

# OWNER'S MANUAL

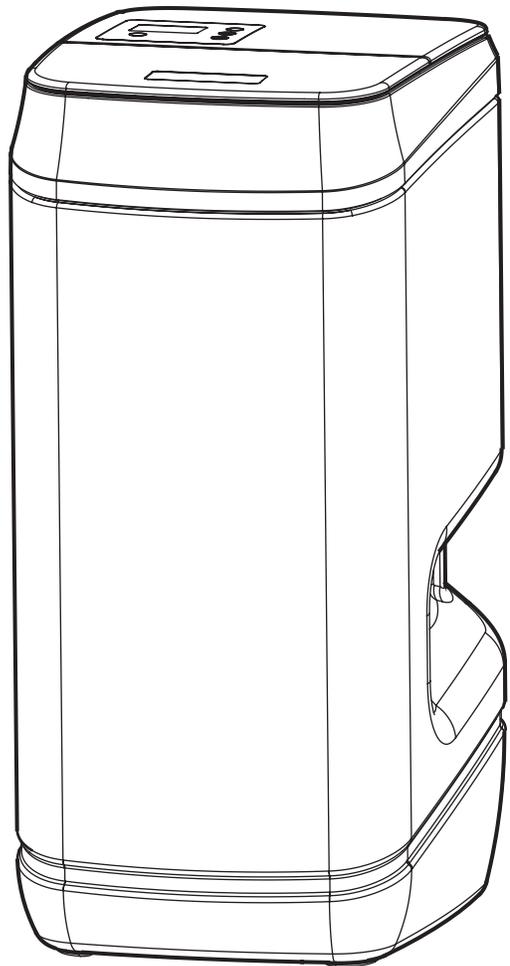
How to install, operate and maintain your  
**A-Plus Water Softener**

Models

**9A+**

**15A+**

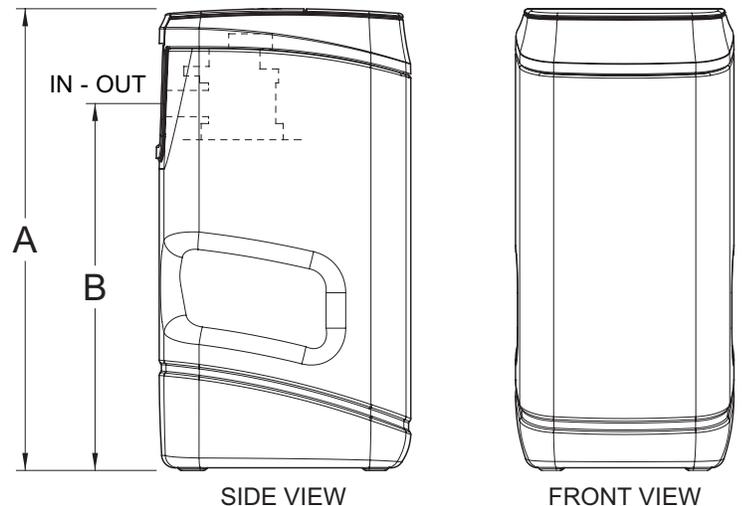
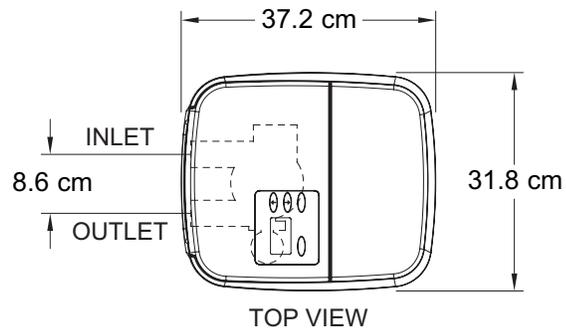
**20A+**



# Water Softener Specifications

	9A+	15A+	20A+
Model Code	Ed 9	Ed15	Ed20
Rated Softening Capacity (mol @ kg. salt dose)	1.36 @ 0.27 4.60 @ 2.27	4.72 @ 0.68 10.81 @ 3.63	6.80 @ 1.13 17.22 @ 5.08
Rated Efficiency (mol/kg. of salt at min. salt dose)	4.99	6.94	5.99
Service Flow Rate (L/min.)	15.1	18.9	22.7
Pressure Drop at Service Flow Rate (bar)	0.21	0.48	0.63
Amount of High Capacity Ion Exchange Resin (L)	9.0	14.2	19.9
Water Supply Max. Hardness (ppm)	856	856	1626
Water Supply Max. Clear Water Iron (ppm)	3	4	5
Min.-Max. Working Pressure (bar)	1.3 - 8.5		
Min.-Max. Operating Temperature (°C)	4 - 49		
Min. Water Supply Flow Rate (L/min.)	11.36		
Max. Flow Rate (L/min.) to Drain during Recharge	7.6		

## Water Softener Dimensions



Model	Nominal Resin Tank Size	Dimension A	Dimension B
9A+	22.9 x 35.6 cm	54.8 cm	41.0 cm
15A+	20.3 x 63.5 cm	83.5 cm	69.7 cm
20A+	20.3 x 88.9 cm	108.0 cm	94.2 cm

# Installation

## THE PROPER ORDER TO INSTALL WATER TREATMENT EQUIPMENT

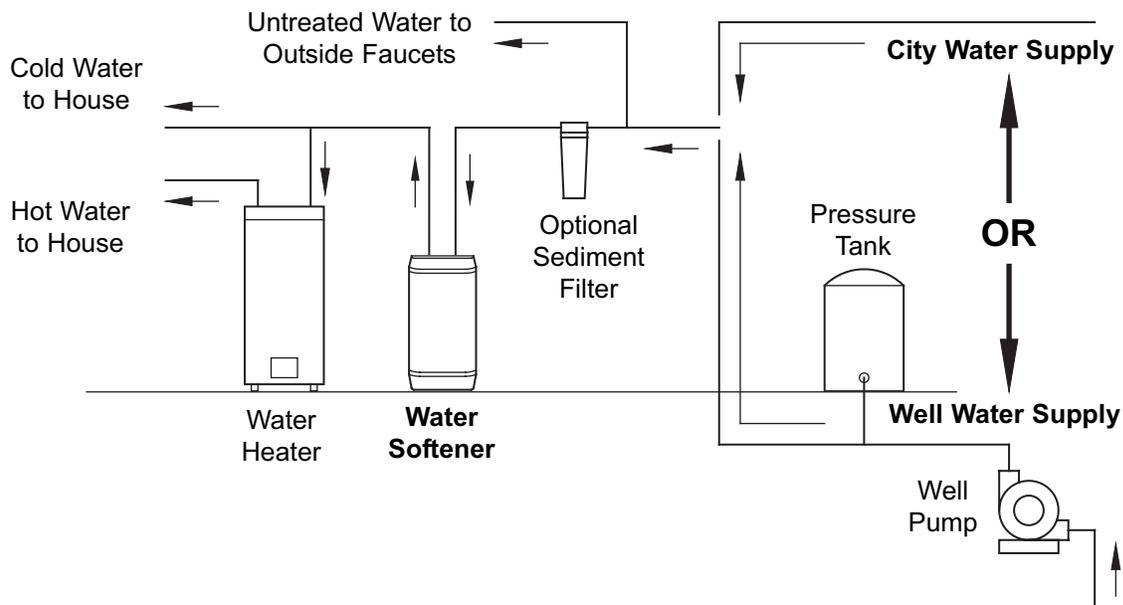


FIG. 1

## REQUIREMENTS

- Always install either a single bypass valve (See Figure 3A) or a 3-valve bypass system (See Figure 3B). Bypass valves allow you to turn off water to the softener for repairs if needed, but still have water in house pipes.
- A drain is needed for recharge discharge water. A floor drain is preferred, close to the water softener (See Figure 4). A laundry tub, standpipe, etc., are other options (See Figure 2).
- A 230V, 50 Hz, grounded, continuously “live” electrical outlet is needed, in a dry location within 2 meters of the water softener.

### SINGLE BYPASS VALVE

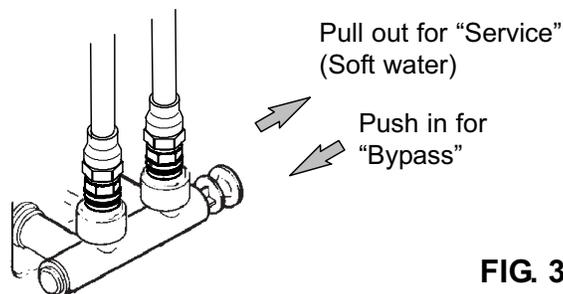


FIG. 3A

### 3 VALVE BYPASS

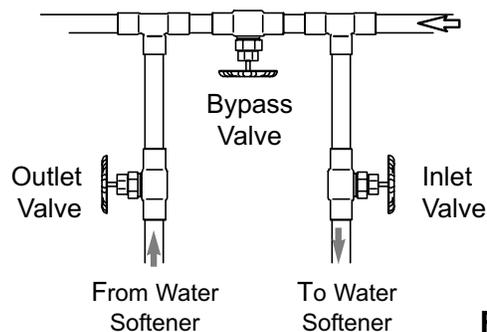


FIG. 3B

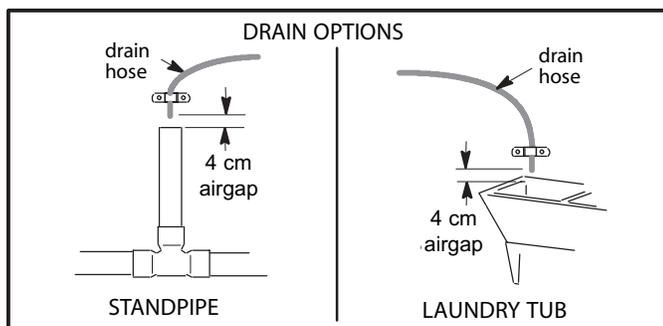


FIG. 2

# Installation

## TYPICAL INSTALLATION

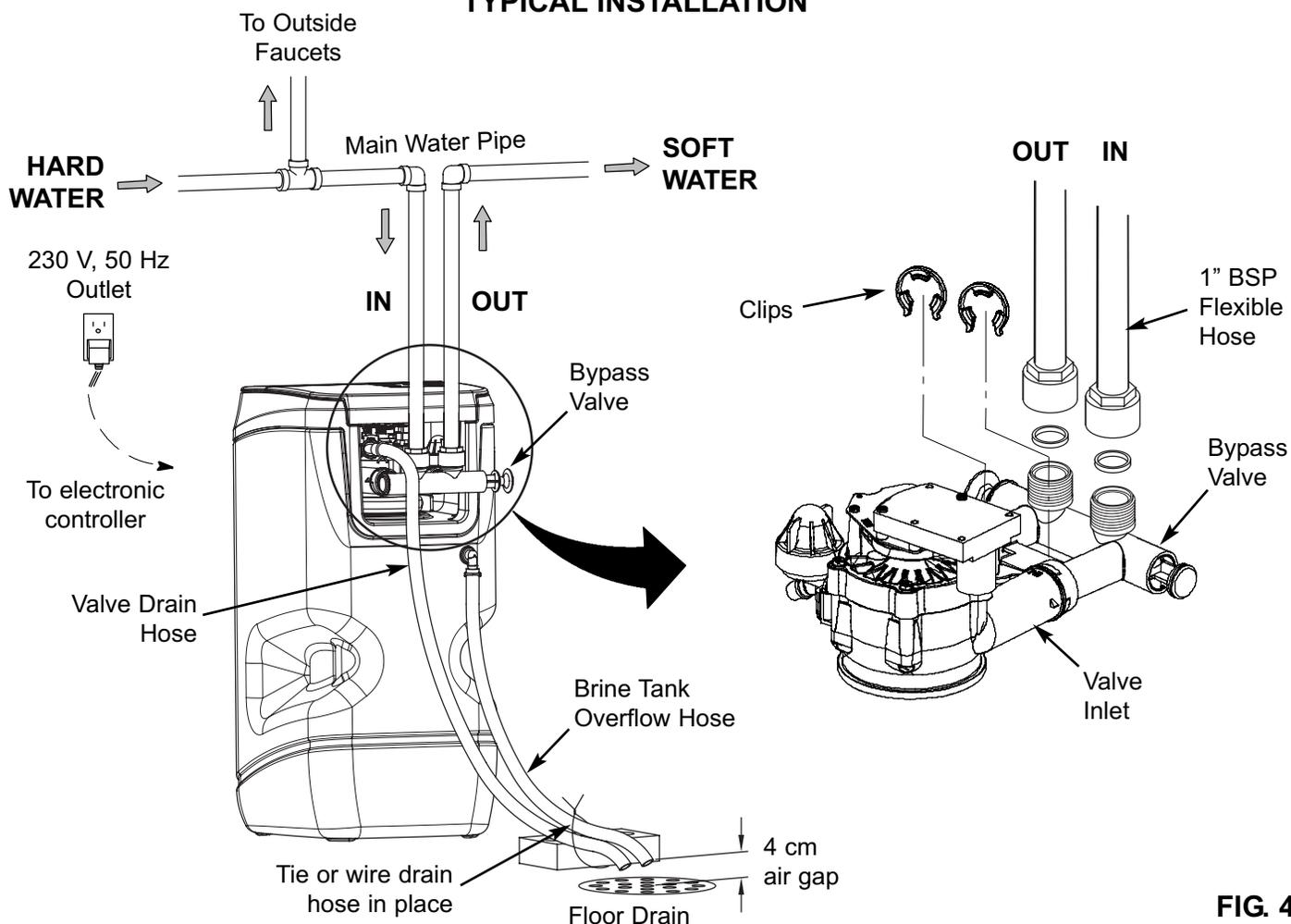


FIG. 4

### 1. INSTALL BYPASS VALVE

- If installing a single bypass valve, put lubricated o-ring seals onto both bypass valve ports. Carefully slide the bypass valve into the softener valve and install the "C" clips (See Figure 4).
- Connect flexible hoses to the bypass valve (See Figure 4).  
**NOTE:** For lubrication, use silicone grease approved for potable water supplies.

### 2. TURN OFF WATER SUPPLY

- Close the main water supply valve near the well pump or water meter.
- Shut off the electric or fuel supply to the water heater.
- Open high and low faucets to drain all water from the house pipes.

### 3. INSTALLING THREE-VALVE BYPASS

If installing a 3-valve bypass system, plumb as needed using Figure 3B 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.

### 4. ASSEMBLE INLET & OUTLET PLUMBING

Measure, cut, and loosely assemble pipe and fittings from the main water pipe.  
Be sure **hard water** supply pipe **goes to the valve inlet side**. Trace the water flow direction to be sure.

### 5. CONNECT INLET & OUTLET PLUMBING

#### a. SOLDERED COPPER

- Thoroughly clean and flux all joints.
- 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.
- Make all solder connections. Be sure to keep fittings fully together, and pipes square and straight.

#### b. THREADED PIPE

- Apply pipe joint compound to all outside pipe threads.
- Tighten all threaded joints.
- If soldering to the inlet and outlet tubes, observe Step 5a above.

continued on next page

### 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 5a above.

## 6. INSTALL VALVE DRAIN HOSE

**NOTE:** See valve drain options on Page 3.

- 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 softener 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 4, 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.

## 7. 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.

## 8. PRESSURE TESTING FOR LEAKS

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

- a. Fully open two or more **softened** cold water faucets nearby the water softener.
- b. Place the bypass valve(s) in **bypass** position (See Figure 2).
- 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. **EXACTLY** as follows, place bypass valve(s) into **service**:
  - (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.
- e. After about three minutes, open a hot water faucet for one minute, or until all air is expelled, then close.
- f. Close all cold water faucets and check your plumbing work for leaks.

## 9. ADD WATER TO THE BRINE TANK

Using a pail or garden hose, add about 10 liters of water into the brine tank.

## 10. SANITIZING THE SOFTENER

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

- a. Open the salt lid and pour about 40 ml (2 to 3 tablespoons) of common household bleach into the softener brine tank. Clorox, Linco, Bo Peep, White Sail, Eagle, etc., are brand names of bleach readily available.
- b. The final step in the sanitizing procedure is done as you complete the following steps, including electronic controller programming on Page 6.

## 11. ADD SALT TO THE BRINE TANK

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

## 12. CONNECT TRANSFORMER

Plug the transformer into a continuously "live," grounded, 230V, 50Hz house electrical outlet, in a dry location and approved by local codes. **The unit works on 24V only. Do not connect without the transformer.**

## 13. PROGRAM THE ELECTRONIC CONTROLLER

Follow the Programming the Water Softener procedure on Page 6 to program the electronic controller with basic operating information, such as time and water hardness. After completing Steps A through C on Page 6, continue with Step 14 below.

## 14. START A RECHARGE

Press and hold the RECHARGE button for a few seconds. You should hear the valve motor run as the water softener begins recharging. This recharge draws the sanitizing bleach into and through the softener. Any air remaining in the unit is purged to the drain.

## 15. RESTART THE WATER HEATER

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

**NOTE:** The water heater is filled with hard water and, as hot water is used, it refills with softened water. In a few days, the hot water will be fully softened. To have fully softened hot water immediately, wait until the recharge (Step 14) is complete, then drain the water heater until water runs cold.

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



# Electronic Demand Timer Features / Options

## NORMAL OPERATION

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



FIG. 10

## OPTIONAL RECHARGE CONTROLS

Sometimes a manually initiated regeneration may be desired or needed. Two examples are:

- You have used more water than usual (house guests, extra washing, etc.) and you may run out of soft water before the next scheduled recharge.
- You did not refill the storage tank with salt before it had run completely out.

Use one of the following two features to begin a regeneration either immediately or at the next preset regeneration start time:

### RECHARGE NOW

To manually start a regeneration cycle, press and hold the RECHARGE button for a few seconds, until "RECHARGE NOW" flashes in the display. The softener begins an immediate regeneration. When completed (in about two hours), you will have a new supply of soft water. Once started, you cannot cancel this regeneration.

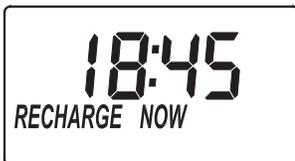


FIG. 11

### RECHARGE TONIGHT

To set a regeneration cycle to begin at the next preset regeneration time, touch (press, but do not hold) the RECHARGE button. "RECHARGE TONIGHT" flashes in the display. A regeneration will occur at the next preset regeneration start time. If you decide to cancel this regeneration before it starts, touch the same button once more.

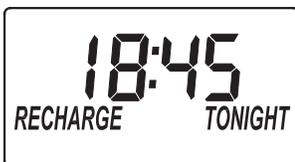


FIG. 12

## VACATION NOTE

A-Plus demand water softeners, as set at the factory, regenerate only while water is being used and softening capacity must be restored. For this reason, the softener will not regenerate when you are away from home for extended periods. However, if you set the "Maximum Days Between Regenerations" feature, the softener will regenerate even when no water is used.

## SET MAXIMUM DAYS BETWEEN REGENERATIONS

The default setting allows the timer to control regeneration frequency based on water usage readings from the water meter. It provides the most economical operation.

You can set a maximum time (in days) between regenerations. For example, no more than 3 days will pass without a regeneration occurring if you set "3 day" in the display. This feature can be set from 1 to 7 days.

To change the number of days between regenerations:

1. Press and hold the SELECT button until "000 - -" shows in the display.
2. Press the SELECT button once again and the words "Auto RECHARGE" flash in the display.



FIG. 13

3. Press the  $\uparrow$  UP or  $\downarrow$  DOWN buttons to set the number of days between regenerations.
4. When the desired number of days are displayed, press the SELECT button several times to advance through the remaining screens and return to the normal operation (time of day) display.

**NOTE:** The unit will recharge after the programmed number of days, even if no water is used during that period. To prevent recharges during vacation, set the maximum days to "Auto" before leaving. You will need to set the number of days again when you return.

# Electronic Demand Timer Features / Options

## POWER OUTAGE MEMORY

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

1. Check the display.
- 2a. If the present time is displayed steadily (not flashing), the controller did not lose time and you do not need to reset the clock.
- 2b. If a time is flashing in the display, then the clock needs to be reset to the correct present time. See "Set Time of Day" on page 6. The flashing display is to remind you to reset the clock. If you do not reset the clock, then recharges will most likely occur at the wrong time of day.

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

## SET 97% FEATURE

When this feature is set ON, the unit will automatically regenerate when 97% of capacity has been used (at any time of day). The factory default setting is OFF.

1. Press and hold the SELECT button until "000 - -" shows in the display.
2. Press the SELECT button twice and "97" will flash in the display, alternating with the current setting (either "ON" or "OFF").

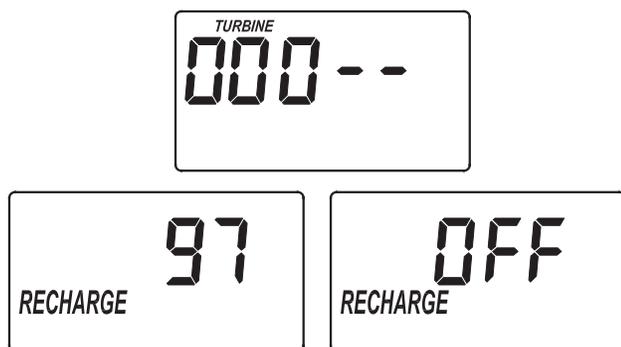


FIG. 14

3. Use the  $\uparrow$  UP or  $\downarrow$  DOWN buttons to toggle the setting between "ON" and "OFF".
4. When the desired setting ("ON" or "OFF") is flashing, press the SELECT button several times to advance through the remaining screens and return to the normal operation (time of day) display.

## 12 OR 24 HOUR CLOCK

The timer has been factory preset to display a 24 hour clock. If you prefer, you may change this to display a 12 hour clock.

1. Press and hold the SELECT button until "000 - -" shows in the display.
2. Press the SELECT button three times and "24 hr" will flash in the display.

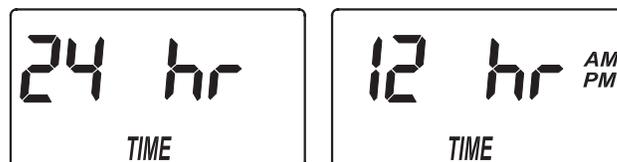


FIG. 15

3. Use the  $\downarrow$  DOWN button to change to a 12 hour clock display.
4. Press the SELECT button several times to advance through the remaining screens and return to the normal operation (time of day) display.
5. To change back to a 24 hour clock, follow Steps 1 through 4, above, except use the  $\uparrow$  UP button in Step 3.

## ADJUST BACKWASH TIME AND RINSE TIME

The timer can be changed to allow different backwash and fast rinse times, if so desired. Each of these can be adjusted from 1 to 30 minutes.

1. Press and hold the SELECT button until "000 - -" shows in the display.

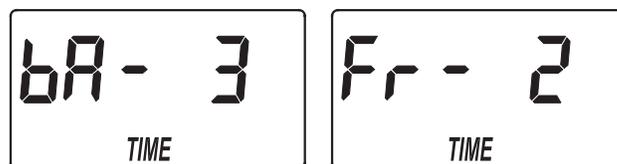


FIG. 15

2. Press the SELECT button four times and, for example, "bA- 3" will flash in the display.
3. Use the  $\uparrow$  UP or  $\downarrow$  DOWN buttons to set the number of minutes desired for backwash.
4. Press the SELECT button again and, for example, "Fr- 2" will flash in the display.
5. Use the  $\uparrow$  UP or  $\downarrow$  DOWN buttons to set the number of minutes desired for fast rinse.
6. Press the SELECT button to return to the normal operation (time of day) display.

# Routine Maintenance

## ADDING SALT

Lift the salt hole cover and check the salt storage level frequently. If the water softener uses all the salt before you refill it, you will experience hard water. Until you have established a refilling routine, check the salt every two or three weeks. Always add if less than 1/4 full. Be sure the brinewell cover is on.

**NOTE:** In humid areas, it is best to keep the salt storage level lower, and to refill more often to avoid salt "bridging".

Recommended Salt: Nugget, pellet or coarse solar salts with less than 1% impurities.

Salt Not Recommended: Rock salt, high in impurities, block, granulated, table, ice melting, ice cream making salts, etc.

## BREAKING A SALT BRIDGE

Sometimes, a hard crust or salt "bridge" forms in the brine tank. It 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 if you have a salt bridge. A bridge may be underneath loose salt. Take a broom handle, or like tool, and hold it next to the water softener. Measure the distance from the floor to the rim of the water softener. Then, carefully push the broom handle 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 use any sharp or pointed objects as you may puncture the brine tank. Do not try to break the salt bridge by pounding on the outside of the salt tank. You may damage the tank.

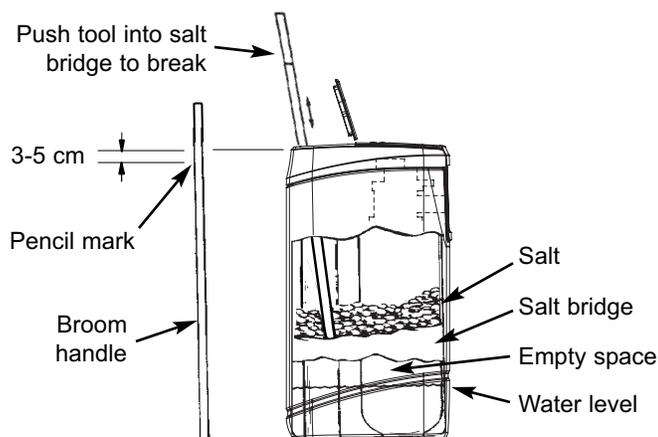


FIG. 17

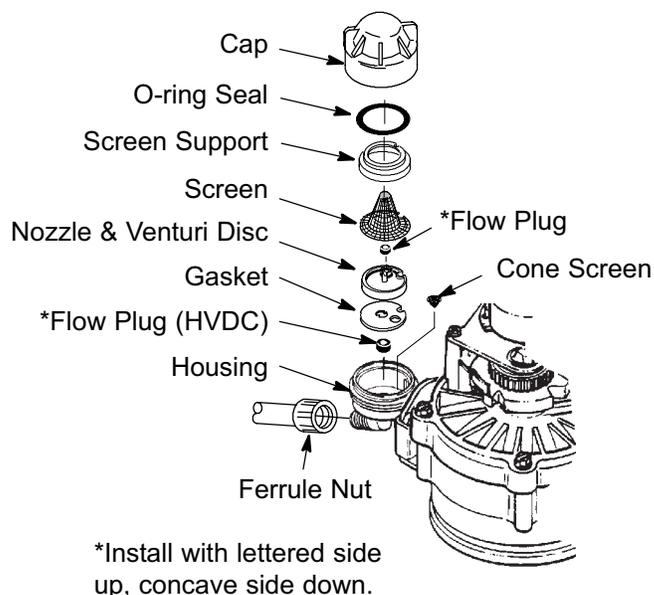
## CLEANING THE NOZZLE & VENTURI

A clean nozzle & venturi (See Figure 18) is a necessity for the water softener to work properly. This small component creates the suction to move brine from the brine tank, into the resin tank. If it should become plugged with sand, silt, dirt, etc., the water softener will not work, and hard water will result.

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

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

Recharge the softener to reduce water level in the tank. This will also assure that the softener is completely recharged and ready to provide softened water again.



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

FIG. 18

# Troubleshooting

## TROUBLESHOOTING GUIDE

PROBLEM	CAUSE	CORRECTION
<b>No soft water</b>	No salt in the storage tank.	Add salt (See Page 9) and then initiate a "Recharge now," as shown on Page 7.
	Salt is "bridged."	Break salt bridge (See Page 9) and then initiate a "Recharge now," as shown on Page 7.
	If display is blank, transformer 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 transformer 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 time is flashing in the display, it means time was lost during the outage. Set the current time (See Page 6). Other settings such as hardness are retained in memory during a power loss.
	Manual bypass valve(s) in bypass position.	Referring to Figures 3A and 3B on Page 3, 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 9.
	Valve drain hose plugged or restricted.	Drain hose must not have any kinks, sharp bends, or be raised too high above the softener (See "Install Drain Hose" on Page 5).
<b>Water hard sometimes</b>	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 6. Check the recharge time, as described on Page 6.
	Hardness number setting is too low.	Referring to "Setting Hardness" on Page 6, check the current hardness setting and increase if needed.
	Hot water being used when softener 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 6, check the current hardness setting and increase if needed.
<b>Motor stalled or clicking</b>	Motor malfunction or internal valve fault causing high torque on motor.	Contact your dealer for service.
<b>Error code E1, E3 or E4 displayed.</b>	Fault in wiring harness, connections to position switch, switch, valve or motor.	Contact your dealer for service.
<b>Error code E5 displayed.</b>	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 6.)
4. Is there salt in the brine tank? If not, refill.
5. Is salt "bridged" (See Page 9)?
6. Are plumbing bypass valve(s) in service position (See Figures 3A and 3B on Page 3)?
7. Are inlet and outlet pipes connected to the water softener 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?
10. Check the hardness setting (See "Setting Hardness" on Page 6). 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 softened water sample to determine whether a problem exists.

If no problem is found after making the initial checks, proceed to "Manually Initiated Electronic Diagnostics" on the next page.

# Troubleshooting

## AUTOMATIC ELECTRONIC DIAGNOSTICS

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

The troubleshooting chart shows the error codes that could appear, and the possible malfunctions for each code.

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

## TO REMOVE AN ERROR CODE:

1. Unplug the transformer.
2. Correct the problem.
3. Plug the transformer back in.
4. Wait for at least 6 minutes while the timer operates the valve through an entire cycle. The error code will return if the problem was not corrected.

## MANUALLY INITIATED ELECTRONIC DIAGNOSTICS

Use the following procedures to advance the water softener through the regeneration cycles to check operation.

Lift off the Salt Hole Cover, remove the top cover faceplate assembly by unlocking the tabs and lifting, to observe cam and switch operation during valve rotation.

1. Press and hold SELECT for 3 seconds until "000" shows in the display.



FIG. 19

2. The first 3 digits indicate water meter operation as follows:

000 (steady) = Soft water not in use, and no flow through the meter.

OPEN A NEARBY SOFT WATER FAUCET.

000 to 140 (continual) = Repeats for each gallon of water passing through the meter.

**NOTE:** If you don't get a reading in the display with faucet open, pull the sensor from the valve outlet port. Pass a small magnet back and forth in front of the sensor. If you get a reading in the display with the magnet, unhook the in and out plumbing and check the turbine for binding (See Figure 20).

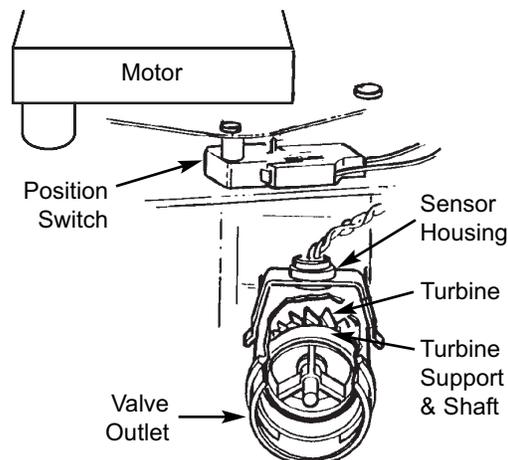


FIG. 20

3. The last 2 digits in the display indicate POSITION switch operation as follows:

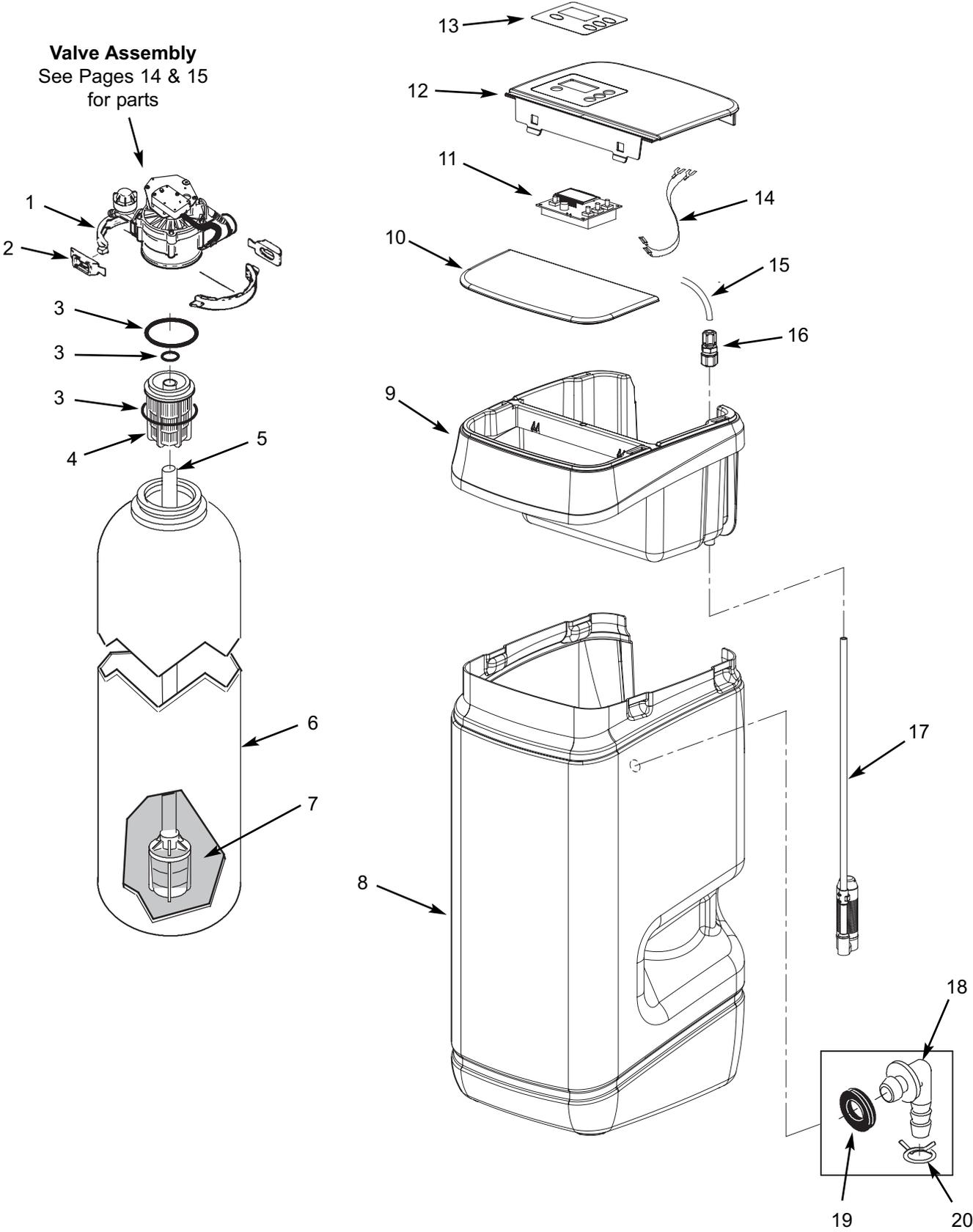
Correct Switch Displays	Valve Cycle Status
--	Valve in service, fill, brining, backwash or fast rinse position.
- P	Valve rotating from one position to another.

4. Use the RECHARGE button to manually advance the valve into each cycle and check correct switch operation.
5. While in this diagnostic screen, the following information is available and may be beneficial for various reasons. This information is retained by the computer from the first time electrical power is applied to the electronic controller.
  - a. Press the ↑ UP button to display the number of days this electronic control has had electrical power applied.
  - b. Press the ↓ DOWN button to display the number of regenerations initiated by this electronic control since the model code number was entered.
6. Press the SELECT button and hold in for 3 seconds until the model code shows in the display. This code identifies the softener model. If the wrong number shows (see table on Page 6), the softener will operate on incorrect programming.
7. To change the code number - Press the ↑ UP or ↓ DOWN button until the correct code shows.
8. To return to the present time display, press the SELECT button. **If the model code was changed, make all timer settings.**

**NOTE:** If the electronic control is left in a diagnostic display (or a flashing display when setting times or hardness), present time automatically returns if a button is not pressed within 4 minutes.

# Softener Exploded View

**Valve Assembly**  
See Pages 14 & 15  
for parts

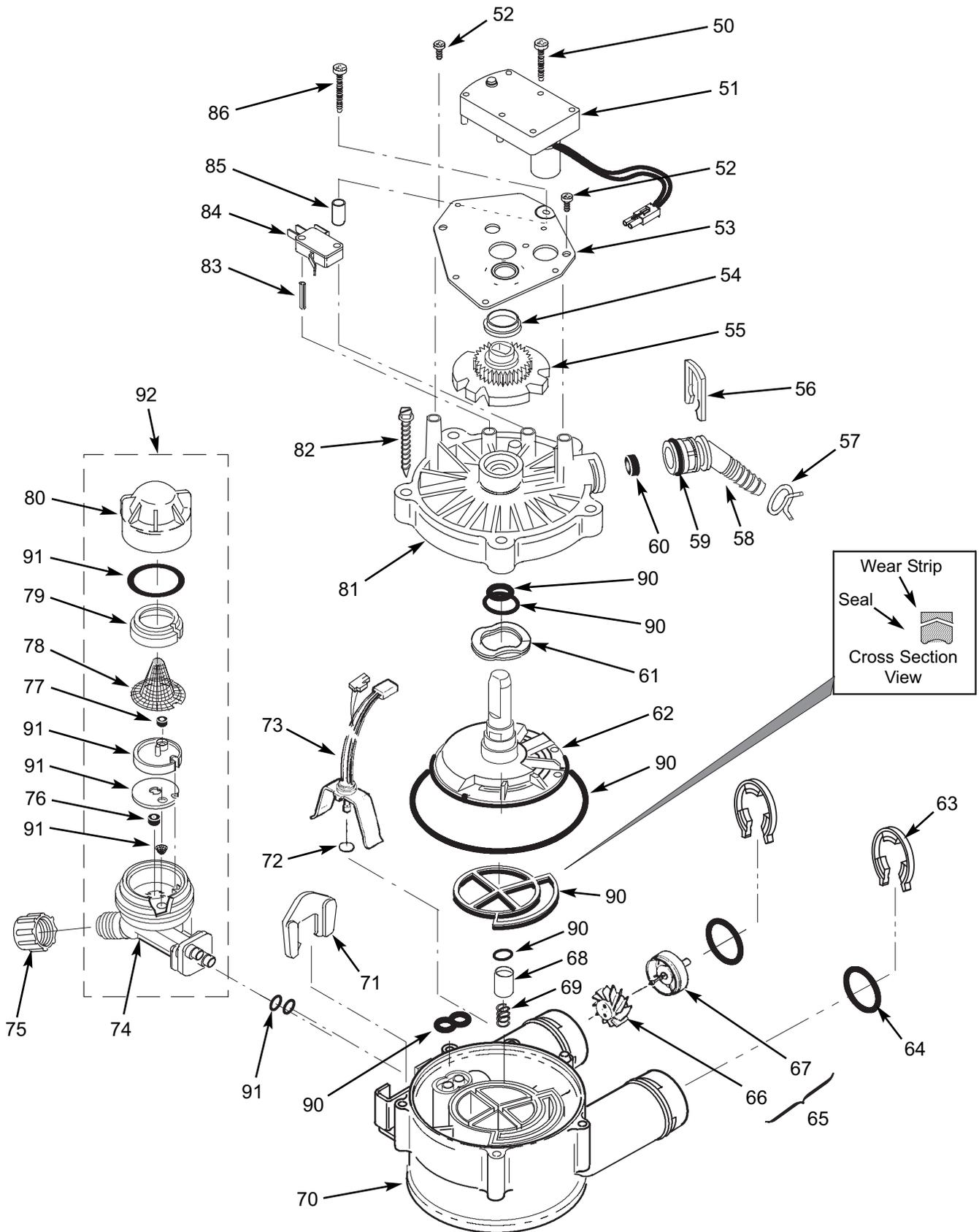


# Softener Parts List

Key No.	Part No.	Description
1	7176292	Clamp Section (2 req.)
2	7088033	Retainer, Clamp (2 req.)
3	7112963	Distributor O-Ring Kit, includes
	-	O-Ring, 20.6 mm x 27.0 mm
	-	O-Ring, 73.0 mm x 82.6 mm
	-	O-Ring, 69.9 mm x 76.2 mm
4	7077870	Top Distributor
5	7105047	Repl. Bottom Distributor
6	7268950	Repl. Resin Tank, 22.9 x 35.6 cm, Model 9A+
	7264037	Repl. Resin Tank, 20.3 x 63.5 cm, Model 15A+
	7114787	Repl. Resin Tank, 20.3 x 88.9 cm, Model 20A+
7	0502272	Resin, 28.3 L
8	7307576	Brine Tank, Model 9A+
	7307039	Brine Tank, Model 15A+
	7307550	Brine Tank, Model 20A+
9	7305079	Rim
10	7309984	Salt Hole Cover
11	7312660	Electronic Control Board (PWA)
12	7309992	Top Cover / Faceplate (order decal below)
13	7311363	Faceplate Decal
14	7250826	Power Cord
15	7094961	Brine Line, 91 cm long
16	7304984	Reducing Union
17	7304968	Sandpoint Check Valve
18	1103200	Hose Adaptor *
19	9003500	Grommet *
20	0900431	Hose Clamp *

\* Included in parts bag.

# Valve Exploded View



# Valve Parts List

Key No.	Part No.	Description
50	7224087	Screw, #8-32 x 25.4 mm (2 req.)
51	7286039	Repl. Motor (incl. 2 ea. of Key No. 50)
52	0900857	Screw, #6-20 x 9.5 mm (2 req.)
53	7231385	Motor Plate
54	0503288	Bearing
55	7284964	Cam & Gear
56	7142942	Clip, Drain
57	0900431	Hose Clamp *
58	7024160	Drain Hose Adaptor
59	7170327	O-Ring, 15.9 x 20.6 mm
60	0501228	Flow Plug, 2.0 gpm
61	7082087	Wave Washer
62	7199232	Repl. Rotor & Disc
63	7116713	Clip (2 req.) *
64	7133498	O-Ring, 23.8 x 30.2 mm (2 req.) *
65	7147243	Turbine & Support Assembly
66	--	Turbine
67	--	Support
68	7092642	Plug, Drain Seal
69	7129889	Spring
70	7082053	Valve Body
71	7081201	Retainer, Nozzle & Venturi
72	0900060	O-Ring, 9.5 x 12.7 mm
73	7276076	Wire Harness, Position Switch
74	7081104	Housing, Nozzle & Venturi
75	1202600	Nut-Ferrule
76	7084607	Fill Flow Plug, .15 gpm, Model 9A+
	1148800	Fill Flow Plug, .3 gpm Models 15A+ & 20A+

Key No.	Part No.	Description
77	0521829	Flow Plug, .1 gpm
78	7146043	Screen
79	7167659	Screen Support
80	7199729	Cap
81	7085263	Valve Cover
82	7074123	Screw, #10-14 x 50.8 mm (5 req.)
83	7077472	Expansion Pin
84	7030713	Switch
85	7117816	Spacer
86	7070412	Screw, #4-24 x 28.6 mm, flat head
90	7290949	Seal Kit, includes the following:
	-	O-Ring, 11.1 x 15.9 mm
	-	O-Ring, 19.1 x 23.8 mm
	-	O-Ring, 85.7 x 92.1 mm
	-	Repl. Rotor Seal
	-	O-Ring, 9.5 x 14.3 mm
	-	Seal, Nozzle & Venturi
91	7298549	Repl. Nozzle, Venturi & Gasket Kit, Model 9A+
	7290957	Repl. Nozzle, Venturi & Gasket Kit, Models 15A+ & 20A+
	-	O-Ring, 6.4 x 9.5 mm, (2 req.)
	-	Cone Screen
	-	Gasket, Nozzle & Venturi
	-	Disc, Nozzle & Venturi
	-	O-Ring, 28.6 x 34.9 mm
92	7268421	Nozzle & Venturi Assembly, Model 9A+
	7187065	Nozzle & Venturi Assembly, Models 15A+ & 20A+

\* Included in parts bag.