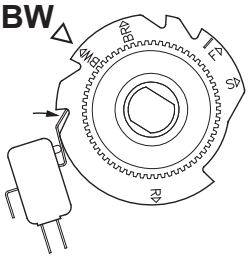


Position Switch

Valve Cam

FIG. 46

BACKWASH

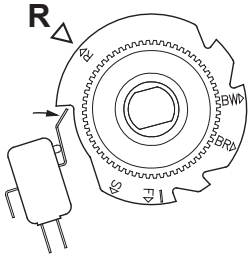


Position Switch

Valve Cam

FIG. 47

FAST RINSE



Position Switch

Valve Cam

FIG. 48

WIRING SCHEMATIC

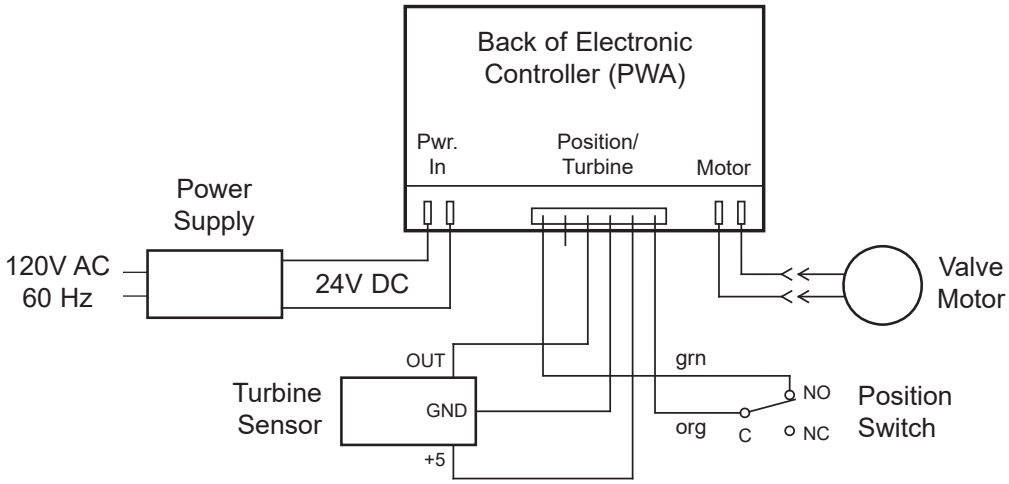
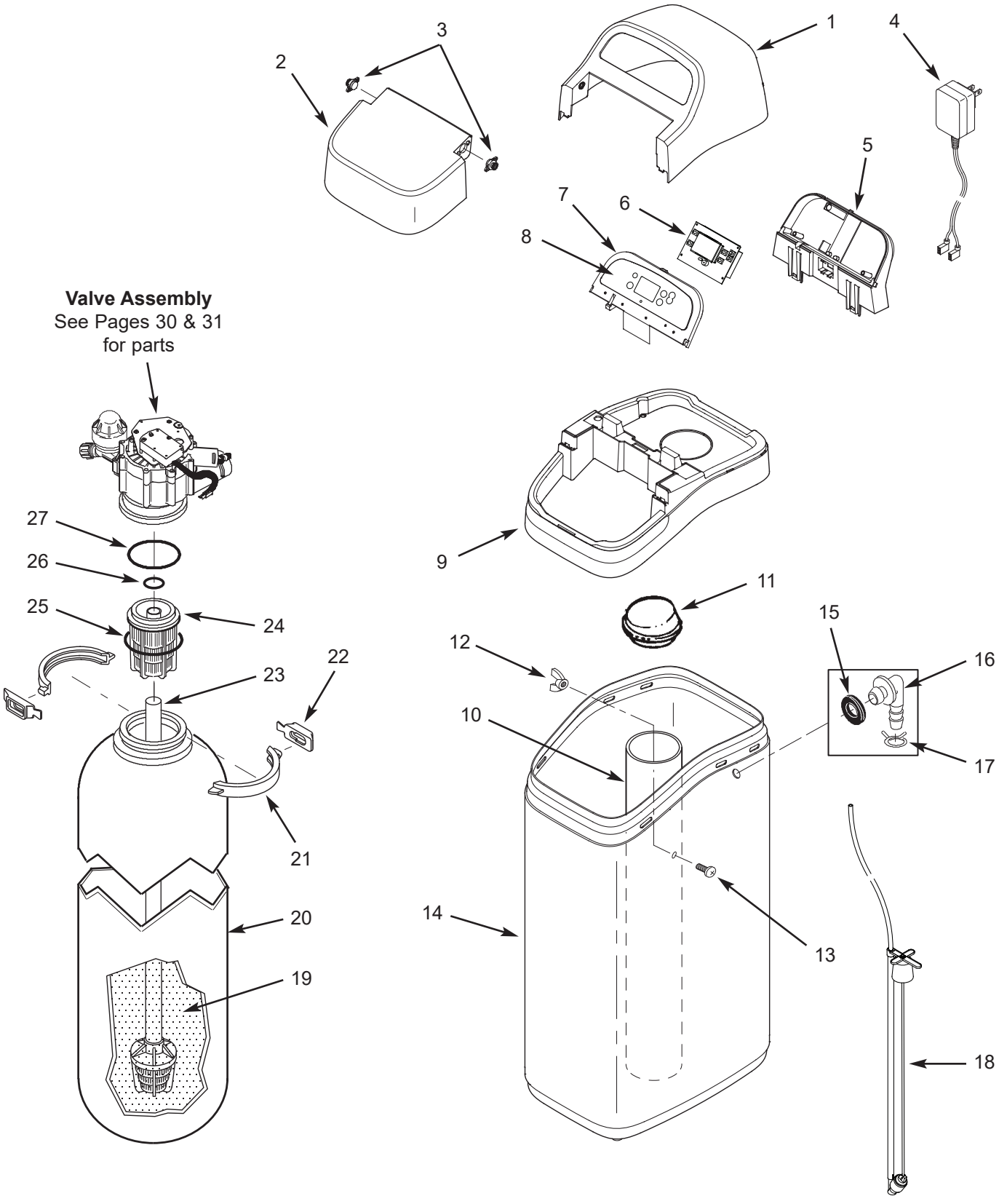


FIG. 49

SOFTENER EXPLODED VIEW – ESD2800R25



SOFTENER PARTS LIST – ESD2800R25

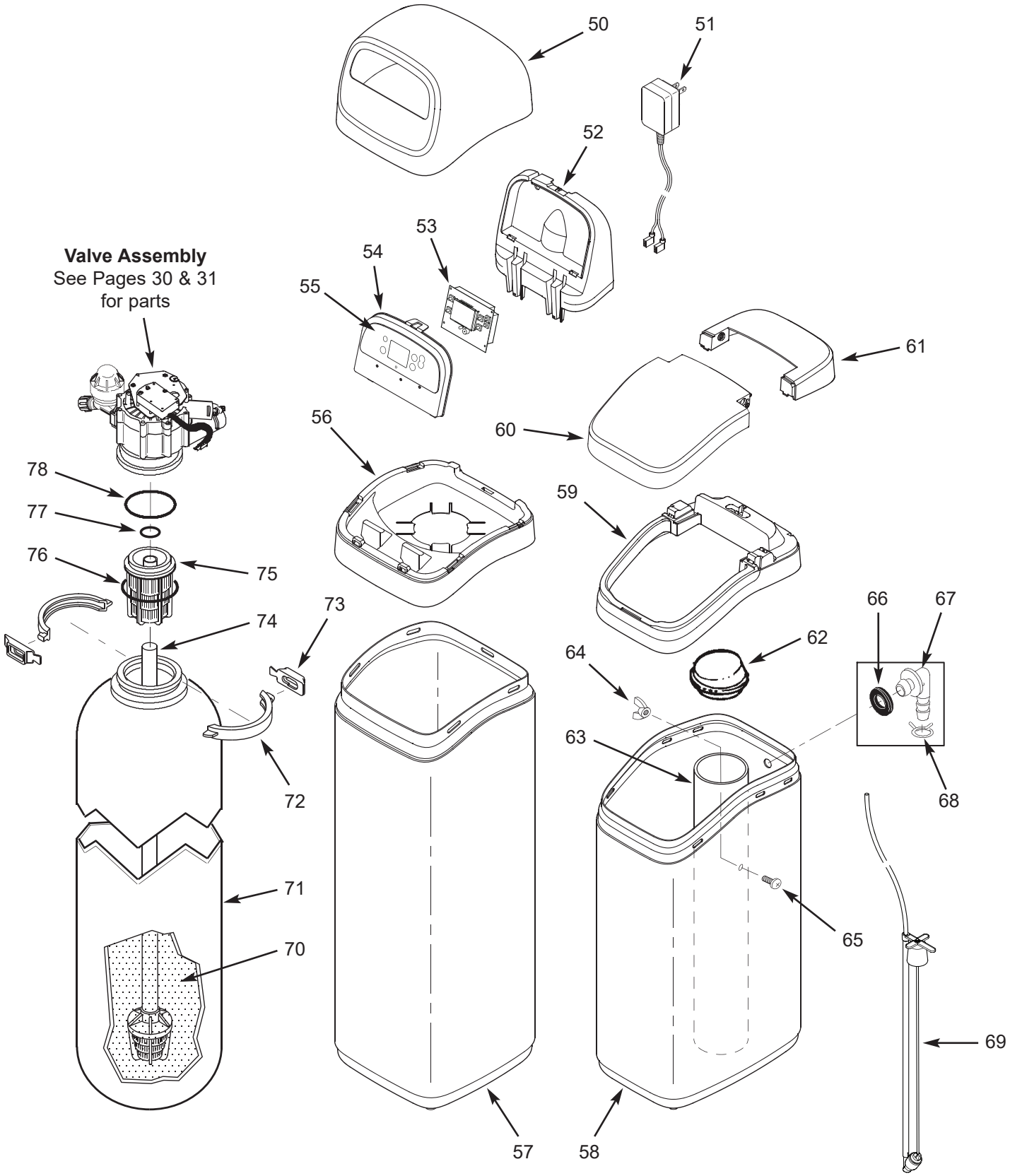
Key No.	Part No.	Description
–	7354808	Cover Assembly (includes Key Nos. 1-3)
1	↑	Cover, Top
2	↑	Salt Lid
3	↑	Damper/Hinge (2 req.)
■	7397123	Decal, Instruction
4	7351054	Power Supply, 24V DC
5	7401362	Support, Faceplate
6	7396787	Repl. Electronic Controller (PWA)
7	7396305	Faceplate (order decal below)
8	7396321	Decal, Faceplate
9	7387102	Rim
10	7214375	Brinewell
11	7155115	Cover, Brinewell
–	7357822	Brinewell Mounting Hardware Kit, (includes Key Nos. 12 & 13)
12	↑	Nut
13	↑	Screw
14	7384887	Brine Tank

Key No.	Part No.	Description
–	7331258	Overflow Hose Adaptor Kit (includes Key Nos. 15-17)
15	↑	Grommet
16	↑	Adaptor Elbow
17	↑	Hose Clamp
18	7381180	Brine Valve Assembly
19	0502272	Resin, 1 cu. ft. (standard mesh)
20	7334696	Resin Tank, 10” dia. x 35”
–	7331177	Tank Neck Clamp Kit (includes 2 ea. of Key Nos. 21 & 22)
21	↑	Clamp Section (2 req.)
22	↑	Retainer Clip (2 req.)
23	7105047	Repl. Bottom Distributor
24	7077870	Top Distributor
–	7112963	Distributor O-Ring Kit (includes Key Nos. 25-27)
25	↑	O-Ring, 2-3/4” x 3”
26	↑	O-Ring, 13/16” x 1-1/16”
27	↑	O-Ring, 2-7/8” x 3-1/4”

■ Not illustrated.

To order parts, call your local EcoWater dealer or go to www.ecowater.com to locate a dealer in your area.

SOFTENER EXPLODED VIEW – ESD2802R30 & ESD2802R39



SOFTENER PARTS LIST – ESD2802R30 & ESD2802R39

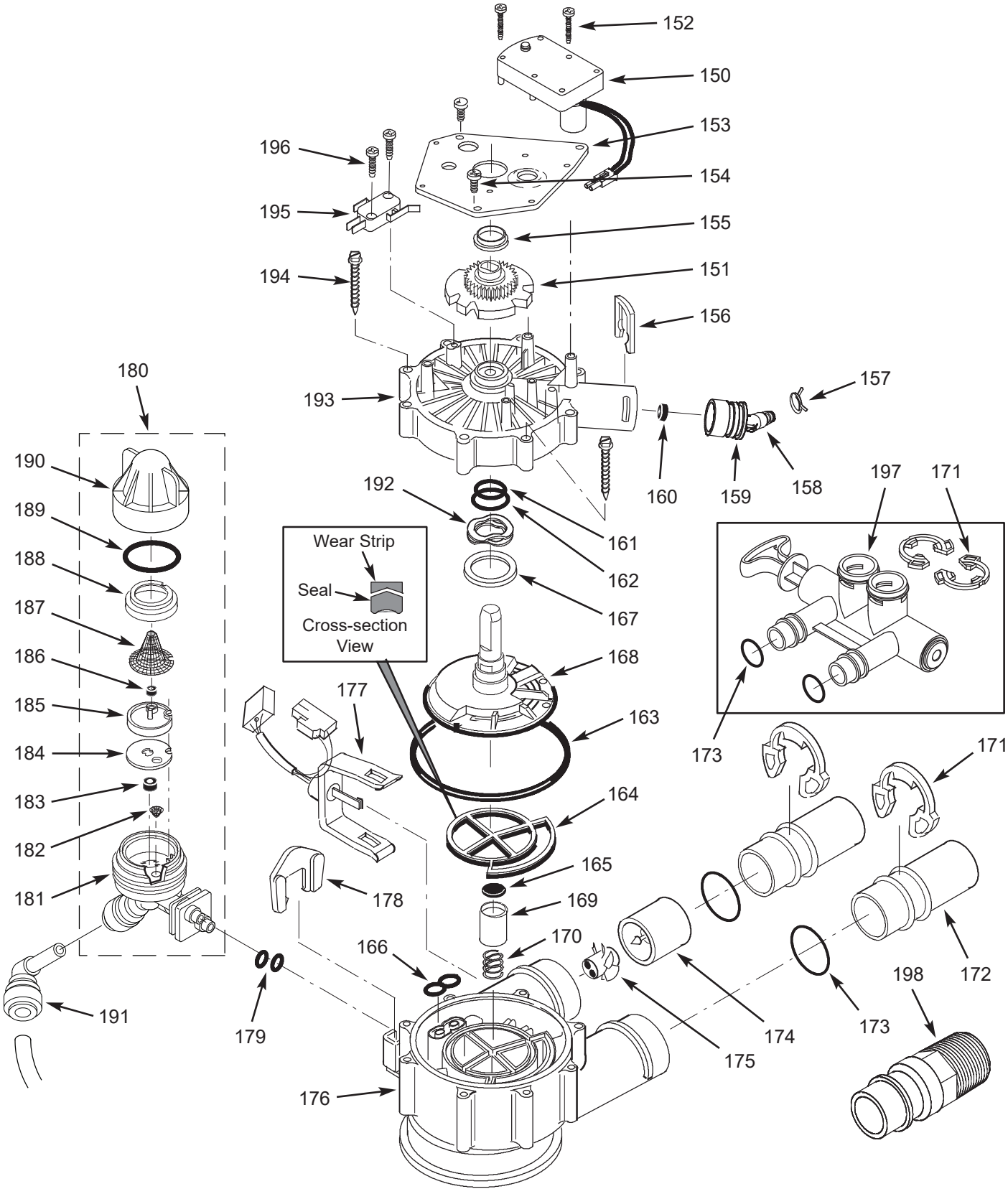
Key No.	Part No.	Description
50	7353365	Cover, Top
51	7351054	Power Supply, 24V DC
52	7353381	Support, Faceplate
53	7396787	Repl. Electronic Controller (PWA)
54	7396313	Faceplate (order decal below)
55	7396339	Decal, Faceplate
56	7368857	Rim
57	7353226	Shroud, 35”, ESD2802R30
	7353234	Shroud, 47”, ESD2802R39
58	7384887	Brine Tank
59	7387128	Rim
–	7364162	Cover Assembly, Brine Tank (includes Key Nos. 60 & 61)
60	↑	Salt Lid
61	↑	Cover, Brine Tank
■	7397123	Decal, Instruction
62	7155115	Cover, Brinewell
63	7214375	Brinewell
–	7357822	Brinewell Mounting Hardware Kit, (includes Key Nos. 64 & 65)
64	↑	Nut
65	↑	Screw

Key No.	Part No.	Description
–	7331258	Overflow Hose Adaptor Kit (includes Key Nos. 66-68)
66	↑	Grommet
67	↑	Adaptor Elbow
68	↑	Hose Clamp
69	7381180	Brine Valve Assembly
70	0502272	Resin, 1 cu. ft. (standard mesh)
71	7328904	Resin Tank, 9” dia. x 35”, ESD2802R30
	7092202	Resin Tank, 10” dia. x 47”, ESD2802R39
–	7331177	Tank Neck Clamp Kit (includes 2 ea. of Key Nos. 72 & 73)
72	↑	Clamp Section (2 req.)
73	↑	Retainer Clip (2 req.)
74	7105047	Repl. Bottom Distributor
75	7077870	Top Distributor
–	7112963	Distributor O-Ring Kit (includes Key Nos. 76-78)
76	↑	O-Ring, 2-3/4” x 3”
77	↑	O-Ring, 13/16” x 1-1/16”
78	↑	O-Ring, 2-7/8” x 3-1/4”

■ Not illustrated.

To order parts, call your local EcoWater dealer or go to www.ecowater.com to locate a dealer in your area.

VALVE EXPLODED VIEW



VALVE PARTS LIST

Key No.	Part No.	Description
–	7384691	Motor, Cam & Gear Kit, 1” (includes Key Nos. 150-152)
150	↑	Motor
151	↑	Cam & Gear
152	7224087	Screw, #8-32 x 1” (2 req.)
153	7231393	Motor Plate
154	0900857	Screw, #6-20 x 3/8” (3 req.)
155	7171250	Bearing
–	7331169	Drain Hose Adaptor Kit (incl. Key Nos. 156-160)
156	↑	Clip, Drain
157	↑	Hose Clamp
158	↑	Drain Hose Adaptor
159	↑	O-Ring, 15/16” x 1-3/16”
160	↑	Flow Plug, 2.0 gpm
–	7185487	Seal Kit (includes Key Nos. 161-166)
161	↑	O-Ring, 5/8” x 13/16”
162	↑	O-Ring, 1-1/8” x 1-1/2”
163	↑	O-Ring, 4-1/2” x 4-7/8”
164	↑	Rotor Seal
165	↑	Seal
166	↑	Seal, Nozzle & Venturi
167	7174313	Bearing, Wave Washer
168	7185500	Rotor & Disc
–	7342712	Drain Plug Kit, 1” (includes Key Nos. 165, 169 & 170)
169	↑	Plug, Drain Seal
170	↑	Spring
171	7089306	Clip, 1”, single (2 req.)
	7336428	Clip, 1”, pack of 20
172	7077642	Copper Tube, 1”, single (2 req.)
	7344138	Copper Tube, 1”, pack of 10 (includes 10 ea. of Key No. 123)
173	7311127	O-Ring, 1-1/16” x 1-5/16”, single (2 req.)
	7336410	O-Ring, 1-1/16” x 1-5/16”, pack of 20

Key No.	Part No.	Description
–	7290931	Turbine & Support Assembly (includes 1 ea. of Key Nos. 174, 175 & 2 ea. of Key No. 173)
174	↑	Turbine Support & Shaft
175	↑	Turbine
176	7171145	Valve Body
177	7309811	Wire Harness, Sensor
178	7081201	Retainer, Nozzle & Venturi
179	7342649	O-Ring, 1/4” x 3/8”, pack of 2
180	7398705	Nozzle & Venturi Assembly (incl. Key Nos. 178, 179 & 181-190)
181	↑	Housing, Nozzle & Venturi
182	↑	Cone Screen
183	↑	Flow Plug, .3 gpm
184	↑	Gasket
185	↑	Nozzle & Venturi Disc, Blue
186	↑	Flow Plug, .15 gpm
187	↑	Screen
188	↑	Screen Support
189	↑	O-Ring, 1-1/8" x 1-3/8"
190	↑	Cap
■	7298913	Repl. Nozzle, Venturi & Gasket Kit (includes Key Nos. 179, 182, 184, 185 & 189)
191	7398975	Elbow, 90°, single
	7400528	Elbow, 90°, pack of 10
192	7175199	Wave Washer
193	7171161	Valve Cover
194	7172997	Screw, #10 x 2-5/8” (8 req.)
195	7305150	Switch
196	7140738	Screw, #4-24 x 3/4” (2 req.)
197	7214383	Bypass Valve, 1” ✱ (includes 2 ea. of Key Nos. 171 & 173)
198	7271204	1” Plastic Installation Adaptor, ✱ single
	7336614	1” Plastic Installation Adaptor, ✱ pack of 10 (includes 10 ea. of Key No. 173)

■ Not illustrated.

✱ Not included with the softener.

To order parts, call your local EcoWater dealer or go to www.ecowater.com to locate a dealer in your area.

LIMITED WARRANTY

EcoWater Systems LLC Advantage Warranty

ESD2800 / 2802 Series Water Conditioning System

Congratulations! You have just purchased the highest quality water conditioning product on the market.

To whom is this warranty extended?
EcoWater Systems LLC warrants its products to the original purchaser, when the product is purchased from an authorized dealer, and guarantees that the products will be free from defects in materials and workmanship from the date that the product is delivered.

How does my warranty work?
If, during the respective warranty period, a part proves, after inspection by EcoWater, to be defective, EcoWater will, at its sole option repair or replace that part at no charge, other than normal shipping, installation or service charges.

What is covered by the warranty?
EcoWater Systems LLC guarantees that,
for the LIFETIME of the original purchaser, when the product is purchased from an authorized dealer, the RESIN / MINERAL TANK will not rust, corrode, leak, burst, or in any other manner fail to perform in accordance with its written specifications, and that,
for a period of TEN (10) YEARS from the date the product is delvered, the SALT TANK will be free of defects in materials and workmanship and will perform in accordance with its written specifications, and that,
for a period of THREE (3) YEARS from the date the product is delvered, the VALVE BODY, ELECTRONIC FACEPLATE, and ALL OTHER PARTS will be free of defects in materials and workmanship and will perform in accordance with their written specifications.

How do I obtain warranty service?
Should you need service, your local, independent
EcoWater Dealer is only a phone call away. PHONE: _____

To obtain warranty service, notice must be given, within thirty (30) days of the discovery of the defect, to your local EcoWater Systems dealer.

If I need a part replaced after the factory warranty expires, is the replacement part warranted?
Yes, EcoWater Systems LLC warrants FACTORY REPAIRS as well as all REPLACEMENT PARTS for a period of 90 DAYS. This warranty does not include normal shipping, installation or service charges.

Are any additional warranties available?
We are pleased to say, YES! EcoWater Systems LLC sells an EXTENDED, PARTS ONLY WARRANTY for the ELECTRONICS portion of your product. This warranty is called the “Perfect 10” and extends the warranty on the electronic FACEPLATE, WIRING HARNESS, DRIVE MOTOR, POWER SUPPLY, POWER CORD, SENSOR HOUSING, and MICRO SWITCHES to a total of TEN (10) YEARS from the date the product is delivered. Your local dealer will provide details regarding this warranty or will refer you to the factory for additional information. Should your local dealer not offer this warranty, you may contact the factory for additional information. This guarantee may be subject to normal shipping and installation or service charges.

General Provisions
The above warranties are effective provided the water conditioning system is operated at water pressures not exceeding 125 psi (8.8 kg/cm^2), and at water temperatures not exceeding 120°F (49°C); provided further that the water conditioning system is not subject to abuse, misuse, alteration, neglect, freezing, accident or negligence; and provided further that the water conditioning system is not damaged as the result of any force of nature such as, but not limited to, flood, hurricane, tornado or earthquake.

The limited warranty does not cover damage due to: (a) transportation, (b) storage, (c) improper use, (d) failure to follow the product instructions or to perform any preventive maintenance, (e) modifications, (f) unauthorized repair, (g) normal wear and tear, or (h) external causes such as accidents, abuse, or other actions or events beyond Warrantor’s reasonable control. Use of aftermarket, used, or non-manufacturer provided parts will void all warranties. Warranty does not cover failures due to improper product installation. Warrantor is excused if failure to perform its warranty obligations is the result of strikes, government regulation, materials shortages, or other circumstances beyond its control.

THERE ARE NO WARRANTIES ON THE WATER CONDITIONING SYSTEM BEYOND THOSE SPECIFICALLY DESCRIBED ABOVE. ALL IMPLIED WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, ARE DISCLAIMED TO THE EXTENT THEY MIGHT EXTEND BEYOND THE ABOVE PERIODS. THE SOLE OBLIGATION OF WARRANTOR UNDER THESE WARRANTIES IS TO REPLACE OR REPAIR THE COMPONENT OR PART WHICH PROVES TO BE DEFECTIVE WITHIN THE SPECIFIED TIME PERIOD, AND WARRANTOR IS NOT LIABLE FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES. NO DEALER, AGENT, REPRESENTATIVE, OR OTHER PERSON IS AUTHORIZED TO EXTEND OR EXPAND THE WARRANTIES EXPRESSLY DESCRIBED ABOVE.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may have other rights which vary from state to state. This warranty applies to consumer-owned installations only.