

# 765 TLC

## Softener & Tannins Reduction System

# Owners Manual

1. Read all instructions carefully before operation.
2. Avoid pinched O-rings during installation by applying (provided with install kit) NSF certified lubricant to all seals.
3. This system is not intended for treating water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

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## Table of Contents

	<b>PAGE</b>
<b>Unpacking / Inspection</b>	<b>2</b>
<b>Safety Guide</b>	<b>2</b>
<b>Proper Installation</b>	<b>3</b>
<b>Specification</b>	<b>4</b>
<b>Before Starting Installation</b>	<b>4</b>
<b>Installation Instructions</b>	<b>6</b>
<b>System Start Up</b>	<b>8</b>
<b>Programming Instructions</b>	<b>9</b>
<b>About The System</b>	<b>10</b>
<b>Maintenance</b>	<b>12</b>
<b>Sanitizing Procedure</b>	<b>15</b>
<b>Main Repair Parts</b>	<b>16</b>
<b>Trouble Shooting</b>	<b>23</b>
<b>Warranty</b>	<b>24</b>

## 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.

## Safety Guide

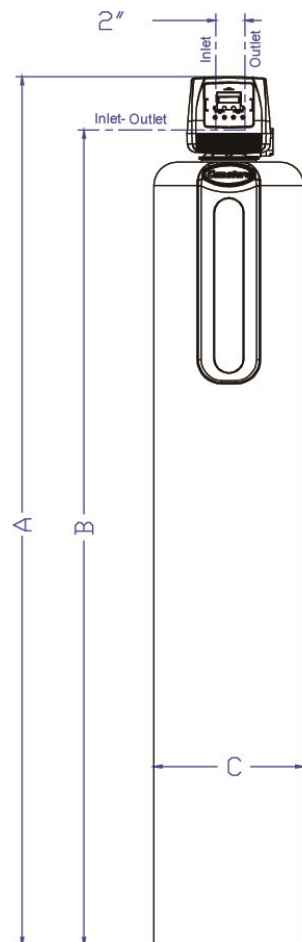
*For your safety, the information in this manual must be followed to minimize the risk of electric shock, property damage or personal injury.*

- 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.

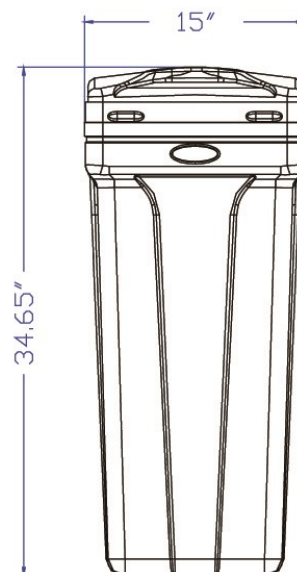
## Proper Installation

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

- **Do not** 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.
- 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.



	NST45UD1	NST70UD1
A	50-3/8"	64"
B	41-5/8"	55-1/2"
C	11"	13"



## Specifications

Specifications	HT765TLC-100	HT765TLC-150	HT765TLC-200	HT765TLC-250	HT765TLC-300
<b>Factory Settings - High Capacity</b>					
Salt Used - Per Regeneration	12.0 lbs	18.0 lbs	24.0 lbs	30.0 lbs	36.0 lbs
Water Used - Regeneration	64.3 gal	90.3 gal	124.6 gal	160.8 gal	196.2 gal
Tannins Removal	2000 ppm	3000 ppm	4000 ppm	5000 ppm	6000 ppm
Resin Quantity - Cubic Feet	1.0 ft	1.5 ft	2.0 ft	2.5 ft	3.0 ft
Tank Size	9x48	10x54	12x52	13x54	14x65
Media Loaded	Yes	Yes	No	No	No
Brine Tank Size (Inches)	BTR 18.1 x 34.5 BTS 15.0"x34.7	20.3 x 37.4	20.3 x 37.4	20.3 x 37.4	23.0 x 40.5
Salt Storage Capacity	BTS 240 lbs BTR 270 lbs	350 lbs	350 lbs	350 lbs	420 lbs
Recommended Service Flow Rate	3.0 gpm	4.5 gpm	6.0 gpm	7.5 gpm	9.0 gpm
Flow Rate @ 15 psi Pressure Drop	11.0 gpm	11.2 gpm	12.2 gpm	12.4 gpm	12.6 gpm
Flow Rate @ 25 psi Pressure Drop	15.0 gpm	15.1 gpm	16.2 gpm	16.4 gpm	16.6 gpm
Back Wash Flow Rate	2.0 gpm	2.4 gpm	3.5 gpm	4.0 gpm	5.0 gpm
Shipping Weight	122 lbs	155 lbs	158 lbs	208 lbs	244 lbs
Regeneration Type	Co-Current / Down Flow				
Maximum Tannins	3.0 ppm (Contact Customer Service for higher levels)				
Plumbing Connections	Includes 3/4" 90°Elbows & 1" Straight NPT				
Resin Type	850 Anion Resin				
Electrical Requirements	Input 120V 60 Hz - Output 12V 550mA				
Water Temperature	Min 39 - Max. 100 degrees Fahrenheit				
Water Pressure	Min. 20 - 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

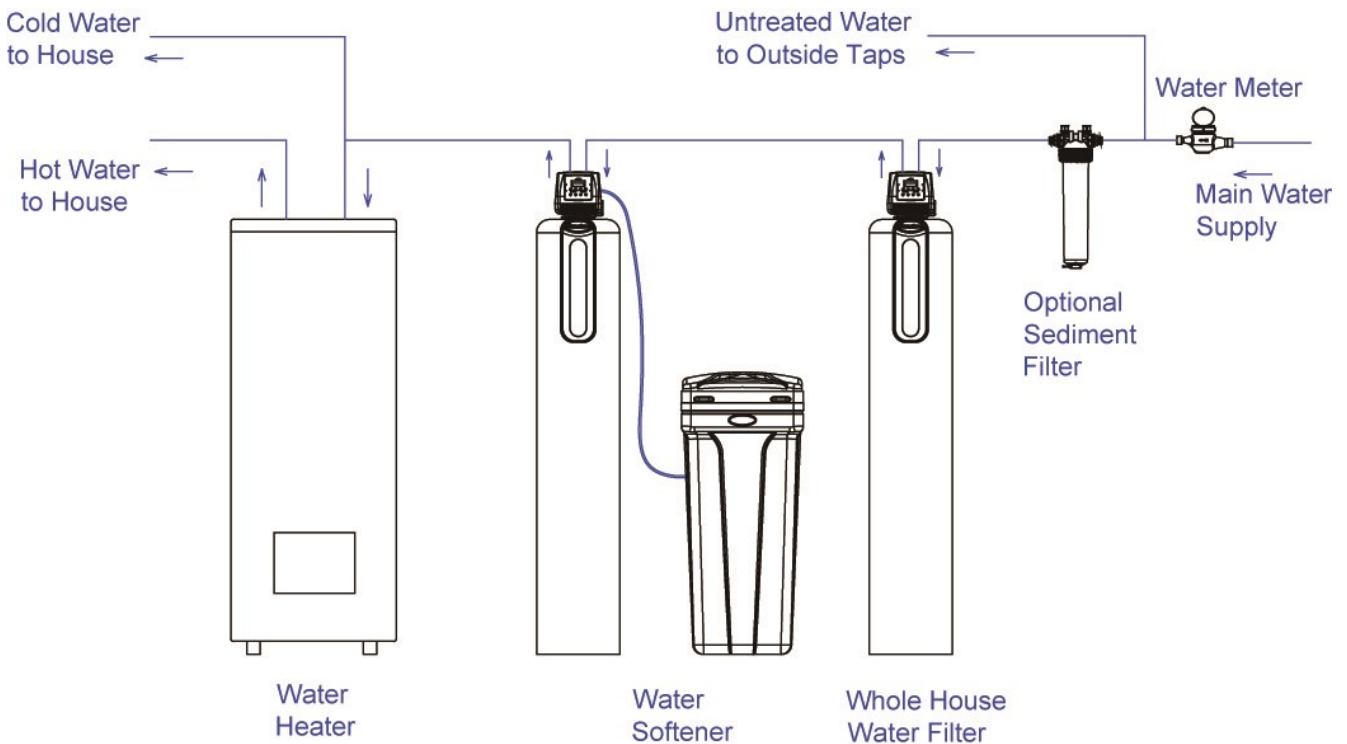
## Before Starting Installation

### 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 or brine 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.



## Installation Instructions

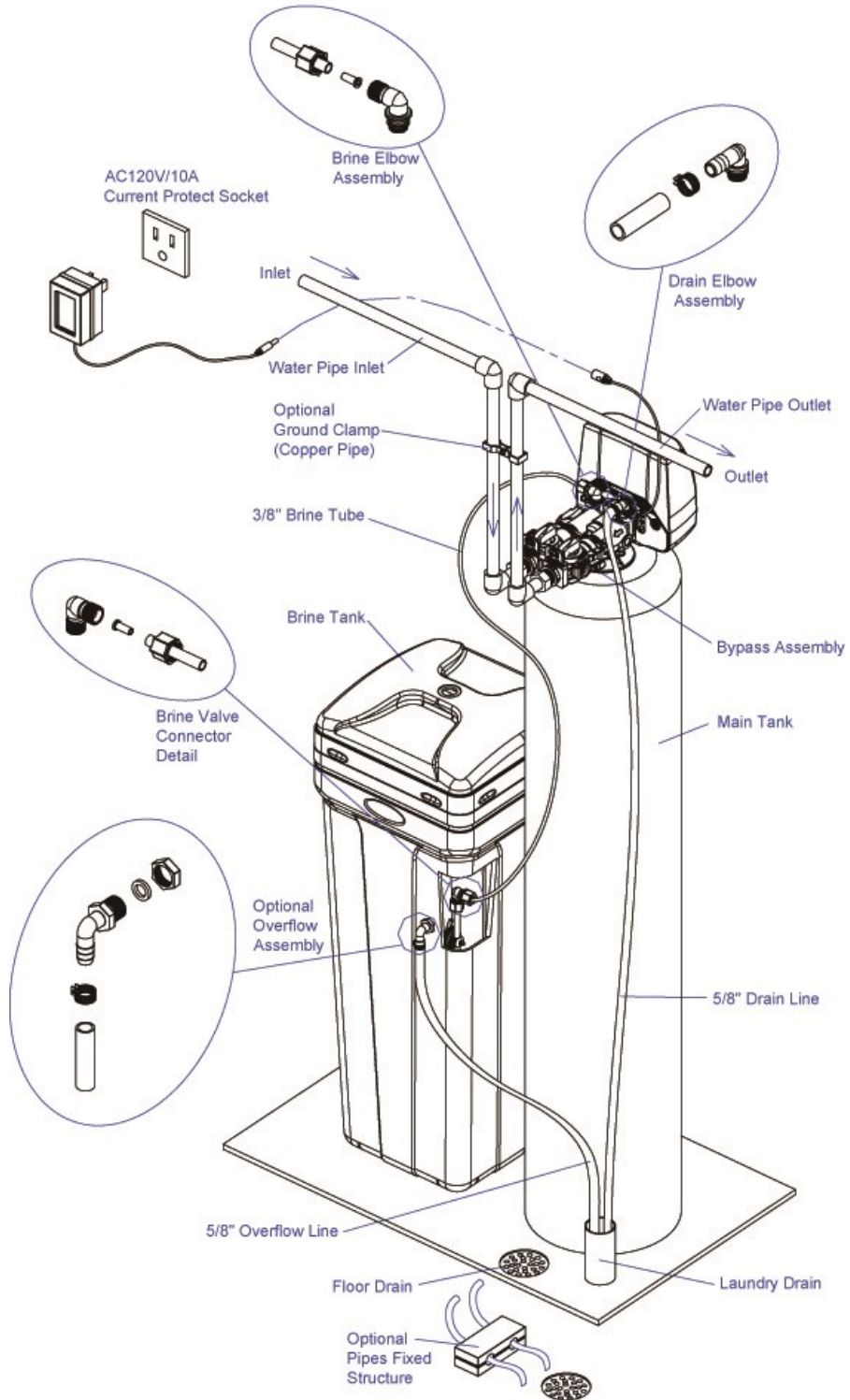
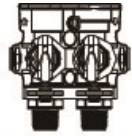
1. If your hot water tank is electric, turn off the power to it to avoid damage to the element in the tank.
2. If you have a private well, turn the power off to the pump and then shut off the main water shut off valve. If you have municipal water, simply shut off the main valve. Go to the faucet, (preferably 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 1/2" 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 3/4". 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.***

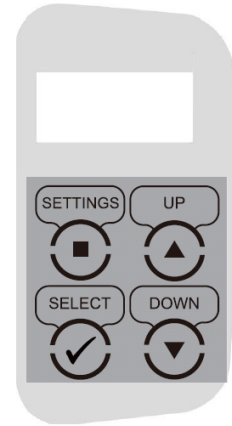
# Installation



## System Start-Up

### Key Pad Configuration

SETTINGS	This function is to enter the basic set up information required at the time of installation.
SELECT	Pressing this key allows the user to change the value of each setting.
DOWN / UP	Increase or decrease the value of the settings while in the programming mode.



### Start-up Instructions

1. Plug the power transformer into an approved power source. Connect the power cord to the valve.
2. When power is supplied to the control, the screen will display "WAITING PLEASE" while it finds the service position.
3. Manually step the valve past the BRINE position to the BACKWASH position. If screen is locked, the screen will display "PRESS SETTINGS 3S TO UNLOCK". Follow the instructions and press SETTINGS for 3 seconds to unlock. Press and hold the SELECT Key for 3 seconds. Press any key to skip the BRINE cycle.
4. Once in the BACKWASH cycle, 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 bypass fully open. 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 RINSE position. Check the drain line flow. Allow the water to run for 3-4 minutes or until the water is clear.
6. 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.
7. 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.
8. Add salt into the cabinet / brine tank.
9. Program unit.



## Programming Instructions

1. Press SETTINGS to advance to the TIME of DAY. TIME of DAY will flash. Press Up and Down key to adjust the TIME of DAY. Press and Hold UP or DOWN key to quickly advance the hours and minutes. When desired time is displayed, press SELECT to Advance to the HARDNESS setting.
2. HARDNESS will flash. Press the UP or DOWN key to adjust HARDNESS (Min 1/Max 199). When desired hardness (in grain per gallon) is displayed, press SELECT to advance to the PEOPLE setting (Min 1/Max 9).
3. PEOPLE will flash. When desired number of people is displayed press SELECT to complete the programming.
4. At any time, press SETTINGS to return to previous home screen menu.

### Menu - Level 1

Press SETTINGS key

TIME 12:00AM
-----------------

HARDNESS 20GPG
-------------------

PEOPLE 4
-------------

## Manual Regeneration (Step / Cycle Valve)

To Initiate the manual regeneration, rotate the knob to the backwash position.

## About The System

### 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.

### Safety Float

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

### Main Display

When power is supplied to the control, the screen will display TIME OF DAY, GALLONS REMAINING, and DEALER NAME and PHONE NUMBER.

### New Sounds

You may notice new sounds as your water softener operates. The regeneration cycle lasts up to 180 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.

## **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	Brine	The brine solution is introduced slowly to the bottom of the tank flowing up through the ion exchange resin pushing the hardness out to drain and restoring system capacity.
#2	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.
#3	Rinse	Fresh water is introduced from the top of the tank down flowing down through the ion exchange resin rinsing any excess brine solution out to the drain.
#4	Refill	A fixed amount of soft water is added to the salt tank to prepare and insure fully saturated brine for the next regeneration.

## **Automatic Hard Water Bypass During Regeneration**

The regeneration cycle can last 30 to 180 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.

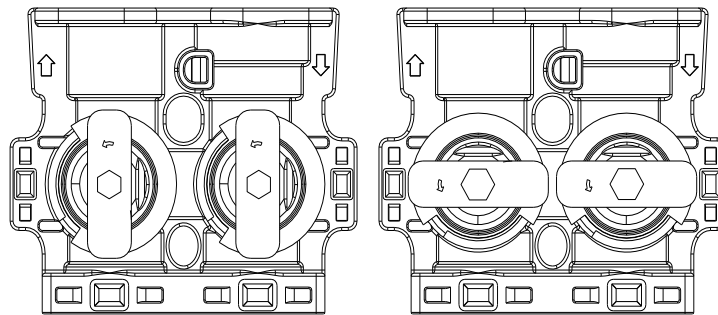
## **System Configuration**

<b>785 UPFLOW System Configuration</b>			
Tank Size (Diameter)	Injector Set	Brine Line Flow Control (BLFC)	Drain Line Flow Control (DLFC)
8"	#0000 Black	0.20 GPM	#1 (1.5 GPM)
9"			#2 (2.0 GPM)
10"			#3 (2.4 GPM)
12"	#00 Purple		#5 (3.5 GPM)
13"	#0 Red		#6 (4.0 GPM)
14"	#1 WHITE		#A (5.0 GPM)

## **Manual Bypass**

In the case of emergency, such as an overflowing brine tank, you can isolate your water softener from the water supply using the bypass valve located at the back of the control. In normal operation the bypass is open with the on/off knobs in line with the inlet and outlet pipes.

To isolate the softener, simply rotate the knobs clockwise (as indicated by the word BYPASS and arrow) until they lock. You can use your water related fixtures and appliances as the water supply is bypassing the softener. However, the water you use will be hard. To resume soft water service, open bypass valve by rotating the knobs counterclockwise.



SERVICE POSITION

BYPASS POSITION

## **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**

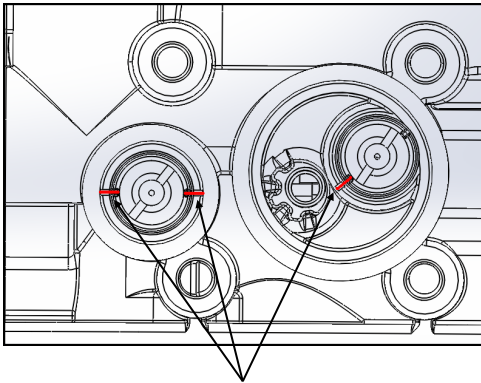
Humidity or wrong type of salt may create a cavity between the water and the salt. This action, known as "bridging", prevents the brine solution from being made, leading to your water supply being hard.

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 two hours to produce a brine solution, then manually regenerate the softener.

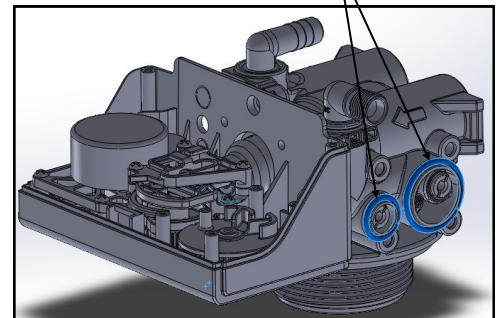
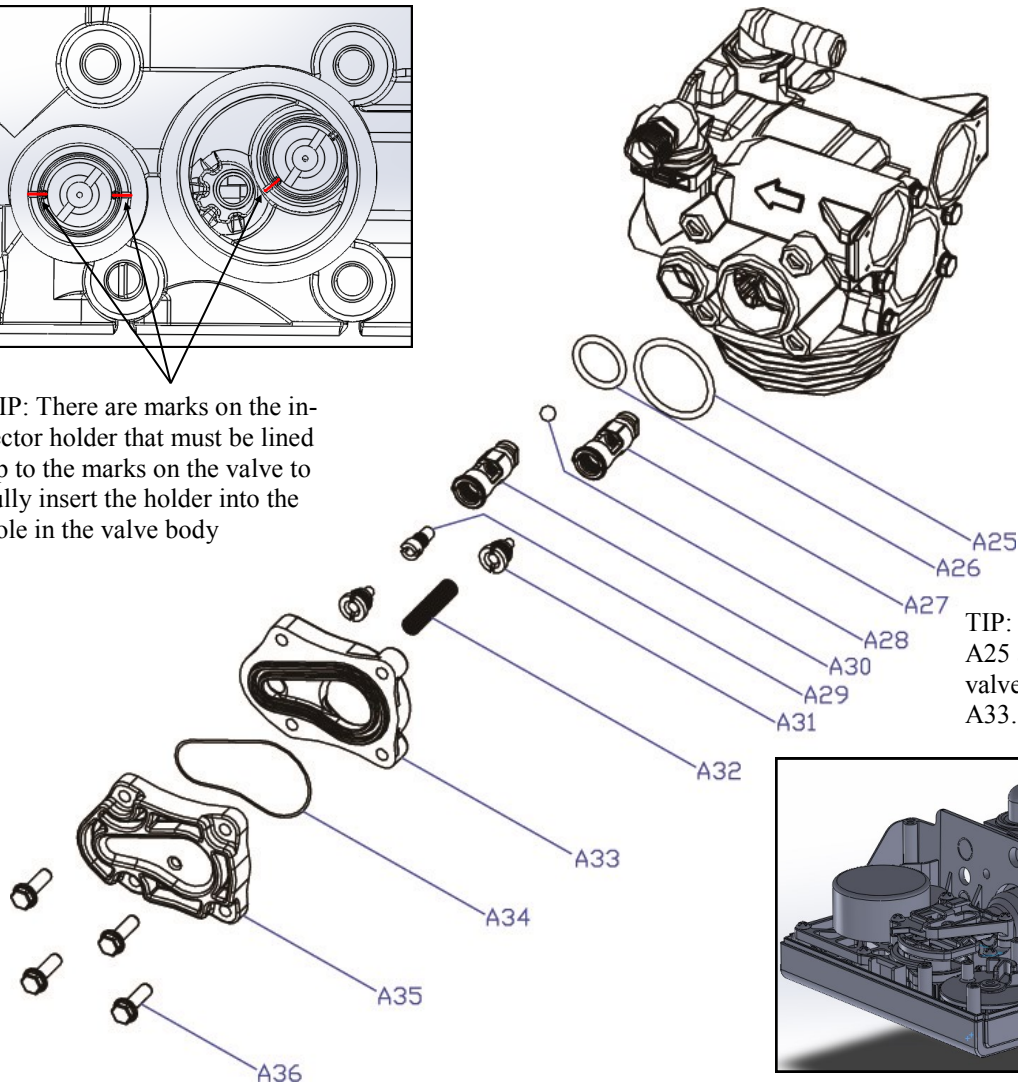
## **Cleaning or Replacing Injectors**

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.

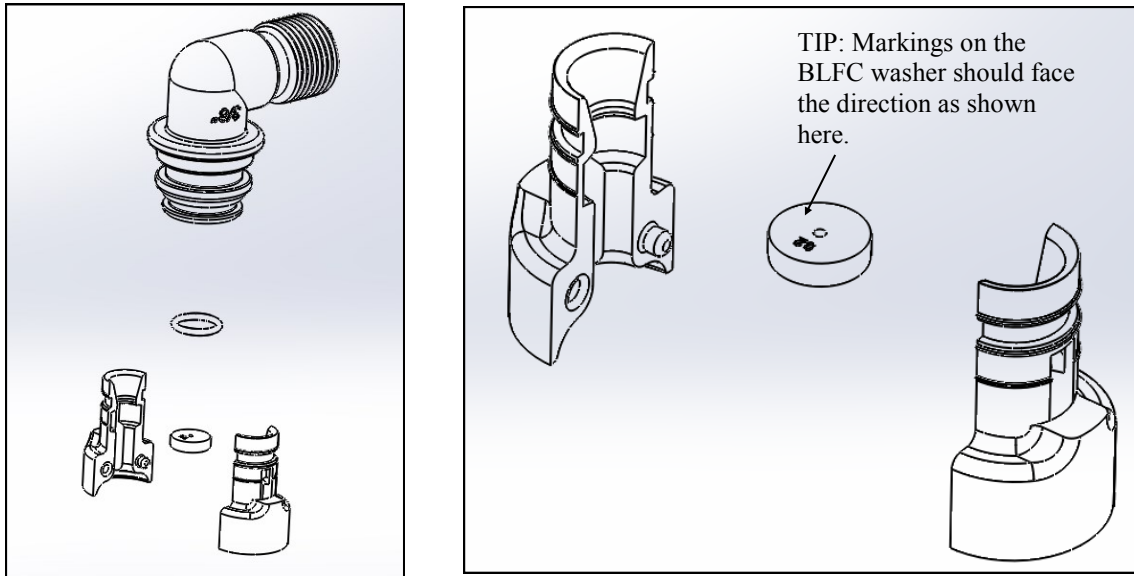


TIP: There are marks on the injector holder that must be lined up to the marks on the valve to fully insert the holder into the hole in the valve body



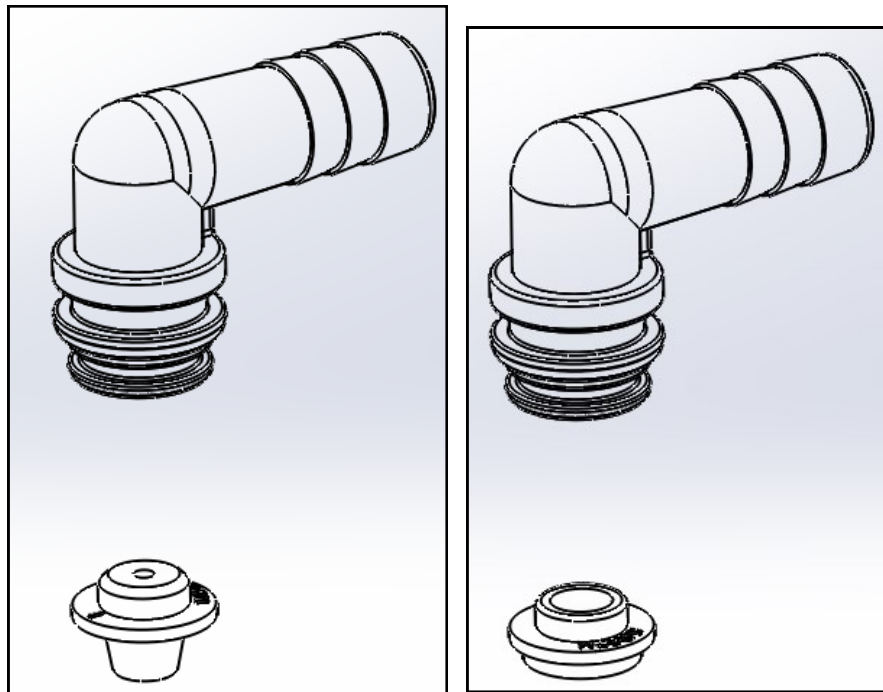
1. Shut off the water supply to your softener and reduce the pressure by opening a cold soft water faucet.
2. Using a screwdriver, remove the four screws holding the injector cover to the control valve body.
3. Carefully remove the assembly and disassemble as shown in above figure.
4. The injector orifice is removed from the valve body by carefully turning it out with a large screwdriver. Remove the injector throat the same way.
5. 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.
6. Reassemble using the reverse procedure.

## **Replacing Brine Line Flow Control (BLFC)**



1. Remove the red clip that secures the brine elbow.
2. Remove the BLFC holder from the elbow fitting.
3. Split the BLFC holder apart and remove the flow washer.
4. Reassemble using the reverse procedure.

## **Replacing Drain Line Flow Control (DLFC)**



1. Remove the red clip that secures the drain line elbow.
2. Remove the BLFC washer from the elbow fitting.
3. Reassemble using the reverse procedure.

## 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).



Item #	Description
80030006	Res Care - 1 gal. Bottle
80030005	Res Care - 1 qt. Bottle



Item #	Description
80030002	Rust Out - 1.5 lb. Bottle
80030003	Rust Out - 5 lb. Bottle
80030004	Rust Out - 50 lb. Pail



Item #	Description
55030001	Res Up Feeder - 0.5 oz/day Feeder
55030002	Res Up Feeder - 1.0 oz/day Feeder

## Sanitizing Procedure

Care is taken at the factory to keep your water softener clean and sanitary. Materials used to make the softener will not infect or contaminate your water supply, and will not cause bacteria to form or grow. However, during shipping, storage, installing and operating, bacteria could get into the softener. For this reason, sanitizing as follows is suggested when installing.

### Sani-System Liquid Sanitizer Concentrate



Item# 80030021—Softener Sanitizer 0.25 fl.oz (24 Pack)

1. Be sure to complete all installation steps, including programming.
2. For effective and complete sanitization, Sani-System Liquid Sanitizer Concentrate is recommended. Pour one 0.25 fl. Oz. package into the brine well located in the cabinet or brine tank. (Alternative use 3/4 oz of common 5.25% household bleach)
3. Start an immediate regeneration. (See page 11)
4. The Softener Sanitizer Solution is drawn into and through the water softener to sanitize it. This sanitizing regeneration is over in about two hours. Then, **soft water** is available for your use.

NOTE: Sanitizing is recommended by the Water Quality Association for disinfecting. On some water supplies, they suggest periodic sanitizing.

## Brine Tank & Res-Up Feeder Assembly

### Step 1

Install salt plate and align brine well opening with the tank handle.



### Step 2

Install feeder bracket into the 2 pre-drilled holes.



### Step 3

Install brine well. Feed wick from feeder into the opening in the brine well cap.



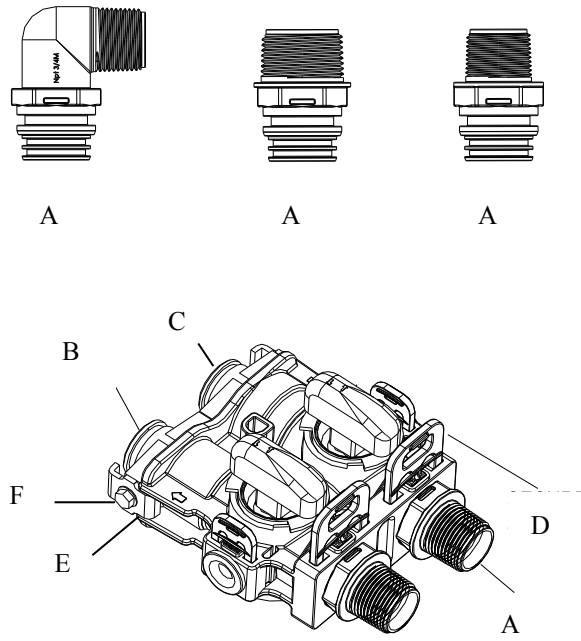
### Step 4

Push feeder into brine well cap as shown to complete the assembly.





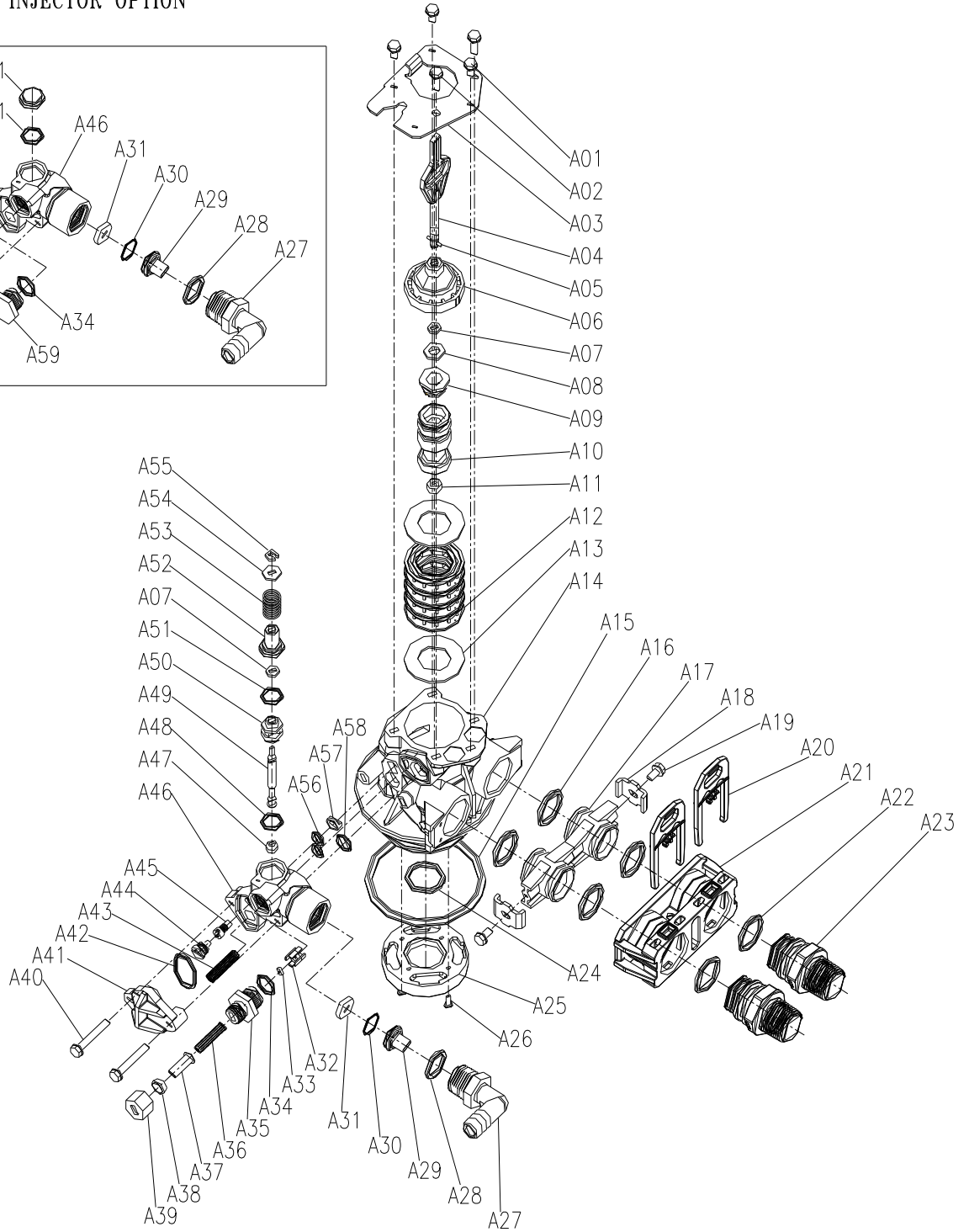
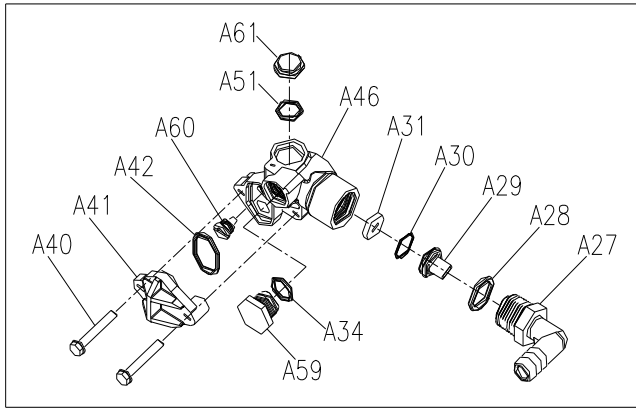
**Main Repair Parts - Connectors**



REPLACEMENT PARTS - CONNECTORS			
Replacement Part Number	Part Description	DWG #	Quantity
60010020	3/4" NPT ELBOW	A	2
60010019	1" NPT STRAIGHT	A	2
60010023	3/4" NPT STRAIGHT	A	2
60010079	VALVE COUPLING INLET	B	1
60010101	VALVE COUPLING OUTLET (METER SIDE)	C	1
60010025	PLASTIC SECURE CLIP	D	2
60010046	BYPASS SS CLIP	E	2
60010047	BYPASS SS SCREW	F	2

# Control Valve Exploded View

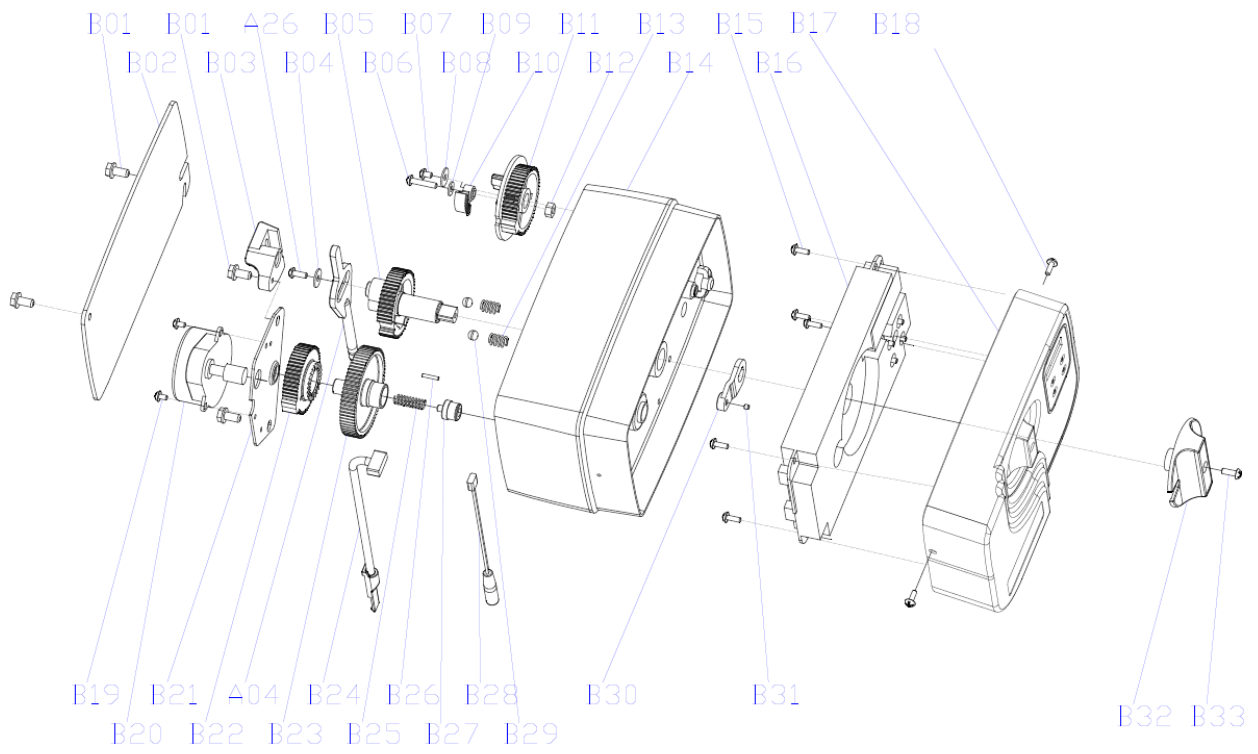
FILTER INJECTOR OPTION



## **Control Valve Parts List**

Item No.	Part No.	Part Discription	Quantity
A01	05056087	Screw-M5×12(Hexagon)	3
A02	05056088	Screw-M5×16(Hexagon with Washer)	2
A03	05056047	End Plug Retainer	1
A04	05010081	Bnt65 Piston Rod	1
A05	05056097	Piston Pin	1
A06	05056023	End Plug	1
A07	05056070	Quad Ring	2
A08	05056024	End Plug Washer	1
A09	05056022	Piston Retainer	1
A10	05056181	Piston (Electrical)	1
A11	05056104	Muffler	1
A12	05056021	Spacer	4
A13	05056073	Seal	5
A14	05056019	Bnt65 Valve Body	1
A15	05056063	O-ring- $\phi 78.74 \times 5.33$	1
A16	05056129	O-ring- $\phi 23 \times 3$	4
A17	05056025	Adaptor Coupling	2
A18	05056044	Adaptor Clip	2
A19	05056090	Screw-ST4.2×13(Hexagon with Washer)	2
A20	21709003	Secure Clip	2
A21	05056140	Valve Connector	1
A22	05056065	O-ring- $\phi 23.6 \times 2.65$	2
A23	21319006	Screw Adaptor	2
A24	26010103	O-ring- $\phi 25 \times 3.55$	1
A25	07060007	Valve Bottom Connector	1
A26	13000426	Screw-ST2.9×13(Large Wafer)	2
A27	05056038	Drain Fitting	1
A28	26010003	O-Ring- $\phi 18 \times 2.65$	1
A29	05056036	DLFC Button Retainer	1
A30	05056079	O-Ring- $\phi 15 \times 0.8$	1
A31	05056143	DLFC-2#	1
A32	05056035	BLFC Button Retainer	1
A33	05056191	BLFC-2#	1
A34	05056138	O-Ring- $\phi 14 \times 1.8$	1
A35	05056100B	BLFC Fitting	1
A36	05056106	Brine Line Screen	1
A37	05056107	BLFC Tube Insert	1
A38	05056033	BLFC Ferrule	1
A39	05056108	BLFC Fitting Nut	1
A40	05056086	Screw-M5×30(Hexagon with Washer)	2
A41	05056029	Injector Cover	1

# **Power Head Exploded View**



## **Power Head Parts List**

<b>Item No.</b>	<b>Part No.</b>	<b>Part Description</b>	<b>Quantity</b>
B01	5056136	Screw-ST3.5×13(Hexagon with Washer)	4
B02	5056014	Bnt65 Back Cover	1
B03	5010045	Piston Stem Holder	1
A26	13000426	Screw-ST2.9×13(Large Wafer)	1
B04	5056139	Washer-3x13	1
B05	5056005	Main Gear	1
B06	5056083	Screw-M4x14	1
B07	5056166	Screw-ST4.2×12(Large Wafer)	1
B08	5056141	Washer-4x12	1
B09	13111004	Washer-4x9	1
B10	5056016	Refill Regulator	1
B11	5056015	Brine Gear	1
B12	5056089	Nut-M4	1
B13	5056095	Spring Detent	2
B14	5056001	Bnt65 Housing	1
B15	5010037	Screw-ST2.9×10	5
B16	5056504	Bnt165 Pcb	1
B17	5056500	Bnt165 Front Cover	1
	5056505	Bnt165 Operation Label	1
	5056506	Bnt165 Regen. Label	1
B18	5056509	Screw-ST2.9×10(CSK )	2
B19	5056082	Screw-M3×5	2
B20	5056510	Motor-12v/2rpm	1
	11700005	Wire Connector	2
B21	5056045	Motor Mounting Plate	1
B22	5056501	Bnt165 Drive Gear	1
A04	5010081	Bnt65 Piston Rod	1
B23	5056002	Idler Gear	1
B24	5010031	Meter Assembly	1
	5010046	Meter Strain Relief	1
B25	5056094	Spring Idler	1
B26	5056098	Motor Pin	1
B27	5056502	Spring Retainer	1
B28	5056507	Bnt165 Power Cable	1
	5056013	Bnt65 Power Strain Relief	1
B29	5056092	Ball-1/4inch	2
B30	5056503	Magnet Holder	1
B31	5010023	Magnet-φ3×2.7	1
B32	5056008	Bnt65 Knob	1
	5056111	Bnt65 Knob Label	1
B33	5056084	Screw-ST3.5x13	1

## 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.

## Warranty

**Canature Watergroup** guarantees that your new water conditioner is built of quality material and workmanship. When properly installed and maintained, it will give years of trouble free service.

### Five Year Limited Warranty

Canature WaterGroup will replace the salt tank or cabinet tank, the fibreglass mineral tank, the ion exchange resin, and valve parts provided the failure is due to a defect in material or workmanship and not the result of damage from any of the conditions described in the general conditions of this warranty.

### General Conditions

Damage to any part of this water conditioner as a result of misuse, misapplication, neglect, alteration, accident, installation or operation contrary to our printed instructions, damage to ion exchange resin and seals caused by chlorine / chloramines in the water supply, or damage caused by any force of nature is not covered in this warranty. We will repair or replace defective parts if our warranty department determines it to be defective under the terms of this warranty. Canature WaterGroup assumes no responsibility for consequential damage, labour or expense incurred as a result of a defect or failure.