

# 9510 Softener Guide



Thank you for purchasing a Clean Water System!

Minimum 30 PSI required. Maximum pressure 90 PSI.

Protect from sunlight, rain, and freezing.

**Read all instructions carefully before operation.**

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

Call us: 1-831-462-8500 M-F 8AM to 4PM PST

Email us: [support@cleanwaterstore.com](mailto:support@cleanwaterstore.com)

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## Safety Guide

*For your safety, the information in this manual must be followed to minimize the risk of electric shock, property damage or personal injury.*

- Check and comply with your provincial / state and local codes. You must follow these guidelines.
- Use care when handling the water softening system. Do not turn upside down, drop, drag or set on sharp protrusions.
- The water softening system works on 12 volt-60 Hz electrical power only. Be sure to use only the included transformer.
- Transformer must be plugged into an indoor 120 volt, grounded outlet only.
- Use clean water softening salts only, at least 99.5% pure. NUGGET, PELLET or coarse SOLAR salts are recommended. Do not use rock, block, granulated or ice cream making salts. They contain dirt and sediments, or mush and cake, and will create maintenance problems.
- Keep the salt lid in place on the softener unless servicing the unit or refilling with salt.
- **WARNING:** This system is not intended for treating water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

## Proper Installation

*This water softening system must be properly installed and located in accordance with the Installation Instructions before it is used.*

- Install or store where it will not be exposed to temperatures below freezing or exposed to any type of weather. Water freezing in the system will break it. Do not attempt to treat water over 100°F.
- **Do not** install in direct sunlight. Excessive sun or heat may cause distortion or other damage to non-metallic parts.
- Properly ground to conform with all governing codes and ordinances.
- Use only *lead-free solder and flux* for all sweat-solder connections, as required by state and federal codes.
- The water softening system requires a minimum water flow of three gallons per minute at the inlet.
- Maximum allowable inlet water pressure is 125 psi. If daytime pressure is over 80 psi, night time pressure may exceed the maximum. Use a pressure reducing valve to reduce the flow if necessary.
- Softener resins may degrade in the presence of chlorine above 2 ppm. If you have chlorine in excess of this amount, you may experience reduced life of the resin. In these conditions, you may wish to consider purchasing a whole house carbon filter softener system with a chlorine reducing media.
- **WARNING:** Discard all unused parts and packaging material after installation. Small parts remaining after the installation could be a choke hazard.

## Unpacking / Inspection

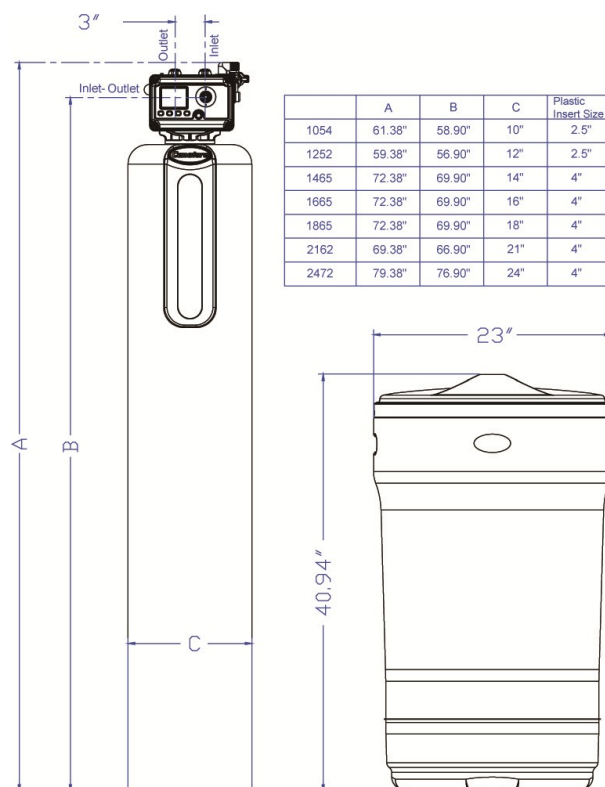
Be sure to check the entire softener for any shipping damage or parts loss. Also note damage to the shipping cartons. Contact the transportation company for all damage and loss claims. The manufacturer is not responsible for damages in transit.

Small parts, needed to install the softener, are in a parts bag. To avoid loss of the small parts, keep them in the parts bag until you are ready to use them.

## Specifications

Specifications	BNT95-300	BNT95-400	BNT95-500	BNT95-700	BNT95-1000	BNT95-1700	BNT95-2100
Factory Settings - High Efficiency							
Salt Used - Lbs	9.0	12.0	15.0	21.0	30.0	51.0	63.0
Water Used - Gallons	109.9	143.0	187.3	250.1	366.5	536.4	787.2
System Capacity - Grains	42,000	56,000	75,000	105,000	150,000	255,000	315,000
Factory Settings - Standard Capacity							
Salt Used - Lbs	18.0	24.0	30.0	42.0	60.0	102.0	126.0
Water Used - Gallons	146.4	190.6	249.3	333.5	488.2	715.2	1051.5
System Capacity - Grains	72,000	96,000	120,000	168,000	240,000	408,000	504,000
Factory Settings - High Capacity							
Salt Used - Lbs	30.0	40.0	50.0	70.0	100.0	170.0	210.0
Water Used - Gallons	158.1	205.5	307.1	407.1	598.9	872.9	1,271.8
System Capacity - Grains	90,000	120,000	140,000	196,000	280,000	476,000	588,000
Resin Quantity - Cubic Feet	3.00	4.00	5.00	7.00	10.00	17.00	21.00
Tank Size	14x65	16x65	18x65	21x62	24x72	30x72	36x72
Brine Tank / Cabinet Size (Inches)	BTR-200 (23.0 x 40.5)	BTR-200 (23.0 x 40.5)	BTR-200 (23.0 x 40.5)	JS/Y-350 (29.0 x 50.0)	JS/Y-500 (33.0 x 52.5)	JS/Y-500 (33.0 x 52.5)	JS/Y-750 (38.0 x 55.0)
Salt Storage Capacity	550 lbs	550 lbs	550 lbs	700 lbs	1000 lbs	1000 lbs	1500 lbs
Flow Rate @ 15 psi Pressure Drop	23.0 gpm	24.8 gpm	27.7 gpm	28.8 gpm	29.6 gpm	33.3 gpm	34.5 gpm
Flow Rate @ 25 psi Pressure Drop	31.3 gpm	33.4 gpm	36.7 gpm	38.2 gpm	39.1 gpm	43.8 gpm	45.1 gpm
Back Wash Flow Rate	5.0 gpm	7.0 gpm	8.0 gpm	11.0 gpm	17.0 gpm	17.0 gpm	17.0 gpm
Maximum Efficiency	5000 Grains Per Lb Salt						
Plumbing Connections	1", 1.25", 1.5"						
Resin Type	Canature 8% High Capacity Ion Exchange Resin						
Electrical Requirements	220 - 12V 50Hz						
Water Temperature	Min 39 - Max. 100 degrees Fahrenheit						
Water Pressure	Min. 35 - Max. 125 psi						

- Continuous operation at flow rates greater than the service flow rate may affect capacity and efficiency performance.
- The manufacturer reserves the right to make product improvements which may deviate from the specifications and descriptions stated herein, without obligation to change previously manufactured products or to note the change.



## Before Starting Installation

### Tools, Pipe, and Fittings, Other Materials

- Pliers
- Screwdriver
- Teflon tape
- Razor knife
- Two adjustable wrenches
- Additional tools may be required if modification to home plumbing is required.
- Plastic inlet and outlet fittings are included with the softener. To maintain full valve flow, 3/4" or 1" pipes to and from the softener fittings are recommended. You should maintain the same, or larger, pipe size as the water supply pipe, up to the softener inlet and outlet.
- Use copper, brass, or PEX pipe and fittings.
- Some codes may also allow PVC plastic pipe.
- ALWAYS install the included bypass valve, or 3 shut-off valves. Bypass valves let you turn off water to the softener for repairs if needed, but still have water in the house pipes.
- 5/8" OD Drain line is needed for the valve drain. A 10' length of hose is included with some models.
- A length of 5/8" OD drain line tubing is needed for the brine tank over flow fitting (optional).
- Nugget or pellet water softener salt is needed to fill the cabinet tank.

### Where To Install The Softener

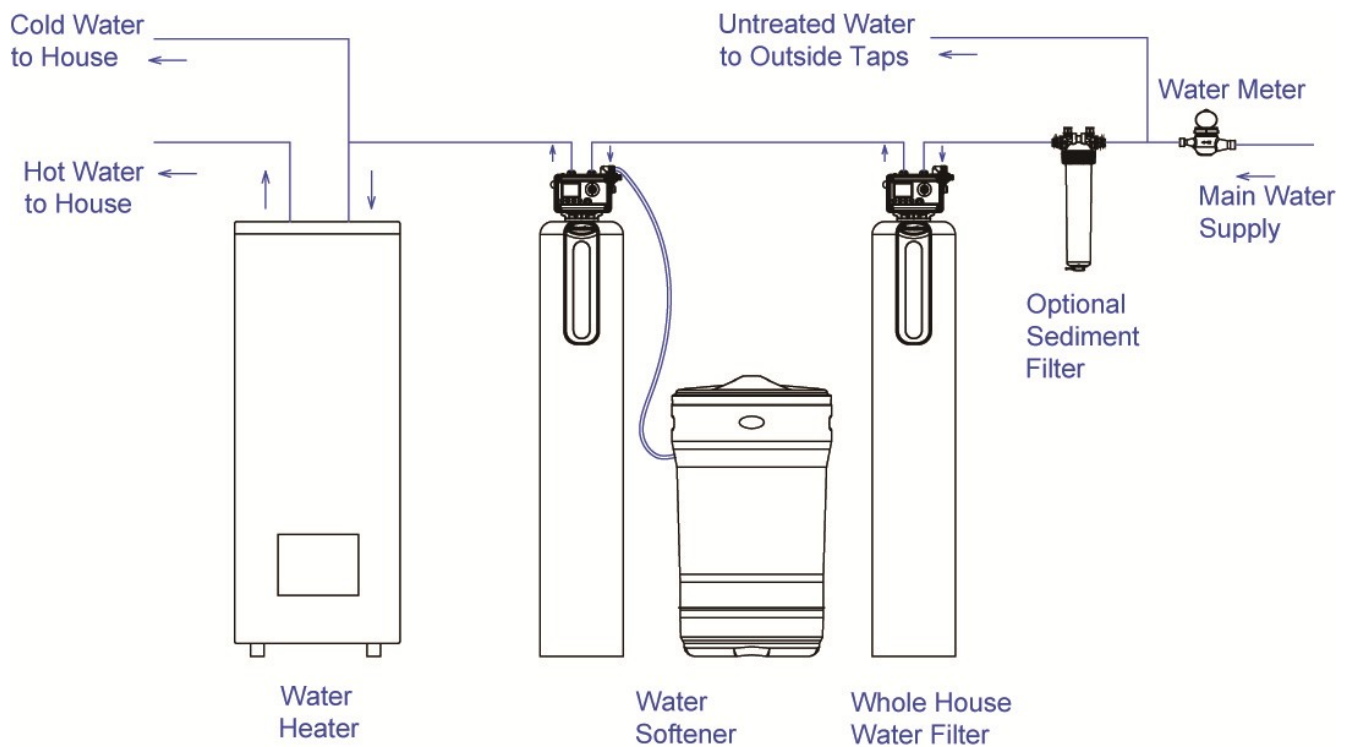
- Place the softener as close as possible to the pressure tank (well system) or water meter (city water).
- Place the softener as close as possible to a floor drain, or other acceptable drain point (laundry tub, sump, standpipe, etc.).
- Connect the softener to the main water supply pipe BEFORE the water heater. **DO NOT RUN HOT WATER THROUGH THE SOFTENER.** Temperature of water passing through the softener must be less than 100 deg. F.
- Keep outside faucets on hard water to save soft water and salt.
- Do not install the softener in a place where it could freeze. **Damage caused by freezing is not covered by the warranty.**
- Put the softener in a place water damage is least likely to occur if a leak develops. The manufacturer will not repair or pay for water damage.
- A 120 volt electric outlet, to plug the included transformer into, is needed within 6 feet of the softener. The transformer has an attached 6 foot power cable. **Be sure the electric outlet and transformer are in an inside location, to protect from wet weather.**
- If installing in an outside location, you must take the steps necessary to assure the softener, installation plumbing, wiring, etc., are as well protected from the elements, contamination, vandalism, etc., as when installed indoors.
- **Keep the softener out of direct sunlight.** The sun's heat may soften and distort plastic parts.

## General Installation

### Typical Softener Location

You must first decide how to run in and out pipes to the softener. Look at the house main water pipe at the point where you will connect the softener. Is the pipe soldered copper, glued plastic, PEX, or threaded brass/galvanized? What is the pipe size?

Now look at the typical installation illustrations below. Use it as a guide when planning your particular installation. Make sure you have correctly identified the inlet of the system. **Be sure to direct raw, hard water to the softener valve inlet fitting.** The bypass valve is marked IN and OUT arrows.



## Installation Instructions

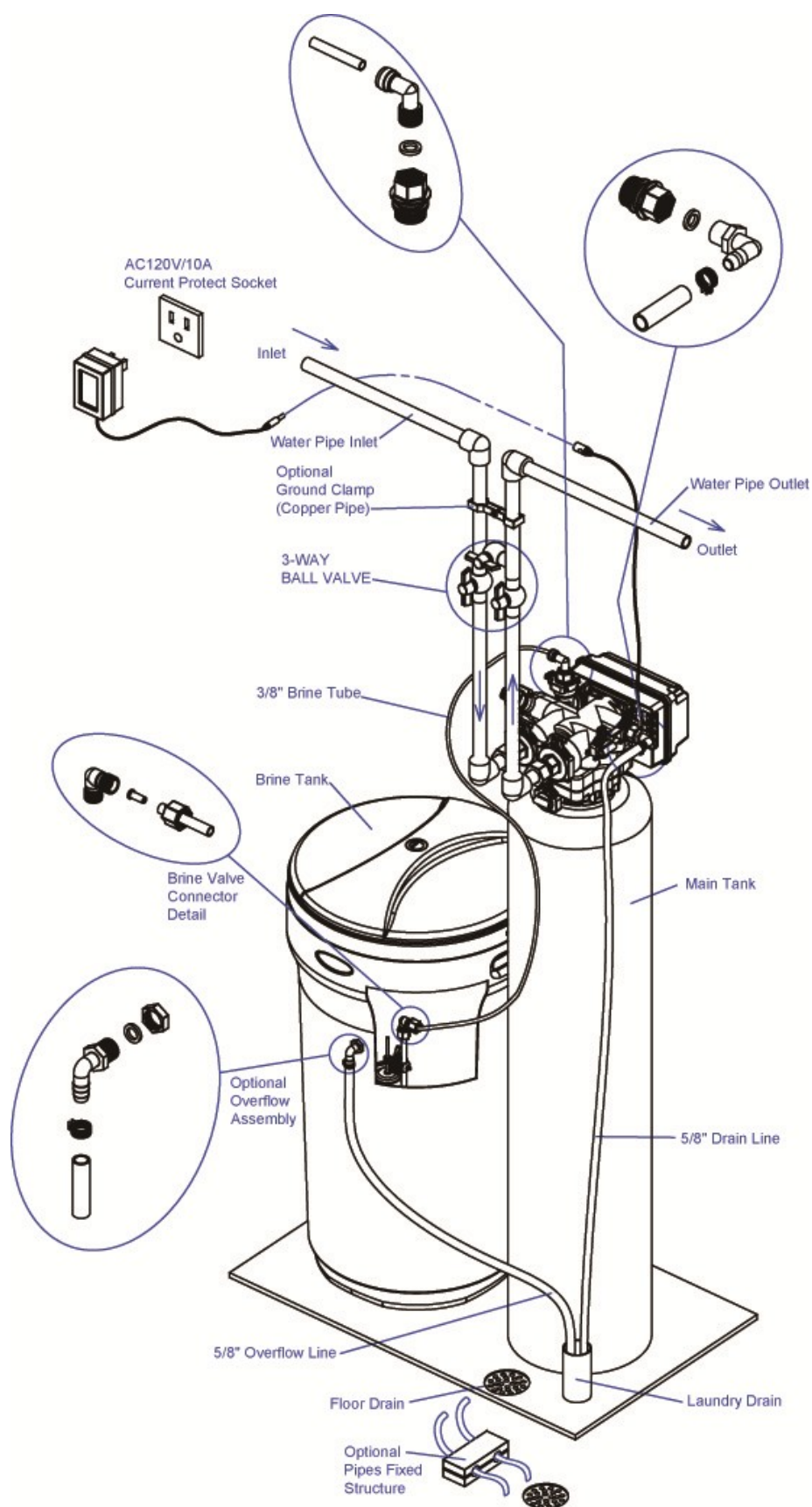
1. If your hot water tank is electric, turn off the power to it to avoid damage to the element in the tank.
2. If you have a private well, turn the power off to the pump and then shut off the main water shut off valve. If you have municipal water, simply shut off the main valve. Go to the faucet, (preferably on the lowest floor of the house) turn on the cold water until all pressure is relieved and the flow of water stops.
3. Locate the softener tank and brine tank close to a drain where the system will be installed. The surface should be clean and level.
4. Connect the inlet and outlet of the softener using appropriate fittings. Perform all plumbing according to local plumbing codes.
  - Use a ½" minimum pipe or tubing size for the drain line
  - **ON COPPER PLUMBING SYSTEMS BE SURE TO INSTALL A GROUNDING WIRE BETWEEN THE INLET AND OUTLET PIPING TO MAINTAIN GROUNDING.**

Any solder joints near the valve must be done before connecting any piping to the valve. Always leave at least 6" (152 mm) between the valve and joints when soldering pipes that are connected to the valve. Failure to do this could cause damage to the valve.

5. Connect the drain hose (10 ft included) to the valve and secure it with a hose clamp (also included). Run the drain hose to the nearest laundry tub or drain pipe. This can be ran up overhead or down along the floor. If running the drain line more than 20 ft overhead, it is recommended to increase the hose size to ¾". NEVER MAKE A DIRECT CONNECTION INTO A WASTE DRAIN. A PHYSICAL AIR GAP OF AT LEAST 1.5" SHOULD BE USED TO AVOID BACTERIA AND WASTEWATER TRAVELLING BACK THROUGH THE DRAIN LINE INTO THE SOFTENER.
6. Using the Allen Key (included), place the unit in the bypass position. Slowly turn on the main water supply. At the nearest cold treated water tap nearby remove the faucet screen, open the faucet and let water run a few minutes or until the system is free of any air or foreign material resulting from the plumbing work.
7. Make sure there are no leaks in the plumbing system before proceeding. Close the water tap when water runs clean.
8. Open the brine tank / cabinet salt lid and add water until there is approximately 3" (75 mm) of water in the tank. Do not add salt to the brine tank at this time.
9. Proceed to start up instructions.

***Note: The unit is not ready for service until you complete the start-up instructions.***

## Softener Installation



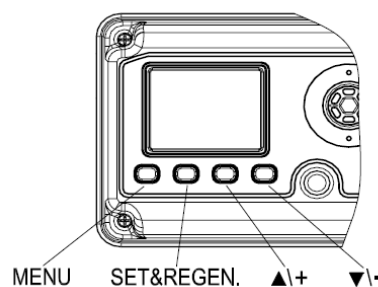


## System Start-Up

### Start-up Instructions

1. Plug the valve into an approved power source.
2. When power is supplied to the control, the screen will display "Advancing to Service Wait Please" while it finds the service position.
3. If screen is locked, press MENU for 3 seconds to unlock. Press and hold the SET / REGEN button for 3 seconds to enter the manual regeneration screen. An option for delayed or immediate regeneration will appear. Press the DOWN button to select IMMEDIATE. Press the SET/REGEN button to immediately start moving to the BACKWASH position.
4. Open the inlet on the bypass valve slowly and allow water to enter the unit. Allow all air to escape from the unit before turning the water on fully then allow water to run to drain for 3-4 minutes or until all media fines are washed out of the softener indicated by clear water in the drain hose.
5. Press any button to advance to the BRINE position. Check the water level in the brine tank to insure the valve is drawing brine properly.
6. Press any button to advance to the RINSE position. Check the drain line flow. Allow the water to run for 3-4 minutes or until the water is clear.
7. Press any button to advance to the REFILL position. Check that the valve is filling water into the brine tank. Allow the valve to refill for the full amount of time as displayed on the screen to insure a proper brine solution for the next regeneration.
8. The valve will automatically advance to the SERVICE position. Open the outlet valve on the bypass, then open the nearest treated water faucet and allow the water to run until clear, close the tap and replace the faucet screen.
9. Add salt into the cabinet or brine tank.
10. Program time, date, hardness and people into controller using Programming Instructions

## Programming Instructions



### Key Pad Configuration

MENU	Enter or exit the system menu. Press and hold the button for 3 seconds to unlock the screen.
SET/REGEN	Press this button to select a program or to save the settings. Press and hold the button for 3 seconds to initiate a manual regeneration.
DOWN / UP	Press these buttons to increase or decrease the value of the settings. Press the buttons to enter the previous or the next menu.

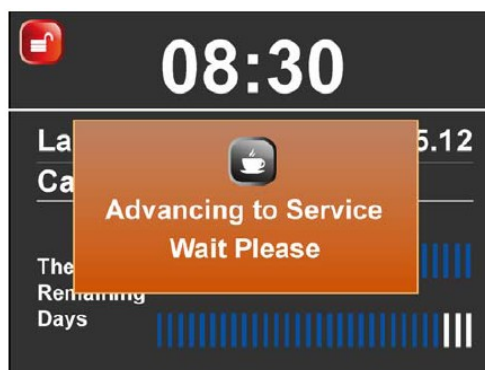
## Change Setting Procedure

1. Press the MENU button to enter and exit the menu.
2. Press the UP or DOWN button to select the parameter.
3. Press the SET/REGEN button to enter or activate the parameter for editing.
4. Press the UP or DOWN button to change the value.
5. Press the SET / REGEN button to save the value.
6. Press the UP or DOWN button to select other parameters.
7. Follow the above steps to change other parameters.
8. Press the MENU button to save and exit settings.

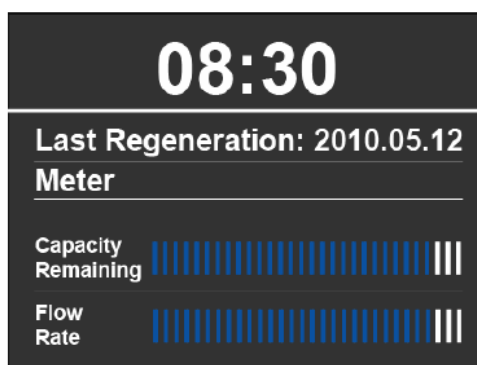
**You can only change flashing parameters.**

## Main Display

When power is first supplied, the valve may take up to two minutes to find the service position. During this time the valve will show:

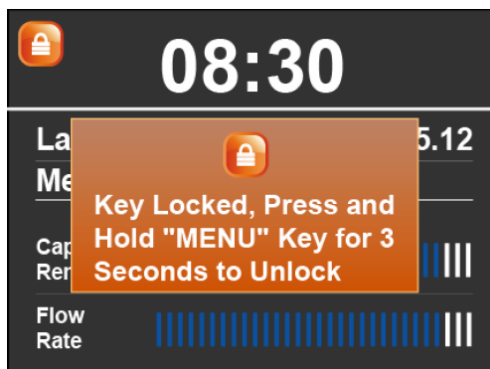


Do not touch any buttons at this time. When the valve reaches the service position it will display:



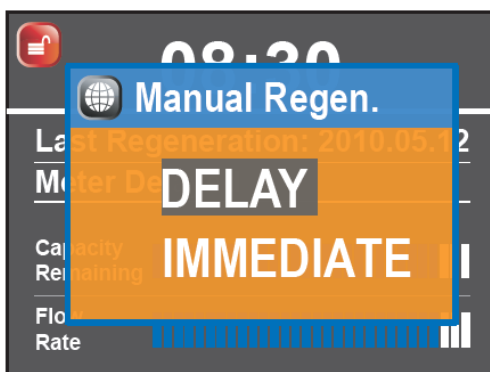
This page shows the current time, last regeneration day, and the regeneration mode. The number of blue bars represent the capacity remaining and the flow rate.

The screen will be locked after 3 minutes. To unlock the screen press and hold the MENU key for 3 seconds.



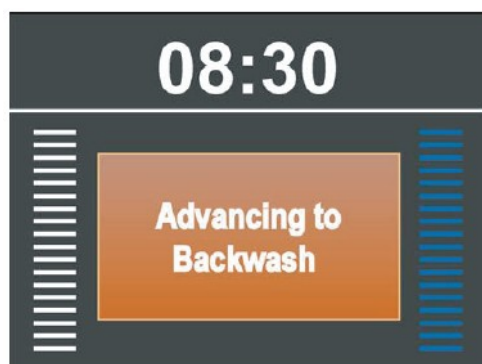
## MANUAL REGENERATION

Press and hold the SET REGEN button for 3 seconds to enter the manual regeneration page. The screen will display:

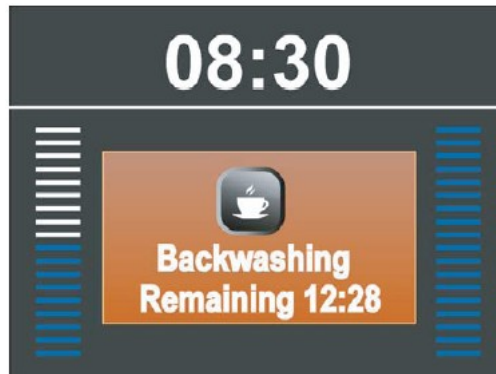


1. If you choose DELAY, the valve will start a regeneration at the next regeneration time (default is 2:00 AM).
2. If you choose IMMEDIATE, the valve will start a regeneration immediately.

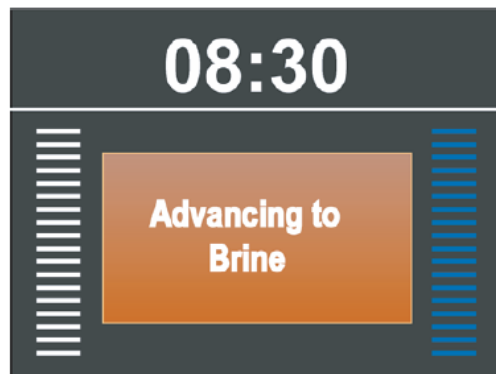
When a regeneration is started, the screen will display:



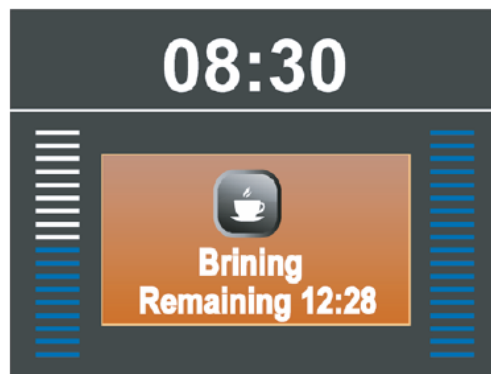
When the valve reaches the Back Wash position. The screen will display:



When Back Wash remaining time reaches zero or any button is pressed, the valve will advance to the next position. The screen will display:



When the valve reaches the Brine position. The screen will display:



When Brining remaining time reaches zero or any button is pressed, the valve will advance to the Rinse position and then the Refill position just like the examples above.

## Main Program

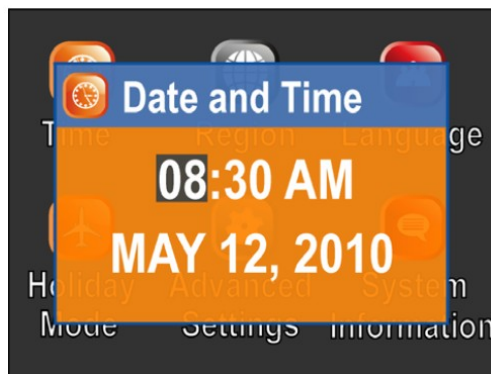
Press the MENU key to view the main page.



1. Press the MENU button to enter and exit the menu.
2. Press the UP or DOWN button to select the parameter.
3. Press the SET/REGEN button to enter or activate the parameter for editing.
4. Press the UP or DOWN button change the value.
5. Press the SET / REGEN button to save the value.
6. Press the UP or DOWN button to select other parameters.
7. Follow the above steps to change other parameters.
8. Press the MENU button to save and exit settings.

**You can only change flashing parameters.**

Choose Time icon to adjust the current date and time.



Choose Region icon to change the display unit of measures. Choose Language icon to change the display language. Note English may be only option depending on version of software.



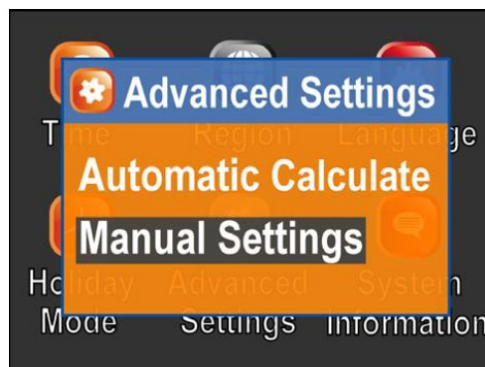
Choose Water Hardness & People to adjust the Water hardness and People. The Water Hardness value is the maximum compensated water hardness of the water supply. If Ferrous Iron is present, add 4 gpg for every 1 ppm Ferrous Iron. The People setting is the number of people living in the home and is used to determine the reserve capacity.



Choose Holiday Mode icon to activate it. The system will perform a brief back wash and rinse every 7 days. When turning Holiday Mode ON, remember to add the end date. This will insure the valve will return to normal operation on that date.



Advance settings has two options. Choose Automatic Calculate to let the system determine the capacity and refill times. To manually adjust the gallon capacity and refill time, choose Manual Settings.



Automatic Calculate mode contains advanced system settings.



In Regen Mode you can select four different regeneration modes. The system should be set to Meter Delayed for proper operation.



**Calendar Clock:** the unit will initiate regeneration at the next pre-set regeneration time based on the interval of days between regeneration days.

**Meter Immediate:** the unit will initiate regeneration immediately after the volume remaining reaches zero.

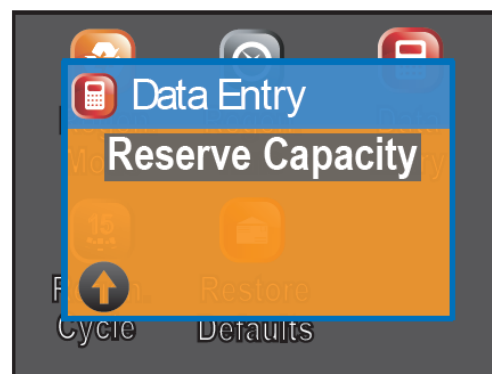
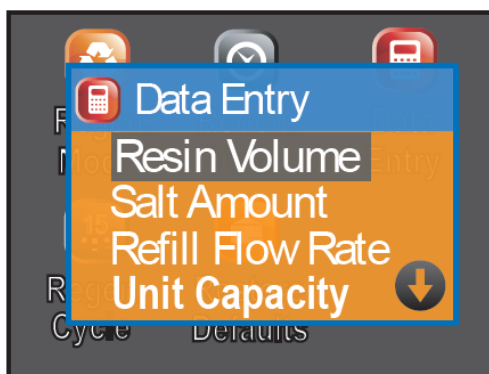
**Meter Delayed:** this is the most common setting. When the volume remaining reaches zero, the system will initiate regeneration at the next preset regeneration time.

**Meter Override:** when the volume remaining reaches zero, the system will initiate regeneration at the next pre-set regeneration time. If the days between regeneration are reached before the volume remaining reaches zero, the system will override the meter setting and initiate regeneration.

Choose Regen Time to adjust the time of day for a regeneration to occur.



Choose Data Entry to enter the Resin Volume, Salt Amount, and Refill Flow Rate, Unit Capacity, and Reserve Capacity. If your system is assembled from the factory, it has already been programmed with the proper settings.



Choose Regen. Cycle to adjust the length of time for each cycle. If your system is assembled from the factory, it has already been programmed with the proper settings. Note that Refill is automatically calculated based on the Data Entry parameters.

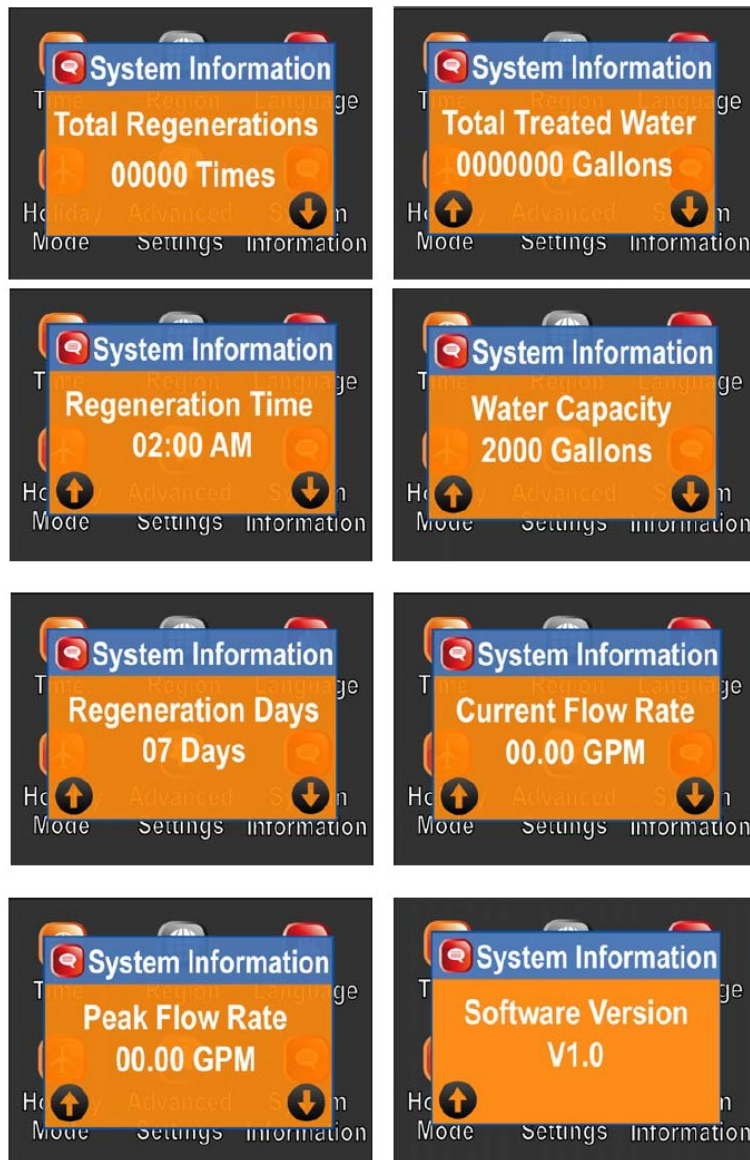




Restore Defaults will erase all the current settings. Be careful when choosing this since you will lose all the current settings and the default settings loaded back in may not be the correct settings for your system.



System Information will provide diagnostic information about your system. Hold the SET/REGEN button for 3 seconds to reset values to zero.



## About The System

### Control Operation During A Power Failure

In the event of a power failure, the valve will keep track of the time and day for 48 hours. The programmed settings are stored in a non-volatile memory and will not be lost during a power failure. If power fails while the unit is in regeneration, the valve will finish regeneration from the point it is at once power is restored. If the valve misses a scheduled regeneration due to a power failure, it will queue a regeneration at the next regeneration time once power is restored.

### Automatic Hard Water Bypass During Regeneration

The regeneration cycle can last 30 to 80 minutes, after which soft water service will be restored. During regeneration, hard water is automatically bypassed for use in the household. Hot water should be used as little as possible during this time to prevent hard water from filling the water heater. This is why automatic regeneration is set for sometime during the night and manual regenerations should be performed when little or no water will be used in the household.

Normal regeneration time is 2:00 AM. It can be changed by going into the PROGRAM menu and selecting REGEN TIME.

### Safety Float

The brine tank is equipped with a safety float which prevents your brine tank from overfilling as a result of a malfunction such as a power failure.

### New Sounds

You may notice new sounds as your water softener operates. The regeneration cycle lasts up to 80 minutes. During this time, you may hear water running intermittently to the drain.

### Regeneration Process

When the system capacity is near exhausted, a regeneration is necessary to restore the system to full capacity. The table below explains the regeneration steps.

Step	Name	Description
#1	Back Wash	Fresh water is introduced to the bottom of the tank flowing upwards expanding the ion exchange resin to rinse out any dirt or small particles to the drain and to un-compact the bed to restore full service flow rates.
#2	Brine	The brine solution is introduced slowly from the top of the tank flowing down through the ion exchange resin pushing the hardness out to drain and restoring system capacity.
#4	Rinse	Fresh water is introduced from the top of the tank flowing down through the ion exchange resin rinsing any excess brine solution out to the drain.
#5	Refill	Fresh water is added to the salt tank to prepare and insure fully saturated brine for the next regeneration.

## System Configuration

95HF System Configuration			
Tank Size (Diameter)	Injector Set	Brine Line Flow Control (BLFC)	Drain Line Flow Control (DLFC)
12"	#4S Black	0.9 GPM	#2S (3.5 GPM)
13"	#4S Black		#3S (4.5 GPM)
14"	#4S Black		#4S (5.0 GPM)
16"	#5S Orange		#7S (7.0 GPM)
18"	#3 Red		#1 (8.0 GPM)
21"	#4 White	1.35 GPM	#2 (11.0 GPM)
24"	#5 Blue		#4 (17.0 GPM)
30"	#6 Yellow		#6 (24.0 GPM)
36"	#6 Yellow		none (35.0 GPM)

## Maintenance

### Adding Salt

Use only crystal water softener salt. Check the salt level monthly. It is important to maintain the salt level above the water level. To add salt, simply lift the salt lid and add the salt directly into the brine tank. Be sure the brine well cover is on and fill only to the height of the brine well.

### Bridging

Humidity or wrong type of salt may create a cavity between the water and the salt. This action, known as "bridging", prevents the brine solution from being made, leading to your water supply being hard. If you suspect salt bridging, carefully pound on the outside of the brine tank or pour some warm water over the salt to break up the bridge. This should always be followed up by allowing the unit to use up any remaining salt and then thoroughly cleaning out the brine tank. Allow four hours to produce a brine solution, then manually regenerate the softener.

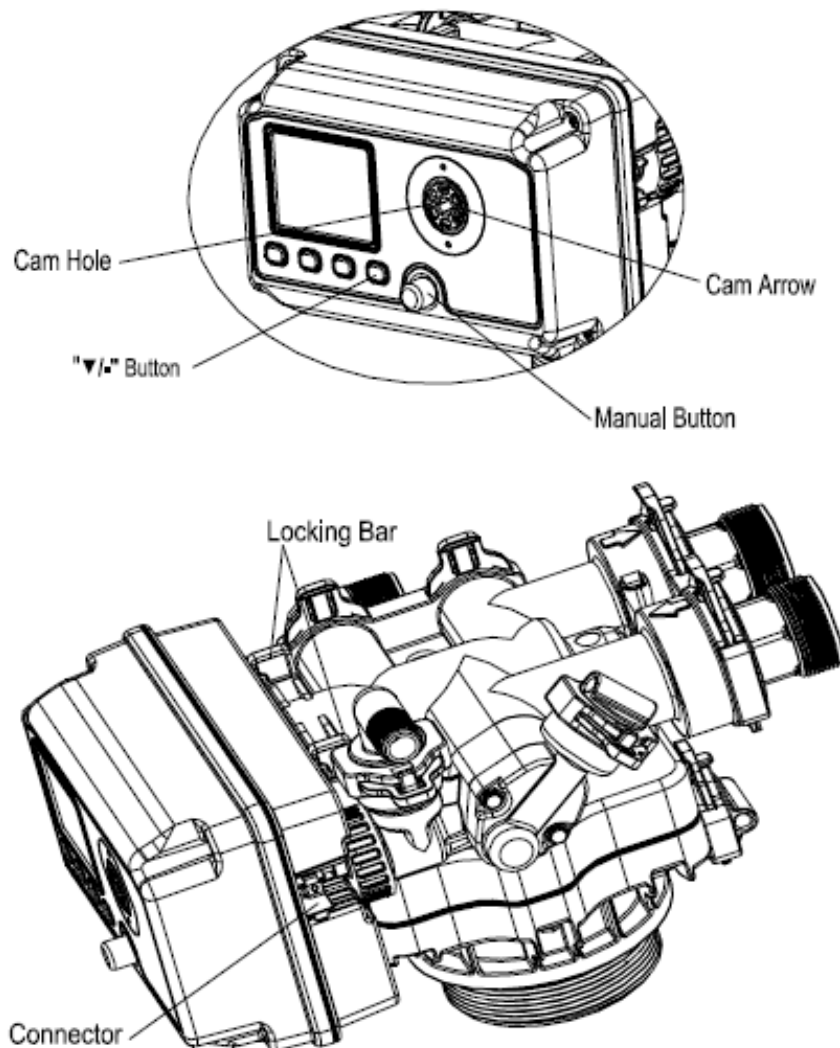
### Care of Your System

To retain the attractive appearance of your new water softener, clean occasionally with mild soap solution. Do not use abrasive cleaners, ammonia or solvents. Never subject your softener to freezing or to temperatures above 100°F.

### Resin Cleaner

An approved resin cleaner must be used on a regular basis if your water supply contains iron. The amount of resin cleaner and frequency of use is determined by the quantity of iron in your water (consult your local representative or follow the directions on the resin cleaner package).

## Removing Power Head Assembly



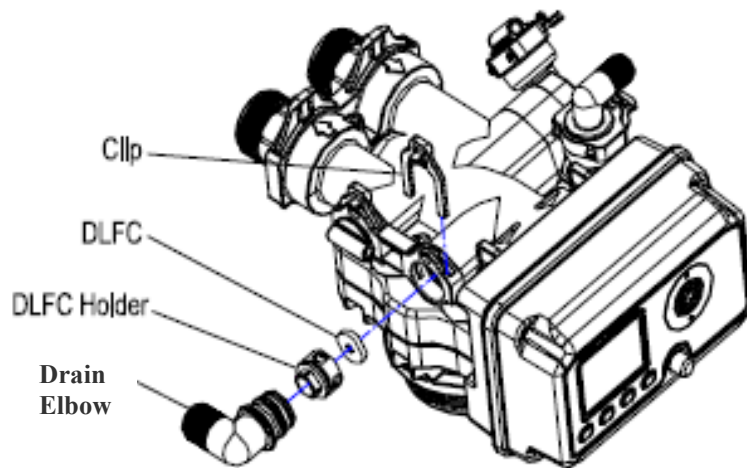
Manually remove the Power Head Assembly:

- Press and hold Manual Button
- With 8 hex key, insert Cam Hole, turn the Cam anti-clockwise to the marked position
- Remove the Connector
- Remove the Locking Bar
- Pull the Power Head Assembly outwards.

Automatic remove the Power Head Assembly:

- Unlock the screen
- Press and hold Down button, the valve will advance the Cam to the marked position
- Remove the Connector
- Remove the Locking Bar
- Pull the Power Head Assembly outwards.

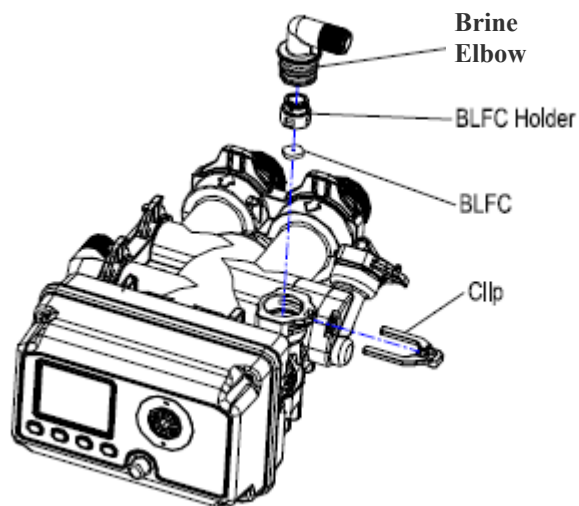
## Replace Drain Line Flow Control (DLFC)



To replace the Drain Line Flow Control (DLFC):

- Remove the Clip
- Pull the Drain Elbow outward
- Pull the DLFC Holder outward from the Drain Elbow
- Replace the DLFC

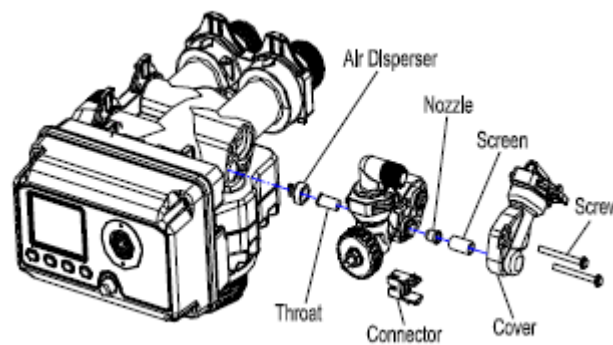
## Replace Brine Line Flow Control (BLFC)



To replace the Brine Line Flow Control (BLFC):

- Remove the Clip
- Pull the Brine Elbow outward
- Pull the BLFC Holder outward from the Brine Elbow
- Replace the BLFC

## Replace or Cleaning Injectors



Sediment, salt and silt will restrict or clog the injector. A clean water supply and pure salt will prevent this from happening.

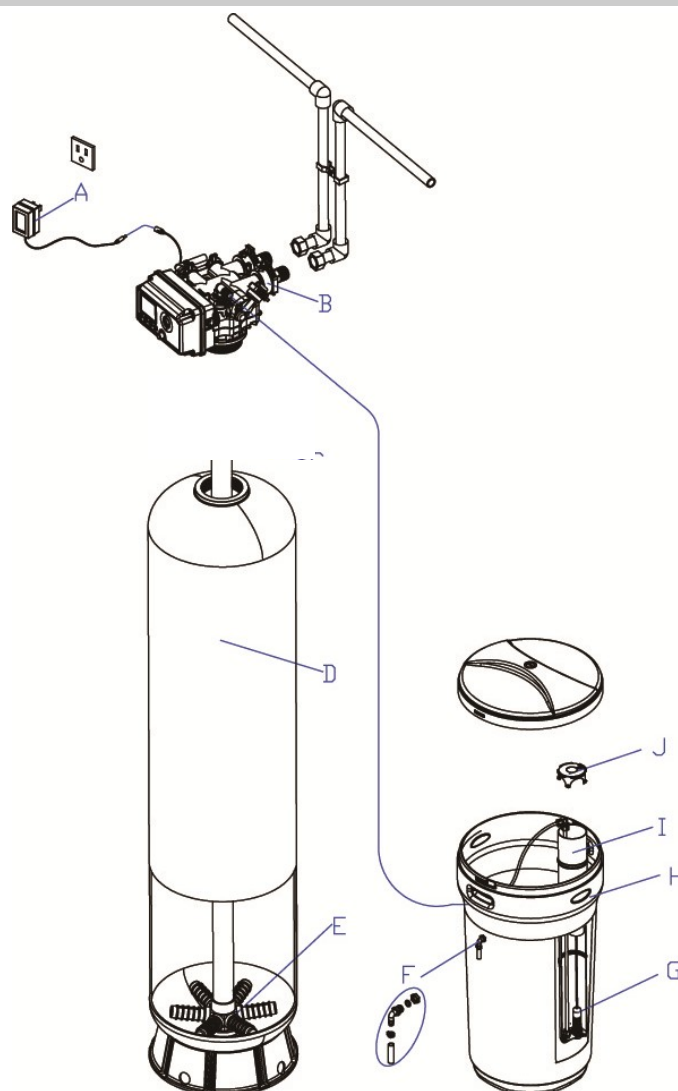
The injector assembly is located on the right side of the control valve. This assembly is easy to clean.

To replace the Injectors:

- Shut off the water supply to your softener and reduce the pressure by opening a cold soft water faucet.
- Remove the Connector
- Remove the Screw
- Slightly pull the Injector Body and Injector Cover outward
- Slightly pull out the Screen
- Replace the Nozzle
- Slightly pull out the Air Dispenser
- Replace the Throat
- Reassemble using the reverse procedure

Note: Carefully flush all parts including the screen. Use a mild acid such as vinegar or Pro-Rust Out to clean the small holes in the orifice and throat.

## Main Repair Parts Exploded View

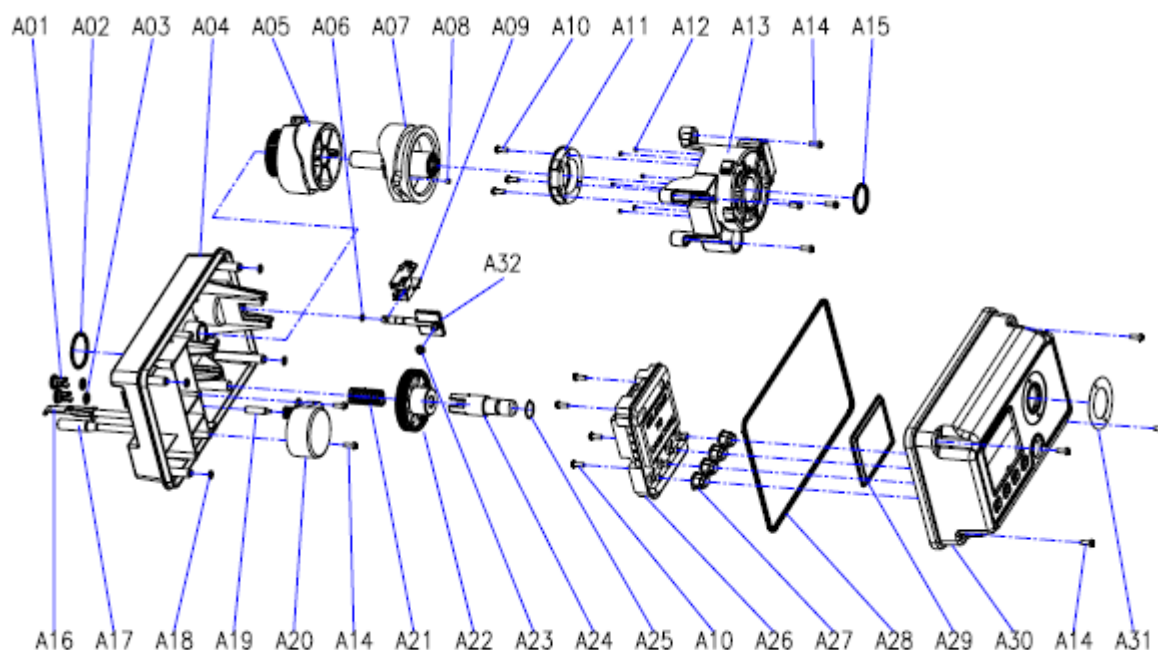


## Main Repair Parts List

REPLACEMENT PARTS - TWIN TANK			
Replacement Part Number	Part Description	DWG #	Quantity
60010052	POWER TRANSFORMER 120V-12V	A	1
10010053	95 SOFTENER VALVE	C	1
25030001	1465 TANK (250,300)	D	1
25030002	1665 TANK (400)	D	1
50040006	DISTRIBUTOR KIT 14" - 16"	E	1
60010005	OVER FLOW FITTING ASSEMBLY	F	1
55010004	SAFETY / AIR CHECK ASSEMBLY	H	1
30020032	BRINE TANK BTR-200 ASSEMBLY	F-J	1
55010011	BRINE WELL & CAP	I&J	1



## Power Head Exploded View

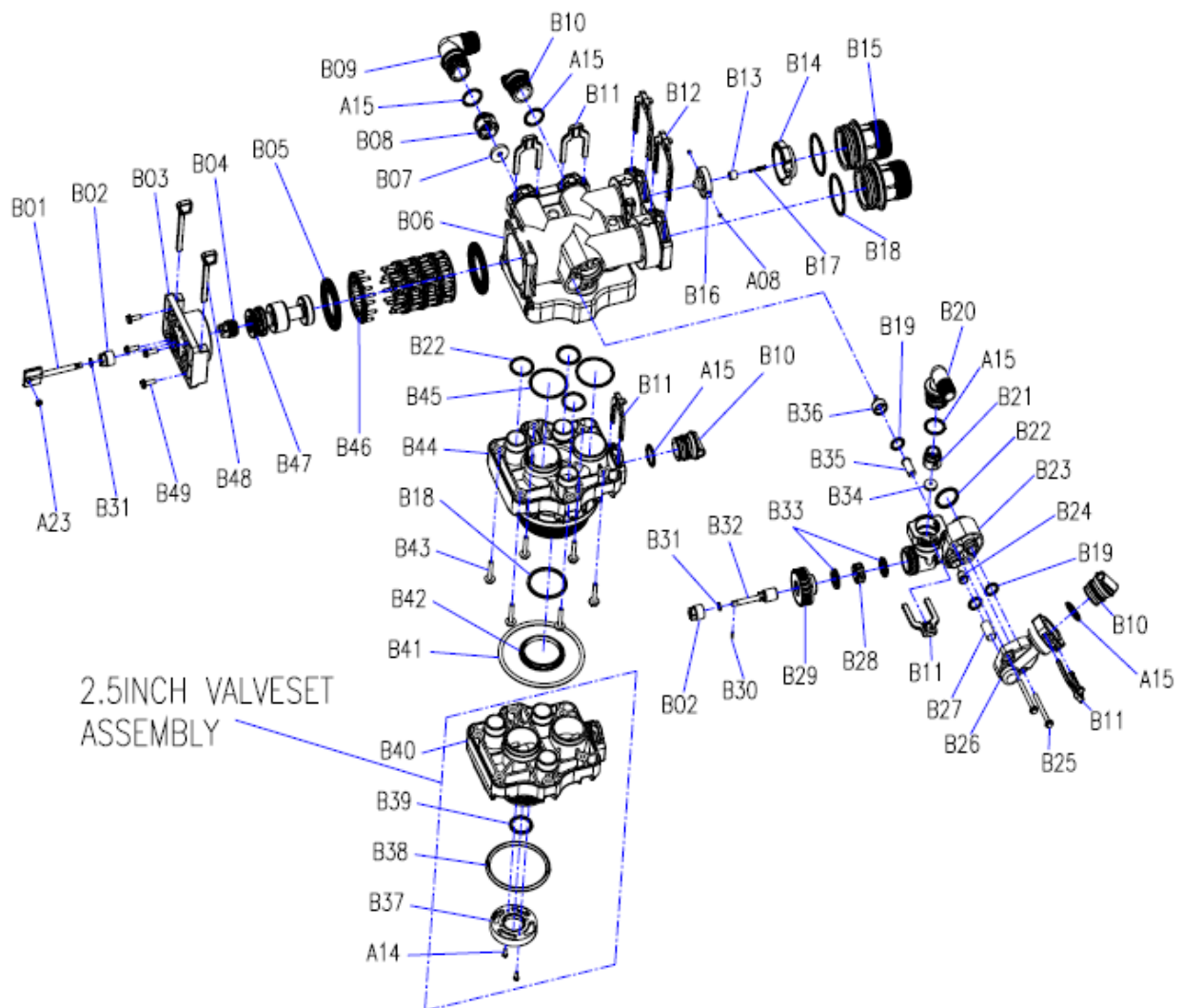


Item No.	Part No.	Part Description	Quantity
A01	05040038	Bnt95 Cable Jacket(without hole)	2
A02	26010028	O-Ring-Ø28×2.65	1
A03	05040086	O-Ring-Ø8×2	2
A04	05040005	Bnt95 Housing	1
A05	05040008	Bnt95 Driving Cam	1
A06	05040032	O-Ring-Ø4×1.5	1
A07	05040009	Bnt95 Driven Cam	1
A08	05010078	Magnet-Ø4x3	1
A09	05040095	Bnt95 Brine Valve Connector	1
A10	05056085	Screw-ST2.9×9.5(Large Wafer)	7
A11	05040052	Bnt95 Sensor Pcb	1
A12	05010047	Friction Point	6
A13	05040007	Bnt95 Mounting Plate	1
A14	05056084	Screw-ST3.5×13	10
A15	05056129	O-Ring-Ø23×3	1
A16	05040054	Bnt95 Meter Cable	1
	05040039	Bnt95 Meter Cover	1
	05040037	Bnt95 Cable Jacket(with hole)	1
	05040086	O-Ring-Ø8×2	1
A17	05040053	Bnt95 Power Cable	1
	05040037	Bnt95 Cable Jacket(with hole)	1
	05040086	O-Ring-Ø8×2	1
A18	05040087	O-Ring-Ø5.5×1.5	4
A19	05040044	Bnt95 Motor Pin	1



Item No.	Part No.	Part Description	Quantity
A20	05040047	Bnt95 Motor (AC12V, 2RPM)	1
A21	05040046	Bnt95 Gear Spring	1
A22	05040040	Bnt95 Gear	1
A23	05040033	Bnt95 Piston Rod Bush	1
A24	05040041	Bnt95 Manual Button	1
A25	05040085	O-Ring- $\varnothing 10 \times 2.5$	1
A26	05040051	Bnt95 Main PCB	1
A27	05056529	Bnt465 Button	4
A28	05040043	Bnt95 Housing Seal	1
A29	05040036	Bnt95 Clear Cover	1
A30	05040006	Bnt95 Cover	1
A31	05040092	Bnt95 Label (Filter)	1
	05040093	Bnt95 Label (Softener)	1
A32	05040026	Bnt95 Brine Valve Piston Rod	1

## Control Valve Exploded View



## Control Valve Parts List

Item No.	Part No.	Part Description	Quantity
B01	05040025	Bnt95 Piston Rod	1
A23	05040033	Bnt95 Piston Rod Bush	1
B02	05040029	Bnt95 Quad Ring Holder	2
B03	05040004	Bnt95 End Plug Retainer	1
B04	05040024	Bnt95 Piston Rod Holder	1
B05	05040022	Bnt95 Spacer Seal	5
B06	05040002	Bnt95 Valve Bobby	1
	05040049	Bnt95 Nut M6	6
	05056101	Nut M5	6
B07	05040104	DLFC #3S (4.5 GPM)	1
	05040105	DLFC #4S (5.0 GPM)	1
	05040107	DLFC #6S (6.0 GPM)	1
	05040108	DLFC #7S (7.0 GPM)	1
	05040069	DLFC #1 (8.0 GPM)	1
	05040070	DLFC #2 (11.0 GPM)	1
	05040071	DLFC #3 (14.0 GPM)	1
	05040072	DLFC #4 (17.0 GPM)	1
	05040073	DLFC #5 (21.0 GPM)	1
	05040074	DLFC #6 (24.0 GPM)	1
B08	05040030	Bnt95 Dlfc Holder	1
B09	05040012	Bnt95 Drainlet	1
A15	05056129	O-Ring-Ø23×3	5
B10	05040015	Bnt95 Plug	3
B11	05040018	Bnt95 Clip (S)	5
B12	05040017	Bnt95 Clip (L)	2
B13	05040034	Bnt95 Impeller Bush	1
B14	05040020	Bnt95 Impeller Holder	1
B15	05040014	Bnt95 Adaptor	2
B16	05040019	Bnt95 Impeller	1
A08	05010078	Magnet-Ø4x3	2
B17	05040045	Bnt95 Impeller Pin	1
B18	26010030	O-Ring-Ø48.7×3.55	3
B19	05040084	O-Ring-Ø14×3	3
B20	05040013	Bnt95 Brinelet	1
B21	05040031	Bnt95 BLFC Holder	1
B22	26010046	O-Ring-Ø27×3	4
B23	05040010	Bnt95 Injector Body	1

Item No.	Part No.	Part Description	Quantity
B24	05040112	Bnt95 Nozzle-4S	1
	05040113	Bnt95 Nozzle-5S	1
	05040059	Bnt95 Nozzle-3	1
	05040061	Bnt95 Nozzle-4	1
	05040063	Bnt95 Nozzle-5	1
	05040065	Bnt95 Nozzle-6	1
B35	05040117	Bnt95 Throat-4S	1
	05040118	Bnt95 Throat-5S	1
	05040060	Bnt95 Throat-3	1
	05040062	Bnt95 Throat-4	1
	05040064	Bnt95 Throat-5	1
	05040066	Bnt95 Throat-6	1
B25	05040099	Screw-M5×55 (Hexagon with Washer)	2
B26	05040011	Bnt95 Injector Cover	1
B27	05040048	Bnt95 Brine Valve Screen	1
B28	05040027	Bnt95 Brine Valve Spacer	1
B29	05040028	Bnt95 Brine Valve Seal Cover	1
B30	05040050	Bnt95 Brine Valve Rod Pin	1
B31	05056070	Quad Ring	2
B32	05040023	Bnt95 Brine Valve Piston	1
B33	05040042	Bnt95 Brine Valve Seal	2
B34	05040081	Bnt95 BLFC-6 (0.9 GPM)	1
	05040083	Bnt95 BLFC-7 (1.35 GPM)	1
B36	05040035	Bnt95 Air Disperser	1
B37	07060007	Valve Bottom Connector	1
B38	05056063	O-Ring-Ø78.74×5.33	1
B39	26010103	O-Ring-Ø25×3.55	1
B40	05040001	Bnt95 Valveset (2.5inch)	1
B41	05040094	O-Ring-Ø108×5.3	1
B42	05040091	Bnt95 Seal Holder	1
B43	05040088	Screw-M6×30 (Hexagon with Washer)	6
B44	05040090	Bnt95 Valveset (4inch)	1
B45	05040082	O-Ring-Ø47×3	2
B46	05040003	Bnt95 Spacer	10
B47	05040021	Bnt95 Piston	1
B48	05040016	Bnt95 Housing Locking Bar	2
B49	05056088	Screw-M5×16 (Hexagon with Washer)	4

## Trouble Shooting

Issue	Possible Cause	Possible Solution
A. Unit fails to initiate a regeneration cycle.	1. No power supply.	Check electrical service, fuse, etc.
	2. Defective circuit board.	Replace faulty parts.
	3. Power failure.	Reset time of day.
	4. Defective meter.	Replace turbine meter.
B. Water is hard.	1. By-pass valve open.	Close by-pass valve.
	2. Out of salt or salt level below water level.	Add salt to tank.
	3. Plugged injector / screen.	Clean parts.
	4. Flow of water blocked to brine tank.	Check brine tank refill rate.
	5. Hard water in hot water tank.	Repeat flushing of hot water tank required.
	6. Leak between valve and central tube.	Check if central tube is cracked or o-ring is damaged. Replace faulty parts.
	7. Internal valve leak.	Replace valve seals, spacer, and piston assembly.
	8. Reserve capacity setting too low.	Increase reserve capacity.
	9. Not enough capacity.	Increase salt dosage.
C. Salt use is high.	1. Refill time is too high.	Check refill time setting.
	2. Defective flow control.	Replace.
D. Low water pressure.	1. Iron or scale build up in line feeding unit.	Clean pipes.
	2. Iron build up inside valve or tank.	Clean control and add resin cleaner to clean bed. Increase regeneration frequency.
	3. Inlet of control plugged due to foreign material.	Remove piston and clean control valve.
	4. Deteriorated resin. (Maybe caused from high chlorine or chloramines.)	Re-bed unit. Consider adding carbon pre-treatment.
E. Resin in drain line.	1. Air in water system.	Check well system for proper air eliminator control.
	2. Incorrect drain line flow control (DLFC) button.	Check for proper flow rate.
F. Too much water in brine tank.	1. Plugged injector or screen.	Clean parts.
	2. Valve not regenerating.	Replace circuit board, motor, or control.
	3. Foreign material in brine valve.	Clean parts.
	4. Unit not drawing brine.	Check for vacuum leak in brine line connections.
G. Unit fails to draw brine.	1. Drain line flow control is plugged.	Clean parts.
	2. Injector or screen is plugged.	Clean parts.
	3. Inlet pressure too low.	Increase pressure to 25 PSI.
	4. Internal valve leak.	Replace seals, spacers, and piston assembly.
	5. Safety valve closed.	Check for leak in brine line connections. Replace safety float assembly.
	6. Vacuum leak in brine line.	Check for leak in brine line connections. Tighten all connections.
	7. Drain line has kink in it or is blocked.	Check drain line.
H. Valve continuously cycles.	1. Defective position sensor PCB.	Replace faulty parts.
I. Flow to drain continuously.	1. Valve settings incorrect.	Check valve settings.
	2. Foreign material in control valve.	Clean control.
	3. Internal leak.	Replace seals, spacers, and piston assembly.
	4. Piston is stuck in position. Motor may have failed or gears have jammed or disengaged.	Check for power to motor. Check for loose wire. Check for jammed gears or gears disengaged. Replace faulty parts.
J. Valve makes beeping sound.	1. The piston has not advanced to the next cycle position properly.	Check for power to motor. Check for loose wire. Check for jammed gears or gears disengaged.