Owners Manual

# LCC
## Light Commercial Conditioner

1. **Read all instructions carefully before operation.**
2. **Avoid pinched o-rings during installation by applying NSF certified lubricant to all seals (provided with install kit).**
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.**
4. **Page 19 of this manual contains important maintenance procedures for the continued proper operation of your unit. These MUST be performed regularly for your warranty to remain valid.**

**The Distribution Center**
100 Hanlan, Woodbridge, ON L4L 4V8

# Table of Contents

# READ THIS PAGE FIRST

## BEFORE STARTING INSTALLATION

- Read this manual thoroughly to become familiar with the device and its capabilities before installing or operating your Water Filter. Failure to follow instructions in this manual could result in personal injury or property damage. This manual will also help you to get the most out of your filter.
- This system is intended for use on municipal water only and its installation must comply with all State, provincial or local regulations. Check with your local public works department for plumbing and sanitation codes. In the event the codes conflict with any content in this manual the local codes should be followed. Consult your licensed plumber for installation of this system.
- This water filter is designed to operate on pressures of 30 psi to 125 psi. If the water pressure is higher than the maximum use a pressure reducing valve in the water supply line to the filter.
- This unit is capable of operating at temperatures between 40°F and 110°F (4°C - 43°C). Do not use this water filter on hot water supplies.
- Do not install this unit where it may be exposed to wet weather, direct sunlight, or temperatures outside of the range specified above.
- Avoid pinched o-rings during installation by applying (provided with install kit) NSF certified lubricant to all seals.
- Filters are commonly exposed to high levels of iron, manganese, sulfur, and sediments. Damage to pistons, seals, and or spacers within the control valve are not covered in this warranty due to the harsh environment.
- It is recommended to regularly inspect and service the control valve on an annual basis. Cleaning and or replacement of piston, seals, and or spacers may be necessary depending on how harsh the conditions are. An Annual Maintenance kit (Part # 60010307) is available for this purpose
- Do not use water that is microbiologically unsafe without adequate disinfection before or after this system.
- This publication is based on information available when approved for printing. Continuing design refinement could cause changes that may not be included in this publication. TDC reserves the right to change the specifications referred to in this literature at any time, without prior notice.

## INSTALL NOTES & SAFETY MESSAGES

**Watch for the following messages in this manual:**

**NOTE**

Do not remove or destroy the serial number. It must be referenced on request for warranty repair or replacement

**NOTE:** used to emphasize installation, operation or maintenance information which is important but does not present a hazard.

**CAUTION!**

Disassembly while under pressure can result in flooding.

**CAUTION:** used when failure to follow directions could result in damage to equipment or property.

**WARNING!**

**ELECTRICAL SHOCK HAZARD!** UNPLUG THE UNIT BEFORE REMOVING THE COVER OR ACCESSING ANY INTERNAL CONTROL PARTS

**WARNING:** used to indicate a hazard which could cause injury or death if ignored.

# HOW YOUR WATER CONDITIONER WORKS

## Why Water Gets Hard And How It Is Softened

All of the fresh water in the world originally falls as rain, snow, or sleet. Surface water is drawn upward by the sun, forming clouds. Then, nearly pure and soft as it starts to fall, it begins to collect impurities as it passes through smog and dust-laden atmosphere. And as it seeps through soil and rocks it gathers hardness, rust, acid, unpleasant tastes and odors.

Water hardness is caused primarily by limestone dissolved from the earth by rainwater. Because of this, in earlier times people who wanted soft water collected rainwater from roofs in rain barrels and cisterns before it picked up hardness from the earth.

Some localities have corrosive water. A softener cannot correct this problem and so its printed warranty disclaims liability for corrosion of plumbing lines, fixtures or appliances.

Water softeners remove hardness in the water by exchanging particles in the water, or ions. They remove hard ions the calcium and magnesium in the water by trading it for sodium ions producing soft water. Unlike the calcium and magnesium, sodium stays dissolved in water and does not form a scale. Sodium also does not interfere with the cleaning action of soaps. The sodium is released by a charged resin contained in the softener, this resin also traps the calcium and magnesium ions. Eventually this resin releases all of its sodium and has filled up with other ions, so it then must be regenerated. Regeneration is accomplished by washing the resin with a salt saturated brine solution that removes the calcium and magnesium while replenishing the sodium. This is why the softener requires a brine tank and salt. The water softener can run for days before running out of sodium, and when it does, the sodium is replenished in only a matter of a few hours

Iron is a common water problem. The chemical/physical nature of iron found in natural water supplies is exhibited in four general types:

1. **Dissolved Iron**—Also called ferrous or "clear water" iron. This type of iron can be removed from the water by the same ion exchange principle that removes the hardness elements, calcium and magnesium. Dissolved iron is soluble in water and is detected by taking a sample of the water to be treated in a clear glass. The water in the glass is initially clear, but on standing exposed to the air, it may gradually turn cloudy or colored as it oxidizes.
2. **Particulate Iron**—Also called ferric or colloidal iron. This type of iron is an undissolved particle of iron. A softener will remove larger particles, but they may not be washed out in regeneration effectively and will eventually foul the ion exchange resin. A filtering treatment will be required to remove this type of iron.
3. **Organic Bound Iron**—This type of iron is strongly attached to an organic compound in the water. The ion exchange process alone cannot break this attachment and the softener will not remove this type of iron.
4. **Bacterial Iron**—This type of iron is protected inside a bacteria cell. Like the organic bound iron, it is not removed bya water softener.

When using a softener to remove both hardness and dissolved iron it is important that it regenerates more frequently than ordinarily would be calculated for hardness removal alone. Although many factors and formulas have been used to determine this frequency, it is recommended that the softener be regenerated when it has reached 50–75% of the calculated hardness alone capacity. This will minimize the potential for bed fouling.

If you are operating a water softener on clear water iron, regular resin bed cleaning is needed to keep the bed from coating with iron. Even when operating a softener on water with less than the maximum of dissolved iron, regular cleanings should be performed. Clean every six months or more often if iron appears in your conditioned water supply. Use resin bed cleaning compounds carefully following the directions on the container.

**CAUTION!**

**Do not use where the water is microbiologically unsafe or with water of unknown quality without adequate disinfection before or after the unit.**

# SPECIFICATION

All units are factory programmed to the below specifications. Alteration should only be done by a factory trained technician or after consultation with one of our technical representatives if you have any questions please call **1-866-874-2532**.

| Model | System Capacity Grains | | | Flow Rate | | | Mineral Tank Size | Resin Cu. Ft. | Brine Tank / Cabinet Size Inches | Salt Capacity (Lbs) | Shipping Weight Lbs |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | @ 10 lbs/ cu ft | **@ 6 lbs/ cu ft (Factory Setting)** | @ 3 lbs/ cu ft | Service USGPM | Backwash USGPM | Regeneration Water Usage Factory Setting (Gallons) | | | | | |
| LCC-200 | 56,000 | **50,000** | 30,800 | 15.0 | 3.5 | 124.4 | 12 x 52 | 2.00 | 20.3 x 37.4 | 385 | 158 |

Note: Shipping weights do not include tank jackets. Add approx 10 lbs.

**Working Temperature:** This unit must be operated at temperatures between 40°F and 110°F (4°C - 43°C).
**Working Pressure:** This water softener must be operated on pressures between 30 psi to 125 psi. If the water pressure is higher than 125 PSI, use a pressure reducing valve in the water supply line to the softener.
Voltage = 120V / 60 Hz
Pipe Size = 3/4" and 1"

- At the stated service flow rates, the pressure drop through these devices will not exceed 15 psig.
- 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.

* Do not use water that is microbiologically unsafe without adequate disinfection before or after the system.

Peak flow rates intended for intermittent use only (10 minutes or less) and are for residential applications only. Do not use peak flow rate for commercial applications or for a continuous rate when treated water supplies are geothermal heat pump, swimming pool, etc.

For satisfactory operation, the pumping rate of the well system must equal or exceed indicated backwash flow rate.

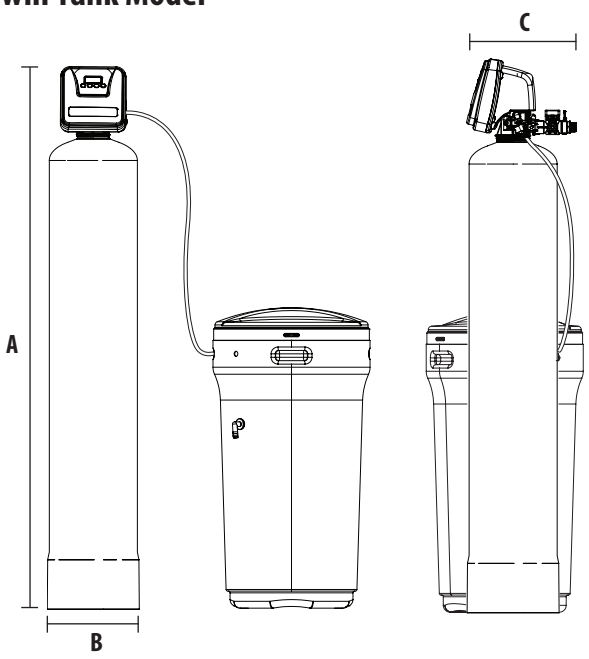
All units come with plastic bypass

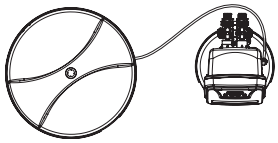
**Maximum Iron** = 1.5 ppm
**Maximum Hydrogen Sulfide** = 0.0 ppm
**Maximum Manganese** = .75 ppm
**pH** = 6.5 to 8.5

# SYSTEM DIMENSIONS

| Models | A (Inches) | B (Inches) | C (Inches) |
|---|---|---|---|
| 200 | 61″ | 12" | 16″ |

**Twin Tank Model**



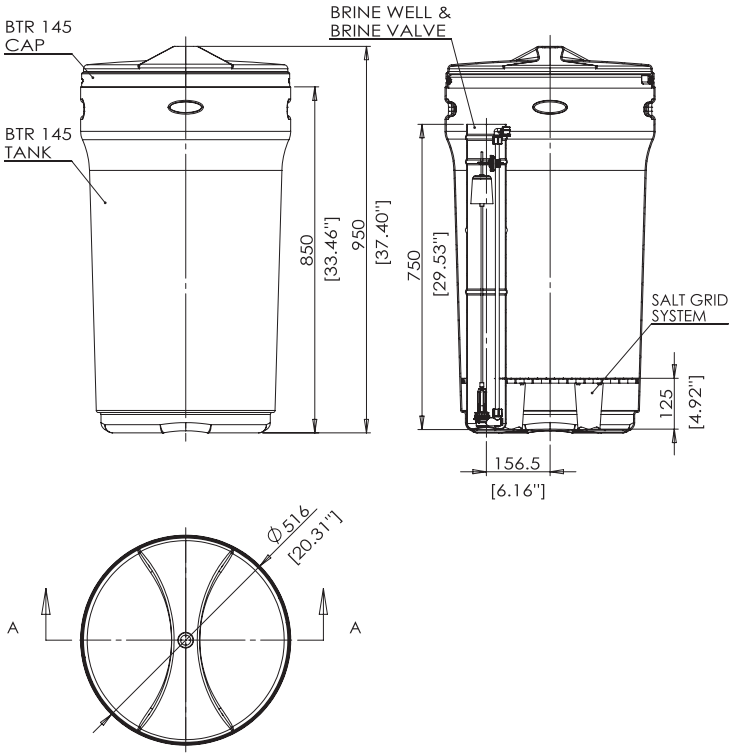



# BRINE TANK DIMENSIONS

| Model | Color | Liquid Volume | | Tank Dimensions (inches) | 5 Pack Carton Dimensions (inches) | Salt Capacity | | 5 Pack Carton Shipping Weight | |
|---|---|---|---|---|---|---|---|---|---|
| | | US Gal | Liters | L x W x H | L x W x H | Lbs | Kg | Lbs | Kg |
| Brine Tanks | | | | | | | | | |
| BTR-145 | Black | 42.3 | 159.7 | 20.3 x 37.4 | 21.9 x 21.9 x 72.2 | 385.0 | 174.2 | 65.6 | 29.8 |

* All brine tanks come with salt grid, safety float and brine well

**BTR145**



# UNPACKING / INSPECTION OF TWIN TANK MODEL

Be sure to check the entire unit 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.

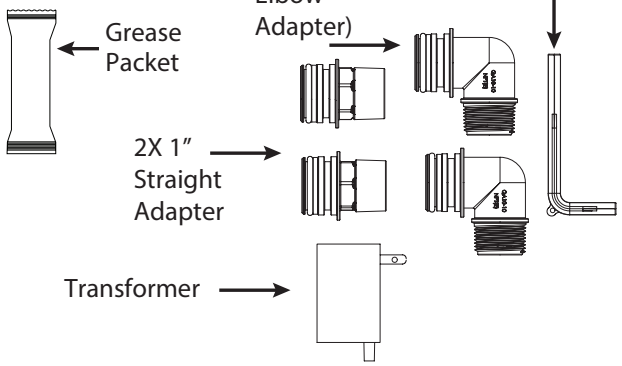
Small parts, needed to install the Softener, are in a parts box. To avoid loss of the small parts, keep them in the parts bag until you are ready to use them.

## What is included in the box?

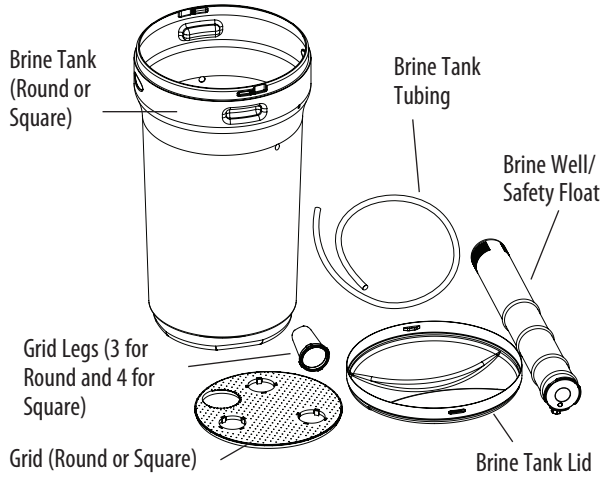
You will expect the following:

**1.** Control Valve
**2.** Tank
**3.** Parts Box
**4.** Owners Manual
**5.** Drain Hose & Clamp (Not included in some brands)
**6.** Brine Tank Assembly

**3.** Parts Box

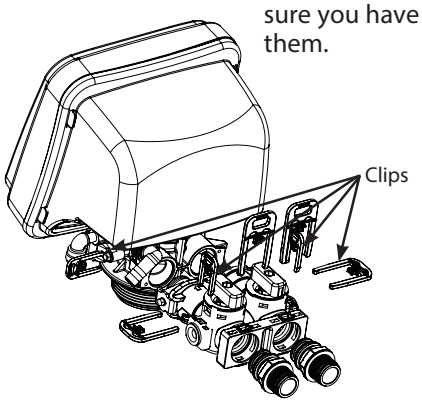


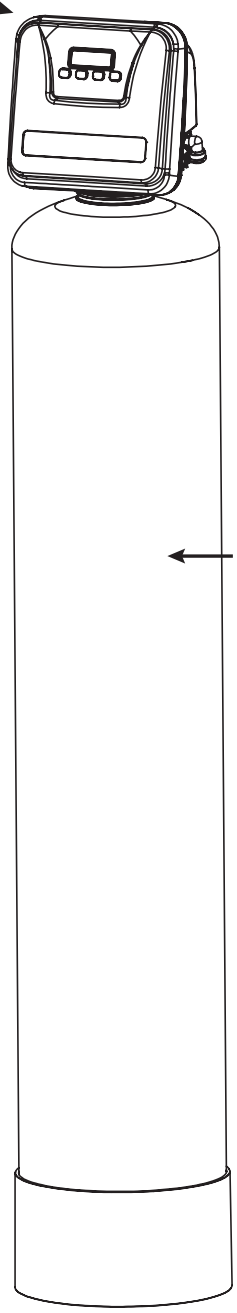

**6.** Brine Tank Assembly (Round Brine Tank Shown))



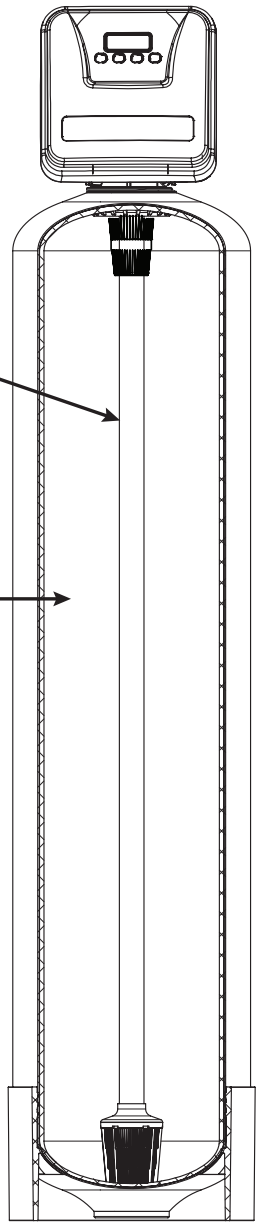

**1.** Control Valve

There are 7 Red clips. Please check to make sure you have all of them.



**2.** Tank

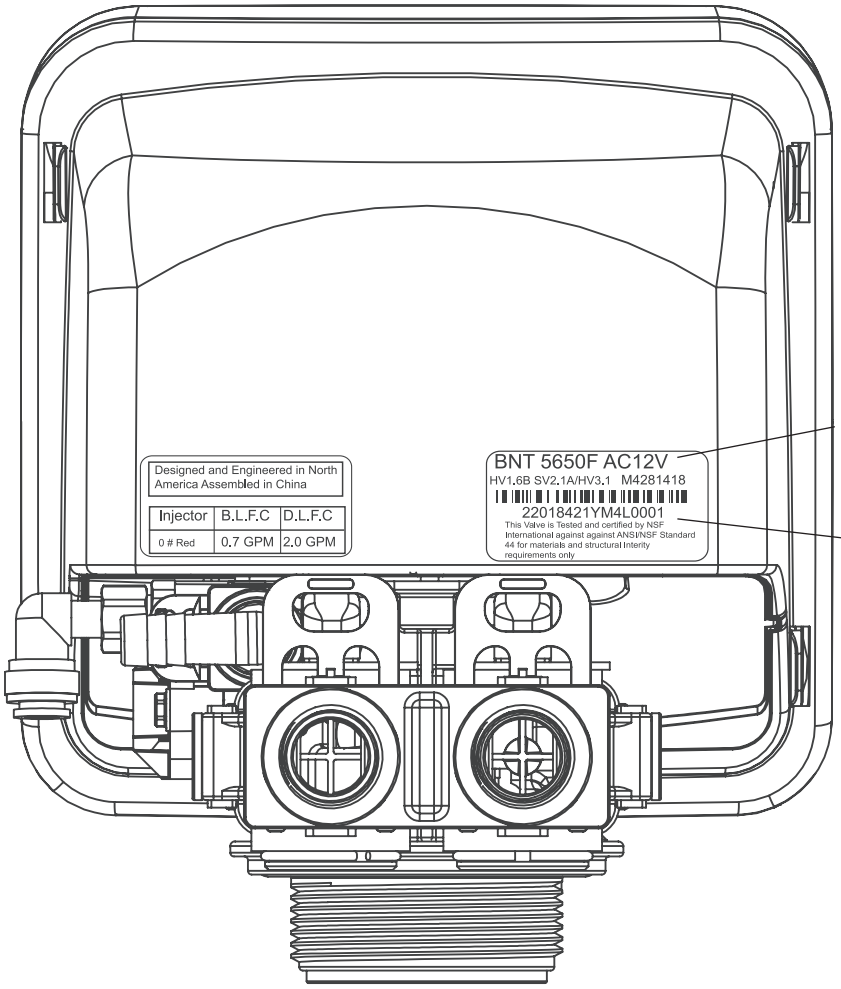


Distributor Tube Inside the Tank

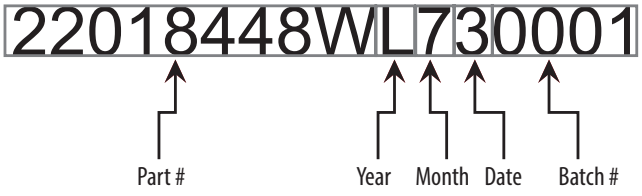
Media Inside the Tank. Media Type will depend on what models were purchased

## Check Valve Type and Valve Serial #

Check to make sure the valve type is what you ordered. The serial # label on the left will show 5650 (DF) for downflow valve. The right Sticker shows the serial # of the control valve. The middle Sticker is dataplate which provides information of Serial # and Date of Manufacture of complete system. Both Serial # labels are important for troubleshooting.




## Valve Serial #:




**(22018448W):** Part #

**(L)Year : "** M" stand for 2016 year," L" stand for 2015, "K" stand for 2014, "J" stand for 2013

**(7)Month: 1 (Jan) 2(Feb) 3(Mar) 4(April) 5(May) 6(June) 7(July) 8(Aug) 9(Sep) A(Oct) B(Nov) C(Dec)**

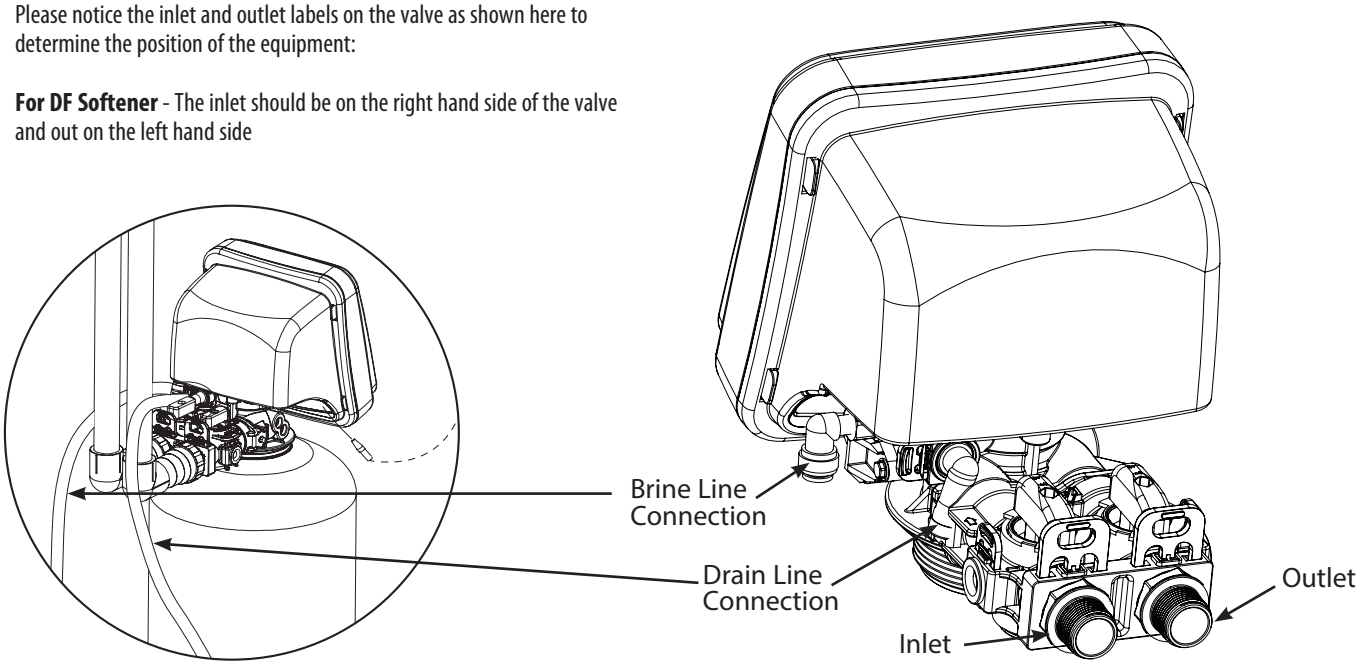
**(3)Date:** 1 2 3 4 5 6 7 8 9 A(10) B(11) C(12) D(13) E(14) F(15) G(16) H(17) I(18) J(19) K(20) L(21) M(22) N(23) O(24) P(25) Q(26) R(27) S(28) T(29) U(30) V(31)

**(0001):** Batch code

Determine the best location for your water Softener, bearing in mind the location of your water supply lines, drain line and 120 volt AC electrical outlet. Subjecting the Softener to freezing or temperatures above 43°C (110°F) will void the warranty.

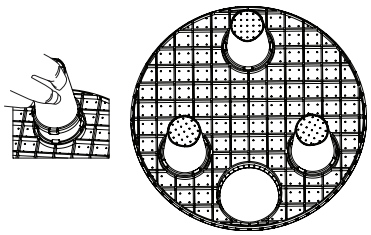
Please notice the inlet and outlet labels on the valve as shown here to determine the position of the equipment:

**For DF Softener** - The inlet should be on the right hand side of the valve and out on the left hand side

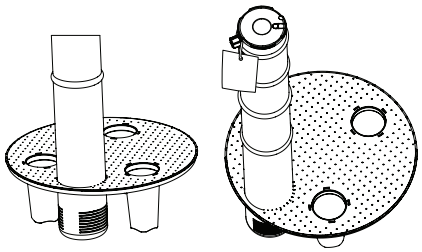



# ASSEMBLING BRINE TANK

**a)** Attach the three brine grid legs to grid plate. The legs will snap on to the tabs of the salt plate making a "click" sound. For square brine tank there are four legs.)

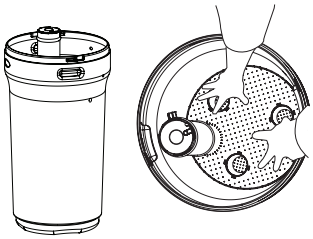


**b)** Insert the brine well assembly inside the grid plate as well below.

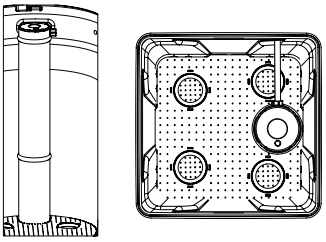


**c)** Drop the brine grid with brine well inside the brine tank such that the nut fitting faces the hole on the brine tank. Then press the grid evenly inside the brine tank until the brine grid legs touches the bottom of the brine tank.

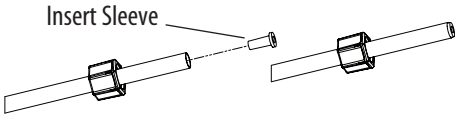
IMPORTANT: IN ROUND BRINE TANK, IT IS IMPORTANT TO ALIGN THE HANDLE TO THE BRINE WELL AS SHOWN



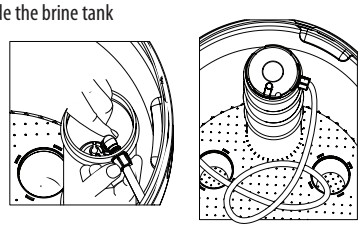
The hole in the brine tank should line up with the brine line as shown for round and square brine tank.



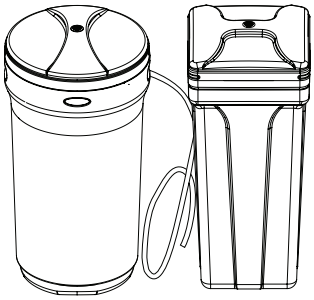
**d)** Take the brine tube and insert the nut and plastic sleeve as shown below.



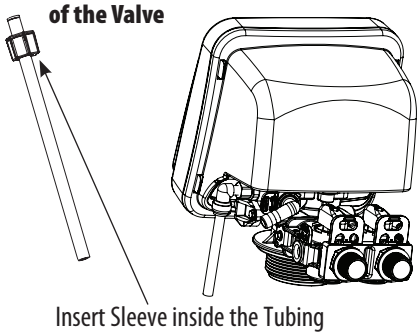

**e)** Insert the tube in the float assembly elbow and hand tighten the nut. In many cases the brine line already come installed from the factory. Leave the other end of the brine line tube inside the brine tank



**f)** For installation of brine tank at the installation site, pull the other end of the brine tube from the hole on the brine tank. The completed assembly is shown below.



**6. Attaching Brine Tubing to the Brine Line of the Valve**

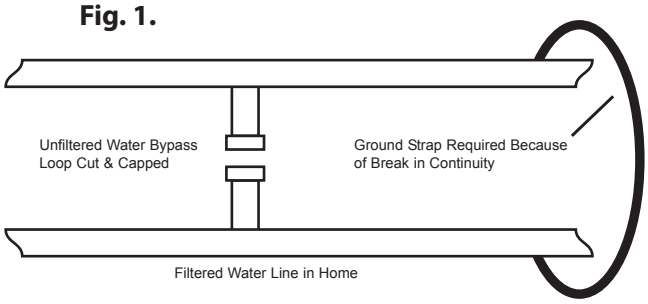


# BEFORE INSTALLATION

Make sure you have a copy of your most recent water test results. If your water has not been tested previously you can contact your supplier of this product to obtain a water sample bottle to be sent to one of our facilities for a free analysis. **It is important that this product not be installed until you have this information**.

In all cases where metal pipe was originally used and is later interrupted by poly pipe or the Noryl bypass valve or by physical separation, an approved ground clamp with no less than #6 copper conductor must be used for continuity, to maintain proper metallic pipe bonding.

**Fig. 1.**




## Inspecting and Handling Your LCC Softener*

Inspect the equipment for any shipping damage. If damaged, notify the transportation company and request a damage inspection. Damage to cartons should also be noted.

Handle the filter unit with care. Damage can result if it is dropped or set on sharp, uneven projections on the floor.

Do not turn the filter unit upside down.

## To Insure this Product Functions Properly:

**Your feed water line size to the unit must be a minimum of 3/4 inch with an operating pressure of no less than 30 psi and no more than 125 psi**.

## MECHANICAL:

Do not use petroleum based lubricants such as petroleum jelly, oils or hydrocarbon based lubricants.Use only 100% silicone lubricants (grease packet provided in parts kit). All plastic connections should be hand tightened only. Teflon tape may be used on connections that do not use an O-ring seal. Do not use pliers or pipe wrenches except where indicated by Nut shape (eg. pipe adapters) All plumbing must be completed according to local codes. Soldering connections should be done before connecting any pieces to the pipe as excessive heat can damage them.

## Tools Required for Installation:

## NOTE: We recommend installation only be completed by a competent installer or plumbing professional to insure this product is installed in accordance with local plumbing codes.

- Two adjustable wrenches
- Additional tools may be required if modification to home plumbing is required.
- Plastic inlet and outlet fittings are included with the filter. To maintain full valve flow, 3/4" or 1" pipes to and from the filter fittings are recommended. You should maintain the same, or larger, pipe size as the water supply pipe, up to the filter 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 filter 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 not included with some brands.

**NOTE**

**All government codes and regulations governing the installation of these devices must be observed.**

**⚠ CAUTION!**

**If the ground from the electrical panel or breaker box to the water meter or underground copper pipe is tied to the copper water lines and these lines are cut during installation of the Noryl bypass valve and/or poly pipe, an approved grounding strap must be used between the two lines that have been cut in order to maintain continuity. The length of the grounding strap will depend upon the number of units being installed and/or the amount of copper pipe being replaced with plastic pipe. See Fig. 1.**

**NOTE**

**Check your local electrical code for the correct clamp and cable size.**

**NOTE**

**If a severe loss in water pressure is observed when the filter unit is initially placed in service, the filter tank may have been laid on its side during transit. If this occurs, backwash the filter to "reclassify" the media.**

***NOTE**

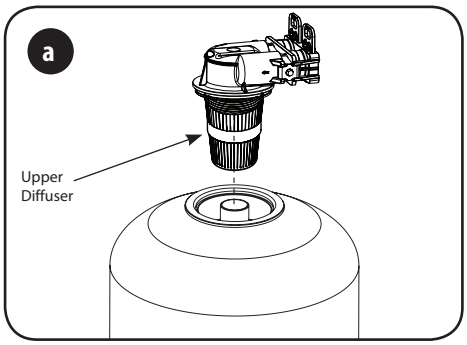
**Due to transportation and climatic conditions all connections including the valve to the tank need to be checked at time of installation and tightened if necessary.**

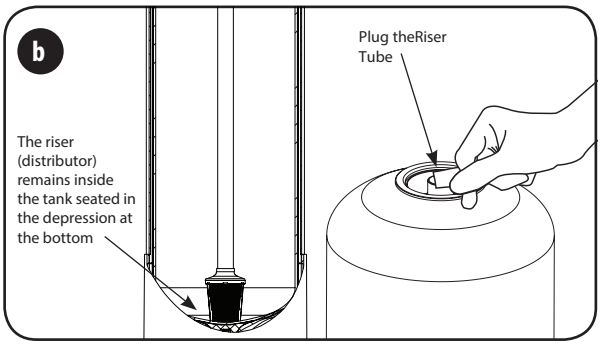
# PREPARATIONS

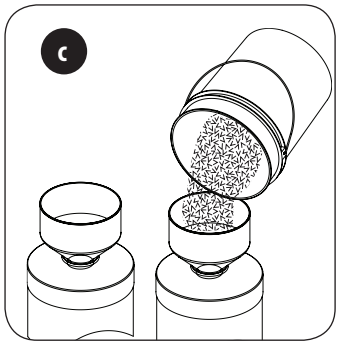
**CAUTION!**

**The unit should be depressurized before installing or replacing media**

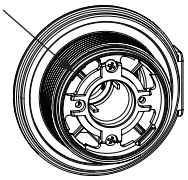
1. **Media Installation (When Necessary).** Models larger than 2.0 CF of media are shipped with separate media in pails or boxes. Models lower than 1.5 CF of media come loaded with media and this step can be skipped for new installation.




**a)** Remove the adaptor from the mineral tank. Grease the bottom oring of the adaptor with silicone grease provided



**b)** Temporarily plug the open end of the riser tube to ensure that no resin or gravel falls down into the distribution. The riser (distributor) remains inside the tank seated in the depression at the bottom.

Plug tube with a tape. Remove after media is loaded.

**c)** Fill support bed first. The media will not always spill down inside the tank and may need to be swept inside.

The large funnel (sold separately makes filling the tank easier and neater. (Or an empty 1 gallon or 4 liter container with the bottom cut out makes a good funnel.)

## Locate Water Conditioning Equipment Correctly

Select the location of your filter tank with care. Various conditions which contribute to proper location are as follows:

1. Locate as close as possible to the water supply source.
2. Locate as close as possible to a floor or laundry tub drain.
3. Locate in correct relationship to other water conditioning equipment (see Fig. 1, 2, 3 or 4, Page 11 and 12). if closer than 10 feet please install check valve in accordance with local plumbing codes.
4. Conditioners should be located in the supply line before the water heater. Temperatures above 110°F (43°C ) will cause damage to conditioners.
5. Do not install a filter or filter in a location where freezing temperatures occur. Freezing may cause permanent damage to this type of equipment and will void the factory warranty.
6. Allow sufficient space around the unit for easy servicing.
7. Keep the filter out of direct sunlight. The sun''s heat may soften and distort plastic parts.

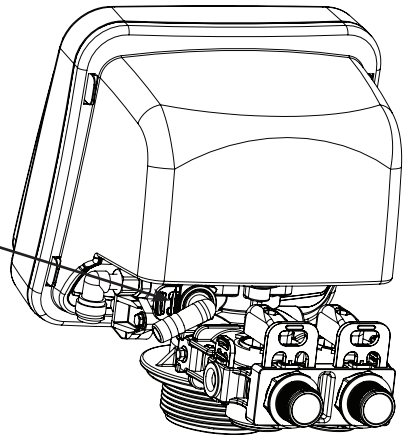
**NOTE**

**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.**

**NOTE**

**The unit is not ready for service until you complete the start-up instructions, page 15.**

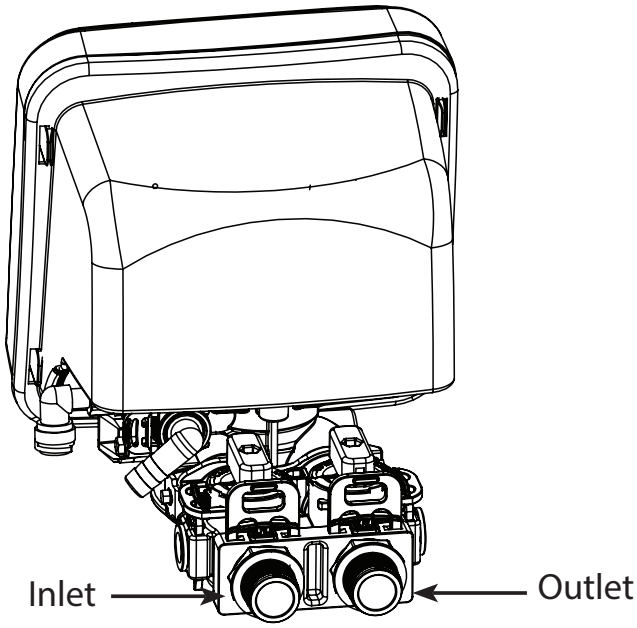
Make sure both brass and plastic nuts are tightened well



# INSTALLATION STEPS

**1.** Determine the best location for your water filter, bearing in mind the location of your water supply lines, drain line and 120 volt AC electrical outlet. Subjecting the filter to freezing or temperatures above 43°C (110°F) will void the warranty.

Please notice the inlet and outlet labels on the valve as shown here to determine the position of the equipment:




## Facts to Remember When Planning Your Installation

**1.** All installation procedures must conform to local and state or provincial plumbing codes.

**2.** Outside faucets used to water lawns and gardens should not supply untreated water, replace untreated water with feed water to the unit. If necessary to do this please install check valve, see page 14. A new water line is often required to be connected to supply untreated water to the inlet of the water filter and to the outside faucets.

**3.** Make sure the bypass is attached well to the control valve. Connect the straight or elbow connectors to the bypass with red clips. Connect the inlet and outlet of the water filter to the plumbing of the house. The control valve must not be submitted to temperatures above 43°C (110°F). When sweat fittings are used, to avoid damaging the control valve, solder the threaded copper adapters to the copper pipe and then, using Teflon tape, screw the assembly into the bypass valve.

Do not use pipe thread compound as it may attack the material in the valve body.

**4.** Apply Teflon Tape and Orings to the fittings

**5.** Connect Filter to the house plumbing. 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.

**6.** **Drain Line connection:** Using Teflon tape, screw the 1/2" hose barb and attach oring into the drain port in the valve. Attach 1/2" drain hose (Supplied with some models and brands) to the hose barb and tighten securely with a hose clamp (Supplied with some models and brands). Run the drain line to a floor drain or a laundry drain. Complete any necessary plumbing.

**7.** 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.

**8.** Make sure there are no leaks in the plumbing system before proceeding. Close the water tap when water runs clean.

**9.** 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.

**NOTE**

**If the plumbing system is used as the ground leg of the electric supply, continuity should be maintained by installing ground straps around any nonconductive plastic piping used in installation.**

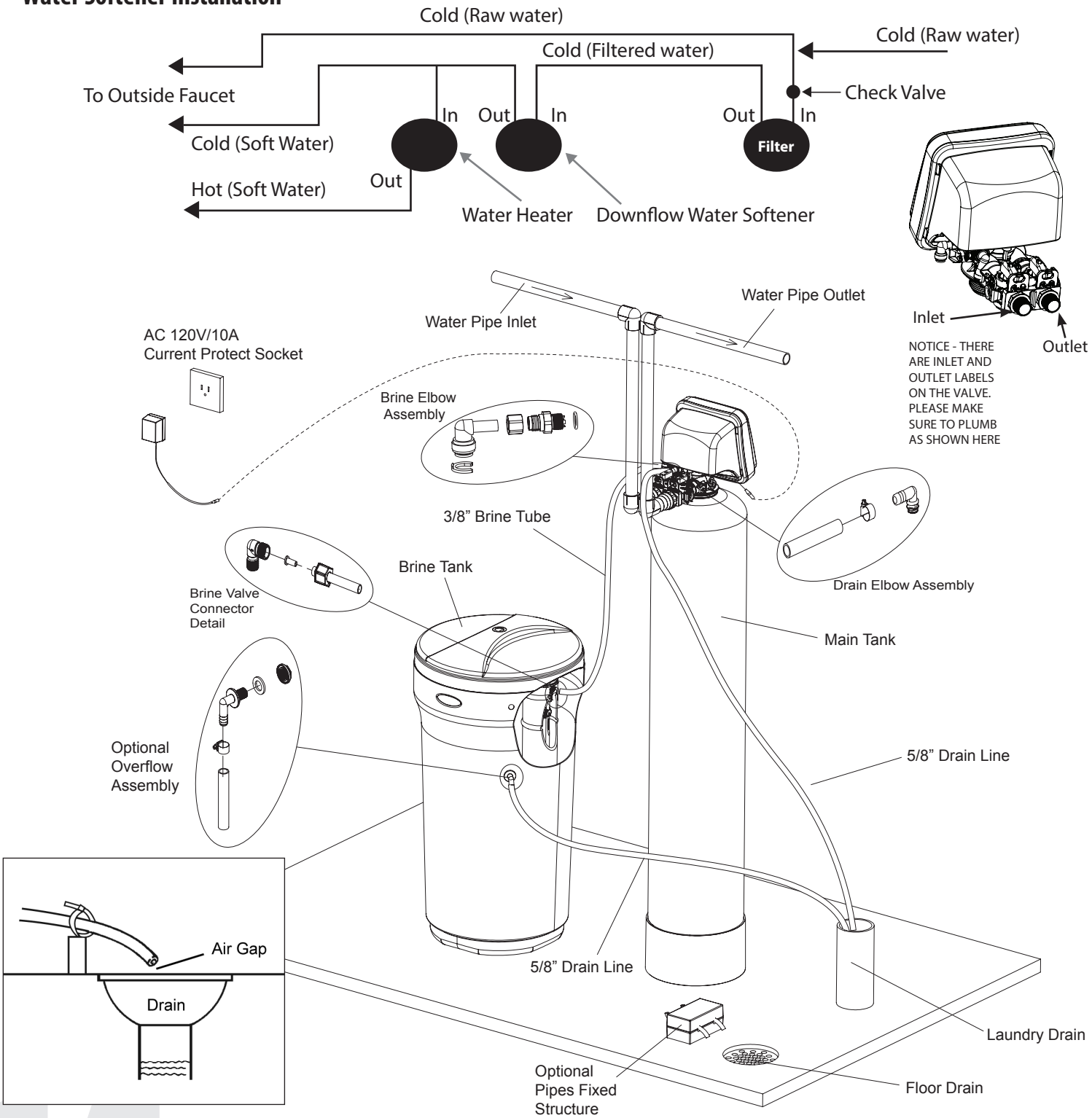
**NOTE**

**Before starting installation, read page 16, Plumbing System Clean-Up, for instructions on some procedures that may need to be performed first.**

# INSTALLATION

**Connect Softener to the HousePlumbing** 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.

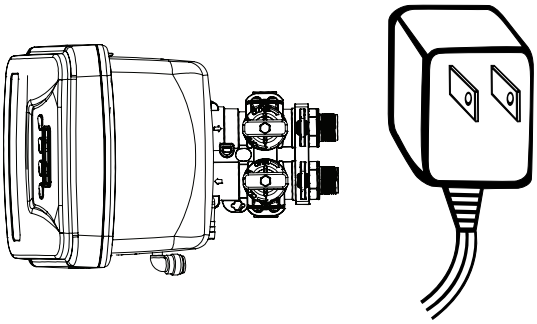
## Water Softener Installation



# STARTUP INSTRUCTIONS

## 1. Connect the Transformer to the Valve

Plug the 12-volt transformer into a 120 VAC 60 Hz outlet.



## 2. Add Water to Brine Tank

Open the brine tank /cabinet salt lid and add water as per the info below. Do not add salt to the brine tank at this time.

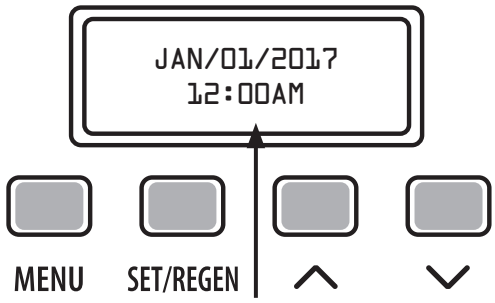
**BTR-145 - 3.25 US Gallons**

**CAUTION!**

**FAILURE TO FOLLOW STEP 2 WOULD DEPLETE THE RESERVE CAPACITY OF RESIN AND RESULT IN HARDNESS LEAKAGE. IN CASE STEP 2 IS MISSED, THEN SOFTENER SHOULD BE REGENERATED TWICE OR THRICE BACK TO BACK TO RESTORE THE RESERVE CAPACITY OF RESIN**

## Screen Display

### Familiarize with Button Configuration:



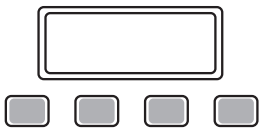

The controller will show the following on the screen - Time, Date and number of Days Remaining for Regeneration.

When power is supplied to the control, the screen may display "INITIALIZING WAIT PLEASE" while it finds the service position.

1. Open the inlet on the bypass valve slowly and allow water to enter the unit. (The outlet of the bypass should remain closed to prevent any fines or debris from entering the plumbing system. 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.
2. Unplug the power cord from the power supply, open inlet. Check the drain line flow. Allow the water to run for 30 minutes, or until all media fines are backwashed from the unit
3. Plug in the valve and advance to the SERVICE position. Open the outlet valve on the bypass, then slowly open the nearest treated water faucet and allow the water to run until clear, close the tap and replace the faucet screen.
4. The Valve is already programmed from factory. Please set up date and time of day and feedwater hardness as shown below:

## 3. Power and Program Valve

**Key Pad Configuration:**




1. If screen is locked, press **"MENU"** for 3 seconds to unlock. Press **"MENU"** again to enter level one programming mode and adjust **CURRENT TIME.**
2. Press **"SET/REGEN"** to adjust hours. When you have entered the change value mode, the curser will blink. Press **"UP** or **DOWN"** arrows to change the hour values. Press **"SET/REGEN"** again to accept the hour value and advance to change the minutes value. Press **"UP** or **DOWN"** arrows to change the minute values. Press **"SET/REGEN"** again to accept the minute values and advance to adjust the AM/PM values. Press " or **"UP** or **DOWN"** to change the **AM/PM** value. Press **""SET/REGEN"** again to accept the **AM/PM** value and exit. When you have exited the change value mode, the curser will stop flashing.

**Setting Current Date**

1. Press **"DOWN"** to advance to CURRENT DATE.
2. Press the **"SET/REGEN"** to change the value. Press **"UP** or **DOWN"** to change the values.

**Setting Number of People**

1. Press **"DOWN"** to advance to to NUMBER OF PEOPLE.
2. Press the **"SET/REGEN"** to change the value. Press **"UP** or **DOWN"** arrows to change the values.

**Setting Water Hardness**

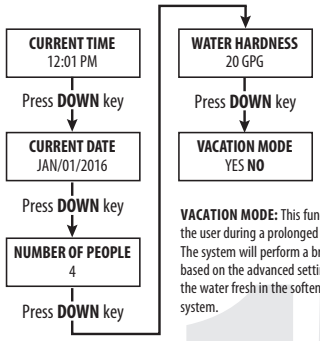
1. Press **"DOWN"** to advance to **WATER HARDNESS**.
2. Press the **"SET/REGEN"** to change the value. Press **"UP** or **DOWN"** arrows to change the values.

**Setting Vacation Mode**

1. Press **"DOWN"** to advance to **VACATION MODE**. Select **NO**.
2. Press the **"SET/REGEN"** to change the value. Press **"UP** or **DOWN"** arrows to change the values.

**Programming Flow Chart**

Press **MENU** Key. For Value Adjustement, Press **SET/REGEN** Key and change the values using **UP** and **DOWN** Key




**VACATION MODE:** This function may be activated by the user during a prolonged absence such as vacation. The system will perform a brief backwash and rinse based on the advanced setting. The purpose is to keep the water fresh in the softener tank and plumbing system.

Initial Manual Regen by pressing **SET/REGEN** button. When in backwash cycle, do not skip the cycle and let all air from the tank escape.

After backwash cycle, the valve will advance to brine draw which needs to be skipped by pressing **SET/REGEN** button.

The valve will now advance to **RINSE CYCLE** which can be skipped. Then valve will advance to refill cycle which should not be skipped. This cycle will let the air our of ejector system of the valve.

# STARTUP INSTRUCTIONS (CONTINUED)

## 3. Manually Regenerate the Valve (Continued)

**NOTE** All units are factory programmed for the correct size and regeneration cycle alteration should only be done by a factory trained technician or after consultation with one of our technical representatives if you have any questions please call: 1-866-874-2532**

**3a.** Open the inlet on the bypass valve slightly and very slowly allow water to enter the unit. (If the water enters too quickly it will push the media up into the control valve and get plugged).

Once the unit has filled sufficiently that water is at least equal to the height of the top of the media shut down the water for 15 – 20 minutes for the media bed to soak. Unplug the power cable. After the media bed has soaked for the recommended time continue.

**3b.** Open the inlet on the bypass valve slowly and allow water to enter the unit. (The outlet of the bypass should remain closed to prevent any fines or debris from entering the plumbing system. 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 the water at the drain appears to be clear of any fines.

**4.** Plug in the valve and the valve will automatically advance to the SERVICE position. Open the outlet valve on the bypass, then slowly open the nearest treated water faucet and allow the water to run until clear, close the tap and replace the faucet screen.

## 4. Add Salt to the Brine Tank/Cabinet

Put 40 kgs of crystal water softener salt in the brine tank. The unit will automatically fill the water to the correct level when it regenerates.

**Start up and programming complete. Unit is now operational.**

# MASTER PROGRAMMING

Press **Up** and **Down** Button for 5 seconds

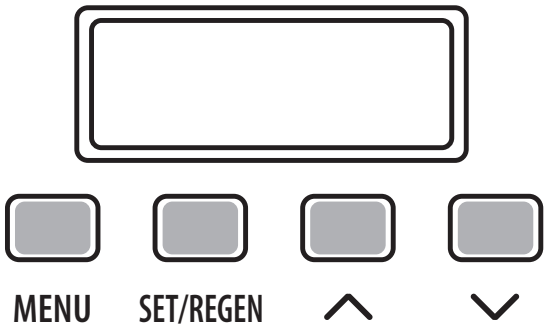
Press **Manual Regen** Button and and change value using **Up** and **Down** Buttons

**Key Pad Setting**

**MENU** This function is to enter the basic set up information required at the time of installation.

**SET/ REGEN** This function is to initiate an immediate or delayed manual regeneration.

**DOWN / UP** Increase or decrease the value of the settings while in the programming mode.




**VALVE MODE**
Softener UF

Press **SET/Regen** Key

**UNIT SIZE**
1.00 CF

**BACKWASH**
4 Minutes

**BRINE**
90 Minutes

Press **SET/Regen** Key

**RINSE**
7 Minutes

**PROGRAMMING COMPLETE**

| Main Valve Settings | |
|---|---|
| Meter Ratio | 5.714 |
| Service Delay | 2.0 |
| Backwash Delay | 2.0 |
| Brine Delay | 2.0 |
| Rinse Delay | 2.0 |
| Refill Delay | 2.0 |

| MODELS | VALVE TYPE | REGEN. MODE | REGEN TIME | UNIT CAPACITY | RESERVE CAPACITY | BACK WASH | BRINE / RINSE | RINSE | REFILL | CAPACITY CALC. | RESIN VOLUME | SALT SETTING | REFILL FLOW RATE | REGEN. DAYS | Injector | Injector Code | BLFC Washer | DLFC Washer | DLFC Code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 200 | SOFTENER | METER DELAYED | 2:00AM | 44,000 | 75 GAL | 10 | 60 | 10 | 6 | AUTO | 2.0CF | 6.0LB | 0.7 GPM | 10 DAYS | #2 | Blue | 0.7 GPM | 3.5 | #5 |

# DURING REGENERATION

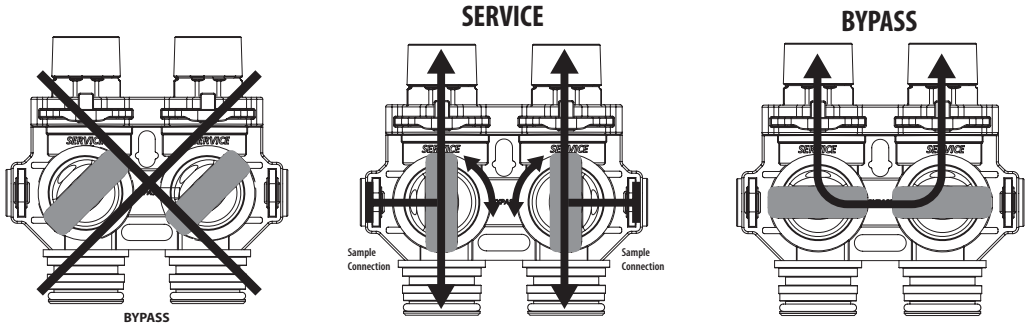
## Automatic Water Bypass

The regeneration cycle lasts approximately 1.5 hours to 3.0 hours depending on the specific model, after which treated water service will be restored. During regeneration, untreated 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.

**IMPORTANT: This is why the 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.**

## Manual Water Bypass

In case of an emergency such as filter maintenance, you can isolate your water filter 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 filter, 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 watersupply is bypassing the softener. However, the water you use will be hard. To resume treated service, open the bypass valve by rotating the knobs counterclockwise. **Please make sure bypass knobs are completely open otherwise the unfiltered water could bypass through the valve.**




## New Sounds

You may notice new sounds as your water softener operates. The regeneration cycle lasts approximately 1.5 hours to 3.0 hours depending on the specific model. During this time, will be able to hear water running intermittently to the drain, depending on proximity of the unit to sleeping area and time of regeneration.

# PLUMBING SYSTEM CLEAN-UP

The following procedures are guidelines only but have proven successful in most instances. Under no circumstances should any procedure outlined below be followed if contrary to the appliance manufacturer's instructions. Should there by any questions concerning the advisability of performing a procedure, it is strongly recommended the manufacturer's authorized service outlet be consulted prior to performing the procedure.

## Water Heater

**If** the water heater has been exposed to both iron and hardness for a long period of time, replacement of the heater tank maybe the only practical solution to prevent continued staining originating from this source. After completing the installation of the conditioner, clean the water heater by following these instructions:

1. Shut off energy supply to water heater and close heater inlet water valve.
2. Drain hot water tank completely. Open inlet water valve allowing heater tank to be refilled with iron-free water. Continue flushing until water runs clear to drain.
3. If, after approximately 30 minutes flushing, water does NOT clear, terminate flushing operation. Refill hot water heater with water and pour approximately 1/2 gallon of household bleach into top of heater tank. Allow bleach solution to stand in tank for 20 to 30 minutes. Flush tank

**NOTE**

**If water does not clear in approximately 10 minutes, water heater should probably be replaced.**

## Dishwasher

Consult owners' handbook and follow manufacturer's instructions.

## Toilet Flush Tanks

Prior to commencing installation of the filter system, pour 4 to 6 ounces of resin mineral cleaner Pro-Rust Out or or other suitable cleaner such as CLR that contains a mild acid into flush tanks and bowls and let stand. When installation is completed, flush toilets several times with conditioned water. If stains or deposits return check that lines are connected to treated water. Repeat procedure until clear. again until water is clear at drain. Turn energy supply on.

# MAINTENANCE INSTRUCTIONS AND SCHEDULE

## System Check List

**NOTE: Many situations affecting the operation of the product can be diagnosed in only a few minutes. Please review this section before contacting anyone to be sure that there is something wrong with the product and not with the general plumbing system. Please be sure you have reviewed these points before starting up the unit to ensure a successful installation.**

**1. Check for Proper Installation**

**a.** Is the inlet line of adequate size and attached to the correct port on the valve?

**b.** Is the drain line of adequate diameter? Drain line must be sized to prevent back pressure from reducing backwash flow rate below minimum for the model installed. Typical examples of minimum drain line diameters are:

**i)** 5/8" OD when drain is up to 15 ft from unit and backwash water discharge point is slightly higher than the control valve

**ii)** 3/4" OD when drain is 25 ft away and/or drain is installed overhead

**c.** Has the drain line been "kinked"? A kinked drain line must be replaced.

**d.** Is the drain line installed in a way that it will freeze in cold weather?

**2. Determine Other Uses of Water in Addition to Normal Domestic Purposes**

(e.g. geothermal heating or cooling, swimming pool fill, lawn irrigation, farm animal watering, etc.) Have any high demand water uses been added subsequent to the installation of the filter system or overlooked when originally sizing the system? (If a high demand situation exists, resize the system using continuous service flow rate data.)

## Service Schedule

- The seals and spacers along with the piston assembly should be inspected/cleaned or replaced every year depending on the inlet water quality and water usage. See inspection and replacement of Piston assembly and seal and spacer kit, page 21, figure 2.
- The injectors should be cleaned/inspected or replaced every year depending on the water quality and use. See Clean Injector Assembly, page 21, figure 3
- SERVICING OF PARALLEL ADAPTOR should be done annually. All connections need to be inspected for leaks, the cross pipes should be removed and inspected for blockage. if there is no evidence of leaking on the adapter no further inspection is required. If addtional inspection is required see page 22.
- The media should be replenished or replaced depending of inlet water quality and water consumption. Check with your water treatment expert on the media bed change frequency.
- Maintenance Kit (60010307) should be used for servicing control on an annual basis. The maintenance kit consists of piston assembly, seals and spacers, injectors. See Fig 1. on right.

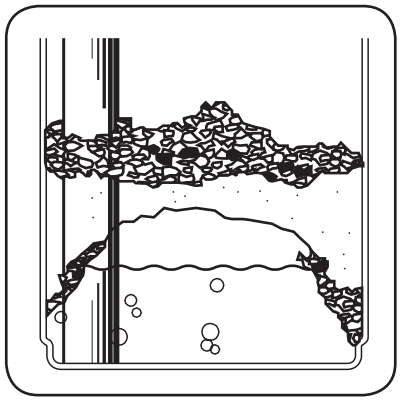
Maintenance of your new water conditioner requires very little time or effort but it is essential. Regular maintenance will ensure many years of efficient and trouble free operation.

**FAILURE TO FOLLOW BASIC MAINTENANCE SCHEDULE WILL RESULT IN THE UNIT FAILING TO OPERATE PROPERLY AND VOID YOUR WARRANTY.**

## Bridging

Humidity or the 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 plastic 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.



**CAUTION!**

**Liquid brine will irritate eyes, skin and open wounds - gently wash exposed area with fresh water. Keep children away from your water conditioner.**

## Cleaning of your Brine / Salt tank

Salt tanks will build up sludge (undissolved salt) in the bottom of them that will continue to increase as time goes by. Every 2 - 3 years the salt tank should be cleaned out completely and re started using the original start up instructions.

Never subject your conditioner to freezing, vacuum or to temperatures above 43°C (110°F).

# Care of Your Softener

To retain the attractive appearance of your new water softener, clean occasionally with a mild soap solution. Do not use abrasive cleaners, ammonia or solvents. Never subject your softener to freezing or to temperatures above 43°C (110°F).

# Servicing Components

- The injector assembly should be cleaned or replaced every year depending on the inlet water quality and water usage.
- The seals and spacer cartridge should be inspected/cleaned or replaced every year depending on the inlet water quality and water usage.

Please refer to the servicing section of this manual for step by step procedure.

Not following the above will void all warranty on the control valve.

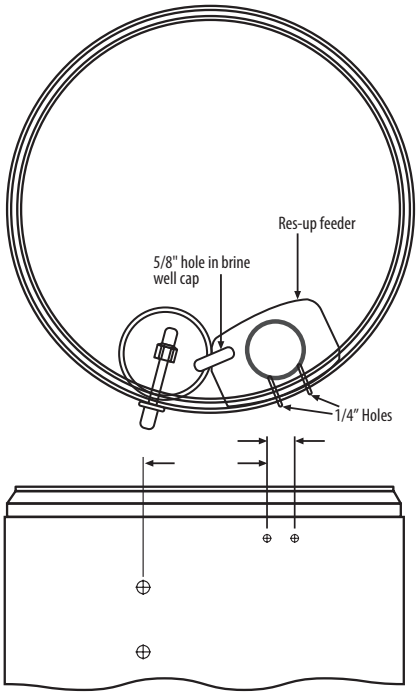
## Resin Cleaner

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 thedirections on the resin cleaner package).

# Res-Up® Feeder Installation Instructions

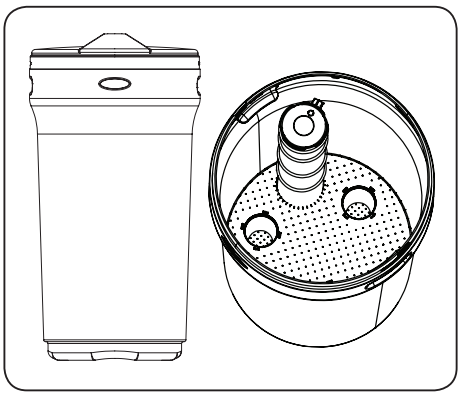
Res-Up Feeders attach to your brine tank and automatically dispense the Res-Up cleaner into the brine solution where it cleans the resin during the regeneration cycle.

The feeder hooks onto the tube inside your brine tank and you just pour some chemical in it and your water conditioner should last significanly longer. A res-up feeder is essential if your raw water contains measurable amounts of iron.

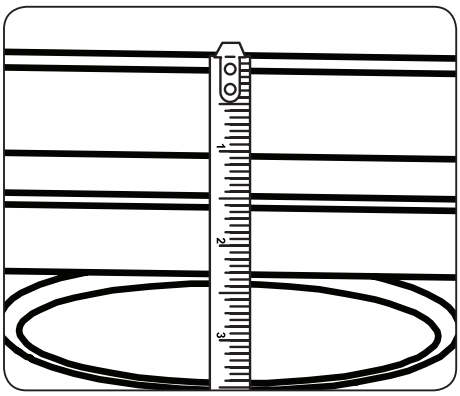



| Res-up Feeder Bottle (Chemical sold Separately) |
|---|
| The 12 cc feeder (Part # 33010) is for conditioners up to 64,000 grains (2 ft3 of resin). |
| The 30 cc feeder (Part # 33018) is for larger conditioners over 64,000 grains. |
| **Pro-Res Care Chemicals** |
| Item #45147 Pro-ResCare - Gallon |
| Item #45148 Pro-ResCare - Quart |

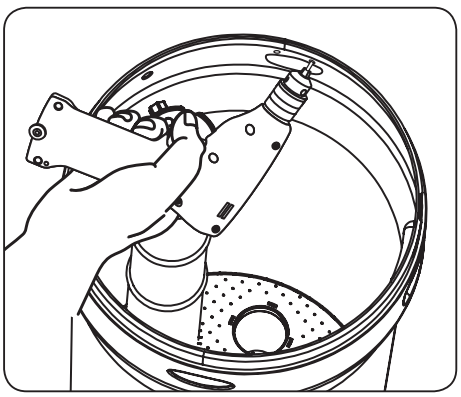
# Install Resup Feeder



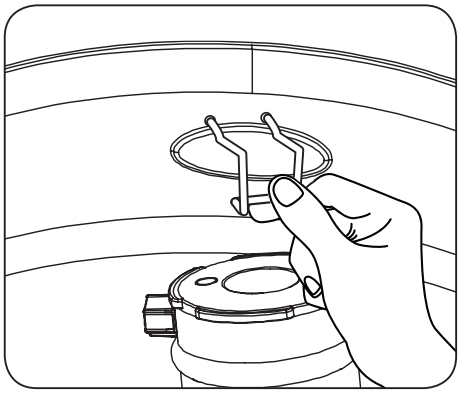
**1.** Install the grid and brine well inside the tank.



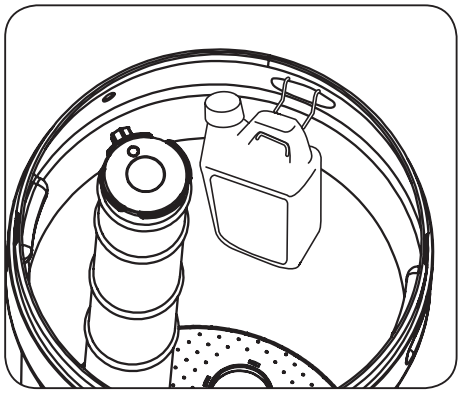
**2.** Measure 2 inches from the top of the tank beside the oblong molding.

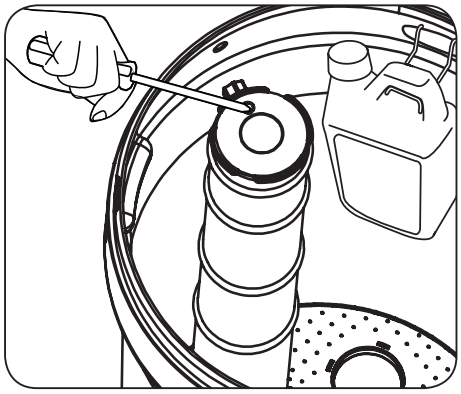


**3.** Mark the location of the holder and drill.

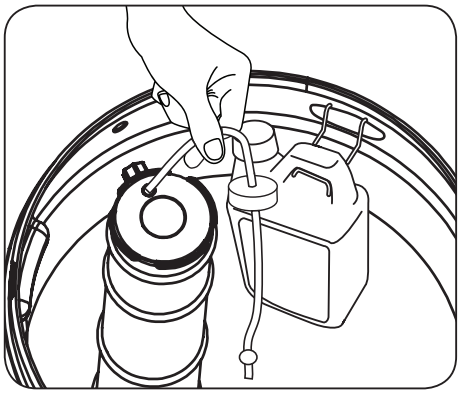


**4.** IInstall the holder and the Res Care Solution





**5.** Take off the small hole cover on the Brine Well lid.



**6.** Take off the cover of the Res care bottle . Insert the wick, making sure it touches the bottom of the bottle. Insert the other end of the tube completely into the hole in the brine well cap. Automatic feeding will start in a few hours.

# SERVICING LCC VALVE

## Before Servicing

**1.** Turn off water supply to conditioner :
   **a.** If the conditioner installation has a 3 valve bypass system first open the valve in the bypass line, then close the valves at the conditioner inlet & outlet.
   b. If the conditioner has an integral bypass valve, put it in the bypass position.
   c. If there is only a shut-off valve near the conditioner inlet, close it.

**2.** Relieve water pressure in the conditioner by stepping the control into the backwash position momentarily. Return the control to the In Service position.

**3.** Unplug Electrical Cord from outlet.

**4.** Disconnect drain line connection.

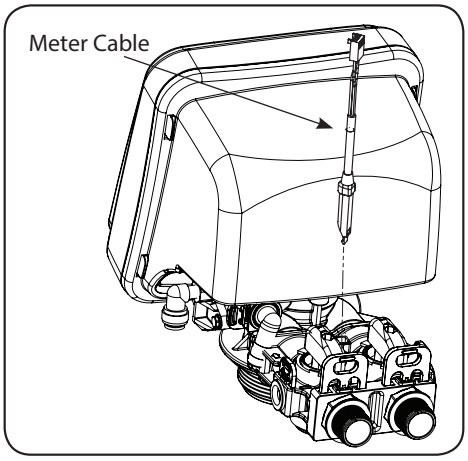
**CAUTION!**

**Disassembly while under pressure can result in flooding. Always follow these steps prior to servicing the valve.**

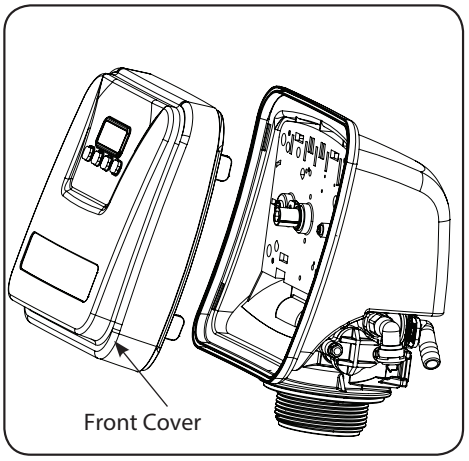
**WARNING!**

**ELECTRICAL SHOCK HAZARD!** UNPLUG THE UNIT BEFORE REMOVING THE COVER OR ACCESSING ANY INTERNAL CONTROL PARTS

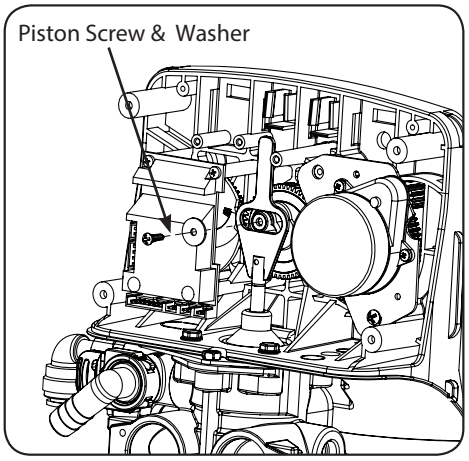
# TIMER REPLACEMENT



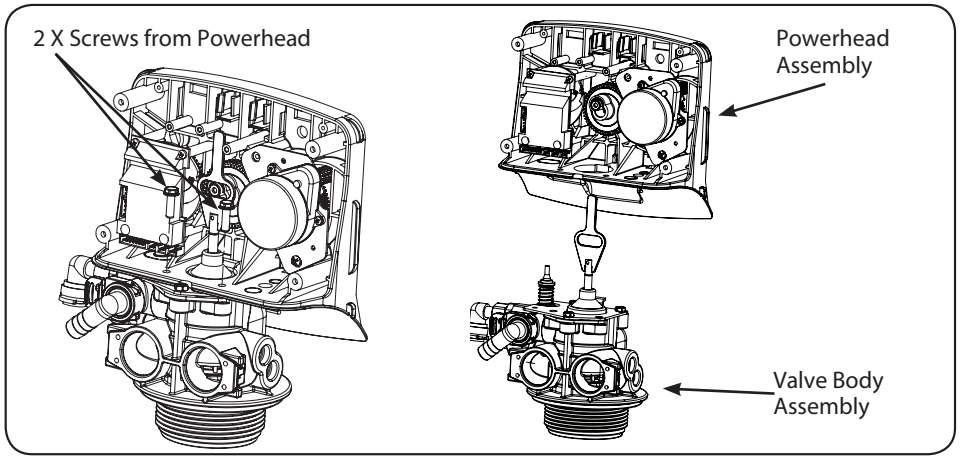

**1.** Disconnect the meter cable from the meter. (If flow meter is attached)




**2.** Remove the front cover of the valve.

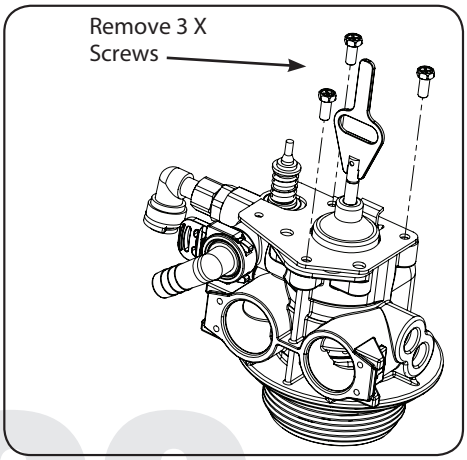



**3.** Remove the piston screw and washer from the piston rod.

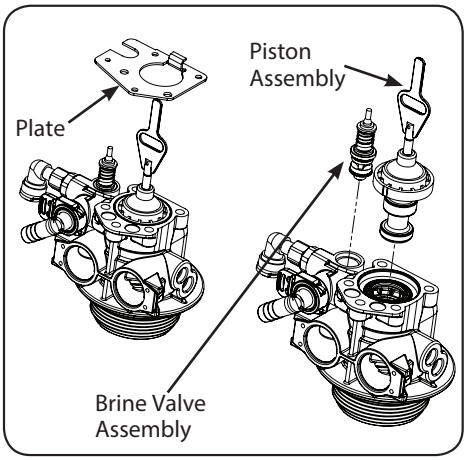



**4.** Remove the two screws from the powerhead as shown
**5.** Life the powerhead from the valve body assembly
**6.** Replace the powerhead by reverse following the steps in this section

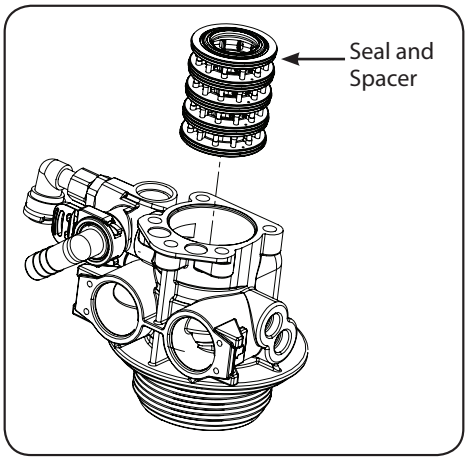
# PISTON AND/OR BRINE VALVE ASSEMBLY REPLACEMENT




**1.** Follow steps 1 to 6 of timer /Powerhead replacement.
**2.** Remove three screws from the plate on the valve body.

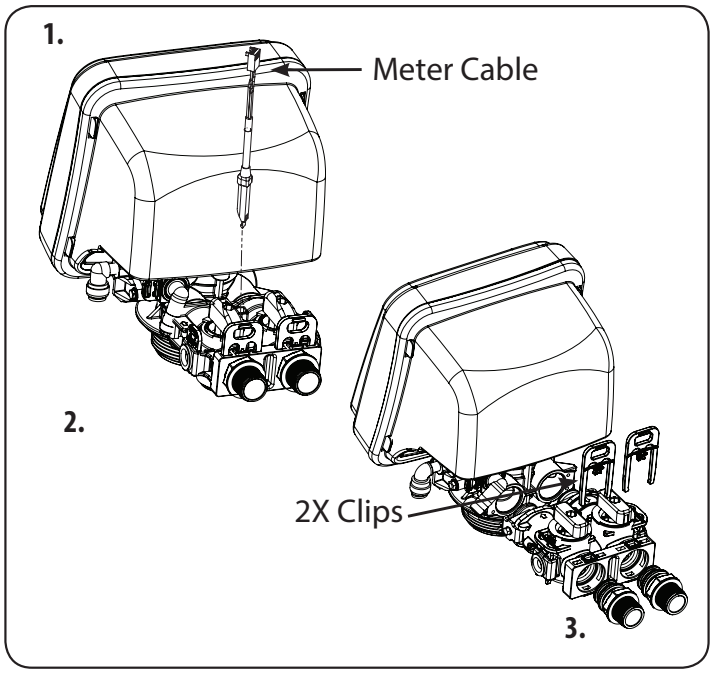



**3.** Remove the plate from the valve body and pull the Piston Assembly from the valve. The brine valve assembly can also be removed in this stage.
**4.** Remove the seal spacer assembly, grease it with silicone lubricant and put back in.




**5.** Replace piston assembly followed by timer assembly.
**6.** Replace the piston assembly and reverse following steps in this section

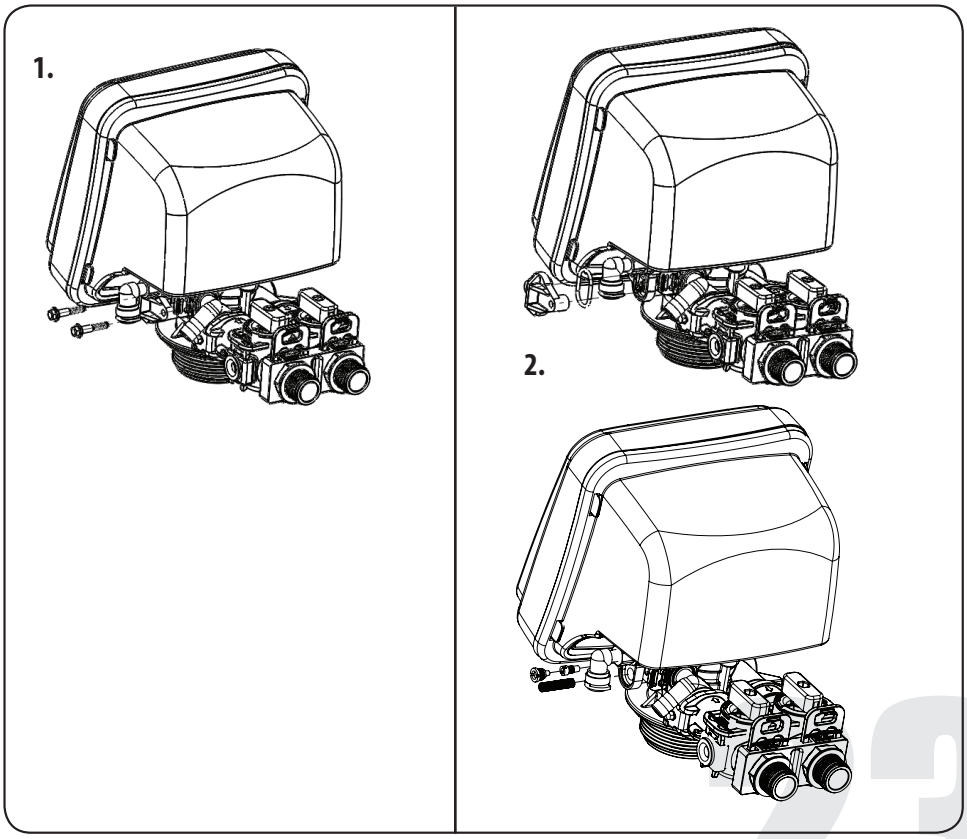
# METER ASSEMBLY REPLACEMENT




**1.** Disconnect the meter cable from the meter.
**2.** Disconnect the valve from bypass by removing clips
**3.** Remove the coupling adapter from the valve

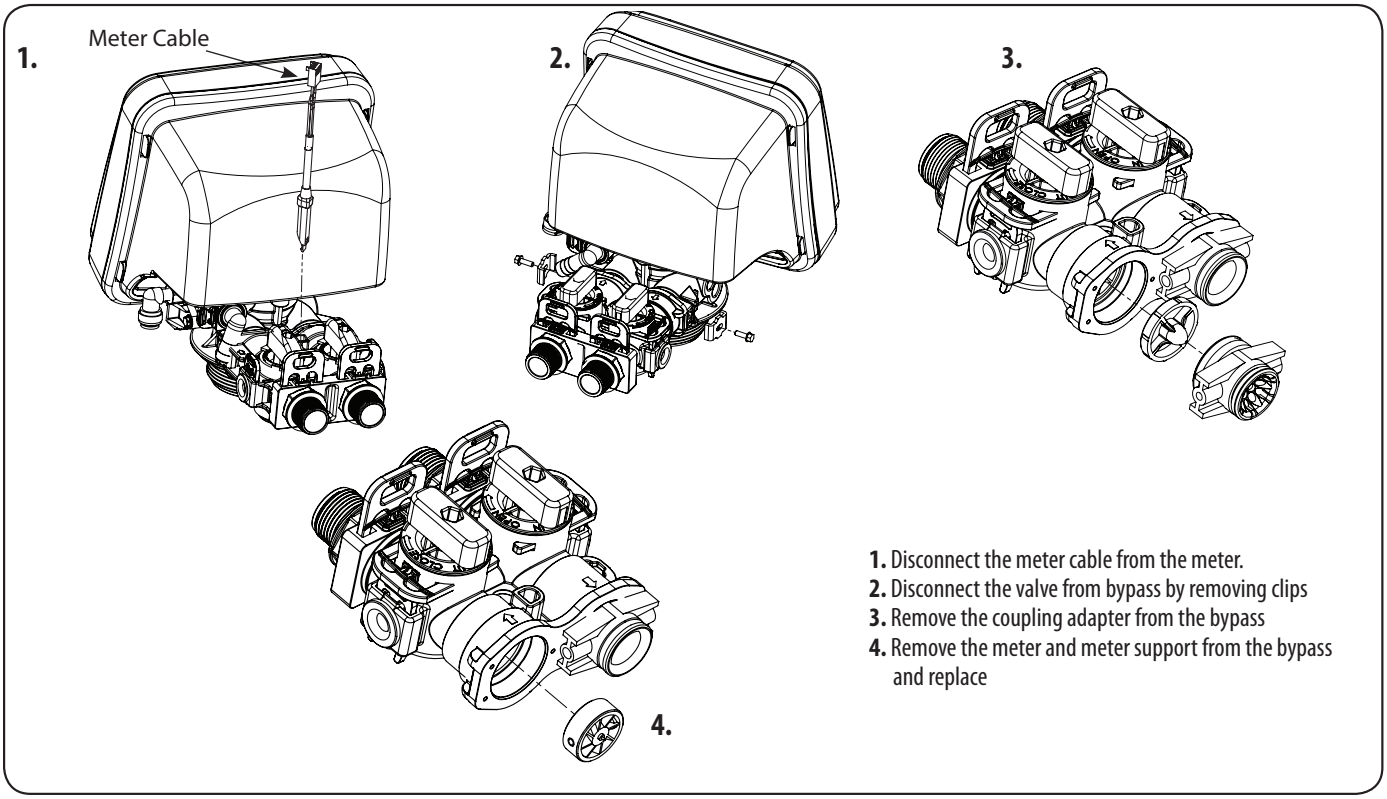
**4.** Remove the meter support and then the impeller out from the coupling and clean it
**5.** Replace meter with the help of special tool and re-assemble the removed components back in the section

# CLEAN INJECTOR ASSEMBLY



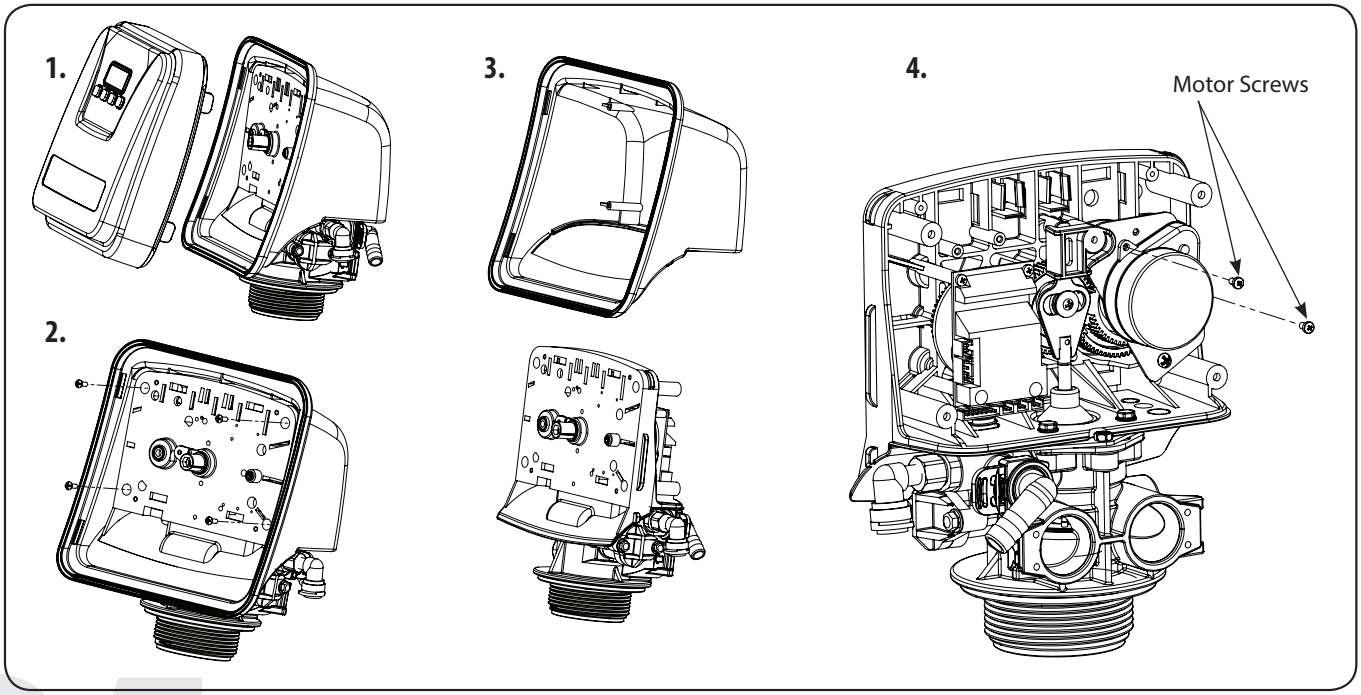

**1.** Remove two screws of the injector cap.
**2.** Pull the Injector Cap Out, Remove the injector assembly, oring and screen, Clean the injectors and replace cap

# REPLACE METER ASSEMBLY



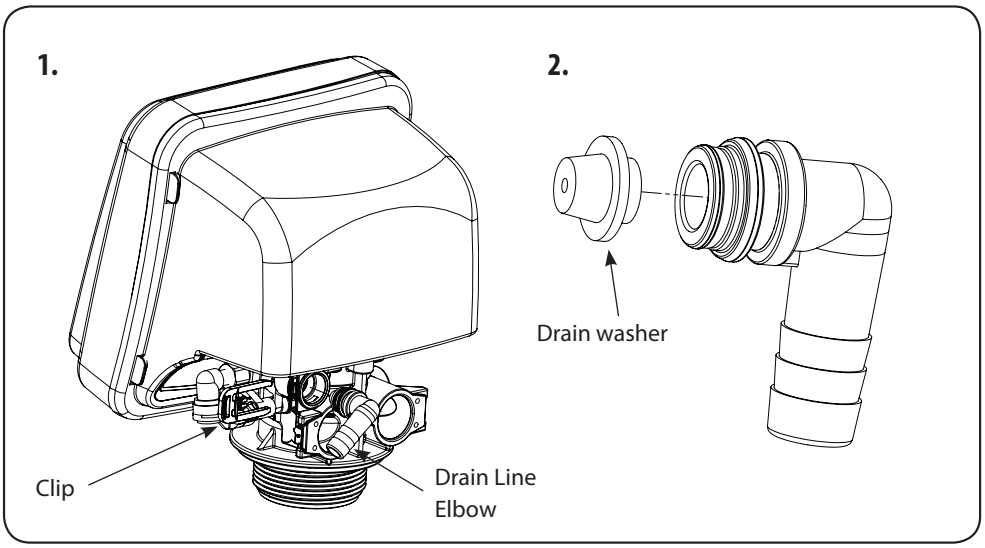

**1.** Disconnect the meter cable from the meter.
**2.** Disconnect the valve from bypass by removing clips
**3.** Remove the coupling adapter from the bypass
**4.** Remove the meter and meter support from the bypass and replace

# REPLACE MOTOR



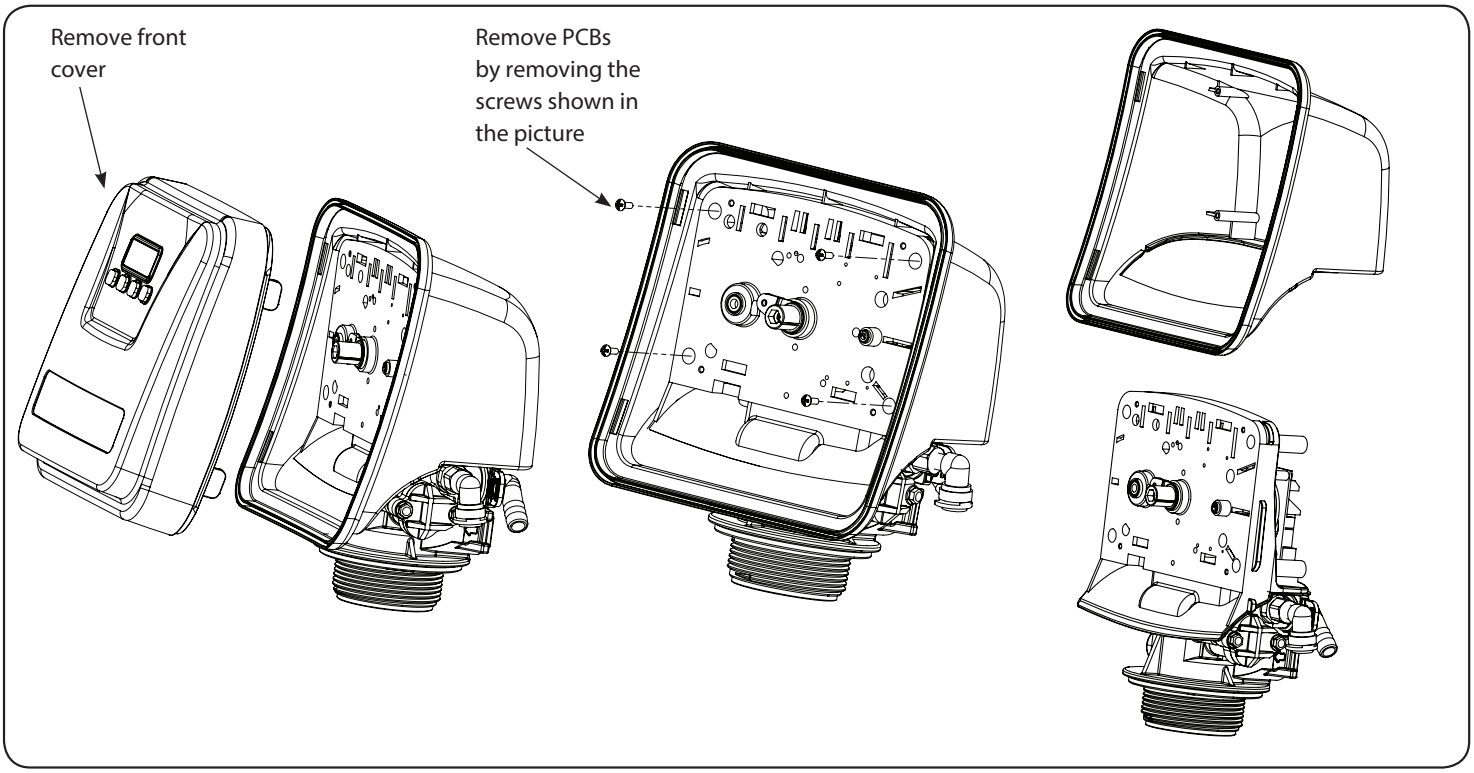

**1.** Remove the powerhead front cover
**2.** Remove all connections from the circuit board
**3.** Remove the cover from the powerhead
**4.** Remove the motor screws and pull the motor out from powerhead

# REPLACE DRAIN LINE FLOW CONTROL




**1.** Pull the drain line clip and remove the drain line elbow and washer
**2.** Clean/replace drain line washer

# REPLACING PCBS



# AFTER SERVICING

**1.** Reconnect drain line

**2.** Return bypass or inlet valve to normal in service position. Water Pressure will automatically build in the Softener

**NOTE**

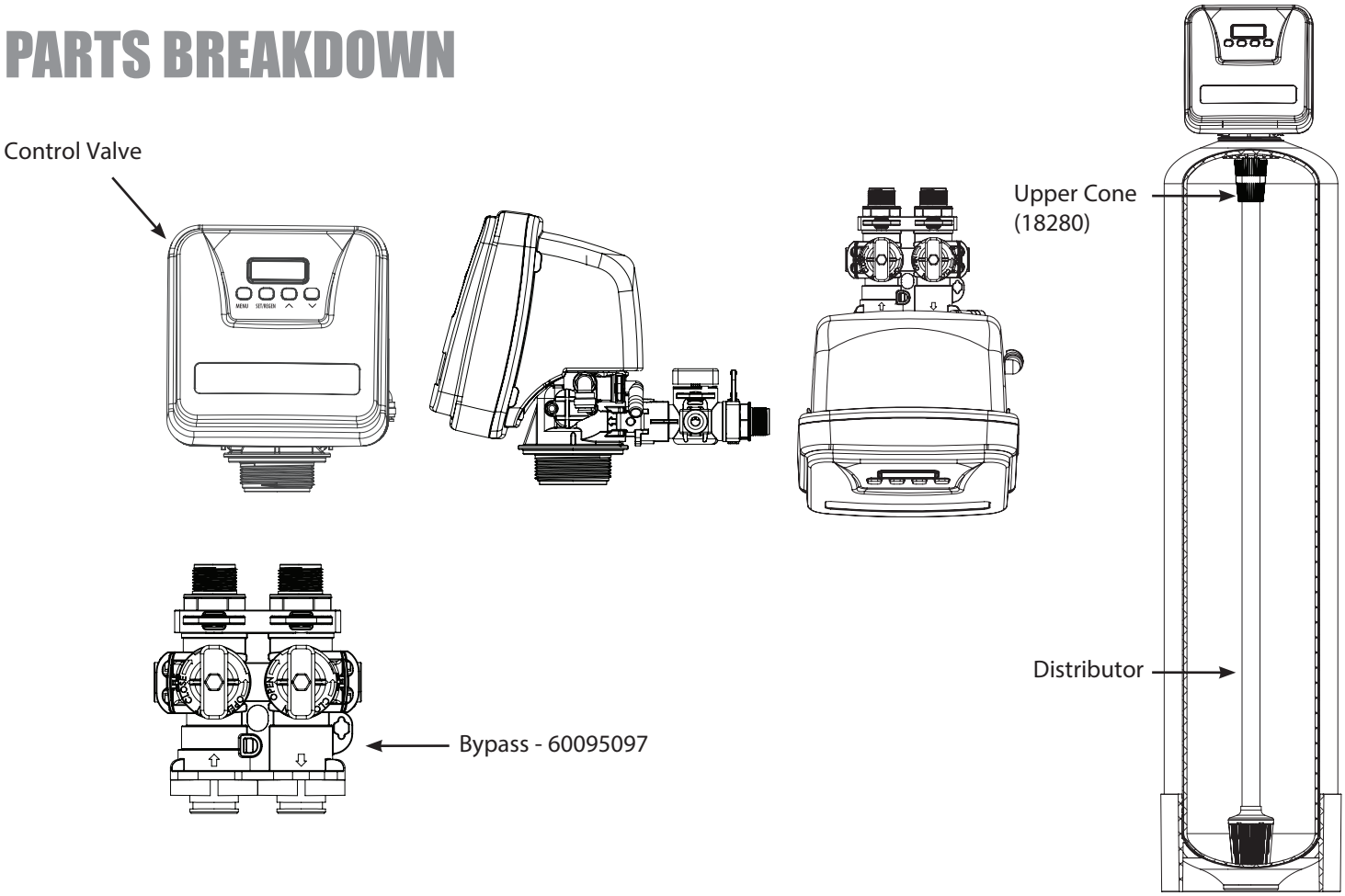
**Be sure to shut off any bypass line.**

**3.** Check for leaks at all sealed areas. Check Drain seal with the control in the backwash position

**4.** Plug electrical cord into outlet

**5.** Set Time of Day and cycle the control valve manually to assure proper function. Make sure control valve is returned to the In Service position

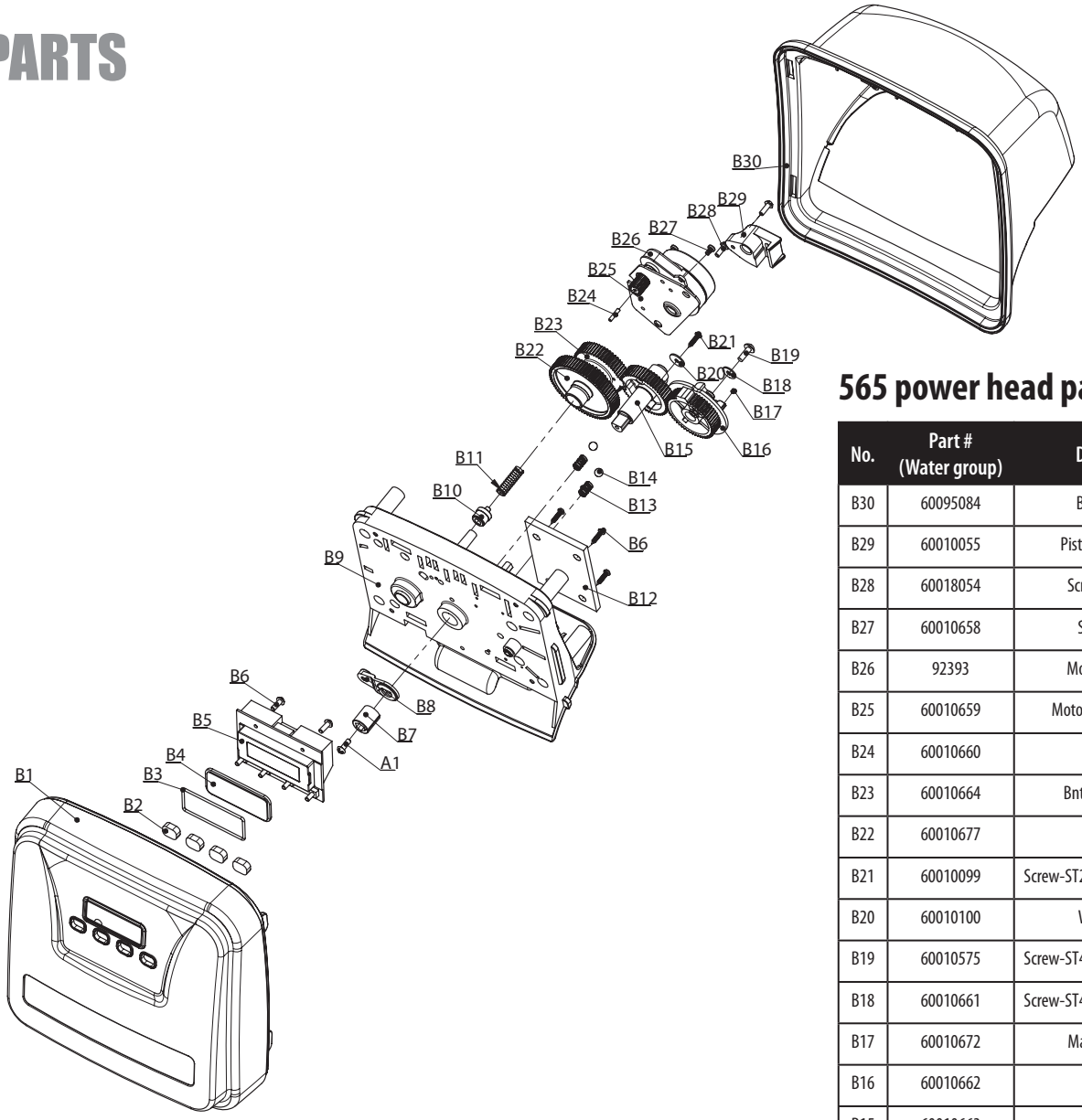
# PARTS BREAKDOWN




## Downflow Softener

| Model | Mineral Tank Size | Tank # (Natural Color) | Tank # (Black Color) | Tank # (Blue Color) | Distributor# | Valve # | Media Bed # |
|---|---|---|---|---|---|---|---|
| Softener Downflow (Single Tank) | | | | | | | |
| 200 | 12 x 52 | 25010058 | 25010060 | 25010059 | 50010005 | 10010109 | 95609 |

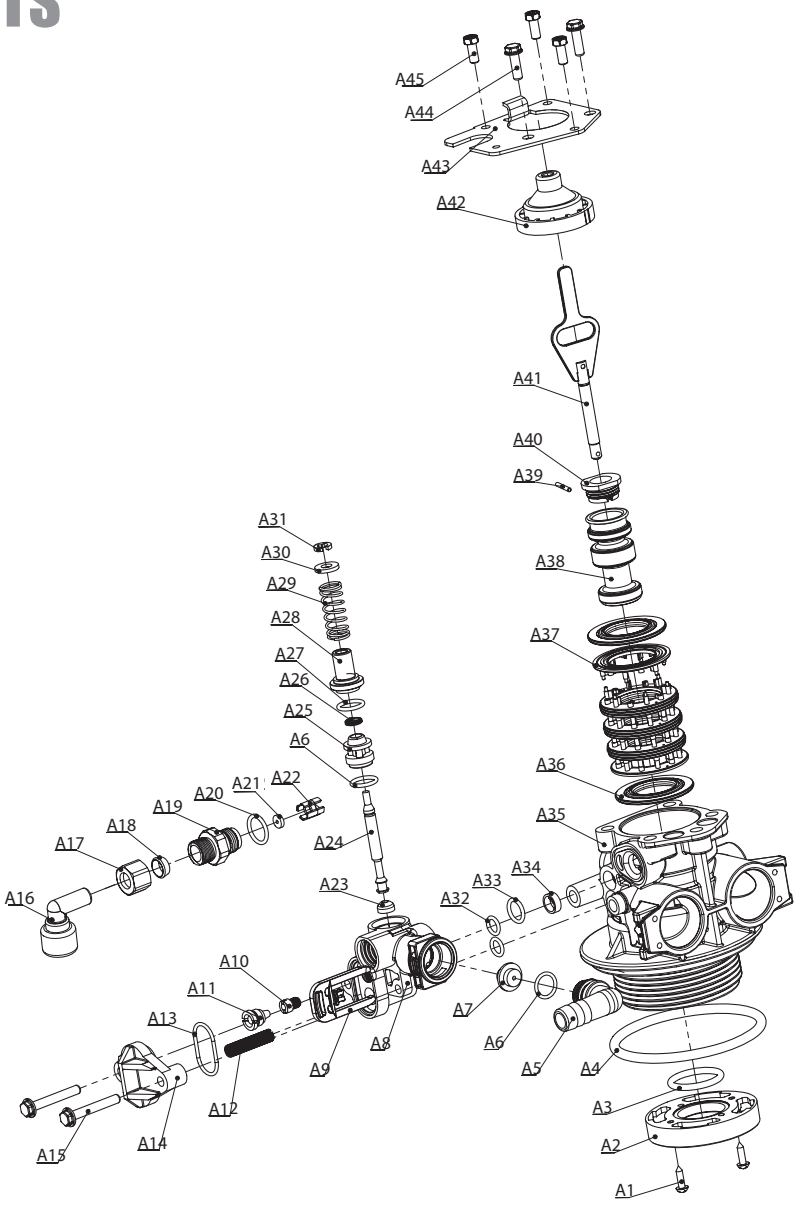
# PARTS




## 565 power head parts list

| No. | Part # (Water group) | Description | Qty |
|---|---|---|---|
| B30 | 60095084 | BNT365 Cover | 1 |
| B29 | 60010055 | Piston Stem Holder | 1 |
| B28 | 60018054 | Screw-ST3.5×13 | 2 |
| B27 | 60010658 | Screw-M3×5 | 2 |
| B26 | 92393 | Motor-12v/2rpm | 1 |
| B25 | 60010659 | Motor Mounting Plate | 1 |
| B24 | 60010660 | Motor Pin | 1 |
| B23 | 60010664 | Bnt165 Drive Gear | 1 |
| B22 | 60010677 | Idler Gear | 1 |
| B21 | 60010099 | Screw-ST2.9×13(Large Wafer) | 1 |
| B20 | 60010100 | Washer-3x13 | 1 |
| B19 | 60010575 | Screw-ST4.2×12(Large Wafer) | 1 |
| B18 | 60010661 | Screw-ST4.2×12(Large Wafer) | 1 |
| B17 | 60010672 | Magnet-φ3×2.7 | 1 |
| B16 | 60010662 | Brine Gear | 1 |
| B15 | 60010663 | Main Gear | 1 |
| B14 | 60010667 | Ball-1/4inch | 2 |
| B13 | 60010668 | Spring Detent | 2 |
| B12 | 60010113 | BNT85 Main PCB | 1 |
| B11 | 60010103 | Spring Idler | 1 |
| B10 | 60010666 | Spring Retainer | 1 |
| B9 | 60095085 | BNT365 Base | 1 |
| B8 | 60010671 | Magnet Holder | 1 |
| B7 | 60010059 | Locking Knob | 1 |
| B6 | 60010673 | Screw-ST2.9×10 | 8 |
| B5 | 60010051 | BNT 85 Main PCB | 1 |
| B4 | 60095086 | Display Protective Cover | 1 |
| B3 | 60095612 | O-ring 40×1.8 | 1 |
| B2 | 60010615 | BNT465 Button | 4 |
| B1 | 60010056 | BNT565 Front Cover | 1 |

# PARTS




## Item #s For All Injector Assemblies and Brine Line and Drain Line Washers

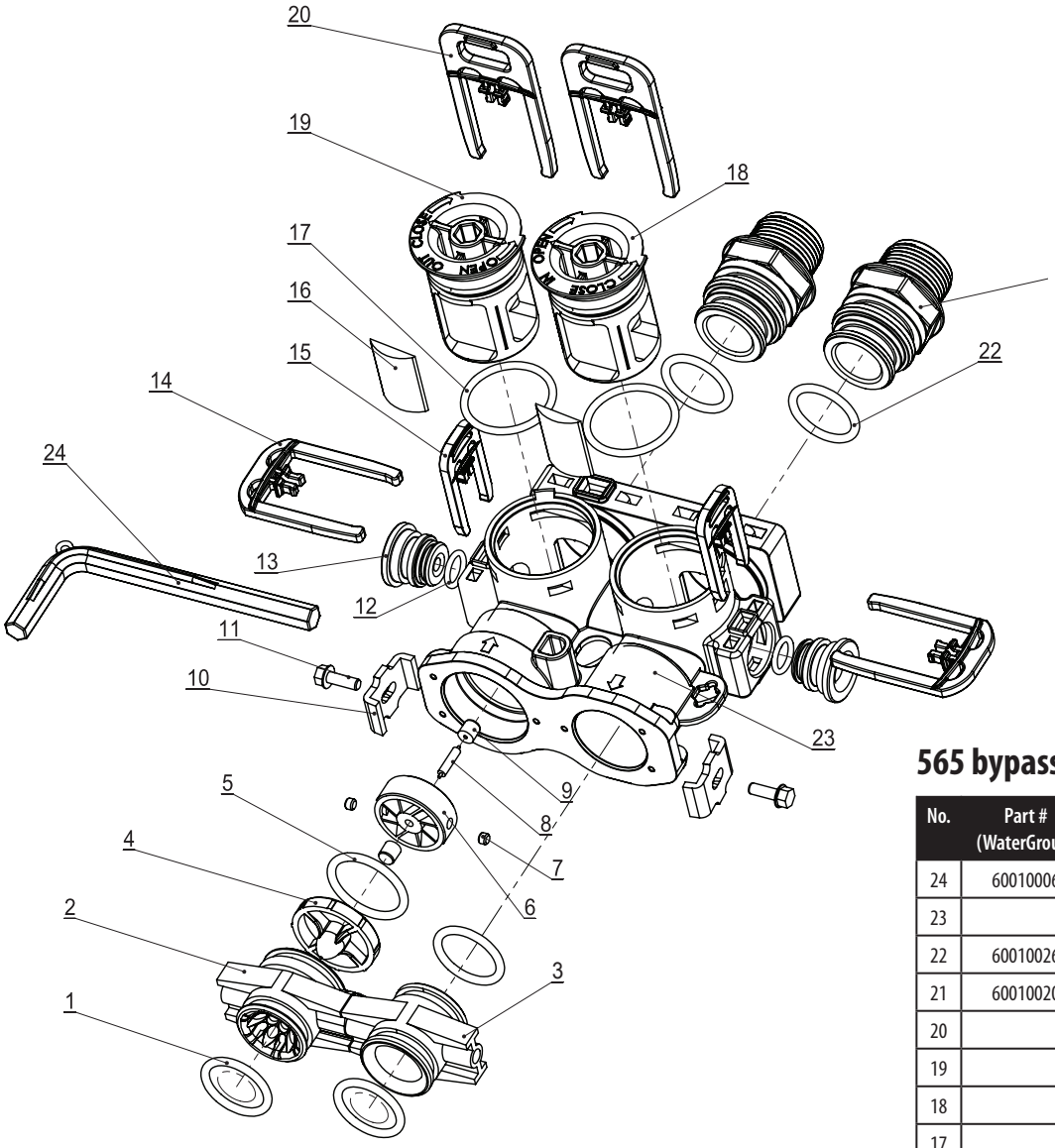
| No. | Part # | Part Description |
|---|---|---|
| 60010110 | | BLFC BUTTON #2 0.3GPM A32 |
| 60010082 | | BLFC BUTTON #2 0.7GPM A32 |
| 60010128 | | BLFC BUTTON 0.2GPM |
| 60010127 | 60010601 | INJECTOR SET #0000 BLACK THROAT |
| | 60010602 | NOZZLE #0000 BLACK THROAT |
| 60010126 | 60010603 | INJECTOR SET #000 GREY THROAT |
| | 60010604 | NOZZLE #000 GREY THROAT |
| 60010035 | 60010605 | INJECTOR SET #00 VIOLET THROAT |
| | 60010606 | NOZZLE #00 VIOLET THROAT |
| 60010034 | 60010607 | INJECTOR SET #0 RED THROAT |
| | 60010608 | NOZZLE #0 RED THROAT |
| 60010033 | 60010609 | INJECTOR SET #1 WHITE THROAT |
| | 60010610 | NOZZLE #1 WHITE THROAT |
| 60010032 | 60010611 | INJECTOR SET #2 BLUE THROAT |
| | 60010612 | NOZZLE #2 BLUE THROAT |

| No. | Part # | Part Description |
|---|---|---|
| 60010031 | 60010613 | INJECTOR SET #3 YELLOW THROAT |
| | 60010614 | NOZZLE #3 YELLOW THROAT |
| 60010685 | | INJECTOR SET #4 GREEN THROAT |
| 60010686 | | NOZZLE #4 GREEN THROAT |
| 60010131 | | DLFC #1 1.5GPM |
| 60010132 | | DLFC #2 2.0GPM |
| 60010133 | | DLFC #3 2.4GPM |
| 60010135 | | DLFC #5 3.5GPM |
| 60010134 | | DLFC #4 3.0GPM |
| 60010041 | | DLFC #6 4GPM |
| 60010169 | | DLFC #7 5GPM |
| 60010136 | | DLFC #A 5.0GPM |
| 60010137 | | DLFC #B 7.0GPM |
| 60010138 | | DLFC #C 11.0GPM |
| 60010167 | | DLFC#5(3.5 GPM) |

## Valve Body Parts List

| No. | Part # | Part Description | Qty |
|---|---|---|---|
| A45 | 60010076 | SCREW M5×16 | 2 |
| A44 | 60010075 | SCREW M5×12 | 3 |
| A43 | 60010645 | END PLUG RETAINER | 1 |
| A42 | 13446 | END PLUG | 1 |
| A41 | 13001 | 65 PISTON ROD | 1 |
| A40 | 60010646 | PISTON RETAINER | 1 |
| A39 | 60010647 | PIN | 1 |
| A38 | 60010648 | PISTON | 1 |
| A37 | 14241 | SPACER | 8 |
| A36 | 13242-02 | SEAL | 5 |
| A35 | 13755-1 | BNT 65 VALVE BODY | 1 |
| A34 | 60010095 | AIR DISPENSER | 1 |
| A33 | 12638 | O-RING(11×2) | 1 |
| A32 | 60010094 | O-RING(7.8×1.9) | 2 |
| A31 | 60010649 | RETAINER RING | 1 |
| A30 | 60010650 | INJECTOR WASHER | 1 |
| A29 | 60010651 | INJECTOR SPRING | 1 |
| A28 | 60010652 | INJECTOR CAP | 1 |
| A27 | 60010185 | O-RING(12.5×1.8) | 1 |
| A26 | 60095735 | QUAD RING | 1 |
| A25 | 60010653 | INJECTOR SPACER | 1 |
| A24 | 60010654 | INJECTOR STEM | 1 |
| A23 | 60010655 | INJECTOR RUBBER SEAT | 1 |
| A22 | 60010081 | BLFC BUTTON RETAINER | 1 |
| A21 | 60010110 | BLFC(0.3GPM) | 1 |
| A20 | 60010083 | O-RING(14×1.8) | 1 |
| A19 | 13244 | COPPER FITTING | 1 |
| A18 | 60010087 | BLFC FERRULE | 1 |
| A17 | 60010088 | BLFC FITTING NUT | 1 |
| A16 | 60010656 | QC BRINE ELBOW | 1 |
| A15 | 60010089 | SCREWS M5×30 | 2 |
| A14 | 60010090 | INJECTOR PLUG | 1 |
| A13 | 60010091 | O-RING(23.9×1.8) | 1 |
| A12 | 10227 | INJECTOR SCREEN | |
| A11 | 60010033 | INJECTOR NOZ-ZLE(WHITE) | 1 |
| A10 | | INJECTOR THROAT(WHITE) | 1 |
| A9 | 60010069 | SECURE CLIP-S | 1 |
| A8 | 60010093 | INJECTOR BODY | 1 |
| A7 | 60010657 | DLFC 3.0GPM | 1 |
| A6 | 60010044 | O-RING(12×2) | 1 |
| A5 | 60010229 | QC DRAIN LINE ELBOW | 1 |
| A4 | 60010077 | O-RING(78.74×5.33) | 1 |
| A3 | 60010080 | O-RING(25×3.55) | 1 |
| A2 | 60010599 | VALVE BOTTOM CONNECTOR | 1 |
| A1 | 60010574 | SCREWS ST3.5×13 | 2 |

# PARTS




## 565 bypass parts list

| No. | Part # (WaterGroup) | Description | Qty |
|---|---|---|---|
| 24 | 60010006 | Bypass Tool | 1 |
| 23 | | 063 Bypass Body | 1 |
| 22 | 60010026 | O-ring( 22.4×3.55) | 2 |
| 21 | 60010020 | Connector 3/4"NPT | 2 |
| 20 | | Connector Clip | 2 |
| 19 | | Bypass Shaft( Outlet) | 1 |
| 18 | | Bypass Shaft( Inlet) | 1 |
| 17 | | O-ring(30×2.65) | 2 |
| 16 | | Shaft Seal | 2 |
| 15 | 92846 | Plug Clip | 2 |
| 14 | | Shaft Clip | 2 |
| 13 | 60010209 | Bypass Plug | 2 |
| 12 | 60010044 | O-ring(12×2) | 2 |
| 11 | 60010126 | Screw M4×12 | 2 |
| 10 | 60010046 | SS Clip | 2 |
| 9 | | Bush | 2 |
| 8 | | Impeller Pin | 1 |
| 7 | | Magnet | 2 |
| 6 | 60010238 | Impeller | 1 |
| 5 | 60010102 | O-ring(27×3) | 1 |
| 4 | | Impeller Support | 1 |
| 3 | 60010079 | Valve-Bypass Connector(Inlet) | 1 |
| 2 | 60010101 | Valve-Bypass Connector(Outlet) | 1 |
| 1 | 60010562 | O-ring(23×3) | 3 |

# 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. |

OPEN

**TDC** warrants 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.

## Seven Year Complete Parts Warranty

**TDC** will replace any part which fails within 84 months from date of manufacture, as indicated by the serial number, provided the failure is due to a defect in material or workmanship. The only exception shall be when proof of purchase or installation is provided and then the warranty period shall be from the date thereof.

## Ten Year Warranty on Mineral Tanks and Brine Tanks

**TDC** will provide a replacement mineral tank or brine tank to any original equipment purchaser in possession of a tank that fails within 120 months, provided that the water conditioner is at all times operated in accordance with specifications and not subject to freezing.

## General Provisions

Damage to any part of this water filter 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. TDC assumes no responsibility for consequential damage, labor or expense incurred as a result of a defect or failure.

**TOLL-FREE: 1-866-874-2532**

**The Distribution Center**
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54891 12/17