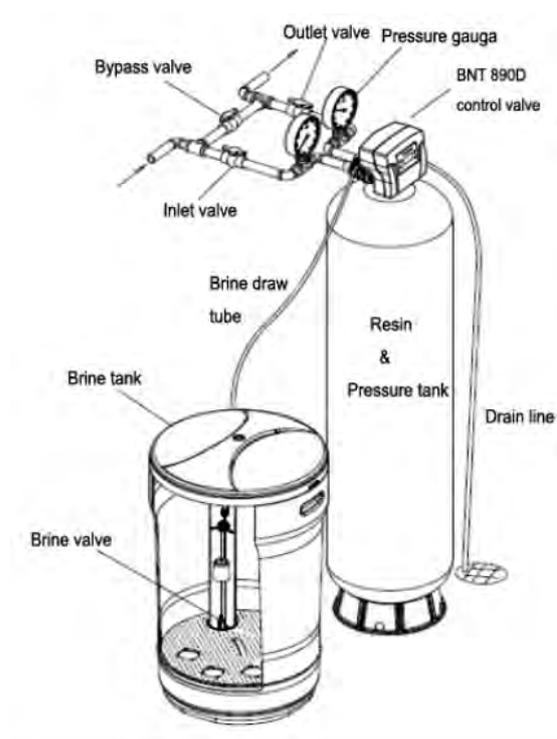




489 SIM

Softener, Iron & Manganese Reduction System

IMPORTANT—PLEASE REFER TO THE PICTURE BELOW ON INLET/OUTLET SIDE OF THE VALVE



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.

Owner's Manual

REVISION # 0
REVISION DATE May 4, 2015
54698

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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.

Specifications

Specifications	89HIM-100	89HIM-150	89HIM-200	89HIM-300
Factory Settings - Iron & Manganese				
Salt Used - Per Regeneration	12.0 lbs	18.0 lbs	24.0 lbs	36.0 lbs
Water Used - Regeneration	52.2 gal	74.4 gal	101.4 gal	166 gal
Hardness Removal - Grains	30,000	45,000	60,000	90,000
Resin Quantity - Cubic Feet	1.0 ft ³	1.5 ft ³	2.0 ft ³	3.0 ft ³
Tank Size	9x48	10x54	12x52	14x65
Tank Jacket / Media Loaded	Yes	Yes	No	No
Brine Tank / Cabinet Size (Inches)	18.1 x 34.5	20.3 x 37.4	20.3 x 37.4	23.0 x 40.5
Salt Storage Capacity	240 lbs	350 lbs	350 lbs	420 lbs
Flow Rate @ 15 psi Pressure Drop	11.0 gpm	11.2 gpm	12.2 gpm	12.6 gpm
Flow Rate @ 25 psi Pressure Drop	15.0 gpm	15.1 gpm	16.2 gpm	16.6 gpm
Back Wash Flow Rate	2.1 gpm	2.4 gpm	3.5 gpm	5.0 gpm
Shipping Weight	125 lbs	158 lbs	161 lbs	247 lbs
Regeneration Type	Co-Current / Down Flow			
Maximum Hardness	75 Grains Per Gallon			
Maximum Iron (Ferrous)	10 ppm			
Maximum Manganese	5 ppm			
Plumbing Connections	3/4" (Optional 1")			
Resin Type	Canature High Efficiency Cation Ion Exchange Resin			
Electrical Requirements	Input 120V 60 Hz - Output 12V 650mA			
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 descriptions stated herein, without obligation to change previously manufactured products or to note the change.

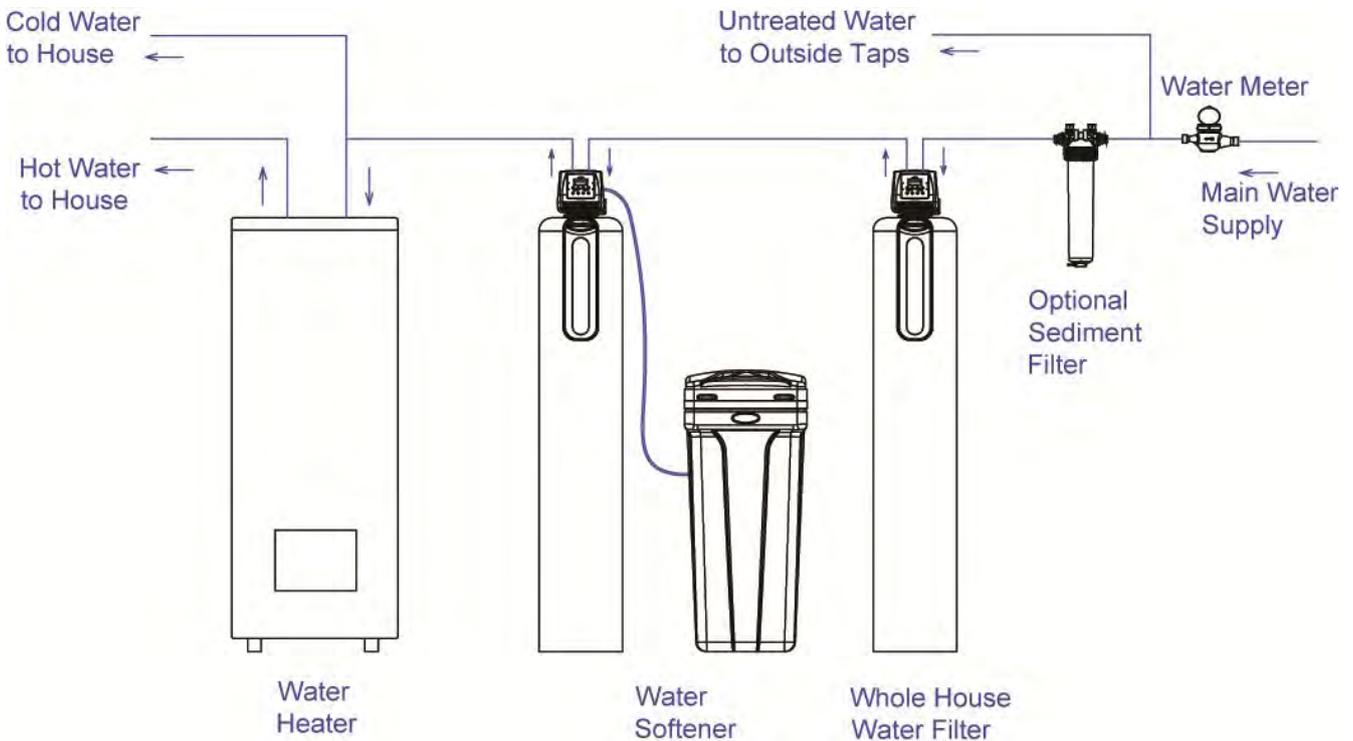
Before Starting Installation

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 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

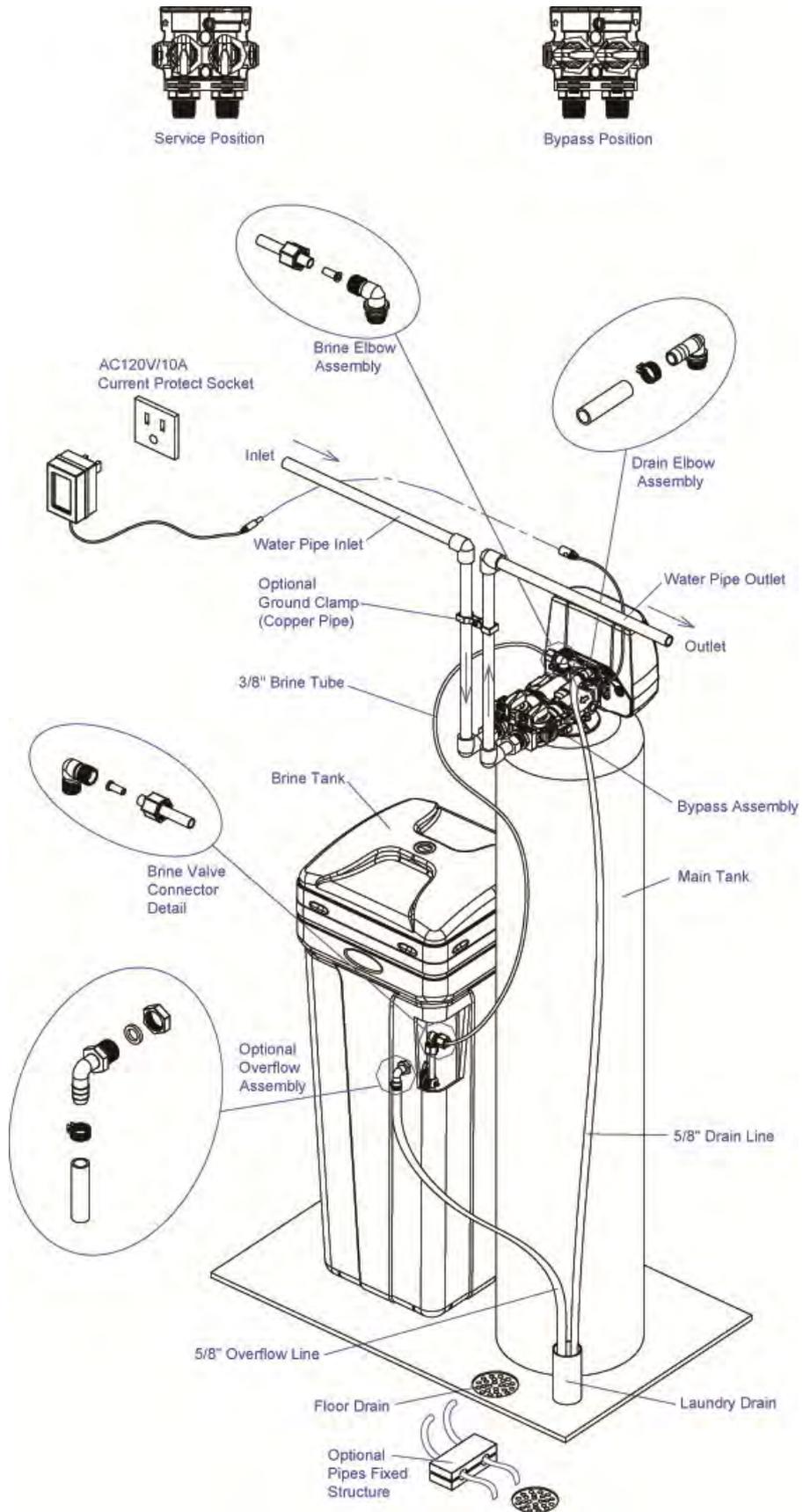
1. If your hot water tank is electric, turn off the power to it to avoid damage to the element in the tank.
2. If you have a private well, turn the power off to the pump and then shut off the main water shut off valve. If you have municipal water, simply shut off the main valve. Go to the faucet, (preferably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

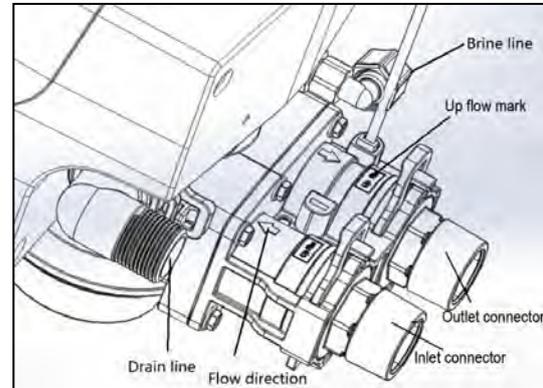
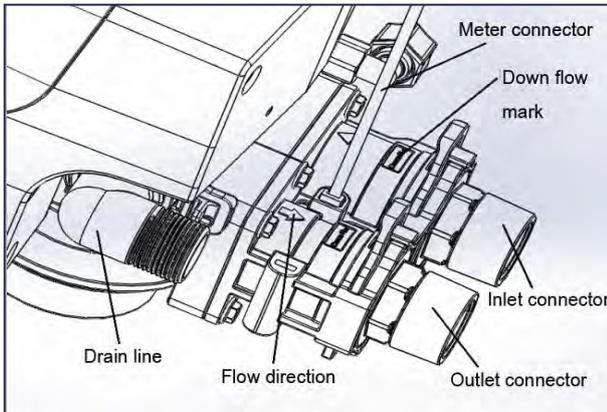
5. Connect the drain hose (10 ft included) to the valve and secure it with a hose clamp (also included). Run the drain hose to the nearest laundry tub or drain pipe. This can be ran up overhead or down along the floor. If running the drain line more than 20 ft overhead, **it is recommended to increase the hose size to 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



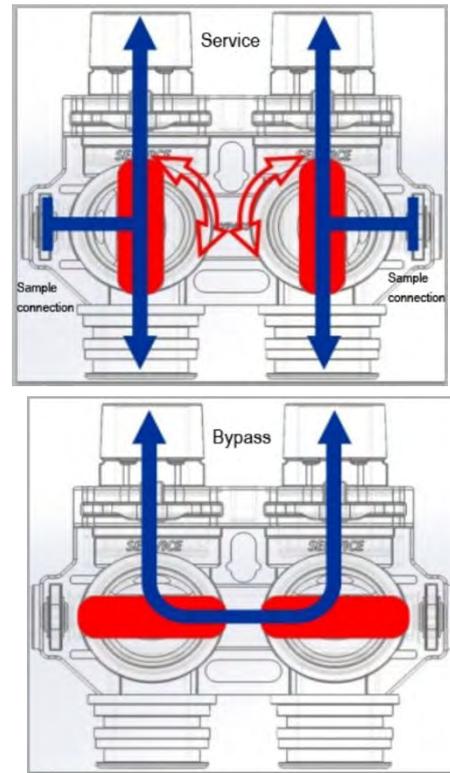
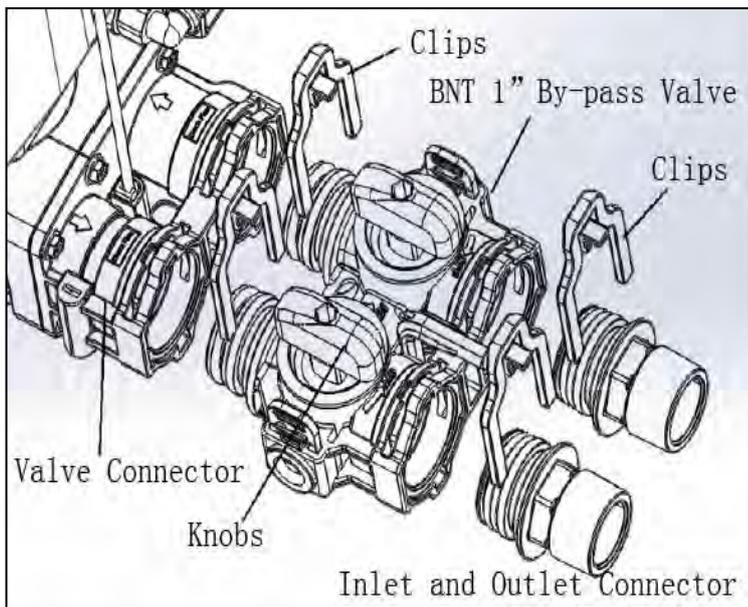
Note: As the picture shows, connect the inlet and outlet according to the arrow direction which seeing from the top view, where you can see the mark of “Up flow” or “Down flow” on the standard inlet and outlet connector assembly.



The installation of 1" integrated bypass valve:

If you use the 1" integrated bypass instead of the three manual valve, the installation method is showed as the picture below.

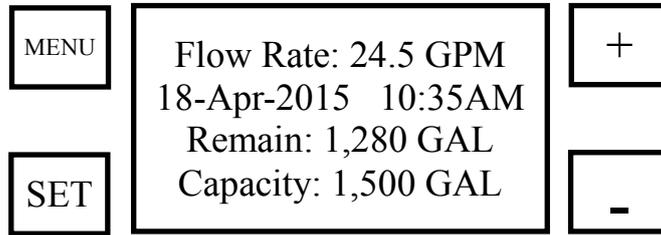
- 1 Use the clips to install the 1" bypass valve between the standard inlet and outlet connector assembly and the inlet and outlet connector, make sure the O-ring is coated with grease.
2. Connection method of inlet and outlet connector: same as the above, make sure to connect according to the direction of arrow seeing from the top view;
3. It is also recommended to install the inlet and outlet pressure gauge and the inlet Y-type filter;
4. When the two knobs on the bypass valve is parallel, the inlet and outlet are open, this state of operation is "Service";
5. Rotate each of the two knobs in clockwise and anticlockwise respectively, when the knobs on the bypass is in one line, the inlet and outlet are both closed, this state of operation is "By-pass".
6. The two small quick connector at the two sides are the sample connection for inlet and outlet, choose the right elbow connector for taking water samples.



Softener commissioning

1. This water softening system must be properly installed (check the inlet and outlet, brine line, drain line, power supply) and located in accordance with the installation instructions before commissioning and putting into operation.
2. The control panel using four touching keys, don't operate the keys with thick gloves.
3. Open the bypass, rinse the inlet and outlet pipe with tap water. Change the control valve to the "Manual Regeneration" interface, initiate the control valve to the backwash process.
4. Then close the bypass valve, slowly open the inlet valve, the raw water filling the tank and empty the air of the system, open the valve more until the backwash water is clean
5. Press any key to advance the control valve to the brine position, check and make sure the vacuum is present at the mouth of brine, and the flow rate of brine draw meet the requirement.
6. Proceed to advance to the RINSE position, allow the water to run until it is clear. Proceed to advance to the REFILL position, check that the brine valve is filling water into the brine tank, allow the valve to refill to the correct amount of water. Then advance to the SERVICE position, open the outlet on the bypass.
7. Put the salt for regeneration into the brine tank.

Button Configuration



Key Pad Configuration

- MENU This function is to enter the basic set up information required at the time of installation.
- SET This function is to accept the values if changed and advance to the next page in the menu.
- + / - These buttons are used to increase or decrease the value of the settings while in the programming mode.

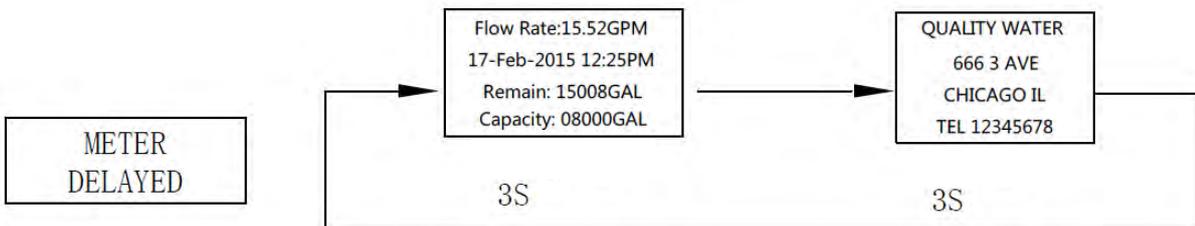
Programming Levels

There are 3 levels to the valve program. Master options and Factory options are typically adjusted at the factory. These options link the PCB function with the type of control valve and should not be tampered with. Advanced options are used to configure the unit when the valve is assembled to the tank so that it can function as the proper size and intended system operation. Settings are the final options chosen when the unit is installed to a specific location.

PROGRAM LEVEL	USER ACCESS
USER SETTINGS(I)	These settings are programmed when the unit is installed. The settings should only be adjusted by a qualified person.
MAIN MENU (II)	These settings are programmed when the unit is installed. The settings should only be adjusted by a qualified person.
ADVANCED MENU (II)	These settings are programmed by the factory and should be adjusted when the valve is assembled into a unit or system. It contains important settings so the valve will operate properly for the type of system it is intended for. The settings should only be changed by qualified person.
HISTORY MENU (IV)	This menu contains key diagnostics for trouble shooting the system.
FACTORY MENU (V)	These settings are programmed by the factory. The settings are important for the operation of the valve that should only be changed by a qualified person.

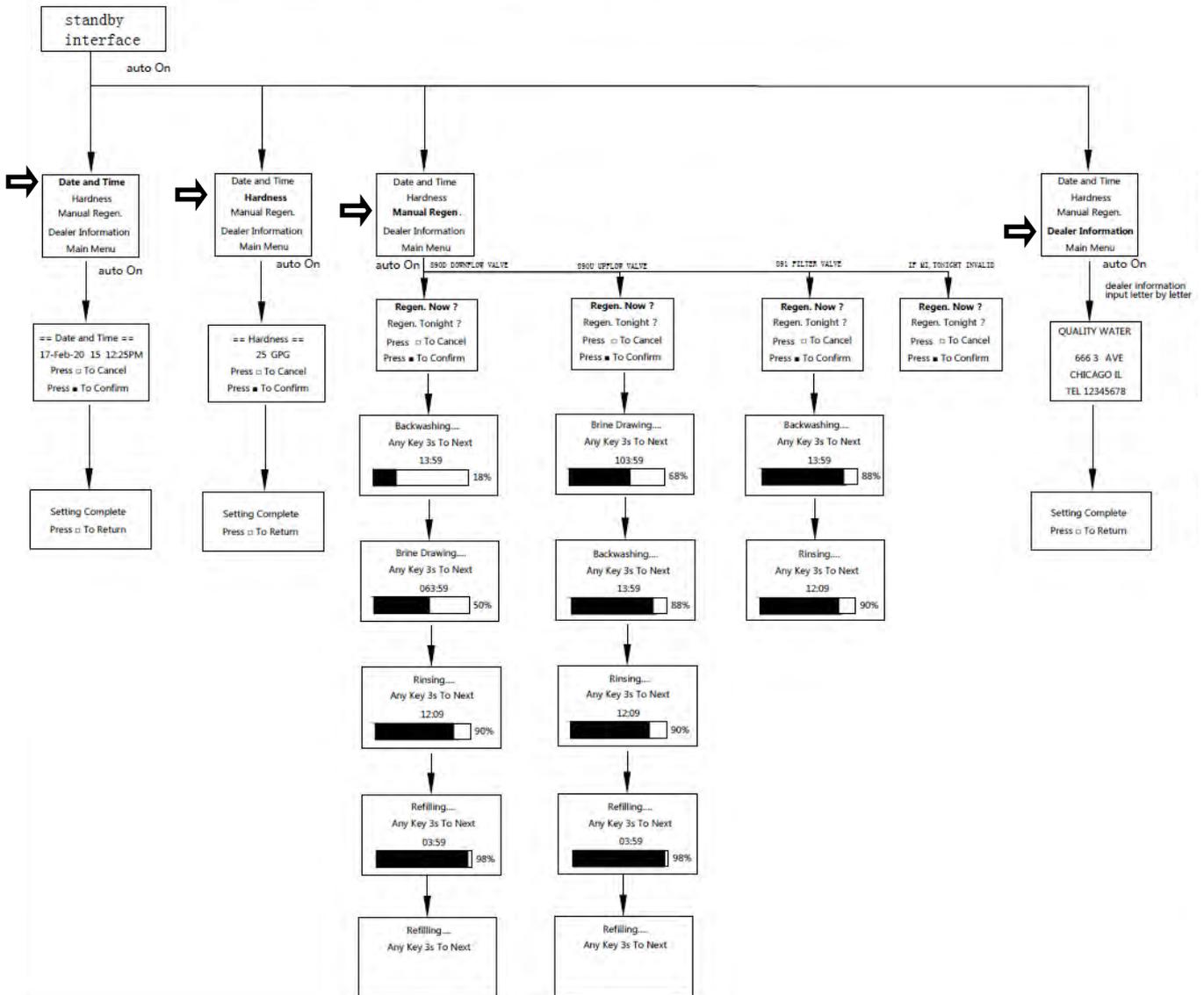
Main Display Options

The main display page shows the Flow Rate, Date, Time Of Day, Remaining Volume, and Total Volume. The display will alternate between the main page and the dealer information page.



User Settings (Level I)

Press MENU key.
 Press + or - to change menu option. Press SET to enter.
 Press + or - to change value. Press SET to accept.



DATE AND TIME

Time of day is for normal operation of system and the scheduling of the regeneration time. The date is used in a diagnostic function to track the last time the system regenerated.

HARDNESS

This value is the maximum compensated water hardness in grains per gallon of the raw water supply. It is used to calculate the system capacity. If Ferrous Iron is present add 4 gpg for every 1 ppm of Ferrous Iron.

MANUAL REGENERATION

To start an immediate regeneration select the Manual Regen option. This setting determines the time of day to perform a scheduled regeneration.

DEALER INFORMATION

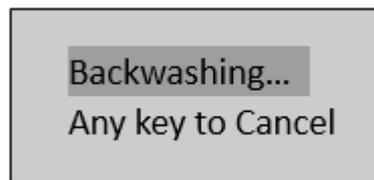
This is optional. Dealer information can be added.

Manual Regeneration

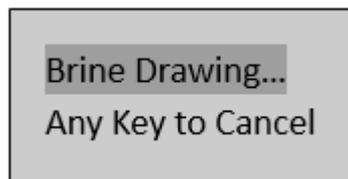
Press “■” key to initiate a manual regeneration, the regeneration steps will be different according to different valve type:

- The regeneration steps of DOWN FLOW valve: backwash、brine +slow rinse、fast rinse、service +refill;
- The regeneration steps of UP FLOW valve: brine +slow rinse、backwash、fast rinse、service +refill;

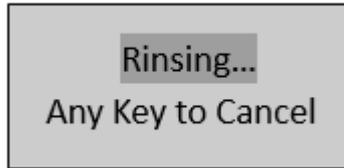
Set the Down Flow valve as an example, when the valve get into backwash, the screen will display:



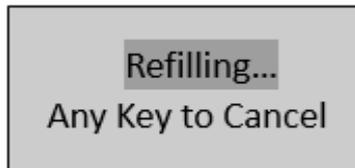
Press any key will stop backwash, and the valve will advance to the next regeneration process, Brine, the screen will display:



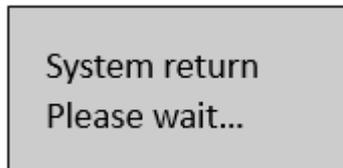
Press any key will stop brine +slow rinse, and the valve will advance to the next regeneration process, Fast Rinse, the screen will display:



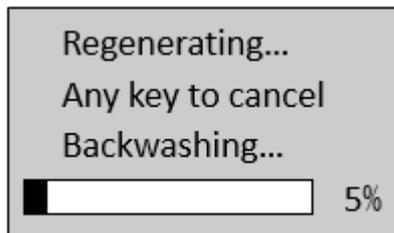
Press any key will stop fast rinse, and the valve will advance to the next regeneration process, Refill, the screen will display:



Press any key will stop service + refill, and the valve will advance to the next regeneration process: service

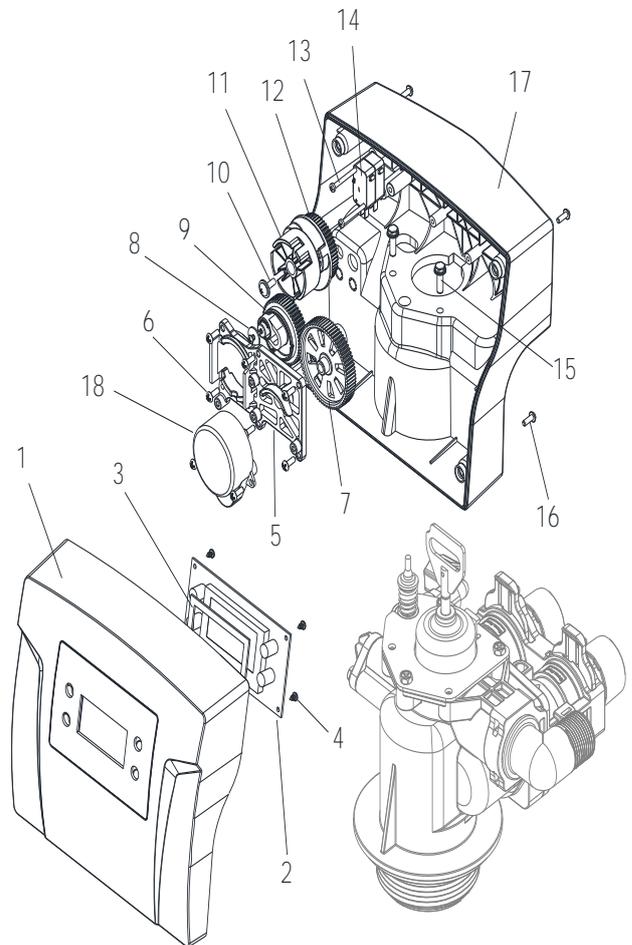


2.3.6 Manual Regeneration : screen will display



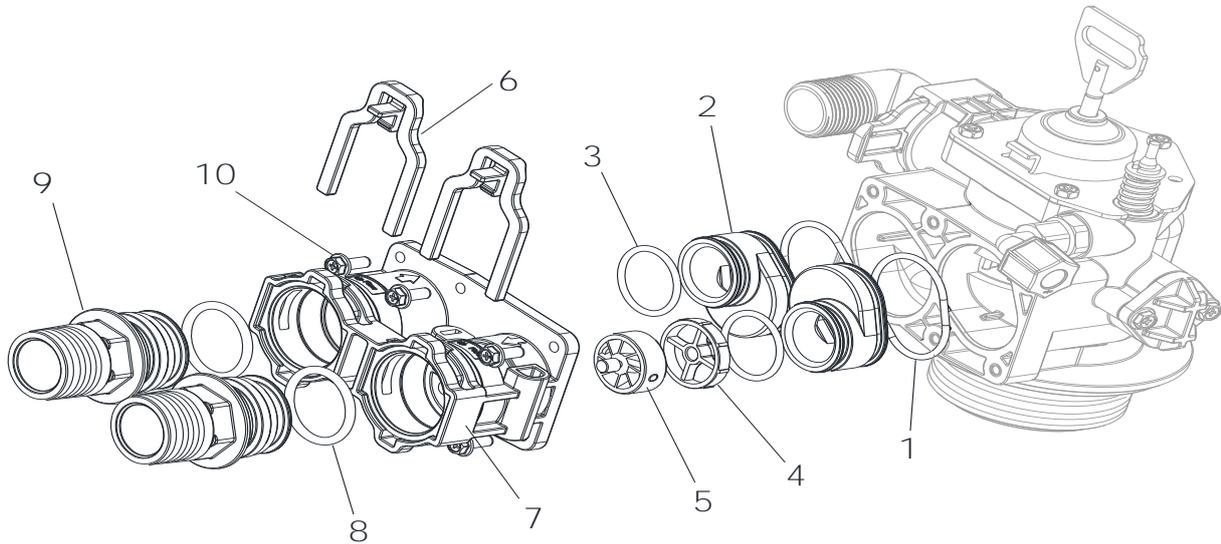
Controller assembly parts list:

No.	Part description	Qty
1	Controller front cover assembly	1
2	89 PCB	1
3	PCB absorb shock foam	1
4	PCB fix screws	4
5	85HE mounting plate	1
6	Screws	8
7	85 drive gear	1
8	Connect screw	1
9	85HE main gear	1
10	Brine gear screw	1
11	Locating wheel assembly : three options Down flow wheel Up flow wheel Filter wheel	1
12	85HE brine gear	1
13	Micro switch screws	2
14	Micro switch	2
15	Valve body connect screws	2
16	Controller screws	4
17	Controller back cover assembly	1



18	Motor 12VAC 3W	1
19	Wire (not displayed)	Some

Parts list of Standard connection assembly :



No.	Part description	Qty	No.	Part description	Qty
1	Big O-ring of Adaptor coupling	2	6	89 secure clip	2
2	Adaptor coupling of 89 control valve	2	7	89 valve connector	1
3	Small O-ring of adaptor coupling	2	8	Connector O-ring	2

8	Three options of piston Down flow piston Up flow piston Filter piston	1
9	Piston retainer	1
10	End plug	1
11	Piston pin	1
12	Piston rod	1
13	End plug retainer	1
14	End plug retainer screws	3
15	Brine line adaptor assembly : optional BLFC : 0.7gpm BLFC : 0.95gpm	1
16	Injector assembly : optional grey, purple, red, white, blue, yellow	1
17	Injector cover O-ring	1
18	Injector cover	1
19	Injector cover screws	2
20	Tank mouth O-ring	1
21	Adapter O-ring	1
22	Center pipe adapter	1
23	Center pipe O-ring	1
24	Valve bottom connector	1
25	Bottom connector screws	2
26	Brass nuts	1
27	Brine line elbow assembly	1

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 10)
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.

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.