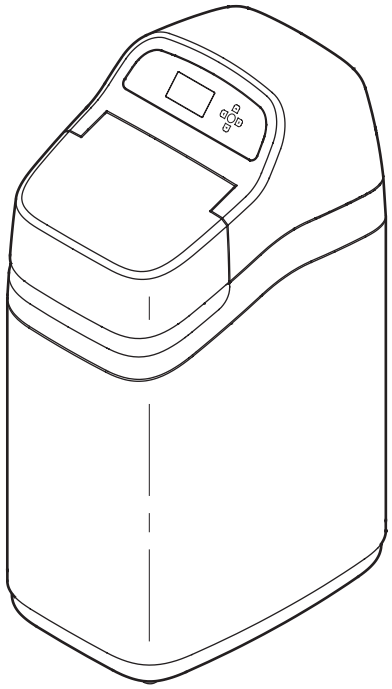
OWNER'S MANUAL

How to operate your EcoWater Systems Water Conditioner/Refiner

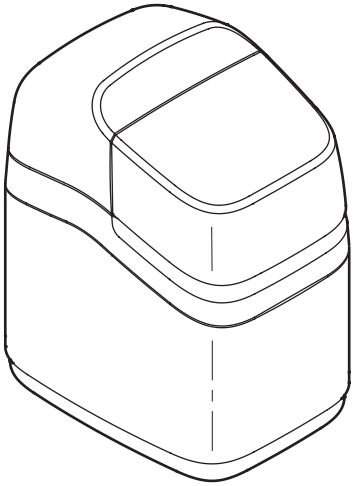
ECOWATER®
SYSTEMS

Your Water. Perfected.

eVOLUTION
Models
300 Boost
400 Boost
500 Power (SDV)
Refiner Boost
Refiner Power (SDV)



eVOLUTION
Models
100 Compact
200 Compact



CE

EcoWater Systems Europe
www.ecowater-europe.com

7365168 (Rev. W 13th March 2025)

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SAFETY GUIDES

Follow the installation instructions carefully. Failure to install the EcoWater Systems conditioner/refiner 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 EcoWater Systems conditioner/refiner. Do not turn upside down, drop, or set on sharp protrusions.

Do not locate the EcoWater Systems conditioner/refiner where freezing temperatures occur. Do not attempt to treat water over 49°C. **Freezing, or hot water damage voids the warranty.**

Avoid installing in direct sunlight. Excessive sun heat may cause distortion or other damage to non-metallic parts.

The EcoWater Systems conditioner/refiner requires a minimum water flow of 11 liters per minute at the inlet. **Maximum allowable inlet water pressure is 8.6 bar.** If daytime pressure is over 5.5 bar, nighttime pressure may exceed the maximum. Use a pressure reducing valve if necessary (Adding a pressure reducing valve may reduce the flow).

The EcoWater Systems conditioner/refiner works on **24 volt 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 220-240 V, 50/60 Hz household outlet that is in a **dry location only**, grounded and properly protected by an over current device such as a 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.

If conditioner/refiner is being used to reduce barium and/or radium 226 and 228, please verify performance by contacting Legend Technical Services, an independent laboartory, at 1-800-949-8220 for testing treated water supply, or check the water testing section of your local phone directory.

FCC NOTICE

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the **FCC** Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

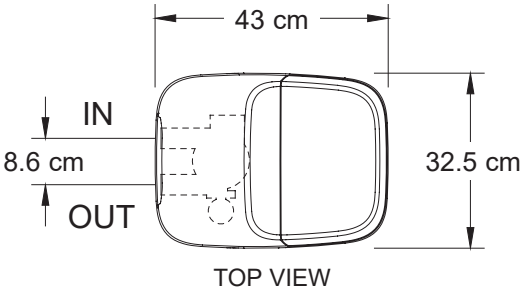
Changes or modifications not expressly approved by EcoWater Systems could void the user's authority to operate the equipment.

This device complies with **Industry Canada** Standard RSS-210. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Ce dispositif est conforme avec la norme CNR-210 **d'Industrie Canada**. Le fonctionnement du dispositif est sujet aux deux conditions suivantes: (1) le dispositif ne doit pas causer de brouillage, et (2) le dispositif doit accepter tous brouillages, incluant tous brouillages qui peut nuire au bon fonctionnement du dispositif.

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 the equipment.

eVOLUTION Model		100 Compact	200 Compact	300 Boost	400 Boost	500 Power SDV	Refiner Boost	Refiner Power SDV
Model Code		S9	S11	S15	S18	S25S	R10	R20SL
Valve Type		3/4” SDV	3/4” SDV	1” SDV	1” SDV	1” SDV	1” SDV	1” SDV
Maximum Capacity per Regeneration	°f·m³	48	69	106	147	206	56	109
	°dH·m³	27	39	59	82	116	31	61
	ppm·m³	480	690	1060	1470	2060	560	1090
Average Operating Capacity per Regeneration	°f·m³	36	48	74	107	148	40	84
	°dH·m³	20	27	42	60	83	22	47
	ppm·m³	360	480	740	1070	1480	400	840
Salt Consumption per Regeneration	kg	0.4 - 1.7	0.5 - 2.7	0.7 - 3.8	0.8 - 4.5	1.2 - 5.5	0.4 - 1.6	1.0 - 3.4
Water Consumption as % of Water Available between Regenerations, at Max. Capacity and for 30 °f (17 °dH, 300 ppm) Hardness Reduction	%	3	3	2	2	2	3	3
Service Flow Rate	lpm	15.1	15.1	22.7	30.3	36.0	15.1	34.0
	m³/h	0.9	0.9	1.4	1.8	2.2	0.9	2.0
Pressure Drop at Service Flow Rate	bar	0.47	0.73	0.38	0.63	0.70	0.17	0.65
Intermittent Flow Rate (Maximum Flow)	lpm	23.5	18.2	49.2	43.5	46	53.0	43
	m³/h	1.4	1.1	3.0	2.6	2.8	3.2	2.6
Pressure Drop at Intermittent Flow Rate (Maximum Flow)	bar	1.0						
Ion Exchange Resin Amount	liter	8.9	10.4	13.9	17.6	25.0	10.4	20.5
	kg	7.4	8.6	11.6	14.6	20.8	8.6	17.1
GAC (Activated Carbon) Amount	liter	–	–	–	–	–	5.1	9.3
	kg	–	–	–	–	–	2.4	4.4
GAC Capacity for 0.75 ppm Chlorine	m³	–	–	–	–	–	3000	5500
Gravel Amount	liter	–	–	2.3	2.3	2.8	2.3	2.8
	kg	–	–	3.7	3.7	4.5	3.7	4.5
Salt Storage Capacity	kg	18	30	65	110	90	65	90
Height	cm	55.5	68.0	88.0	114.0	114.0	88.0	114.0
Width	cm	32.5	32.5	35.5	35.5	35.5	35.5	35.5
Depth	cm	43.0	43.0	51.0	51.0	51.0	51.0	51.0
Operating Pressure	bar	1.4 - 8.6						
Operating Temperature	°C	4 - 49						



eVOLUTION Model	Nominal Resin Tank Size	Dimension A	Dimension B	Dimension C
100 Compact	22.9 cm dia. x 35.6 cm	55.5 cm	34.5 cm	41 cm
200 Compact	20.3 cm dia. x 48.3 cm	68 cm	47 cm	53.5 cm

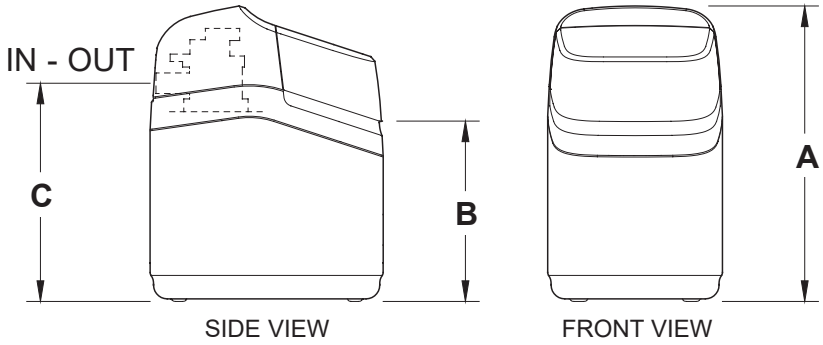
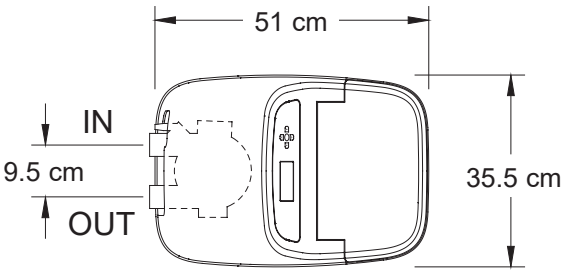


FIG. 1



eVOLUTION Model	Nominal Resin Tank Size	Dimension D	Dimension E	Dimension F
300 Boost	20.3 cm dia. x 63.5 cm	88 cm	61 cm	70.5 cm
Refiner Boost				
400 Boost	20.3 cm dia. x 88.9 cm	114 cm	87 cm	97 cm
500 Power	25.4 cm dia. x 88.9 cm	114 cm	87 cm	100 cm
Refiner Power				

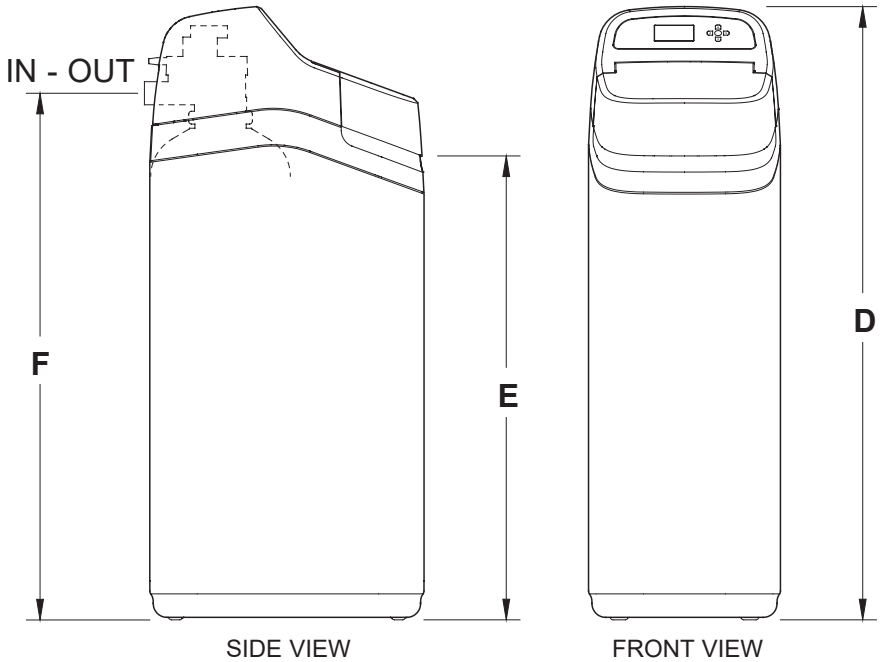


FIG. 2

TYPICAL INSTALLATION ILLUSTRATION

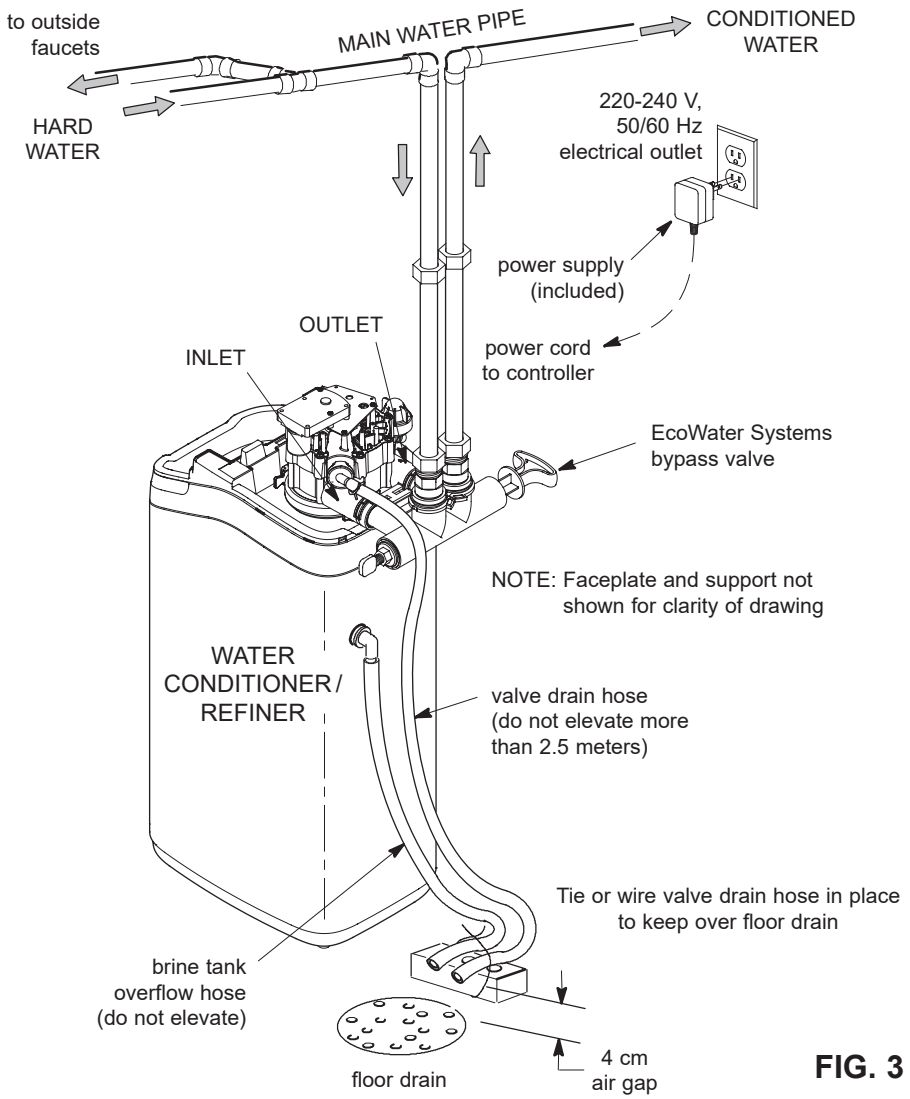


FIG. 3

INLET / OUTLET PLUMBING OPTIONS

- ALWAYS INSTALL either an EcoWater Systems bypass valve or a 3-valve bypass system. Bypass valves allow you to turn off water to the conditioner/ refiner for repairs if needed, but still have water in house pipes.

OTHER REQUIREMENTS

- If installing in an outside location, you must take the steps necessary to assure the conditioner/refiner, installation plumbing, wiring, etc., are as well protected from the elements, contamination, vandalism, etc., as when installed indoors.
- A 220-240 V, 50/60 Hz, grounded, continuously “live” electrical outlet is needed, in a dry location near the EcoWater Systems conditioner/refiner.

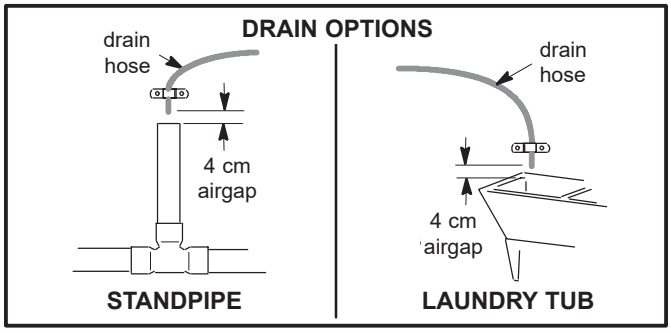


FIG. 4

- A drain is needed for recharge discharge water. A floor drain is preferred, close to the EcoWater Systems conditioner/refiner. A laundry tub, standpipe, etc., are other options (See Figure 4).

1. UNPACKING

EcoWater Systems eVOLUTION conditioner/refiner models are shipped from the factory in one carton. The carton also includes a bag of small parts needed to assemble and install the unit, plus this manual.

Thoroughly check the EcoWater Systems conditioner/refiner for possible shipping damage and parts loss. Also inspect and note any damage to the shipping carton. Notify the transportation company if damage is present. EcoWater Systems is not responsible for in-transit damages.

Remove and discard (RECYCLE) all packing materials. We suggest you keep the small parts in the bag until you are ready to use them.

2. INSTALL BYPASS VALVE

a. If installing an **EcoWater Systems Bypass Valve**, put lubricated o-ring seals onto both bypass valve ports (See Figure 5). Carefully slide the bypass valve into the conditioner/refiner valve and install the "C" clips.

b. Connect flexible hoses to the bypass valve (See Figure 5).

NOTE: For lubrication, use silicone grease approved for potable water supplies.

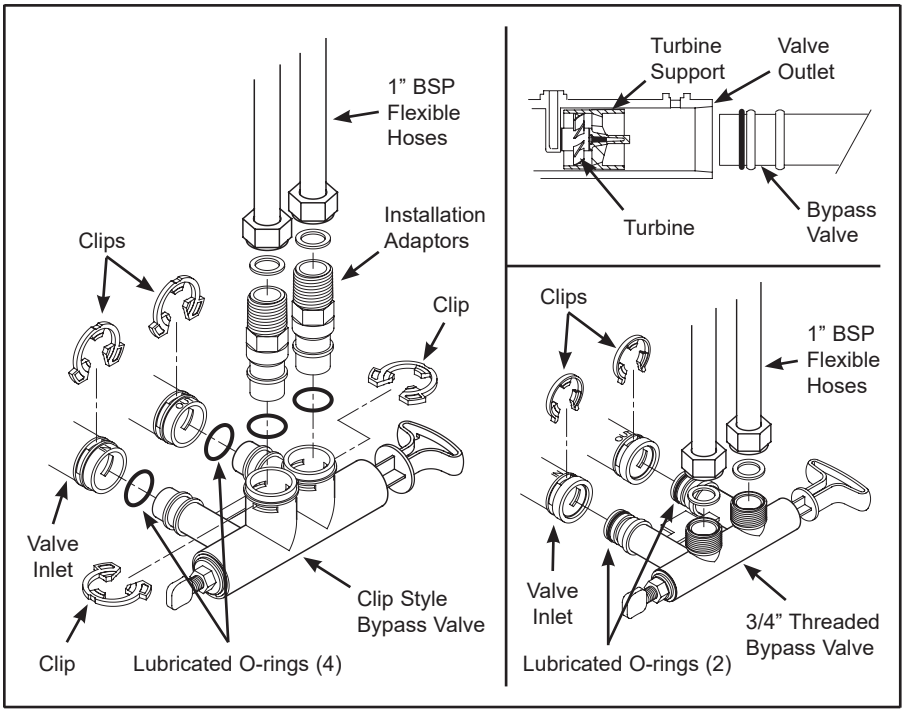


FIG. 5

3. 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.

4. INSTALLING THREE-VALVE BYPASS

If installing a 3-valve bypass system, plumb as needed using Figure 8 as a guide. When installing sweat copper, be sure to use lead-free solder and flux, required by federal and state codes. Use pipe joint compound on outside pipe threads.

5. ASSEMBLE INLET & OUTLET PLUMBING

Measure, cut, and loosely assemble pipe and fittings from the main water pipe (or from the bypass valves installed in Step 4), to the inlet and outlet copper tubes, installed in Step 2b.

Be sure **hard water** supply pipe **goes to** the **valve inlet side**. Trace the water flow direction to be sure.

6. CONNECT INLET & OUTLET PLUMBING

a. SOLDERED COPPER

(1) Thoroughly clean and flux all joints.

(2) Pull the plastic "C" clips and remove the inlet and outlet tubes from the valve. Remove o-rings from the tubes. **DO NOT solder with tubes in the valve.** Soldering heat will damage the valve.

NOTE: If installing a ground as shown in Figure 6A, place ground clamps on copper tubes before soldering (See Step 7a).

(3) Make all solder connections. Be sure to keep fittings fully together, and pipes square and straight.

b. THREADED PIPE

(1) Apply pipe joint compound to all outside pipe threads.

(2) Tighten all threaded joints.

(3) If soldering to the inlet and outlet tubes, observe Step 6a above.

c. CPVC PLASTIC PIPE

(1) Clean, prime and cement all joints, following the manufacturer's instructions supplied with the plastic pipe and fittings.

(2) If soldering to the inlet and outlet tubes, observe Step 6a above.

7. 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 Figure 8, will maintain ground continuity. If you use the plastic bypass, continuity is broken. To restore the ground, do either step **7a** or **7b** following.

a. Install the EcoWater Systems ground clamp kit (not included) across the inlet and outlet copper pipes (See Figure 6A).

b. Install a #4 copper wire across the removed section of main water pipe, securely clamping at both ends (See Figure 6B) – parts not included.

8. INSTALL VALVE DRAIN HOSE

NOTE: See valve drain options on Page 5.

a. Elevating the drain hose may cause back pressure that could reduce the brine draw during recharge. If raising the drain line overhead is required to get to the drain point, measure the inlet water pressure to the conditioner/refiner first. For inlet pressures between 1.4 and 3.4 bar, do not raise higher than 2 meters above the floor. For inlet pressure above 3.4 bar, the drain line may be raised to a maximum height of 3 meters.

b. Connect a length of 1/2" I.D. hose (check codes) to the valve drain elbow, on the controller. Use a hose clamp to hold the hose in place. Route the hose out through the notch in the back of the top cover.

c. Run the hose to the floor drain, and as typically shown in Figure 3, tie or wire the end to a brick or other heavy object. This will prevent “whipping” during recharges. Be sure to provide a 4 cm minimum air gap, to prevent possible sewer water backup.

9. INSTALL BRINE TANK OVERFLOW HOSE

a. Connect a length of 1/2" I. D. hose to the brine tank overflow elbow and secure in place with a hose clamp.

b. Run the hose to the floor drain, or other suitable drain point **no higher than the drain fitting** on the tank. If the tank overfills with water, the excess water flows to the drain point.

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

To prevent excessive air pressure in the EcoWater Systems conditioner/refiner and plumbing system, do the following steps EXACTLY in order:

a. Fully open two or more **conditioned** cold water faucets nearby the EcoWater Systems conditioner/refiner.

b. Place the bypass valve(s) in **bypass** position (See Figure 8).

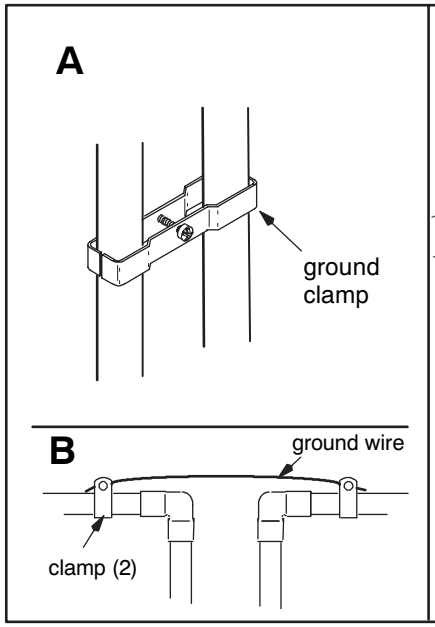
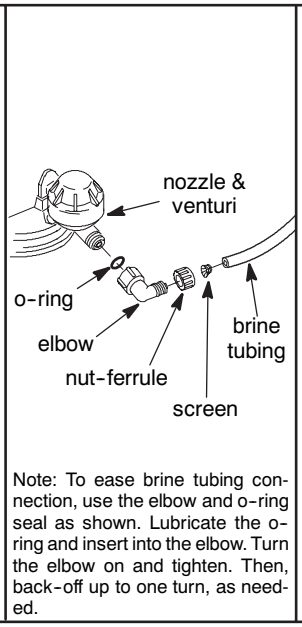


FIG. 6



Note: To ease brine tubing connection, use the elbow and o-ring seal as shown. Lubricate the o-ring and insert into the elbow. Turn the elbow on and tighten. Then, back-off up to one turn, as needed.

FIG. 7

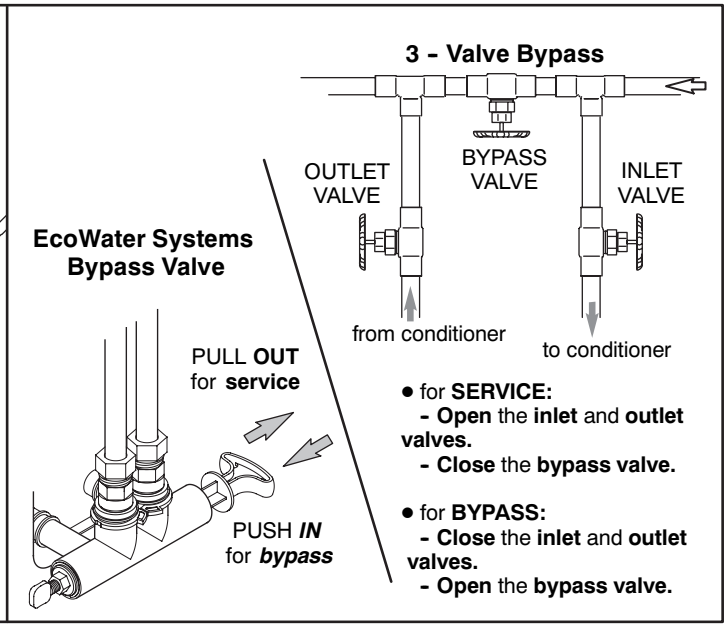


FIG. 8

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 conditioner/refiner'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 conditioner/refiner's bypass valve is in the **bypass** position.

h. **Install and plug in the power supply:** Remove the power supply from its packaging and snap the appropriate modular plug (Europe or UK) into place. At the other end of the wires are two small connectors. Plug these into the power wire harness coming from the back of the electronic control board. Plug the power supply into an electrical outlet.

i. **Program the electronic controller:** Follow the Setup Procedure on Pages 9-11 to program the electronic controller with basic operating information, such as time and water hardness. After completing the setup procedure, continue with "j. Start a recharge", below.

j. **Start a recharge:** From the rolling status screens, press the SELECT (○) button to display the **Main menu**. Make sure **Recharge** is highlighted, then press SELECT (○). Press DOWN (▼) to scroll to **Recharge now**, then press SELECT (○) twice. You should hear the valve motor run as the conditioner/refiner begins recharging. Use the RIGHT (▶) button to advance the valve to the **backwash** position.

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

11. ADD WATER AND SALT TO THE BRINE TANK

a. Using a pail or garden hose, add about 10 liters 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 conditioner salts, but it must be clean. Recommended nugget, pellet or coarse solar salts hwave less than 1% impurities.

NOTE: See page 27 for additional information on salt.

12. SANITIZING THE ECOWATER SYSTEMS CONDITIONER/REFINER

Care is taken at the factory to keep your EcoWater Systems conditioner/refiner 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 40 ml (2 to 3 tablespoons) of common household bleach into the conditioner/refiner brinewell. Replace the brinewell cover.

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

c. **Start a recharge:** From the rolling status screens, press the SELECT (○) button to display the **Main menu**. Make sure **Recharge** is highlighted, then press SELECT (○). Press DOWN (▼) to scroll to **Recharge now**, then press SELECT (○) twice. You should hear the valve motor run as the conditioner/refiner begins recharging. This recharge draws the sanitizing bleach into and through the conditioner/refiner. 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 conditioner/refiner, and allow 190 liters of water to pass through the system. This should take at least 20 minutes. Close the faucet.

13. 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 conditioned water. In a few days, the hot water will be fully conditioned. To have fully conditioned hot water immediately, wait until the recharge (Step 12) 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.

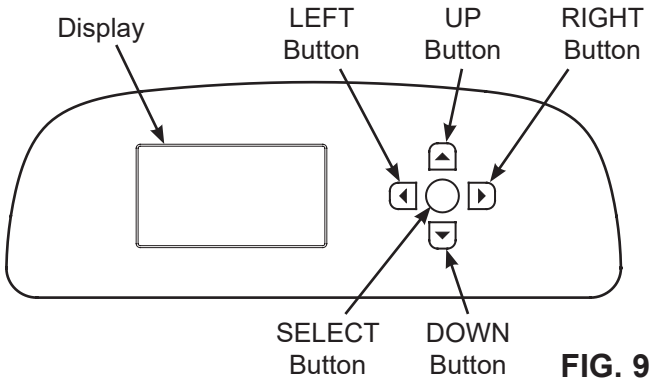


FIG. 9

SETUP PROCEDURE

When the EcoWater Systems conditioner/refiner is plugged in for the first time, a beep sounds and the display briefly shows a logo, followed by model information. Next, a series of "wizard" screens prompts you to enter basic operating information:

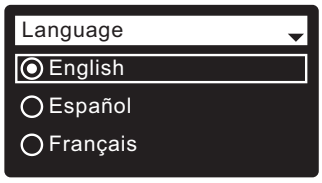


FIG. 10

1. **LANGUAGE** If the desired language already has a dot next to it (See Figure 10), go to Step 2. Otherwise, press the conditioner/refiner's DOWN (▼) or UP (▲) buttons to scroll to the desired language, then press the SELECT (○) button to choose it.
2. Press the SELECT (○) button to advance to the next "wizard" screen.

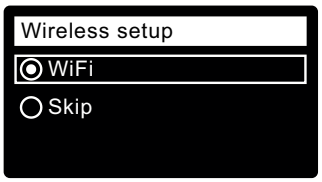


FIG. 11

NOTE: Before starting Wireless Setup, download the Ecowater EU Hydrolink Home™ app from the App Store (iOS) or Google Play (Android), create an account, and log in.

3. **WIRELESS SETUP** Use the SELECT (O) button to choose WiFi. The conditioner/refiner display will change to show "See connection instructions".

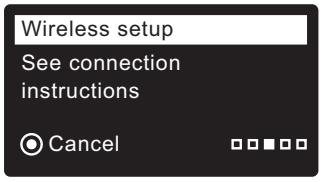


FIG. 12

NOTE: If desired, WIreless setup can also be done after the rest of the **Setup Procedure** (Steps 8-18) has been completed. From the **Main menu**, scroll down to the **Advanced settings** menu and select **Wireless setup**.

4. After logging into your **Hydrolink Home™** account, tap **Connect** to add a device, then **Setup Device**.

FIG. 13

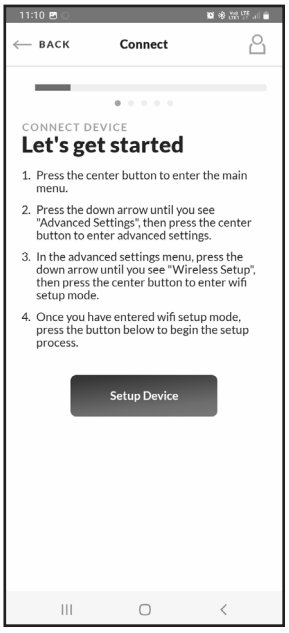


FIG. 14

5. Once the device is found, tap **Yes** to set up the device and begin connecting to WiFi.

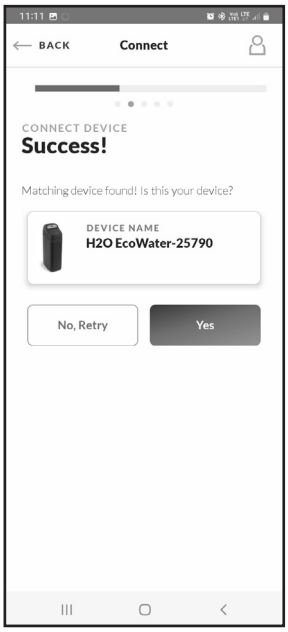


FIG. 15

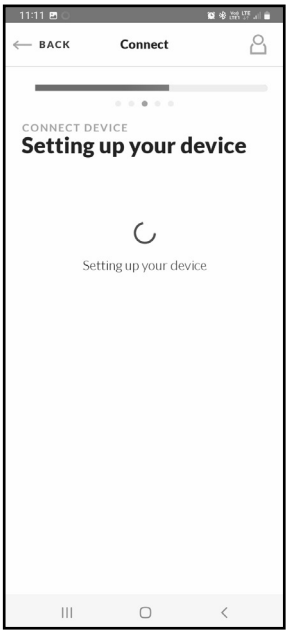


FIG. 16

continued on the next page

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6. Select the home's wireless network and enter WiFi password, then tap **Connect device to network**.

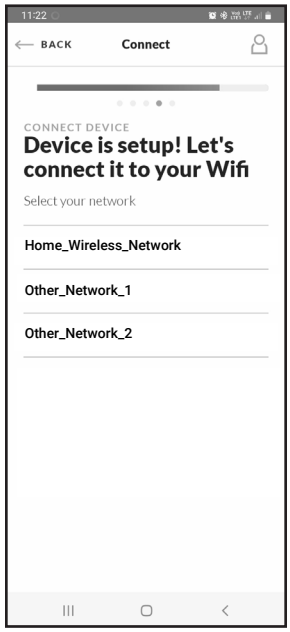


FIG. 17

FIG. 18

7. When the device successfully connects to the network, you'll hear a beep and see the following message on the app. Tap the button (O) to continue.

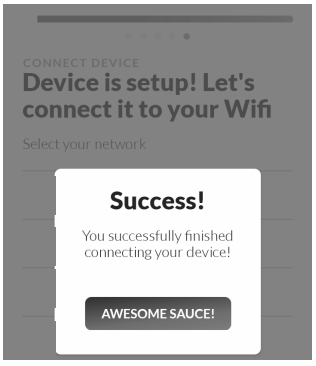


FIG. 19

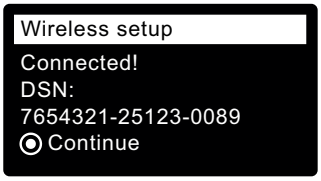


FIG. 20

From here you can continue customizing your set tings, or choose to skip and configure later.

NEW WI-FI ROUTER?

If You replace your local Wi-Fi router, a previously connected system will not automatically connect to the new router. From the **Main menu**, scroll down to the **Advanced settings** menu, select **Wireless setup**, and repeat the above wireless setup procedure to connect your system to the new router.

Finish Setting up the Softener

8. Once you have connected the Wi-Fi system press the SELECT (O) button to advance to the next "wizard" screen.

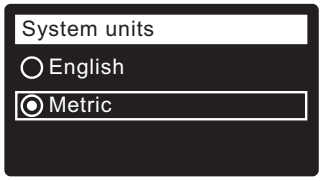


FIG. 21

9. **SYSTEM UNITS** If the desired system already has a dot next to it (See Figure 21), go to Step 10. Otherwise, press the DOWN (▼) or UP (▲) buttons to scroll to the desired system, then press the SELECT (O) button to choose it.

10. Press the SELECT (O) button.

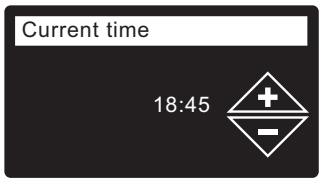


FIG. 22

11. **CURRENT TIME** Press the DOWN (▼) or UP (▲) buttons to set the current time (See Figure 22). Hold the button down to rapidly advance. Be sure that AM or PM is correct. If the system units were set to metric in Step 9, the clock will be in 24-hour format.

12. Press the SELECT (O) button.

FIG. 23

13. **HARDNESS** Press the UP (▲) or DOWN (▼) buttons to set the value of your water's hardness (See Figure 23).

NOTE: Do not increase the hardness setting to compensate for iron in your water. The electronic control compensates automatically after you set the iron level in Step 15, below.

14. Press the SELECT (O) button.

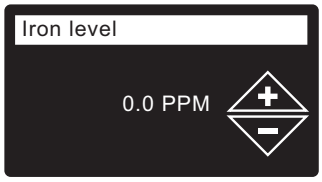


FIG. 24

15. **IRON LEVEL** Press the UP (▲) or DOWN (▼) buttons to set the value for iron in your water (See Figure 24).

16. Press the SELECT (○) button. The screen will show “Setup complete!” (See Figure 25).

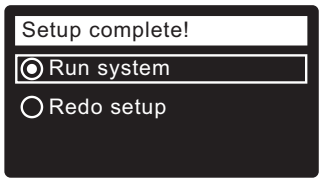


FIG. 25

17. If, at this point, you want to go back and make changes, press the DOWN (▾) button to scroll to **Redo setup**, then press the SELECT (○) button twice to repeat the “wizard” screens.

18. If no changes are desired, make sure **Run system** has a dot next to it (See Figure 25) and press the SELECT (○) button. The unit begins normal operation.

NORMAL OPERATION

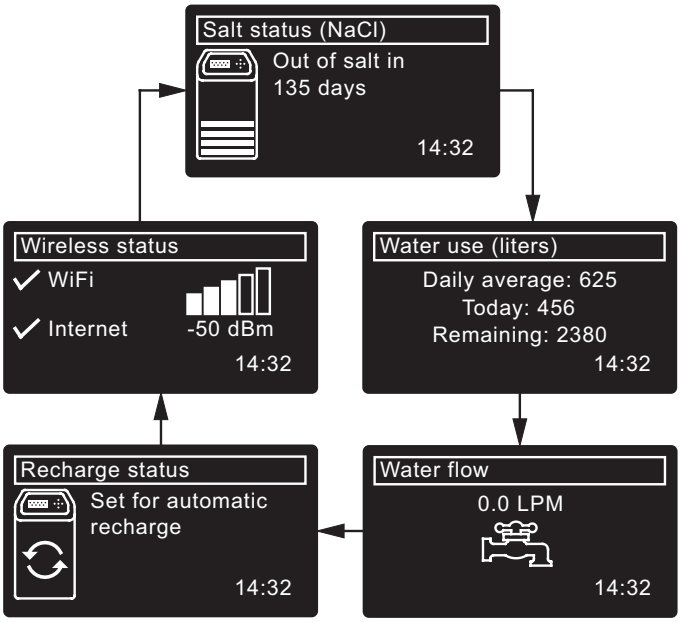
CONDITIONER/REFINER STATUS SCREENS

During normal operation, the EcoWater Systems conditioner/refiner’s display shows up to five status screens. Page 17 explains how individual screens can be turned on or off. Each is shown for six seconds, in a rolling sequence (See Figure 26).

In the “Wireless status” screen, the check marks indicate the following:

✓ **WiFi** - The softener is connected to a Wi-Fi router.

✓ **Internet** - The softener is connected to a Wi-Fi router which is connected to the internet.



*Water remaining before the next recharge.

FIG. 26

Pressing the conditioner/refiner’s RIGHT (▸) button manually advances to the next screen in the sequence. Pressing the LEFT (◂) button manually returns to the previous status screen. If no buttons are pressed for 30 seconds, the automatic rolling sequence resumes.

OTHER MESSAGES, ALERTS & REMINDERS

The conditioner/refiner status screens described in the previous section will not be displayed in a rolling sequence when one of the following items is displayed:

- **Recharge status** (Displayed during recharges, showing valve position and time remaining)
- **Add salt** or **Out of salt** (See Page 27)
- **Current time** setting screen instead of status screens indicates time has been lost, perhaps after a long power loss. Set the time (See Page 15).
- **Service reminder** (See Page 24)
- **Error detected** (Contact your dealer for service)

FLASHING DISPLAY

The conditioner/refiner’s display will flash on and off when one or more of the following conditions occurs:

- Salt needs to be added
- Time needs to be set (Time has been lost)
- Service is overdue (Service reminder)
- Error condition

The flashing will stop after any key is pressed. However, it will start again at Midnight if the underlying condition (e.g. low salt level) has not been addressed.

LONG DISPLAY SCREEN MESSAGES

Most messages in the conditioner/refiner’s display screens are short enough to be shown as a single line. Longer messages will be truncated (See Figure 27 for an example) until you highlight them.

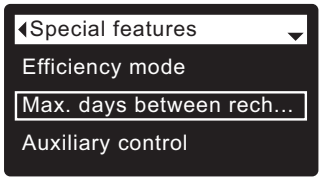


FIG. 27

One second after being highlighted, the viewing box expands (See Figure 28) to show the entire message. After three seconds the view resets (Figure 27).

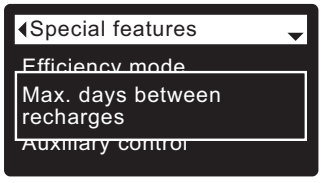


FIG. 28

MAIN MENU

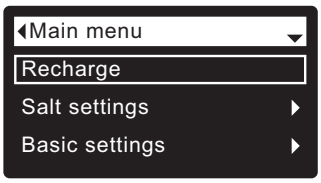


FIG. 29

During normal operation (status screens rolling), press the conditioner/refiner's SELECT (○) button to display the Main menu (See Figure 29). This menu and its subsidiary screens are used to control these operations:

- **Recharge** (See Page 15)
- **Salt settings**
  - **Low salt alarm** (See Page 14)
  - **Salt type** (See Page 14)
- **Basic settings**
  - **Current time** (See Page 15)
  - **Hardness** (See Page 16)
  - **Iron level** (See Page 16)
  - **Recharge time** (See Page 16)
  - **Rolling screens** (See Page 17)
- **User preferences**
  - **Language** (See Page 17)
  - **Time format** (See Page 18)
  - **Volume units** (See Page 18)
  - **Hardness units** (See Page 18)
  - **Weight units** (See Page 18)
- **System information**
  - **Model information** (See Page 19)
  - **Wireless information** (See Page 19)
  - **Water available** (See Page 19)
  - **Daily avg. water used** (See Page 19)
  - **Water used today** (See Page 19)
  - **Total water used** (See Page 19)
  - **Current water flow** (See Page 19)
  - **Days powered up** (See Page 19)
  - **Last recharge** (See Page 19)
  - **Total recharges** (See Page 19)
- **Advanced settings**
  - **Cycle times**
    - **Backwash time**① (See Page 21)
    - **Extra backwash time**② (See Page 20)
    - **2nd backwash (On/Off)** (See Pages 20-21)
    - **2nd backwash time** (See Pages 20-21)
    - **Fast rinse time**① (See Page 21)
    - **Extra fast rinse time**② (See Page 20)
  - **Special features**
    - **Efficiency mode** (See Page 22)
    - **Max. days between recharges** (See Page 22)
    - **Auxiliary control** (See Page 23)
    - **Chemical feed volume**③ (See Page 23)
    - **Chemical feed timer**③ (See Page 23)
    - **97% feature** (See Page 22)
    - **Service reminder** (See Page 24)
  - **Troubleshooting**
    - **Diagnostics** (See Page 24)
    - **Setup changes** (See Page 25)
    - **SLS calibration** (See Page 25)
  - **Wireless setup** (See Pages 9-10)

① Only on refiners.

② Only on conditioners.

③ Only displayed if Auxiliary control is set to Chemical feed.

LOCKOUT FEATURE

A "lockout" feature is available to prevent user modification of parameters that affect conditioner/refiner performance. The unit is shipped from the factory with the lockout feature off. After programming is complete, the lockout feature can be turned on to prevent changes to the following:

- **Hardness**
- **Iron level**
- **Backwash time**
- **Extra backwash time**
- **Second backwash (On/Off)**
- **Second backwash time**
- **Extra fast rinse time**
- **Fast rinse time**
- **Efficiency mode**
- **Max days between recharges**
- **Auxiliary control**
- **Chemical feed volume**
- **Chemical feed timer**
- **97% feature**
- **Service reminder**
- **Setup changes**
- **SLS calibration point 0**
- **SLS calibration point 1**

To turn on the lockout feature:

1. From any of the rolling status screens, press the SELECT (○) button to display the **Main menu**.
2. Press the DOWN (▾) button to scroll through the menu options until **Advanced settings** is highlighted.
3. Press the SELECT (○) button to display the Advanced settings menu.
4. Press the DOWN (▾) button to scroll through the menu options until **Troubleshooting** is highlighted.
5. Press the SELECT (○) button to display the Troubleshooting menu.
6. Press the DOWN (▾) button to scroll through the menu options until **Setup changes** is highlighted.
7. Press the SELECT (○) button to display the Setup changes menu (See Figure 30).

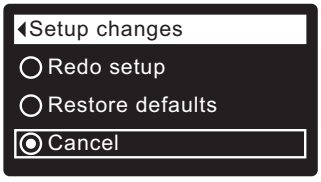


FIG. 30

8. Press the RIGHT (▸) button. A flashing padlock icon will appear, as shown in Figure 31.

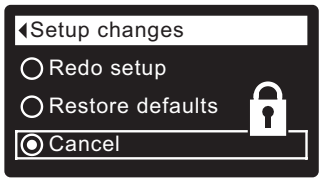


FIG. 31

9. Press the SELECT (○) button.
10. Press the LEFT (◂) button three times to return to the rolling status screens.

When the lockout feature is on, the flashing padlock icon will appear in any screen that would normally be used to change a parameter in the list to the left. For example, the **Hardness** screen will look like Figure 33, instead of Figure 32.

FIG. 32

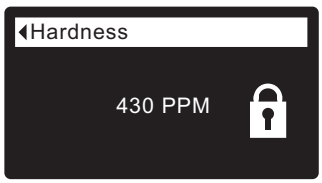


FIG. 33

Another indicator that the lockout feature is on is the **Model Information** screen. This screen appears on power-up, and can also be displayed from the System Information menu (See Page 19). If the lockout feature is on, there will be a non-flashing padlock icon in the upper right corner (See Figure 34).

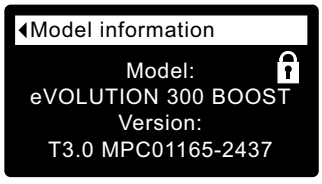


FIG. 34

To turn off the lockout feature:

1-7. Go to the **Setup changes** screen (Figure 31) by following Steps 1-7 at left.
8. Press the RIGHT (▸) button. The flashing padlock icon will disappear, as shown in Figure 30.
9. Press the SELECT (○) button.
10. Press the LEFT (◂) button three times to return to the rolling status screens.

LOW SALT ALARM

Use this feature to program when the electronic control will display a low salt alarm. The number of days can be customized, or the feature can be turned off. The default is 20 days.

1. From any of the rolling status screens, press the SELECT (○) button to display the **Main menu**.

2. Press the DOWN (▼) button to scroll through the menu options until **Salt settings** is highlighted (See Figure 35).

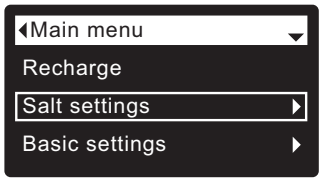


FIG. 35

3. Press the SELECT (○) button to display the Salt settings menu (See Figure 36).

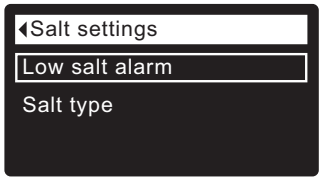


FIG. 36

4. Make sure **Low salt alarm** is highlighted.

5. Press the SELECT (○) button to display the Low salt alarm screen (See Figure 37).

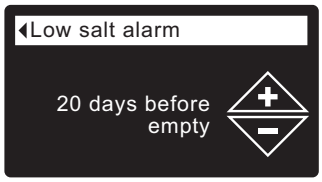


FIG. 37

6. Press the DOWN (▼) or UP (▲) buttons to change the number of days. Set the number of days to provide enough time to purchase salt and avoid running into hard water. Setting the number of days below 1 turns the alarm feature off.

7. Press the SELECT (○) button. The display will go back to the Salt settings menu (Figure 36).

8. Press the LEFT (◀) button twice to return to the rolling status screens.

SETTING SALT TYPE

Use this feature to program the electronic control with which type of salt is used. The default is NaCl. Selecting KCl increases fill time 25% and brine/slow rinse times 12%.

1-3. Go to the **Salt settings** menu by following Steps 1-3 in “Low Salt Alarm” at left.

4. Press the DOWN (▼) button to scroll through the menu options until **Salt type** is highlighted.

5. Press the SELECT (○) button to display the Salt type menu (See Figure 38).

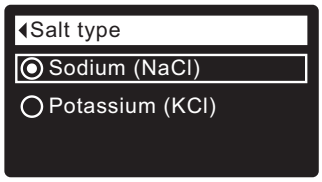


FIG. 38

6. If the desired salt type already has a black dot next to it (See Figure 38), go to Step 7. Otherwise, press the conditioner’s DOWN (▼) or UP (▲) buttons to scroll to the other salt type, then press SELECT (○) to choose it.

7. Press the SELECT (○) button. The display will go back to the Salt settings menu.

8. Press the LEFT (◀) button twice to return to the rolling status screens.

RECHARGING THE CONDITIONER/REFINER

This feature may be used to assure an adequate supply of conditioned water at times of unusually high water use. For example, if you have guests and the "Water available" screen (See Page 19) is at or below 50%, you could deplete conditioned water capacity before the next automatic recharge. Initiating a manual recharge will restore 100% conditioned water capacity after complete.

1. From any of the rolling status screens, press the SELECT (○) button to display the **Main menu**.

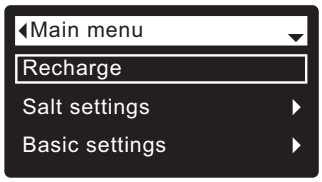


FIG. 39

2. Make sure **Recharge** is highlighted (See Figure 39).

3. Press the SELECT (○) button to display the Recharge menu (See Figure 40).

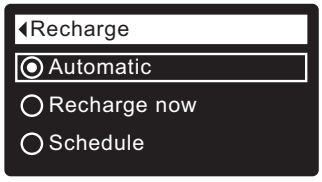


FIG. 40

4. If the desired option already has a dot next to it (See Figure 40), go to Step 5. Otherwise, press the DOWN (▼) or UP (▲) buttons to scroll to the desired option, then press SELECT (○) to choose it.

- **Automatic** cancels a manually scheduled recharge (if it has not already begun) and lets the electronic control determine when to recharge next.
- **Recharge now** begins a recharge immediately after the SELECT (○) button is pushed again in Step 5.
- **Schedule** sets a recharge to begin at the preset recharge time (set according to the instructions on Page 18).

5. Press the SELECT (○) button. If **Recharge now** is selected, the display immediately goes to the Recharge status screen (See Figure 41). If **Automatic** or **Schedule** are selected, the display goes back to the Main menu (Figure 39).

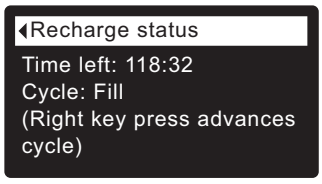


FIG. 41

6. Press the LEFT (◀) button (twice from the Recharge status screen) to return to the rolling status screens.

SETTING THE CURRENT TIME

When the conditioner/refiner's electronic control is first powered up, a "wizard" screen prompts you to set the current time (See Pages 9-11). To change the time at a later date, such as after a long power loss:

1. From any of the rolling status screens, press the SELECT (○) button to display the **Main menu**.

2. Press the DOWN (▼) button to scroll through the menu options until **Basic settings** is highlighted (See Figure 42).

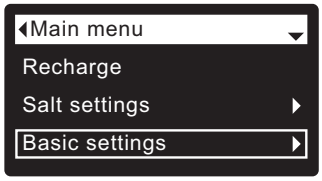


FIG. 42

3. Press the SELECT (○) button to display the Basic settings menu (See Figure 43).

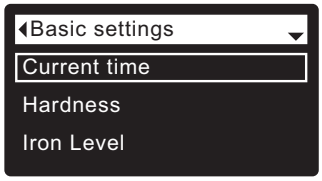


FIG. 43

4. Make sure **Current time** is highlighted.

5. Press the SELECT (○) button to display the Current time screen (See Figure 44).

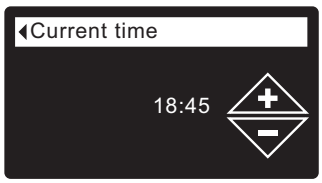


FIG. 44

6. Press the UP (▲) or DOWN (▼) buttons to change the time. Hold the button down to rapidly advance. Be sure that AM or PM is correct (unless conditioner/refiner is set for a 24-hour clock).

7. Press the SELECT (○) button. The display will go back to the Basic settings menu (Figure 43).

8. Press the LEFT (◀) button twice to return to the rolling status screens.

NOTE: On Wi-Fi connected systems, the current time will be updated and maintained automatically via Wi-Fi.

SETTING RECHARGE TIME

When the conditioner/refiner's electronic control is first powered up, the default time for starting an automatic recharge is 02:00 (2:00 a.m.). This is a good time in most households because water is not being used. To change this time:

1. From any of the rolling status screens, press the SELECT (○) button to display the **Main menu**.

2. Press the DOWN (▼) button to scroll through the menu options until **Basic settings** is highlighted (See Figure 45).

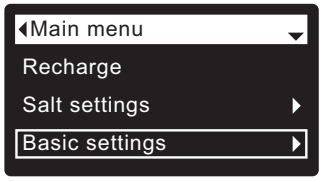


FIG. 45

3. Press the SELECT (○) button to display the Basic settings menu (See Figure 46).

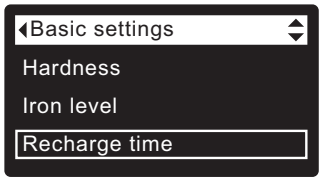


FIG. 46

4. Press the DOWN (▼) button to scroll through the menu options until **Recharge time** is highlighted.

5. Press the SELECT (○) button to display the Recharge time screen (See Figure 47).

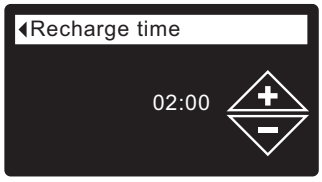


FIG. 47

6. Press the UP (▲) or DOWN (▼) buttons to change the recharge time in 1 hour increments. Hold the button down to rapidly advance. Be sure that AM or PM is correct (unless conditioner/refiner is set for a 24-hour clock).

7. Press the SELECT (○) button. The display will go back to the Basic settings menu (Figure 46).

8. Press the LEFT (◀) button twice to return to the rolling status screens.

SETTING HARDNESS

When the conditioner/refiner's electronic control is first powered up, a "wizard" screen prompts you to enter your water's hardness (See Pages 9-11). To change it:

1-3. Go to the **Basic settings** menu by following Steps 1-3 in "Setting Recharge Time" at left.

4. Press the DOWN (▼) button to scroll through the menu options until **Hardness** is highlighted.

5. Press the SELECT (○) button to display the Hardness screen (See Figure 48).

1 grain = 1°dH
10 ppm = 1°f

FIG. 48

6. Press the UP (▲) or DOWN (▼) buttons to set the value for your water's hardness. Hold the button down to rapidly advance.

NOTE: Do not increase the hardness setting to compensate for iron in your water. The electronic control compensates automatically after you set the iron level, below.

7. Press the SELECT (○) button. The display will go back to the Basic settings menu.

8. Press the LEFT (◀) button twice to return to the rolling status screens.

SETTING IRON LEVEL

When the conditioner/refiner's electronic control is first powered up, a "wizard" screen prompts you to enter your water's iron level (See Pages 9-11). To change:

1-3. Go to the **Basic settings** menu by following Steps 1-3 in "Setting Recharge Time" at left.

4. Press the DOWN (▼) button to scroll through the menu options until **Iron level** is highlighted.

5. Press the SELECT (○) button to display the Iron level screen (See Figure 49).

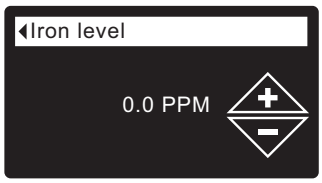


FIG. 49

6. Press the UP (▲) or DOWN (▼) buttons to set the value for iron in your water. Hold the button down to rapidly advance.

7. Press the SELECT (○) button. The display will go back to the Basic settings menu.

8. Press the LEFT (◀) button twice to return to the rolling status screens.

MODIFYING ROLLING SCREENS

During normal conditioner/refiner operation, up to five status screens are shown in sequence (See "Conditioner/ Refiner Status Screens" on Page 11). When the conditioner/refiner's electronic control is first powered up, the default is to show all five. You can turn on/off individual screens*:

1. From any of the rolling status screens, press the SELECT (○) button to display the **Main menu**.
2. Press the DOWN (▾) button to scroll through the menu options until **Basic settings** is highlighted (See Figure 50).

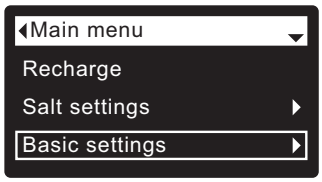


FIG. 50

3. Press the SELECT (○) button to display the Basic settings menu (See Figure 51).

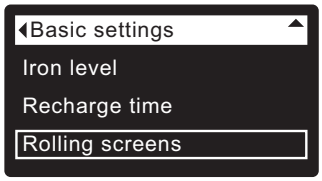


FIG. 51

4. Press the DOWN (▾) button to scroll through the menu options until **Rolling screens** is highlighted.
5. Press the SELECT (○) button to display the Rolling screens menu (See Figure 52).

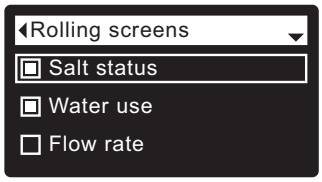


FIG. 52

6. Press the DOWN (▾) or UP (▴) buttons to scroll through the list. Items with a black square next to them will be displayed during normal operation.
7. To un-select a screen, make sure its name is highlighted in a box. Then press the SELECT (○) button. The black square will disappear. Pressing SELECT (○) again makes the black square reappear and re-selects the highlighted item. At least one screen must be selected/highlighted.
8. When selections are complete, exit this menu by pressing the LEFT (◂) button. The display will go back to the Basic settings menu (Figure 51).
9. Press the LEFT (◂) button twice to return to the rolling status screens.

*This does not include service reminders, errors, alerts or Recharge status screens.

SETTING THE LANGUAGE

When the conditioner/refiner's electronic control is first powered up, a "wizard" screen prompts you to set the language (See Pages 9-11). To change the conditioner/refiner's language:

1. From any of the rolling status screens, press the SELECT (○) button to display the **Main menu**.
2. Press the DOWN (▾) button to scroll through the menu options until **User preferences** is highlighted (See Figure 53).

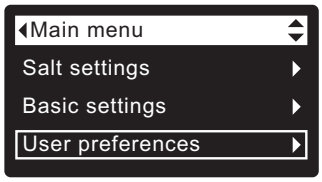


FIG. 53

3. Press the SELECT (○) button to display the User preferences menu (See Figure 54).

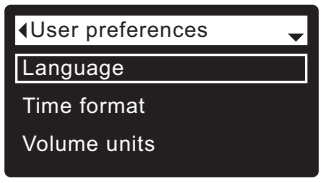


FIG. 54

4. Make sure **Language** is highlighted.
5. Press the SELECT (○) button to display the Language menu (See Figure 55).

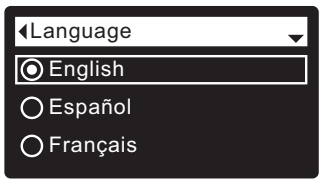


FIG. 55

6. If the desired language already has a dot next to it (See Figure 55), go to Step 7. Otherwise, press the DOWN (▾) or UP (▴) buttons to scroll to the desired language, then press SELECT (○) to choose it. The choices are: English, Spanish, French, Italian, German, Dutch, Polish, Russian, Hungarian, Turkish, Lithuanian, Greek, Romanian, Czech, Slovak, Bulgarian, Serbian or Croatian.
7. Press the SELECT (○) button. The display will go back to the User preferences menu (Figure 54).
8. Press the LEFT (◂) button twice to return to the rolling status screens.

TO SET THE CONDITIONER/REFINER TO ENGLISH IF ANOTHER LANGUAGE IS DISPLAYED:

From the rolling status screens, press SELECT (○). Press DOWN (▾) three times, then press SELECT (○) twice. Press UP (▴) to scroll to **English** at the top of the list, then press SELECT (○) twice. Press LEFT (◂) twice to exit all menus.

SETTING TIME FORMAT

Use this feature to select a 12-hour (AM/PM) or 24-hour clock.

1. From any of the rolling status screens, press the SELECT (○) button to display the **Main menu**.
2. Press the DOWN (▼) button to scroll through the menu options until **User preferences** is highlighted.
3. Press the SELECT (○) button to display the User preferences menu.
4. Press the DOWN (▼) button to scroll through the menu options until **Time format** is highlighted.
5. Press the SELECT (○) button to display the Time format menu (See Figure 56).

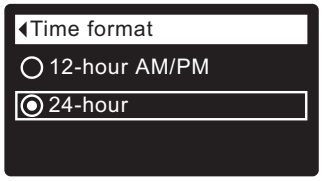


FIG. 56

6. If the desired time format already has a dot next to it (See Figure 56), go to Step 7. Otherwise, press the DOWN (▼) or UP (▲) buttons to scroll to the other time format, then press SELECT (○) to choose it.
7. Press the SELECT (○) button. The display will go back to the User preferences menu.
8. Press the LEFT (◀) button twice to return to the rolling status screens.

SETTING VOLUME UNITS

Use this feature to select gallons or liters as volume units.

1-3. Go to the **User preferences** menu by following Steps 1-3 in "Setting Time Format" above.
4. Press the DOWN (▼) button to scroll through the menu options until **Volume units** is highlighted.
5. Press the SELECT (○) button to display the Volume units menu (See Figure 57).

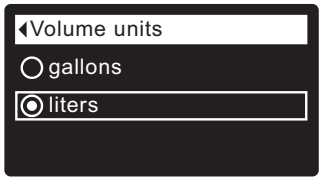


FIG. 57

6. If the desired volume unit already has a dot next to it (See Figure 57), go to Step 7. Otherwise, press the DOWN (▼) or UP (▲) buttons to scroll to the other volume unit, then press SELECT (○) to choose it.
7. Press the SELECT (○) button. The display will go back to the User preferences menu.
8. Press the LEFT (◀) button twice to return to the rolling status screens.

SETTING HARDNESS UNITS

Use this feature to select grains or parts per million (ppm) as hardness units.

1. From any of the rolling status screens, press the SELECT (○) button to display the **Main menu**.
2. Press the DOWN (▼) button to scroll through the menu options until **User preferences** is highlighted.
3. Press the SELECT (○) button to display the User preferences menu.
4. Press the DOWN (▼) button to scroll through the menu options until **Hardness units** is highlighted.
5. Press the SELECT (○) button to display the Hardness units menu (See Figure 58).

1 grain = 1°dH
10 ppm = 1°f

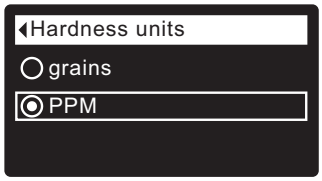


FIG. 58

6. If the desired hardness unit already has a dot next to it (See Figure 58), go to Step 7. Otherwise, press the DOWN (▼) or UP (▲) buttons to scroll to the other hardness unit, then press SELECT (○) to choose it.
7. Press the SELECT (○) button. The display will go back to the User preferences menu.
8. Press the LEFT (◀) button twice to return to the rolling status screens.

SETTING WEIGHT UNITS

Use this feature to select pounds or kilograms as weight units.

1-3. Go to the **User preferences** menu by following Steps 1-3 in "Setting Hardness Units" above.
4. Press the DOWN (▼) button to scroll through the menu options until **Weight units** is highlighted.
5. Press the SELECT (○) button to display the Weight units menu (See Figure 59).

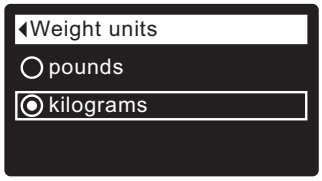


FIG. 59

6. If the desired weight unit already has a dot next to it (See Figure 59), go to Step 7. Otherwise, press the DOWN (▼) or UP (▲) buttons to scroll to the other weight unit, then press SELECT (○) to choose it.
7. Press the SELECT (○) button. The display will go back to the User preferences menu.
8. Press the LEFT (◀) button twice to return to the rolling status screens.

SYSTEM INFORMATION

Use these features to look up the following information about the conditioner/refiner and its operations:

- **Model information** (model number and software version)
- **Wireless information**
- **Water available** (conditioned water ready for use)
- **Daily average water used**
- **Water used today**
- **Total water used** (explained in Step 6, below)
- **Current water flow**
- **Days powered up**
- **Last recharge**
- **Total recharges**

To display one of these screens:

1. From any of the rolling status screens, press the SELECT (○) button to display the **Main menu**.
2. Press the DOWN (▾) button to scroll through the menu options until **System information** is highlighted (See Figure 60).

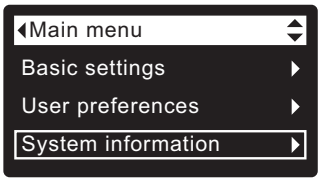


FIG. 60

3. Press the SELECT (○) button to display the System information menu (See Figure 61).

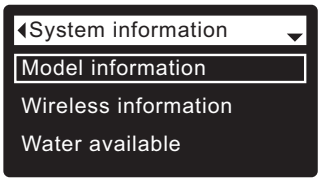


FIG. 61

4. Press the DOWN (▾) button to scroll through the menu options until the desired option is highlighted (See list at the top of this column).
5. Press the SELECT (○) button to display the desired information screen (See Figures 62-71).
6. The **Total water used** screen (See Figure 67) shows the volume of water used since it was last reset (it works like the trip odometer in a car). To reset the value to 0, press the RIGHT (▸) button while this screen is displayed.
7. When finished viewing an information screen, press the SELECT (○) button. The display will go back to the System information menu (Figure 61). It will also exit automatically if no buttons are pressed for four minutes.
8. Press the LEFT (◂) button twice to return to the rolling status screens.

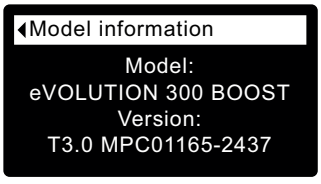


FIG. 62

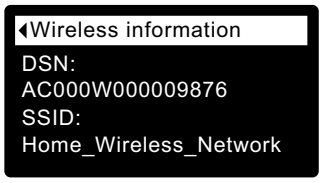


FIG. 63

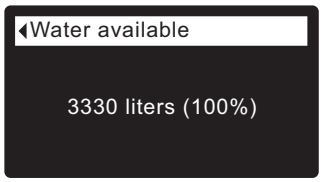


FIG. 64

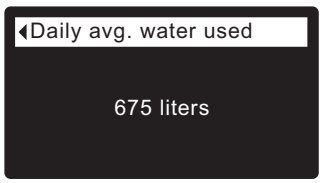


FIG. 65

FIG. 66

FIG. 67

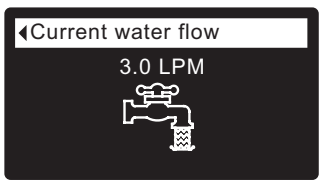


FIG. 68

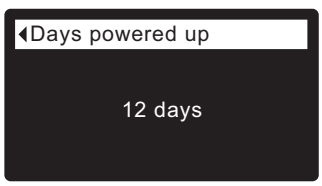


FIG. 69

FIG. 70

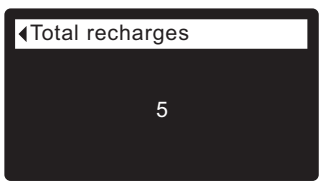


FIG. 71

CYCLE TIMES (Conditioner Models)

See following page for Refiner cycle times

Use these features to change the following conditioner operations:

- **Extra backwash time**
- **Second backwash (On/Off)**
- **Second backwash time**
- **Extra fast rinse time**

To display these screens:

1. From any of the rolling status screens, press the SELECT (○) button to display the **Main menu**.
2. Press the DOWN (▼) button to scroll through the menu options until **Advanced settings** is highlighted (See Figure 72).

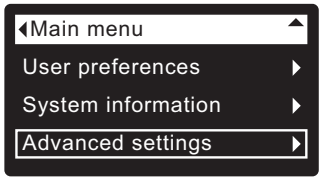


FIG. 72

3. Press the SELECT (○) button to display the Advanced settings menu (See Figure 73).

FIG. 73

4. Make sure **Cycle times** is highlighted.
5. Press the SELECT (○) button to display the Cycle times menu (See Figure 74).

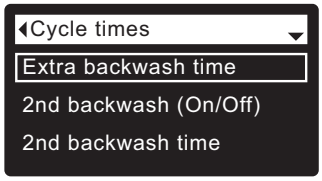


FIG. 74

6. Press the DOWN (▼) button to scroll through the menu options until the desired option is highlighted (See list at the top of this column).
7. Press the SELECT (○) button to display the desired cycle time screen (See Figures 76-78).
8. **See the right column on this page for specific instructions on each cycle time screen.**
9. Press the SELECT (○) button. The display will go back to the Cycle times menu (Figure 74).
10. Press the LEFT (◀) button three times to return to the rolling status screens.

8a. **Extra backwash time**: The backwash time during regeration is determined by the electronic controller. However, if you experience salty tasting water after regeneration, you may want to increase it. Press the UP (▲) button to add minutes, up to 15, of extra backwash time (See Figure 75).

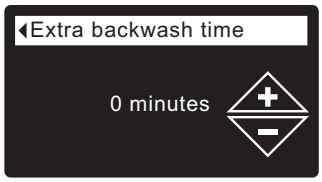


FIG. 75

8b. **Second backwash (On/Off)**: If the desired option already has a dot next to it (See Figure 76), go to Step 9. Otherwise, press the DOWN (▼) or UP (▲) buttons to scroll to the other option, then press SELECT (○) to choose it. Setting this feature On adds a second backwash and rinse at the beginning of the recharge cycle. Default is Off. Set this feature On if your water supply contains a lot of sediment or iron.

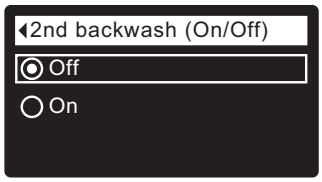


FIG. 76

8c. **Second backwash time**: Press the UP (▲) or DOWN (▼) buttons to change the second backwash time. Hold the button down to rapidly advance. The time can be set from 0 to 30 minutes (See Figure 77).

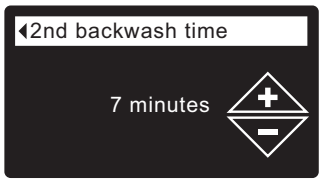


FIG. 77

8d. **Extra fast rinse time**: The fast rinse time during regeration is determined by the electronic controller. However, if you experience salty tasting water after regeneration, you may want to increase it. Press the UP (▲) button to add minutes, up to 15, of extra fast rinse time (See Figure 78).

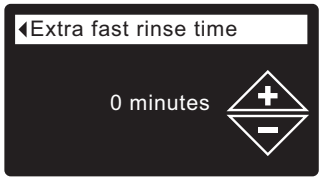


FIG. 78

CYCLE TIMES (Refiner Models)

See previous page for Conditioner cycle times

Use these features to change the following conditioner operations:

- **Backwash time**
- **Second backwash (On/Off)**
- **Second backwash time**
- **Fast rinse time**

To display these screens:

1. From any of the rolling status screens, press the SELECT (○) button to display the **Main menu**.

2. Press the DOWN (▼) button to scroll through the menu options until **Advanced settings** is highlighted (See Figure 79).

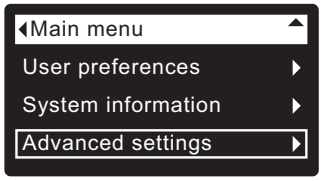


FIG. 79

3. Press the SELECT (○) button to display the Advanced settings menu (See Figure 80).

FIG. 80

4. Make sure **Cycle times** is highlighted.

5. Press the SELECT (○) button to display the Cycle times menu (See Figure 81).

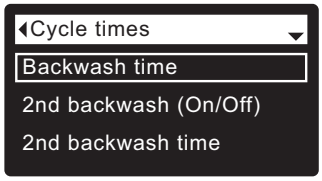


FIG. 81

6. Press the DOWN (▼) button to scroll through the menu options until the desired option is highlighted (See list at the top of this column).

7. Press the SELECT (○) button to display the desired cycle time screen (See Figures 83-85).

8. **See the right column on this page for specific instructions on each cycle time screen.**

9. Press the SELECT (○) button. The display will go back to the Cycle times menu (Figure 81).

10. Press the LEFT (◀) button three times to return to the rolling status screens.

8a. **Backwash time**: Press the UP (▲) or DOWN (▼) buttons to change the backwash time. Hold the button down to rapidly advance. The backwash time can be set from 1 to 30 minutes* (See Figure 82).

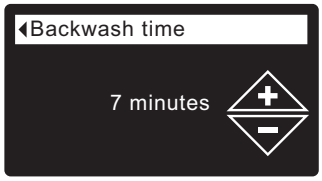


FIG. 82

8b. **Second backwash (On/Off)**: If the desired option already has a dot next to it (See Figure 83), go to Step 9. Otherwise, press the DOWN (▼) or UP (▲) buttons to scroll to the other option, then press SELECT (○) to choose it. Setting this feature On adds a second backwash and rinse at the beginning of the recharge cycle. Default is Off. Set this feature On if your water supply contains a lot of sediment or iron.

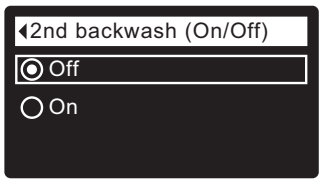


FIG. 83

8c. **Second backwash time**: Press the UP (▲) or DOWN (▼) buttons to change the second backwash time. Hold the button down to rapidly advance. The time can be set from 0 to 30 minutes (See Figure 84).

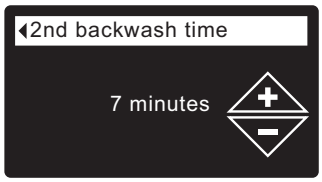


FIG. 84

8d. **Fast rinse time**: Press the UP (▲) or DOWN (▼) buttons to change the fast rinse time. Hold the button down to rapidly advance. The fast rinse time can be set from 1 to 30 minutes* (See Figure 85).

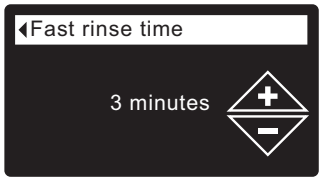


FIG. 85

*Reducing the backwash and fast rinse times below a refiner model's default settings can result in salty water after recharges.

SPECIAL FEATURES

Use these features to change the following operations:

- **Efficiency mode**
- **Maximum days between recharges**
- **Auxiliary control** (described on Page 23)
- **Chemical feed volume*** (described on Page 23)
- **Chemical feed timer*** (described on Page 23)
- **97% feature**
- **Service reminder** (described on Page 24)

To display one these screens:

1. From any of the rolling status screens, press the SELECT (○) button to display the **Main menu**.

2. Press the DOWN (▼) button to scroll through the menu options until **Advanced settings** is highlighted (See Figure 86).

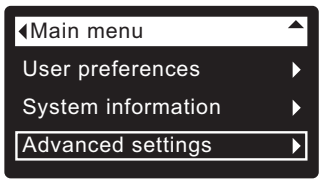


FIG. 86

3. Press the SELECT (○) button to display the Advanced settings menu (See Figure 87).

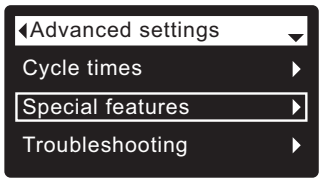


FIG. 87

4. Press the DOWN (▼) button to scroll through the menu options until **Special features** is highlighted.

5. Press the SELECT (○) button to display the Special features menu (See Figure 88).

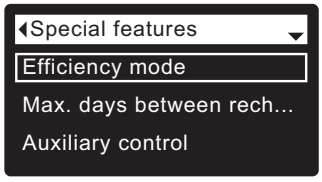


FIG. 88

6. Press the DOWN (▼) button to scroll through the menu options until the desired option is highlighted (See list at the top of this column).

7. Press the SELECT (○) button to display the desired special feature screen (See Figures 89-91).

8. **See the right column on this page for specific instructions on each cycle time screen.**

9. Press the SELECT (○) button. The display will go back to the Special features menu (Figure 88).

10. Press the LEFT (◀) button three times to return to the rolling status screens.

*Only displayed if Auxiliary control is set to Chemical feed.

8a. **Efficiency mode**: If the desired efficiency mode already has a dot next to it (See Figure 89), go to Step 9. Otherwise, press the DOWN (▼) or UP (▲) buttons to scroll to the desired efficiency mode, then press SELECT (○) to choose it.

- **Salt efficient** limits available salt doses to maintain 4000 grains/lb. of salt efficiency. Units may recharge more frequently.
- **Auto adjusting** is the default. It automatically adjusts salt doses to target a 3-4 day interval between recharges. Recommended.
- **High capacity** is for applications where very low "bleed" (less than 1.5 ppm) of hardness can be tolerated. Such applications include water for boilers. This setting will consume higher quantities of salt.

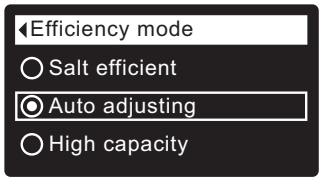


FIG. 89

8b. **Maximum days between recharges**: Press the UP (▲) or DOWN (▼) buttons to change the number of days (See Figure 90). The feature can be set from 1 to 15 days. Setting the number of days below 1 turns the feature off and defaults to automatic control of recharging.

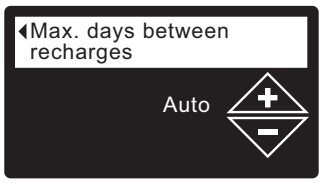


FIG. 90

8c. **97% feature**: If the desired option already has a dot next to it (See Figure 91, go to Step 9. Otherwise, press the DOWN (▼) or UP (▲) buttons to scroll to the other option, then press SELECT (○) to choose it. If this feature is On, the conditioner/refiner will automatically recharge when 97% of capacity is used, at any time of day. Default is Off.

FIG. 91

AUXILIARY CONTROL

The electronic control has an auxiliary output which can control external devices in a water treatment system. The signal is 24V DC, current draw 500 mA maximum. The Auxiliary Output terminals are located on the electronic control board (See Schematic on Page 33).

For more details on the use of auxiliary controlled equipment in water treatment systems, consult the EcoWater Systems "Problem Water Guide."

To select an auxiliary control mode:

1. From any of the rolling status screens, press the SELECT (○) button to display the **Main menu**.
2. Press the DOWN (▼) button to scroll through the menu options until **Advanced settings** is highlighted.
3. Press the SELECT (○) button to display the Advanced settings menu.
4. Press the DOWN (▼) button to scroll through the menu options until **Special features** is highlighted.
5. Press the SELECT (○) button to display the Special features menu (See Figure 92).

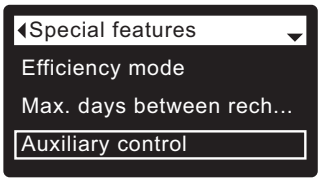


FIG. 92

6. Press the DOWN (▼) button to scroll through the menu options until **Auxiliary control** is highlighted.
7. Press the SELECT (○) button to display the Auxiliary control menu (See Figure 93).
8. If the desired option already has a dot next to it (See Figure 93), go to Step 9. Otherwise, press the DOWN (▼) or UP (▲) buttons to scroll to the desired option, then press SELECT (○) to choose it.
   - **Off** is the default. The 24V DC output is always off.
   - **On:** The 24V DC output is always on.
   - **Chlorine** can be used to drive a chlorine generator, which produces chlorine, as brine water passes through it, to sanitize the resin during recharges.
   - **Bypass:** Turns 24V DC on during the entire regeneration cycle (when the conditioner's valve is in bypass and hard water is going to the house).
   - **Chemical feed:** Can be used to run a chemical feed pump. If chosen, the chemical feed volume and timer must be set, as detailed at right)
   - **Water use:** Turns 24V DC on when the conditioner's turbine indicates water flow. Could drive an air pump for iron or sulfur oxidation.
   - **Fast Rinse:** Turns 24V DC on during the fast rinse portion of the regeneration cycle.
9. Press the SELECT (○) button. The display will go back to the Special features menu (Figure 92).
10. Press the LEFT (◀) button three times to return to the rolling status screens.

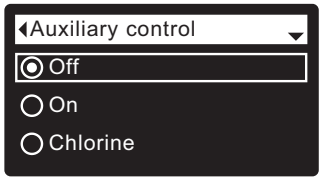


FIG. 93

CHEMICAL FEED

If the auxiliary control mode has been set to **Chemical feed**, as described in the previous section, two additional lines (**Chemical feed volume** and **Chemical feed timer**) will appear on the Special features menu.

To set these values:

1. From any of the rolling status screens, press the SELECT (○) button to display the **Main menu**.
2. Press the DOWN (▼) button to scroll through the menu options until **Advanced settings** is highlighted.
3. Press the SELECT (○) button to display the Advanced settings menu.
4. Press the DOWN (▼) button to scroll through the menu options until **Special features** is highlighted.
5. Press the SELECT (○) button to display the Special features menu (See Figure 92).
6. Press the DOWN (▼) button to scroll through the menu options until **Chemical feed volume** or **Chemical feed timer** is highlighted.
7. Press the SELECT (○) button to display the Chemical feed volume or Chemical feed timer menu (See Figures 94 & 95).

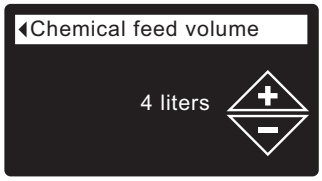


FIG. 94

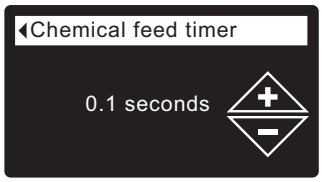


FIG. 95

8. Press the UP (▲) or DOWN (▼) buttons to change the value. Hold the button down to rapidly advance.
   - **Chemical feed volume** is the amount of water which will pass through the conditioner/refiner between each activation of the chemical feed equipment.
   - **Chemical feed timer** is how long the output to the chemical feed equipment is energized each time it is activated.
9. Press the SELECT (○) button. The display will go back to the Special features menu (Figure 92).
10. Press the LEFT (◀) button three times to return to the rolling status screens.

SERVICE REMINDER (set / reset)

Use this feature to program the number of months (up to 24) before a "Service overdue" message will appear instead of the rolling status screens (See Figure 96).

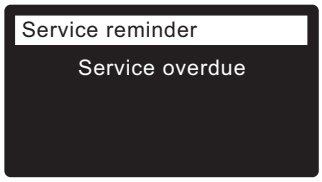


FIG. 96

This message also appears on the remote. This will be a reminder to call your dealer for service. Once programmed, this feature displays the number of months and days left until the service reminder.

Once the "Service overdue" message has appeared, dealers performing service clear it by setting the number of months until the next service reminder. Set or reset the service reminder as follows:

1. From any of the rolling status screens, press the SELECT (○) button to display the **Main menu**.
2. Press the DOWN (▼) button to scroll through the menu options until **Advanced settings** is highlighted.
3. Press the SELECT (○) button to display the Advanced settings menu.
4. Press the DOWN (▼) button to scroll through the menu options until **Special features** is highlighted.
5. Press the SELECT (○) button to display the Special features menu (See Figure 97).

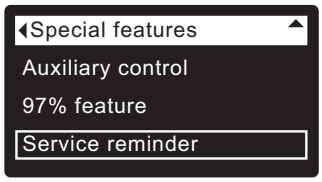


FIG. 97

6. Press the DOWN (▼) button to scroll through the menu options until **Service reminder** is highlighted.
7. Press the SELECT (○) button to display the Service reminder screen (See Figure 98).

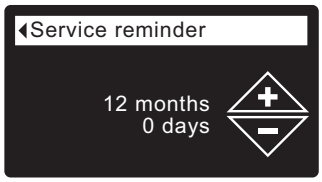


FIG. 98

8. Press the UP (▲) or DOWN (▼) buttons to set the number of months until the service reminder appears. Repeatedly pressing the DOWN (▼) button until the display reads "Off" turns this feature off and zeros the number of months and days.
9. Press the SELECT (○) button. The display will go back to the Special features menu (Figure 97).
10. Press the LEFT (◀) button three times to return to the rolling status screens.

DIAGNOSTICS

This feature allows a service technician to check the operating state of individual components in the conditioner/refiner (e.g. valve position) to troubleshoot problems. **If an error code is displayed in place of the rolling status screens, call your dealer for service.**

To view the Diagnostics screen:

1. If an error code is displayed, skip Steps 2-7 and go directly to Step 8.
2. To display the Diagnostics screen from any of the rolling status screens (when an error code is not displayed), press the SELECT (○) button to display the **Main menu**.
3. Press the DOWN (▼) button to scroll through the menu options until **Advanced settings** is highlighted.
4. Press the SELECT (○) button to display the Advanced settings menu.
5. Press the DOWN (▼) button to scroll through the menu options until **Troubleshooting** is highlighted.
6. Press the SELECT (○) button to display the Troubleshooting menu (See Figure 99).

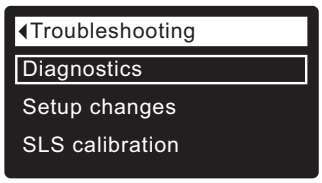


FIG. 99

7. Make sure **Diagnostics** is highlighted.
8. Press the SELECT (○) button to display the Diagnostics screen (See Figure 100).

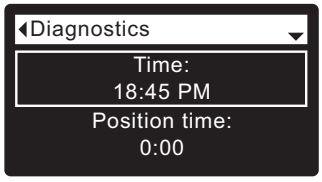


FIG. 100

9. Press the DOWN (▼) or UP (▲) buttons to scroll through the list. The following items are displayed:
   - **Time** (current)
   - **Position time** (counts down the time remaining in the current valve position)
   - **Current position** (of the valve: service, fill, brine, backwash, fast rinse or moving)
   - **Requested position** (of the valve)
   - **Motor state** (on or off)
   - **Valve position switch** (open or closed)
   - **Turbine count** (if changing, indicates water flow)
   - **Salt level sensor** (distance reading of sensor)
   - **Tank light switch** (open or closed)
   - **RF module** (detected or not)
   - **Error code** (call for service if a number is displayed)

continued on the next page

continued from the previous page

10. When finished viewing the Diagnostics screen, press the SELECT (○) button. The display will go back to the Troubleshooting menu.
11. Press the LEFT (◂) button three times to return to the rolling status screens (or error code screen if an error condition exists).

SETUP CHANGES

This feature allows a service technician to repeat the setup procedure (See Pages 9-11) or restore the conditioner/refiner's default operating values.

1. From any of the rolling status screens, press the SELECT (○) button to display the **Main menu**.
2. Press the DOWN (▾) button to scroll through the menu options until **Advanced settings** is highlighted.
3. Press the SELECT (○) button to display the Advanced settings menu.
4. Press the DOWN (▾) button to scroll through the menu options until **Troubleshooting** is highlighted.
5. Press the SELECT (○) button to display the Troubleshooting menu (See Figure 99).
6. Press the DOWN (▾) button to scroll through the menu options until **Setup changes** is highlighted.
7. Press the SELECT (○) button to display the Setup changes menu (See Figure 101).

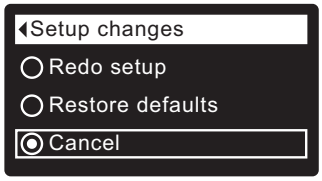


FIG. 101

8. If the desired option already has a dot next to it (See Figure 101), go to Step 9. Otherwise, press the DOWN (▾) or UP (▴) buttons to scroll to the desired option, then press SELECT (○) to choose it.
- **Redo setup** allows you to select a different model code (intended to be used for upgrades or retrofits of existing conditioner/refiner). Model codes are listed on Page 3.
- **Restore defaults** will reset all customizable settings to their default values and take you through the "wizard" screen setup procedure (See Pages 9-11).
- **Cancel** will return to the Troubleshooting menu (Figure 99).

9. Press the SELECT (○) button.

SLS CALIBRATION

This feature is used by a service technician replacing a salt level sensor. A replacement salt level sensor is shipped from the factory with numerical values for two calibratioin points, and these values must be entered into the controller. Instructions for this procedure are supplied with the replacement salt level sensor.

NOTE: Do not change the numerical values of the SLS calibration points unless installing a replacement salt level sensor.

The bypass blending valve works as a typical push-pull bypass valve, but has the added ability to finely adjust hardness of the treated water leaving the water softener. If slightly harder water is desired than is normally output by the water softener, this bypass blending valve can divert a small stream of hard water before it enters the water softener and blend it with the exiting softened water. The amount of water diverted is controlled by turning a blend adjusting knob on the end cap of the valve stem (See Figure 102).

1. When the bypass valve is in service position (normal softener operation), with handle pulled all the way out (See Figure 102), **increase hardness** of treated water by turning the blend adjusting knob **counterclockwise** up to 6 turns from the fully closed position. While adjusting this knob, hold the bypass valve handle to prevent the stem from rotating.
2. Do not continue to turn the knob counterclockwise beyond 6 turns from the fully closed position, as this would eventually pull the screw's internal o-rings out of their seat and water would leak from the bypass valve.
3. **Decrease hardness** of treated water by turning the blend adjusting knob **clockwise** while holding the bypass handle. When the knob will not turn any more, hard water is no longer being blended with treated water.
4. Once the desired hardness is achieved, the adjustment knob may be locked in place by tightening the hex nut clockwise against the end cap using an adjustable wrench. Hold the bypass valve handle to prevent the stem from rotating, or else use another wrench to grip the stem on the flats between the end cap and the bypass valve body. Loosen the hex nut (turn it counterclockwise) before readjusting the hardness or closing the diversion path for servicing (see next step)
5. If the water softener is to be serviced or disconnected from the bypass valve, the blend adjusting knob must be turned all the way clockwise to close the diversion path and prevent water leaking from the softener valve inlet of the bypass valve.

SERVICE POSITION (Normal Softener Operation)

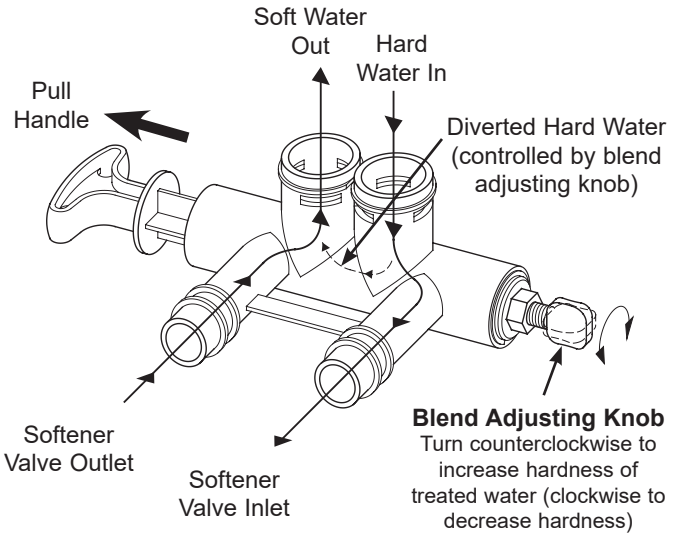


FIG. 102

BYPASS POSITION

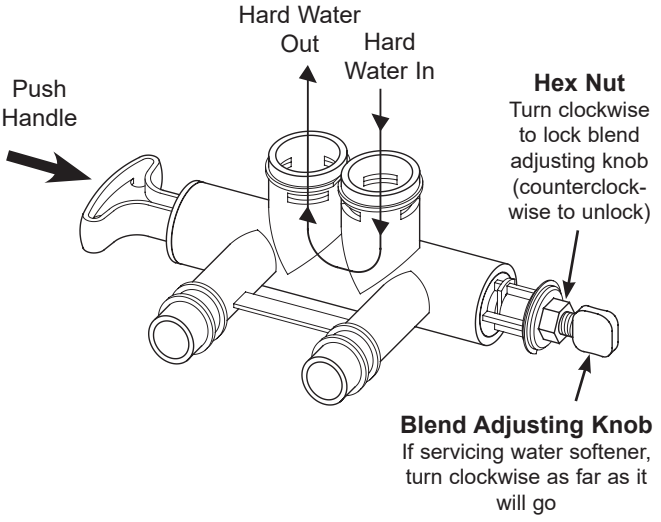


FIG. 103

ADDING SALT

If the conditioner/refiner uses all the salt before more is added, hard water will result. EcoWater eVOLUTION series models have automatic salt level sensing. Your Wi-Fi account can also be used to monitor salt. The conditioner/refiner salt status screen has an optional display of the estimated number of days until salt is depleted ("Out of salt in X days"). The conditioner/refiner can also be programmed to display a Low Salt Alarm a certain number of days before salt is estimated to run out (See Page 14).

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 add salt more often.

RECOMMENDED SALT: Cube, pellet, coarse solar, etc., water conditioner 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 as a regenerant:

1) Make sure "Salt type" on the electronic control is set to "KCl", as shown on Page 14.
2) Place only one bag of potassium chloride (KCl) into your conditioner/refiner at a time. The salt storage tank should never contain more than 25 kg 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 conditioner/refiner 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 conditioner/refiner electronic parts.

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 conditioner/refiner, as shown in Figure 104. Make a pencil mark on the handle 3 - 5 cm 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.**

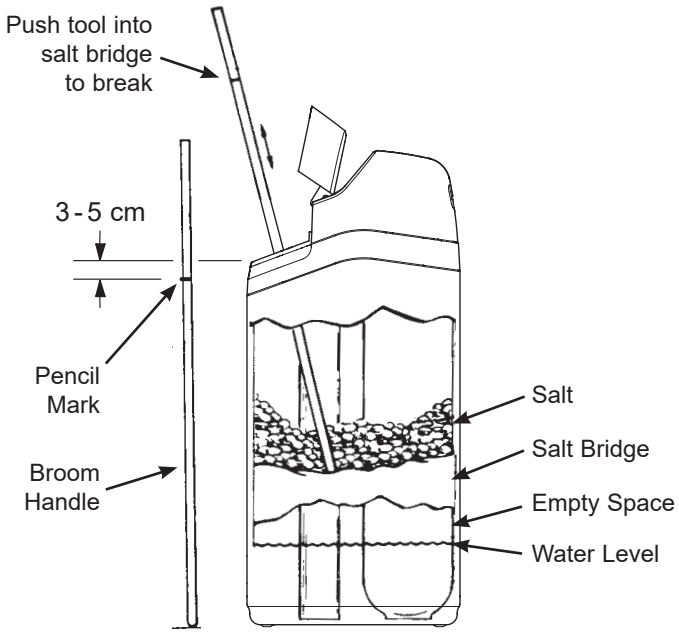


FIG. 104

CLEANING THE NOZZLE & VENTURI

A clean nozzle & venturi (See Figure 105) is necessary for the EcoWater Systems conditioner/refiner to work properly. This small unit creates the suction to move brine from the brine tank into the resin tank. If it should become plugged with dirt, silt, sand, etc., the EcoWater Systems conditioner/refiner will not work and hard water will result.

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

Carefully replace all parts in the correct order. Lubricate the o-ring seal with silicone grease and put in place. Install and tighten the cap, by hand only. Do not overtighten, which could break the cap or housing. Put the bypass valve(s) into service (conditioned water) position.

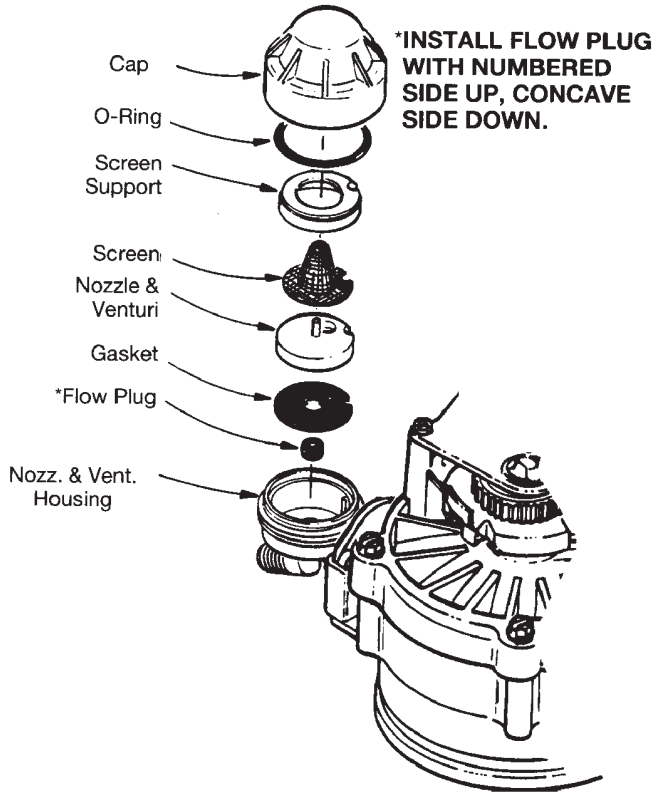


FIG. 105

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.

RELIEVING WATER PRESSURE WITH THE BYPASS VALVE(S)

CAUTION: Always relieve water pressure in the EcoWater Systems conditioner/refiner, as described below, before removing parts from the valve or resin tank.

DE-PRESSURIZE

1. Put bypass valve(s) into **Bypass** position.
2. Place conditioner/refiner valve in **Fill** position by performing Steps 1 & 7 of Manual Advance Recharge procedure on Page 32.

PRESSURIZE

1. Put bypass valve(s) into **Service** position.
2. Return conditioner/refiner valve to **Service** position by performing Steps 10-16 of Manual Advance Recharge procedure on Page 32.

ALTERNATE METHODS:

3-VALVE BYPASS (See Figure 106)

DE-PRESSURIZE

1. Close the INLET valve.
2. Open HOT and COLD conditioned water house faucets.
3. Close the OUTLET valve and open the BYPASS valve.
4. Close all house faucets.

PRESSURIZE

1. Open HOT and COLD house faucets.
2. Close the BYPASS valve and open the OUTLET valve.
3. **Slowly**, open the INLET valve.
4. Close all house faucets.

ECOWATER SYSTEMS BYPASS VALVE

(See Figure 107)

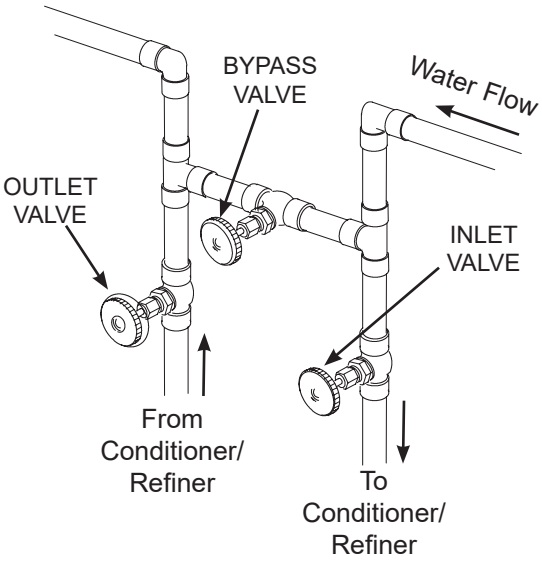
DE-PRESSURIZE

1. Close the house main water supply valve.
2. Open HOT and COLD conditioned water house faucets.
3. Push the bypass valve handle to **Bypass** position.
4. Optional: For hard water bypass to house faucets, reopen the main water supply valve.

PRESSURIZE

1. Open main water supply valve if it is closed.
2. Open HOT and COLD house faucets.
3. Pull the bypass valve handle to **Service** position.
4. Close all house faucets.

3-Valve Bypass



For **Service**
Close Bypass Valve.
Open Inlet & Outlet Valves.

For **Bypass**
Open Bypass Valve.
Close Inlet & Outlet Valves.

FIG. 106

EcoWater Systems Bypass Valve

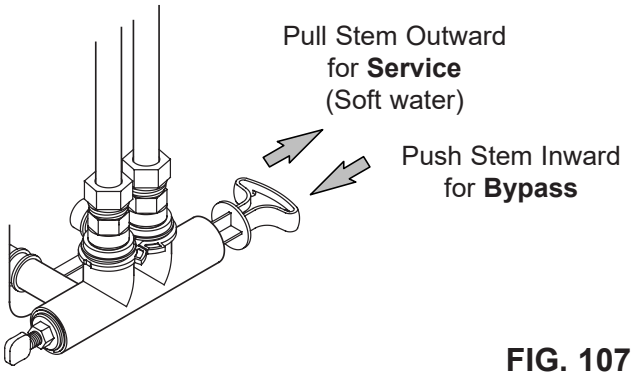


FIG. 107

TROUBLESHOOTING GUIDE

PROBLEM	CAUSE	CORRECTION
Cannot set some conditioner/ refiner parameters and display shows a padlock icon:	Lockout feature is on.	Turn off the lockout feature (See Page 13).
No soft water	No salt in the storage tank.	Add salt (See Page 27) and then initiate a "Recharge now," as shown on Page 15.
	Salt is "bridged."	Break salt bridge (See Page 27) and then initiate a "Recharge now," as shown on Page 17.
	If display is blank, power supply may be unplugged at wall outlet, power cable leads may be disconnected from the electronic control board, fuse may be blown, circuit breaker may be popped, or power supply may be plugged into a switched outlet which is "off."	Check for power loss due to any of these and correct. When power is restored, if the display shows the "Current Time" setting screen (Figure 44 on Page 15), it means time was lost during the outage. Set the current time. Other settings such as hardness are retained in memory during a power loss.
	Bypass valve(s) in bypass position.	Referring to Figure 8 on Page 7, place bypass valve(s) in service position.
	Dirty, plugged or damaged nozzle & venturi.	Take apart, clean and inspect the nozzle & venturi assembly, as shown on Page 28.
	Valve drain hose plugged or restricted.	Drain hose must not have any kinks, sharp bends, or be raised too high above the conditioner/refiner (See Page 7).
Water hard sometimes	Bypassed hard water being used during recharge, due to current time or recharge time settings being incorrect.	Check the current time displayed. If not correct, refer to "Set Current Time" on Page 15. Check the recharge time, as described on Page 16.
	Hardness number setting is too low.	Referring to "Setting Hardness" on Page 16, check the current hardness setting and increase if needed.
	Hot water being used when conditioner/ refiner is recharging.	Avoid using hot water during recharges, because water heater refills with hard water.
	Increase in actual hardness of water supply.	Have unsoftened water sample tested. Referring to Page 16, check the current hardness setting and increase if needed.
	Turbine is not turning freely.	Check turbine, as described on Page 31.
Motor stalled or clicking	Motor malfunction or internal valve fault causing high torque on motor.	Contact your dealer for service.
Error code E1, E3 or E4 displayed.	Fault in wiring harness, connections to position switch, switch, valve or motor.	Contact your dealer for service.
Error code E5 displayed.	Electronic control malfunction.	Contact your dealer for service.

TROUBLESHOOTING - INITIAL CHECKS

Always make these initial checks first:

1. Is display blank? Check power source.
2. Is Error code displayed? If so, go to "Automatic Electronic Diagnostics" on the next page.
3. Is correct time displayed? If not, recharges occur at the wrong time. Set current time (See Page 15.)
4. Is there salt in the brine tank? If not, refill.
5. Is salt "bridged" (See Page 27)?
6. Are plumbing bypass valve(s) in service position (See Figure 8 on Page 7)?
7. Are inlet and outlet pipes connected to the EcoWater conditioner/refiner inlet and outlet respectively?
8. Is valve drain hose free of kinks and sharp bends, and not elevated over 2 meters above the floor.
9. Is the brine tube connected (See Fig. 7 on Page 7)?
10. Check the hardness setting (See "Setting Hardness on Page 16). Be sure it is correct for the household's water supply. Perform a hardness test on a raw water sample to compare with the setting.
11. Perform a hardness test on a conditioned water sample to determine whether a problem exists.

If no problem is found after making the initial checks, proceed to "Troubleshooting - Manual Diagnostics" and "Manual Advance Recharge Check" on the next two pages.

AUTOMATIC ELECTRONIC DIAGNOSTICS

This conditioner/refiner has a self-diagnostic function for the electrical system (except for input power and/or water meter). The controller monitors electronic components and circuits for correct operation. If a malfunction occurs, an **Error code** is displayed (See Figure 108).

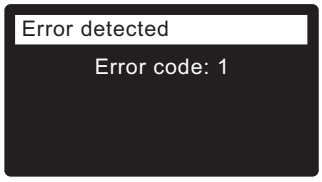


FIG. 108

The troubleshooting chart on the previous page shows the error codes that could appear, and the possible malfunctions for these codes.

When an error code appears in the display, pressing SELECT (○) will display the **Diagnostics** screen (See Page 24), so a service technician can further isolate the problem.

REMOVING ERROR CODE

1. Unplug power supply from electrical outlet.
2. Correct problem.
3. Plug power supply back in.
4. Wait for eight minutes while controller operates valve through an entire cycle. The error code will return if the problem was not corrected.

TROUBLESHOOTING - MANUAL DIAGNOSTICS

1. Display the **Diagnostics** screen, following the procedure on Page 24.
2. Press the DOWN (▼) or UP (▲) buttons to scroll through the list. The following items are displayed:

- **Time** (current)
- **Position time** (counts down the time remaining in the current valve position)
- **Current position** (of the valve: service, fill, brine, backwash, fast rinse or moving) See "Manual Advance Recharge Check" on next page for position verification.
- **Requested position** (of the valve)
- **Motor state** (on or off)
- **Valve position switch** (open or closed)
- **Turbine count** (indicates water flow) See following section for turbine diagnostics.
- **Salt level sensor** (distance reading of sensor)
- **Tank light switch** (open or closed)
- **RF module** (detected or not)
- **Error code**

CHECKING THE TURBINE

1. Display the **Diagnostics** screen, following the procedure on Page 24.
2. Press the DOWN (▼) button to scroll through the list until **Turbine Count** is displayed (See Figure 109).

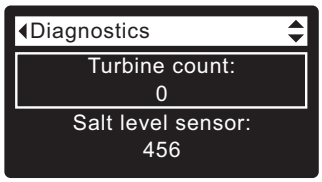


FIG. 109

3. A steady display of "0" (zero) indicates no water flow through the meter (i.e. no conditioned water being used).
4. Open a nearby conditioned water faucet.
5. The number in the display should count upward from 0 and reset for each gallon of flow (at 200 on some models, for example). 1 gallon = 3.78 liters.
6. If the display reading does not change with the faucet open, pull the wire harness from the valve outlet port (See Figure 110).

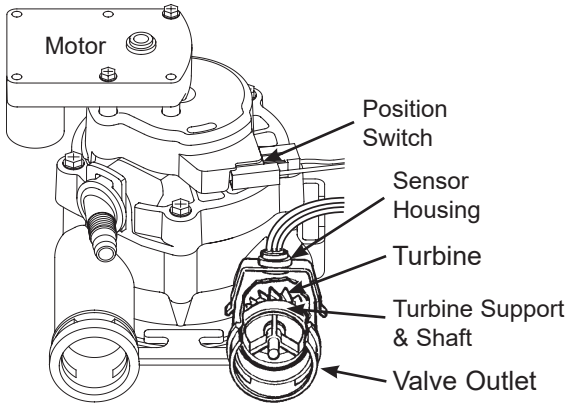


FIG. 110

7. Pass a small magnet back and forth in front of the sensor.
8a. If the displayed **Turbine Count** does count upward with each pass of the magnet, disconnect the outlet plumbing and check the turbine for binding.
8b. If the displayed **Turbine Count** does not count upward with each pass of the magnet, the sensor is probably faulty.

TROUBLESHOOTING - MANUAL ADVANCE RECHARGE CHECK

This check verifies proper operation of the position switch, gear motor, brine tank fill, brine draw, recharge flow rates, and other controller functions. Always make the Initial Checks (See Page 30) and the Manual Diagnostics (See Page 31) first.

1. Display the **Diagnostics** screen, following the procedure on Page 24.

2. Press the DOWN (▼) button to scroll through the list until **Valve position switch** is displayed (See Figure 111).

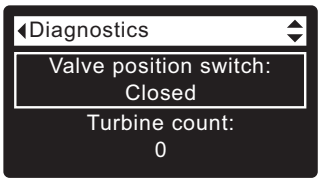


FIG. 111

3. Verify that when the switch plunger is down (into one of the detents on the valve motor cam), this screen reads **Open**. When the valve cam is rotating (for example, after Step 7, below) , the switch plunger will be up and this screen should read **Closed**.

4. Press the UP (▲) button to scroll through the list until **Current position** is displayed (See Figure 112).

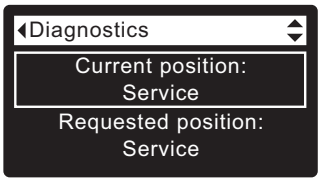


FIG. 112

5. Verify that the valve position indicator on the motor cam agrees with the position displayed on the screen

6. Remove the brinewell cover.

7. With the Diagnostics screen displayed, press the RIGHT (▶) button once to advance the valve from **Service** to **Fill**.

8. Shine a flashlight into the brinewell and observe fill water entering the tank.

9. If water does not enter the tank, look for an obstructed nozzle / venturi, fill flow plug or brine tube (See Figure 105 on Page 28).

10. After verifying fill, press the RIGHT (▶) button once to move the valve into **Brine***. A slow flow of water to the drain will begin. Verify brine draw from the brine tank by shining the flashlight into the brinewell to observe a noticeable drop in the liquid level.

* If the 2nd Backwash option is set (See Page 20), the valve will enter backwash and fast rinse before brine.

11. If the unit does not draw brine, check for:
- Dirty or defective nozzle / venturi (See Page 28)
- Nozzle / venturi not seated on the gasket or gasket not sealing properly
- Restriction in valve drain, causing back pressure (bends, kinks, elevated too high, etc.)
- Obstruction in valve or brine tubing
- Internal valve fault (obstructed outlet disc, wave washer faulty etc.)

12. With the Diagnostics screen displayed, once again press the RIGHT (▶) button to advance the valve to **Backwash**.

13. Look for a fast flow of water from the drain hose. If flow is slow, check for a plugged top distributor, backwash flow plug or drain hose

14. With the Diagnostics screen displayed, once again press the RIGHT (▶) button to advance the valve to **Fast rinse**.

15. Again, look for a fast flow of water from the drain hose. Allow the unit to rinse for several minutes to flush out any brine that may remain from the brine cycle test.

16. With the Diagnostics screen displayed, once again press the RIGHT (▶) button to return the valve to the **Service** position.

IMPORTANT: Always return the valve to the **Service** position before exiting this procedure.

OTHER SERVICE

Hard Water Bypass (Hard water “bleeds” into conditioned water supply):

1. Faulty inlet disc, seal or wave washer (See Pages 38 through 41).
2. Missing or faulty o-ring(s) at valve connection to riser pipe.

Water Leaks from Drain Hose during service:

1. Faulty inlet disc, seal or wave washer.
2. Faulty o-ring on inlet disc shaft.
3. Faulty outlet disc, seal or wave washer.

Flooded Salt Tank:

1. Nozzle / venturi plugged.
2. Faulty valve seals.
3. Restricted or plugged backwash / fast rinse controls.
4. Restricted or plugged drain line.

Water Has Salty Taste:

1. House water pressure low. Adjust well pump.
2. Partially restricted valve drain hose, top distributor, backwash flow plug, resin tank internal riser pipe, or bottom distributor.
3. Backwash and fast rinse times have been reduced from default settings.
4. Wrong model code.

WIRING SCHEMATIC

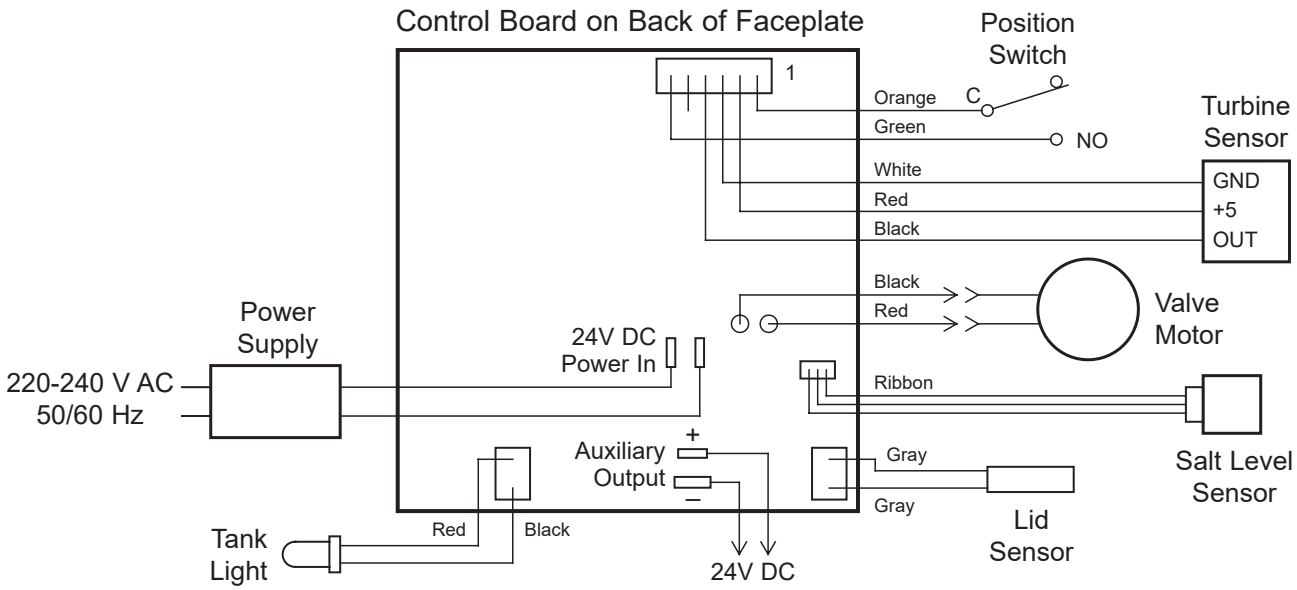
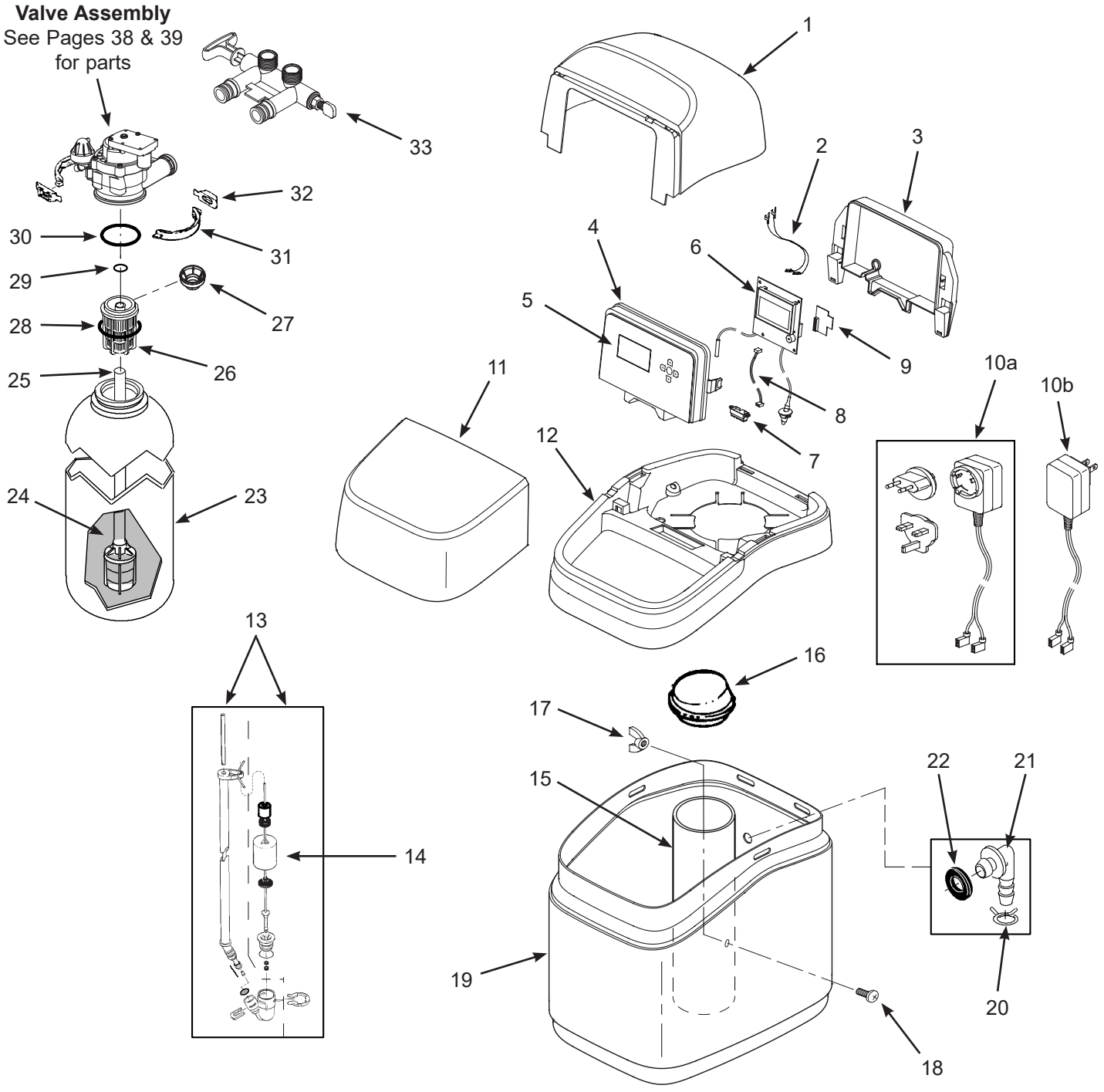


FIG. 113

ECOWATER SYSTEMS CONDITIONER ASSEMBLY

(eVOLUTION Models 100 Compact & 200 Compact)



ECOWATER SYSTEMS CONDITIONER ASSEMBLY

(eVOLUTION Models 100 Compact & 200 Compact)

Key No.	Part No.	Description
1	7353292	Cover, Top
2	7250826	Power Cable
3	7353284	Support, Faceplate
–	7357848	Repl. Faceplate Assembly (includes Key Nos. 4-8)
4	↑	Faceplate
5	↑	Keypad/Decal
6	↑	Electronic Controller (PWA), with Tank Light Assembly & Lid Sensor
–	7357872	Repl. Salt Level Sensor Assembly (includes Key Nos. 7 & 8)
7	↑	Salt Level Sensor, Short Range (also incl. in Repl. Faceplate Asm.)
8	↑	Cable, Salt Level Sensor (also incl. in Repl. Faceplate Asm.)
9	7341520	Repl. Wi-Fi Board
10a	7366130	Power Supply, 24V DC, with Snap-in Plugs for Europe & UK
10b	7351054	Power Supply, 24V DC, with Plug for North America ✱
11	7353268	Salt Lid
12	7353250	Rim
13	7310113	Brine Valve Assembly, 100 Compact
	7310147	Brine Valve Assembly, 200 Compact
14	7269516	Float, Stem & Guide Assembly, 100 Compac)
	7269508	Float, Stem & Guide Assembly, 200 Compact
15	7267043	Brinewell, 100 Compact
	7326928	Brinewell, 200 Compact
16	0500283	Cover, Brinewell, 100 Compact
	7155115	Cover, Brinewell, 200 Compact

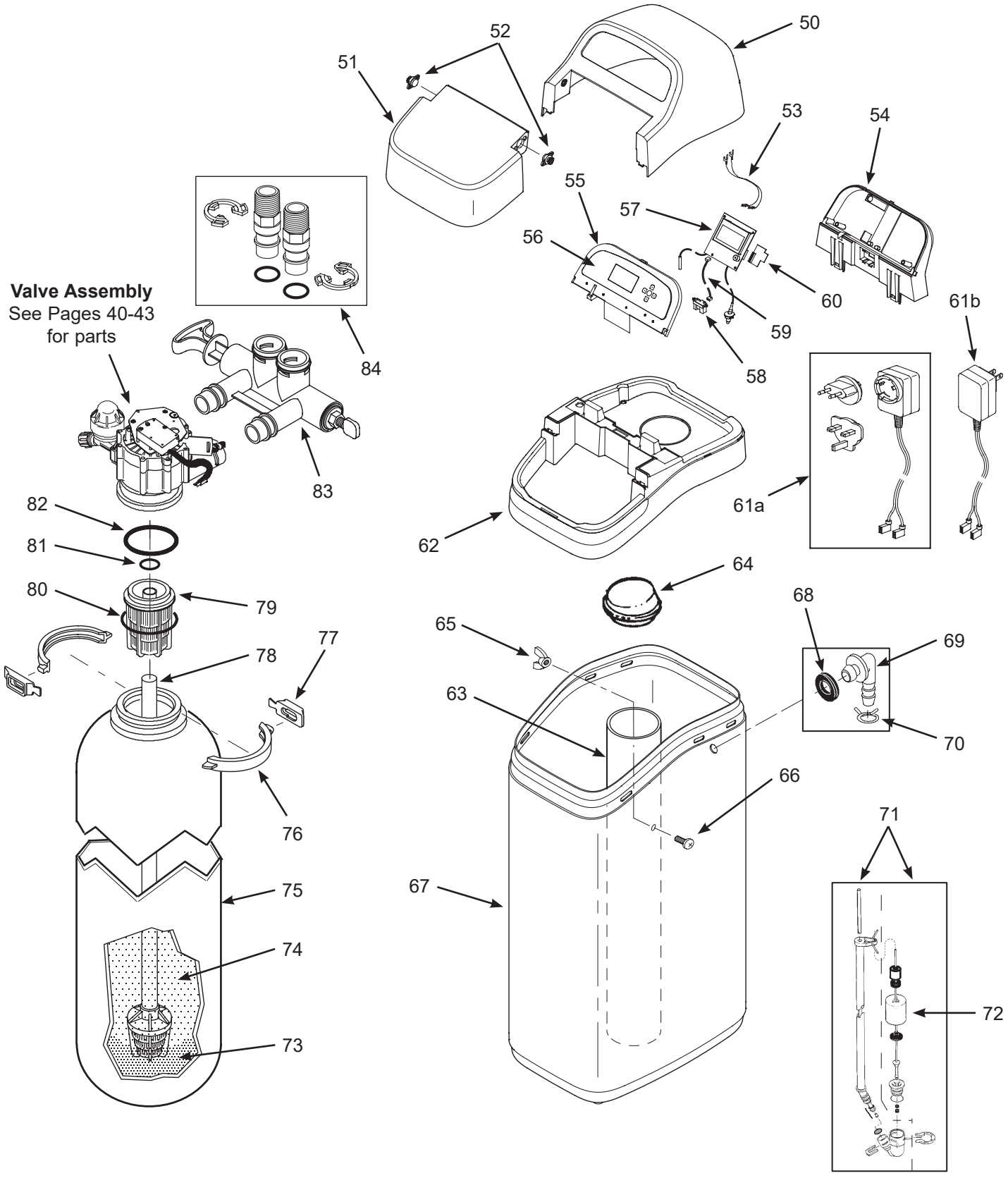
Key No.	Part No.	Description
–	7357822	Brinewell Mounting Hardware Kit, (includes Key Nos. 17 & 18)
17	↑	Nut
18	↑	Screw
19	7353137	Repl. Brine Tank, 100 Compact
	7353145	Repl. Brine Tank, 200 Compact
–	7331258	Overflow Hose Adaptor Kit (includes Key Nos. 20-22)
20	↑	Hose Clamp ✱
21	↑	Adaptor Elbow
22	↑	Grommet
23	7268950	Resin Tank, 22.9 cm dia. x 35.6 cm, 100 Compact
	7256377	Resin Tank, 20.3 cm dia. x 48.3 cm, 200 Compact
24	RMH001	Resin, per liter
	30437	Resin, 25 liter bag
25	7105047	Repl. Bottom Distributor
26	7088855	Top Distributor, 100 Compact
	7077870	Top Distributor, 200 Compact
27	7265025	Screen, 100 Compact only
–	7112963	Distributor O-Ring Kit (includes Key Nos. 28-30)
28	↑	O-Ring, 69.9 x 76.2 mm
29	↑	O-Ring, 20.6 x 27.0 mm
30	↑	O-Ring, 73.0 x 82.6 mm
–	7331177	Tank Neck Clamp Kit (includes 2 ea. of Key Nos. 31 & 32)
31	↑	Clamp Section (2 req.)
32	↑	Retainer Clip (2 req.)
33	7328051	Blending Bypass Valve, 3/4", Threaded ✱
■	7327631	Blending Bypass Valve, 3/4", Clip Style ✱

■ Not illustrated

✱ Not included with conditioner/refiner

ECOWATER SYSTEMS CONDITIONER ASSEMBLY

(eVOLUTION Models 300 Boost, 400 Boost, 500 Power, 500 Power SDV & Refiners)



ECOWATER SYSTEMS CONDITIONER ASSEMBLY

(eVOLUTION Models 300 Boost, 400 Boost, 500 Power, 500 Power SDV & Refiners)

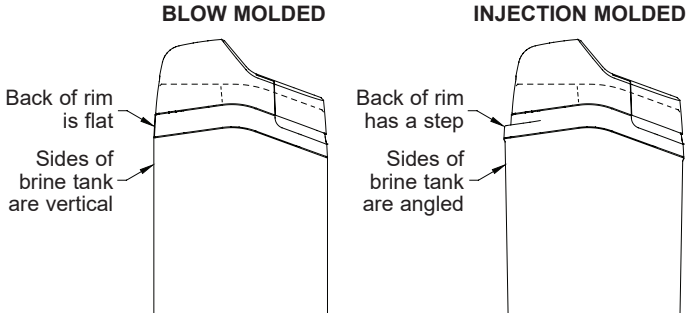
Key No.	Part No.	Description
–	7354808	Cover Assembly (incl. Key Nos. 50-52)
50	↑	Cover, Top
51	↑	Salt Lid, with magnet
52	↑	Damper/Hinge (2 req.)
53	7250826	Power Cable
54	7367851	Support, Faceplate
–	7357856	Repl. Faceplate Asm. (incl. Key Nos. 55-59)
55	↑	Faceplate
56	↑	Keypad/Decal
57	↑	Electronic Controller (PWA), with Tank Light Assembly & Lid Sensor
–	7357880	Repl. Salt Level Sensor Assembly (includes Key Nos. 58 & 59)
58	↑	Salt Level Sensor, Long Range (also incl. in Repl. Faceplate Asm.)
59	↑	Cable, Salt Level Sensor (also incl. in Repl. Faceplate Asm.)
60	7341520	Repl. Wi-Fi Board
61a	7366130	Power Supply, 24V DC, with Snap-in Plugs for Europe & UK
61b	7351054	Power Supply, 24V DC, with Plug for North America ✱
62	7353307	Rim, 300 Boost (any), 400 Boost & 500 Power with Blow Molded Brine Tank ♦
	7357521	Rim, Refiner Boost (any), Refiner Power with Blow Molded Brine Tank ♦
	7384895	Rim, 400 Boost & 500 Power with Injection Molded Brine Tank
	7387097	Rim, Refiner Power with Injection Molded Brine Tank
63	7267027	Brinewell (300 Boost & Refiner Boost)
	7109871	Brinewell (400 Boost, 500 Power & Refiner Power)
64	7155115	Cover, Brinewell
–	7357822	Brinewell Mounting Hardware Kit, (includes Key Nos. 65 & 66)
65	↑	Nut
66	↑	Screw
67	7353179	Brine Tank, 300 Boost & Refiner Boost
	7353187	Brine Tank, Blow Molded, 400 Boost, 500 Power & Refiner Power ♦
	7384887	Brine Tank, Injection Molded, 400 Boost, 500 Power & Refiner Power

Key No.	Part No.	Description
–	7331258	Overflow Hose Adaptor Kit (incl. Nos. 68-70)
68	↑	Grommet
69	↑	Adaptor Elbow
70	↑	Hose Clamp ✱
71	7310163	Brine Valve Assembly, 300 Boost & Refiner Boost
	7310210	Brine Valve Assembly, 400 Boost, 500 Power & Refiner Power
72	7293395	Float, Stem & Guide Assembly, 300 Boost & Refiner Boost
	7327568	Float, Stem & Guide Assembly, 400 Boost, 500 Power & Refiner Power
73	WSM001	Gravel, 8 kg req.
74	RMH001	Resin, per liter
	30437	Resin, 25 liter bag
75	7264037	Resin Tank, 20.3 cm dia. x 63.5 cm, 300 Boost
	7304235	Resin Tank, 20.3 cm dia. x 88.9 cm, 400 Boost
	7113066	Resin Tank, 25.4 cm dia. x 88.9 cm L, 500 Power with Blow Molded Brine Tank ♦
	7334696	Resin Tank, 25.4 cm dia. x 88.9 cm S, 500 Power with Injection Molded Brine Tank
	7342110	Filled Media Tank, 20.3 cm dia. x 63.5 cm, Refiner Boost ❶
	7342128	Filled Media Tank, 25.4 cm dia. x 88.9 cm L, Refiner Power w/Blow Mold Brine Tank ♦ ❶
	7391193	Filled Media Tank, 25.4 cm dia. x 88.9 cm S, Refiner Power w/Injection Mold Brine Tank ❶
–	7331177	Tank Neck Clamp Kit (includes 2 ea. of Key Nos. 76 & 77)
76	↑	Clamp Section (2 req.)
77	↑	Retainer Clip (2 req.)
78	7105047	Repl. Bottom Distributor
79	7077870	Top Distributor
–	7112963	Distributor O-Ring Kit (incl. Key Nos. 80-82)
80	↑	O-Ring, 69.9 x 76.2 mm
81	↑	O-Ring, 20.6 x 27.0 mm
82	↑	O-Ring, 73.0 x 82.6 mm
83	7329594	Blending Bypass Valve, 1" ✱
84	7342704	Installation Adaptor Kit, 1" ✱ (2 ea. adaptors, o-rings & clips)

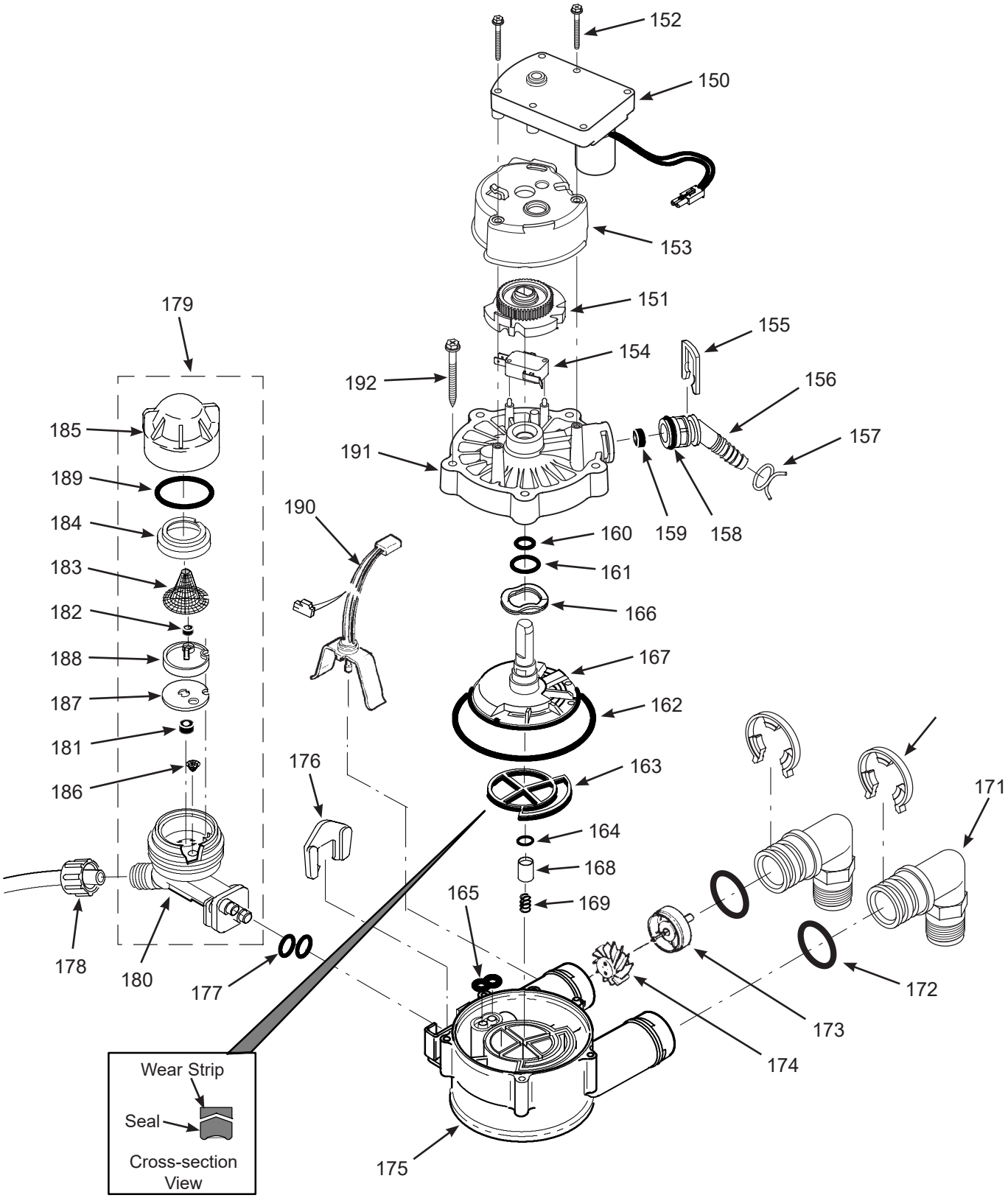
♦ Blow molded brine tanks were used exclusively prior to 2022, and on some units manufactured later. Rims for blow molded brine tanks will only fit that type, and rims for injection molded brine tanks will only fit that type. See illustration at right.

❶ Filled media tank for refiner includes activated carbon, resin, top and bottom distributors, associated o-rings, neck clamp kit and shipping cap, assembled.

✱ Not included with conditioner/refiner



3/4" VALVE ASSEMBLY (eVOLUTION Models 100 Compact & 200 Compact)



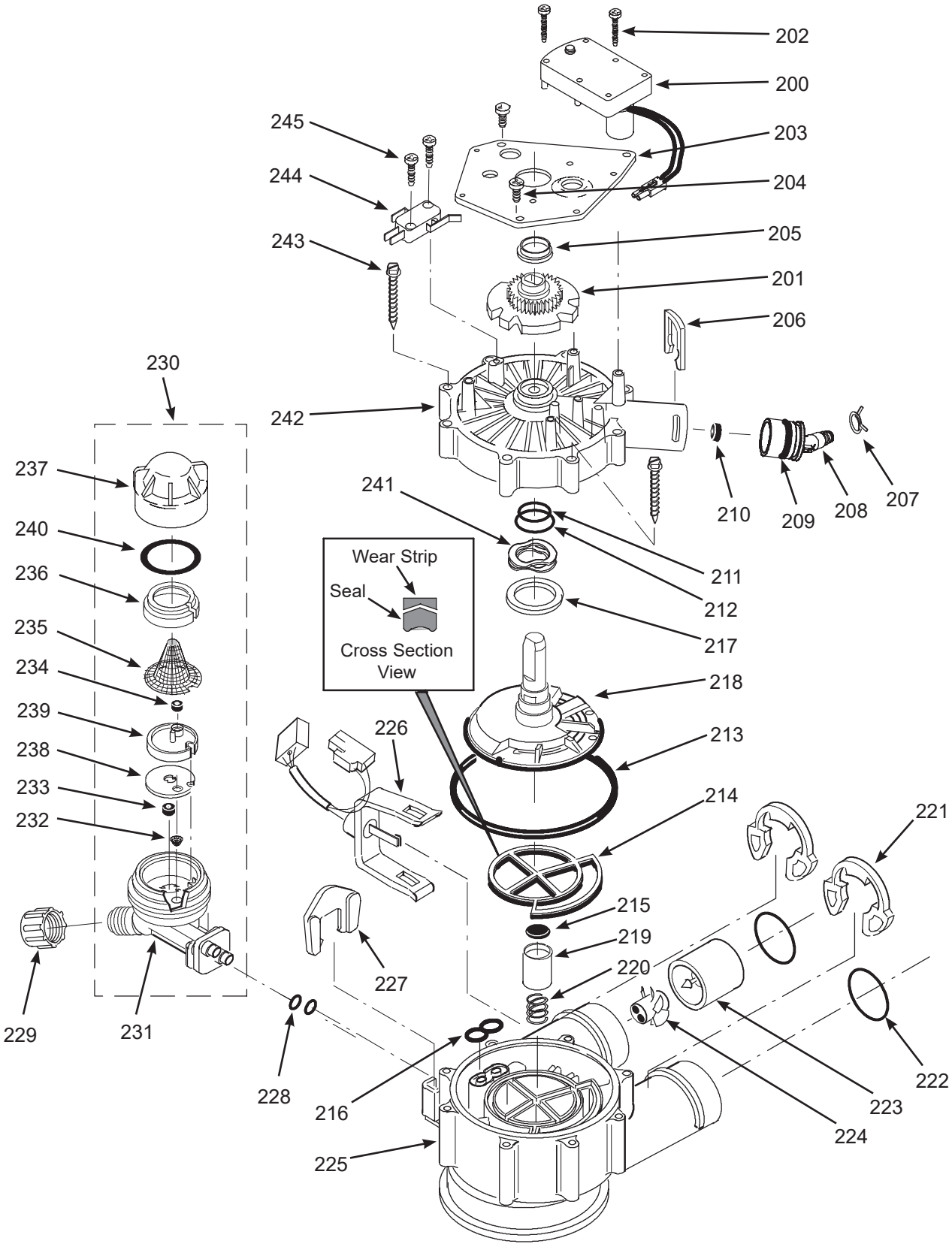
3/4" VALVE ASSEMBLY (eVOLUTION Models 100 Compact & 200 Compact)

Key No.	Part No.	Description
–	7397864	Motor, Cam & Gear Kit, 3/4" (includes Key Nos. 150-153)
150	↑	Motor
151	↑	Cam & Gear
152	↑	Screw, #6-19 x 3.5 cm (2 req.)
153	↑	Motor Mount
154	7030713	Switch
–	7331185	Drain Hose Adaptor Kit (includes Key Nos. 155-159)
155	↑	Clip, Drain
156	↑	Drain Hose Adaptor
157	↑	Hose Clamp
158	↑	O-Ring, 15.9 x 20.6 mm
159	↑	Flow Plug, 7.6 lpm
–	7129716	Seal Kit (includes Key Nos. 160-165)
160	↑	O-Ring, 11.1 x 15.9 mm
161	↑	O-Ring, 19.1 x 23.8 mm
162	↑	O-Ring, 85.7 x 92.1 mm
163	↑	Repl. Rotor Seal
164	↑	O-Ring, 9.5 x 14.3 mm
165	↑	Seal, Nozzle & Venturi
166	7082087	Wave Washer
167	7199232	Repl. Rotor & Disc
–	7342665	Drain Plug Kit, 3/4" (includes Key Nos. 164, 168 & 169)
168	↑	Plug, Drain Seal
169	↑	Spring
170	7337563	Clip, 3/4", pack of 4

Key No.	Part No.	Description
171	7255583	Installation Adaptor Elbow, 90°, pack of 2, including O-Rings & Silicone Grease (See Key No. 172), provided with 100 Compact only
172	7390668	O-Ring, 23.8 x 30.2 mm, pack of 2, including Silicone Grease
	7337571	O-Ring, 23.8 x 30.2 mm, pack of 4
–	7113040	Turbine & Support Assembly, including 2 O-Rings (See Key No. 172) & 1 ea. of Key Nos. 173 & 174
173	↑	Turbine Support & Shaft
174	↑	Turbine
175	7082053	Valve Body
176	7081201	Retainer, Nozzle & Venturi
177	7342649	O-Ring, 6.4 x 9.5 mm, pack of 2
178	1202600	Nut - Ferrule
179	7268421	Nozzle & Venturi Assembly
180	7081104	Housing, Nozzle & Venturi
181	7084607	Fill Flow Plug, .57 lpm
182	0521829	Flow Plug, .38 lpm
183	7146043	Screen
184	7167659	Screen Support
185	7199729	Cap
–	7298549	Repl. Nozzle, Venturi & Gasket Kit (includes Key Nos. 186-189)
186	↑	Cone Screen
187	↑	Gasket, Nozzle & Venturi
188	↑	Disc, Nozzle & Venturi
189	↑	O-Ring, 28.6 x 34.9 mm
190	7311779	Wire Harness, Position Switch
191	7337466	Valve Cover
192	7342657	Screw, #10-14 x 5 cm, pack of 5

1” SINGLE DISC VALVE ASSEMBLY

(Models 300 Boost, 400 Boost, 500 Power SDV, Refiner Boost & Refiner Power SDV)



1” SINGLE DISC VALVE ASSEMBLY

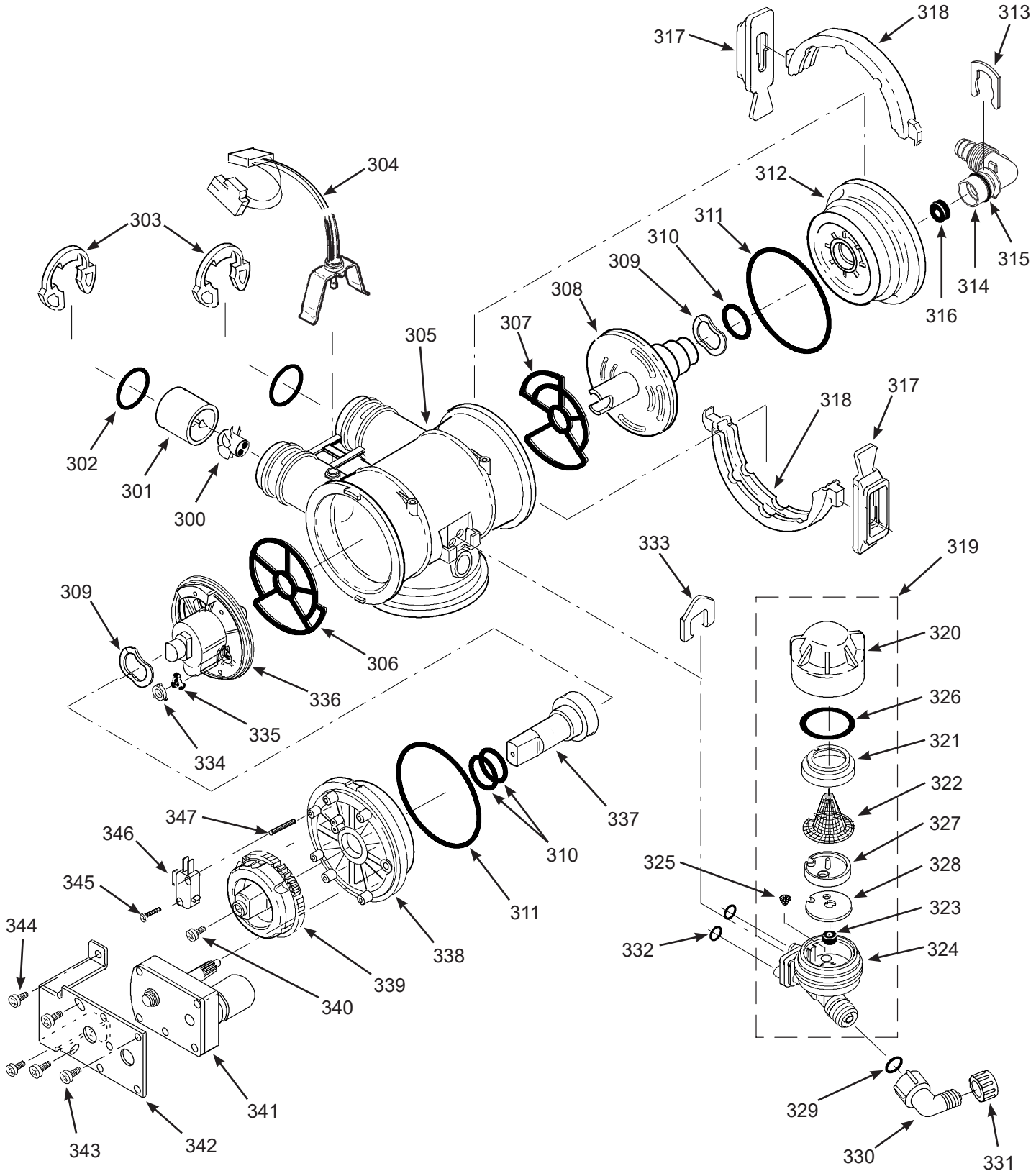
(Models 300 Boost, 400 Boost, 500 Power SDV, Refiner Boost & Refiner Power SDV)

Key No.	Part No.	Description
–	7384691	Motor, Cam & Gear Kit, 1” (includes Key Nos. 200-202)
200	↑	Motor
201	↑	Cam & Gear
202	7224087	Screw, #8-32 x 2.5 cm (2 req.)
203	7231393	Motor Plate
204	0900857	Screw, #6-20 x .95 cm (3 req.)
205	7171250	Bearing
–	7331169	Drain Hose Adaptor Kit (includes Key Nos. 206-210)
206	↑	Clip, Drain
207	↑	Hose Clamp
208	↑	Drain Hose Adaptor
209	↑	O-Ring, 23.8 x 30.2 mm
210	↑	Flow Plug, 7.6 lpm
–	7185487	Seal Kit (includes Key Nos. 211-216)
211	↑	O-Ring, 15.9 x 20.6 mm
212	↑	O-Ring, 28.6 x 38.1 mm
213	↑	O-Ring, 114.3 x 123.8 mm
214	↑	Repl. Rotor Seal
215	↑	Seal
216	↑	Seal, Nozzle & Venturi
217	7174313	Bearing, Wave Washer
218	7185500	Repl. Rotor & Disc
–	7342712	Drain Plug Kit, 1” (includes Key Nos. 215, 219 & 220)
219	↑	Plug, Drain Seal
220	↑	Spring
221	7337589	Clip, 1”, pack of 4
222	7337597	O-Ring, 27.0 x 33.3 mm, pack of 4
–	7290931	Turbine & Support Assembly, including 2 O-Rings (See Key No. 222) & 1 ea. of Key Nos. 223 & 224

Key No.	Part No.	Description
223	↑	Turbine Support & Shaft
224	↑	Turbine
225	7171145	Valve Body
226	7309811	Wire Harness, Position Switch
227	7081201	Retainer, Nozzle & Venturi
228	7342649	O-Ring, 6.4 x 9.5 mm, pack of 2
229	1202600	Nut - Ferrule
230	7238450	Nozzle & Venturi Assembly (incl. Key Nos. 227, 228 & 231-240)
-	7253808	Nozzle & Venturi Assembly for 500 Power SDV & Refiner Power SDV (incl. Key Nos. 227, 228 & 231-240)
231	7081104	Housing, Nozzle & Venturi
232	7095030	Cone Screen
233	1148800	Flow Plug, 1.1 lpm
234	0521829	Flow Plug, .38 lpm
-	7084607	Flow plug, .15 lpm (for 500 Power SDV & Refiner Power SDV)
235	7146043	Screen
236	7167659	Screen Support
237	7199729	Cap
–	7290957	Repl. Nozzle, Venturi & Gasket Kit (includes Key Nos. 238-240)
	7298913	Repl. Nozzle, Venturi & Gasket Kit for 500 Power SDV & Refiner Power SDV (includes Key Nos. 238-240)
238	↑	Gasket, Nozzle & Venturi
239	↑	Disc, Nozzle & Venturi
240	↑	O-Ring, 28.6 x 34.9 mm
241	7175199	Wave Washer
242	7171161	Valve Cover
243	7342681	Screw, #10 x 6.7 cm, pack of 8
244	7305150	Switch
245	7140738	Screw, #4-24 x 1.9 cm (2 req.)

1” DUAL DISC VALVE ASSEMBLY (Models 500 Power & Refiner Power)

Models 500 Power SDV & Refiner Power SDV: see page 40



1” DUAL DISC VALVE ASSEMBLY (Models 500 Power & Refiner Power)

Models 500 Power SDV & Refiner Power SDV: see page 41

Key No.	Part No.	Description
–	7290931	Turbine & Support Assembly, including 2 O-Rings (See Key No. 302) & 1 ea. of Key Nos. 300 & 301), 500 Power & Refiner Power
	7331703	Turbine & Support Assembly (includes 1 ea. of Key Nos. 300, 301 & 2 ea. of Key No. 302), 600 Power
300	↑	Turbine
301	↑	Turbine Support & Shaft
302	7337597	O-Ring, 27.0 x 33.3 mm, pack of 4
303	7337589	Clip, 1”, pack of 4
304	7309811	Wire Harness w/pos. switch conn.
305	7159949	Disc Valve Housing
306	7334133	Outlet End Seal ❶
307	7334125	Inlet End Seal ❶
–	7135270	Inlet & Outlet End Seal Kit (includes 1 ea. of Key Nos. 306 & 307)
308	7390236	Inlet Disc, single ❶
	7368475	Inlet Disc, pack of 10
309	7058216	Wave Washer (2 req.)
310	7170220	O-Ring, 19.1 x 23.8 mm (3 req.) ❶
311	7170296	O-Ring, 73.0 x 82.6 mm (2 req.)
312	7077498	Inlet End Cap
313	7142942	Clip, Drain
314	7219066	Drain Elbow
315	7170327	O-Ring, 15.9 x 20.6 mm
316	7097969	Flow Plug, Fast Rinse, 11.3 lpm
–	7331177	Tank Neck Clamp Kit (includes 2 ea. of Key Nos. 317 & 318)
317	↑	Retainer Clip (4 req.) ❷
318	↑	Clamp Section (4 req.) ❷

Key No.	Part No.	Description
319	7091866	Nozzle & Venturi Assembly (includes Key Nos. 320-328)
320	7199729	Cap
321	7167659	Screen Support
322	7146043	Screen
323	1148800	Flow Plug, 1.1 lpm
324	7081104	Housing, Nozzle & Venturi
325	7095030	Cone Screen
–	7290957	Repl. Nozzle, Venturi & Gasket Kit (includes Key Nos. 326-328)
326	↑	O-Ring, 28.6 x 34.9 mm
327	↑	Disc, Nozzle & Venturi
328	↑	Gasket, Nozzle & Venturi
329	7292323	O-Ring, 4.8 x 11.1 mm
330	7120526	Elbow, 90°
331	1202600	Nut - Ferrule
332	7342649	O-Ring, 6.4 x 9.5 mm, pack of 2
333	7081201	Clip, Nozzle & Venturi
334	7078313	Retainer ❶
335	7104570	Flow Washer, Backwash, 6.4 lpm
336	7390244	Outlet Disc, single ❶
	7368483	Outlet Disc, pack of 10
337	7091329	Driver, Outlet Disc
338	7159965	Outlet End Cap
339	7283497	Cam & Gear
340	7203104	Washerhead Screw, #8-18 x 1.27 cm
341	7281275	Motor, incl. Key No. 342
342	7289702	Bracket, Motor
343	7168524	Screw, #10-32 x 0.8 cm (3 req.)
344	7103972	Screw, #8-18 x 1.1 cm (2 req.)
345	7140738	Screw, #4-24 x 1.9 cm
346	7145186	Switch
347	7140746	Expansion Pin

❶ Included in Disc Kit, #7218688

❷ Not all parts are shown

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