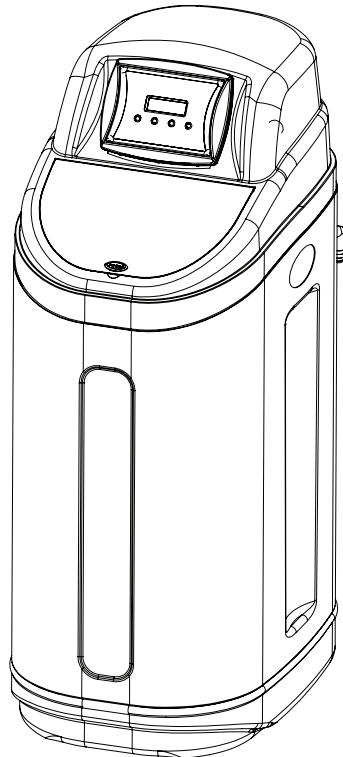
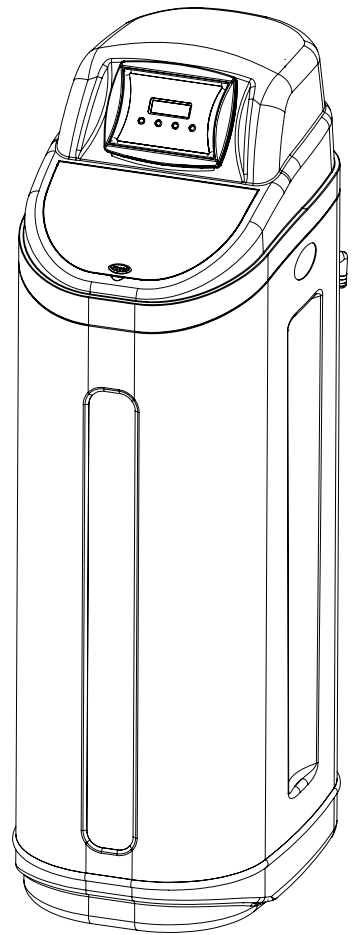


**ECS-20**



**ECS-24**



**ECS-34/39**

## EcoSmart Series Water Conditioner



IAPMO R & T Certified  
against CSA B483.1

- 1. Page 20 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.**
2. Read all instructions carefully before operation.
3. Avoid pinched o-rings during installation by applying NSF certified lubricant to all seals (provided with install kit).
4. This system is not intended for treating water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

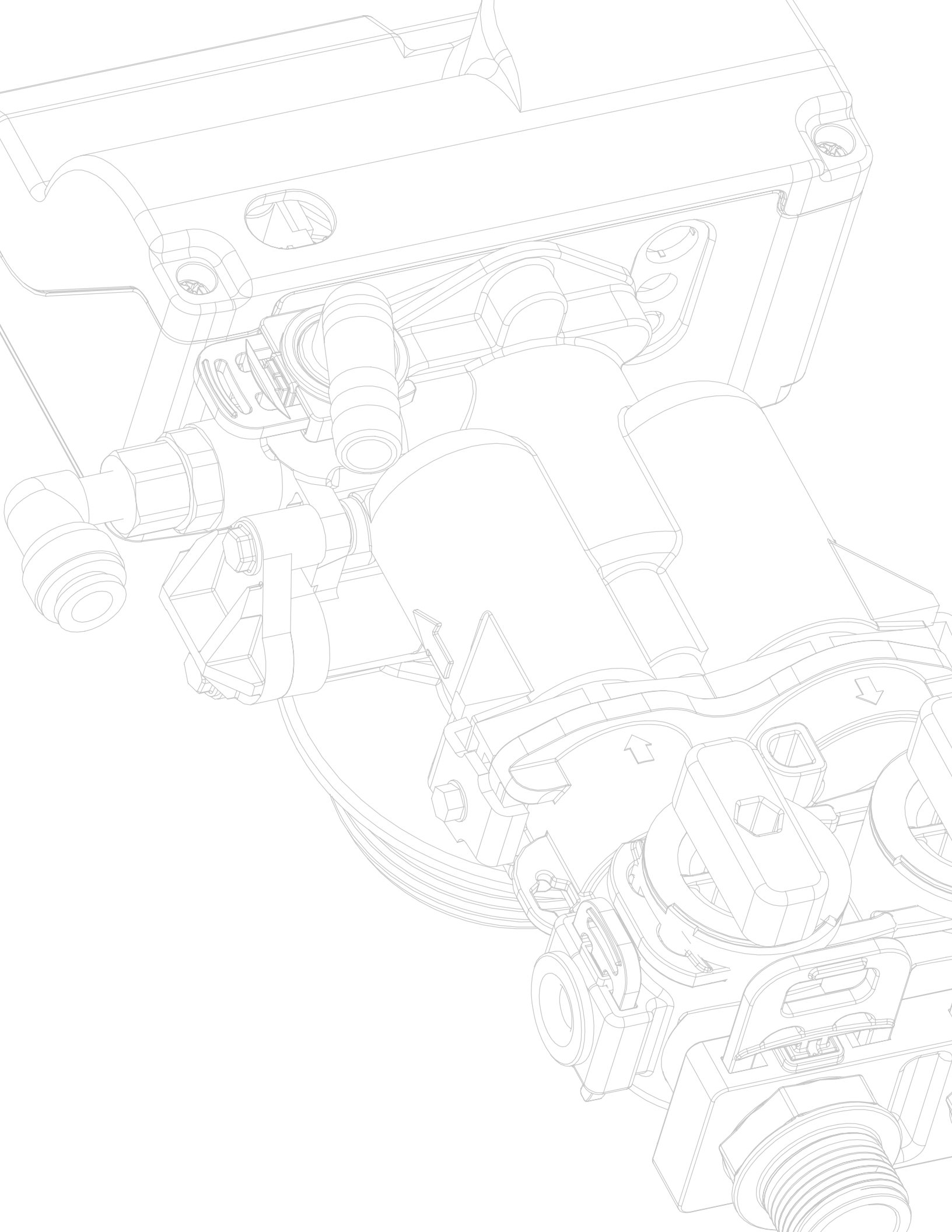
**Canada West**  
855 Park St., Unit 1  
Regina, SK S4N 6M1

**Canada East**  
490 Pinebush Rd., Unit 1  
Cambridge, ON N1T 0A5

**U.S.A.**  
56 Lightcap Rd.  
Pottstown, PA 19464

9760 Mayflower Park Drive,  
Suite 110  
Carmel, IN 46032

4645 W. McDowell Rd.  
Suite 106, Phoenix, AZ 85035



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# READ THIS PAGE FIRST

## BEFORE STARTING INSTALLATION

- ▶ Read this manual thoroughly to become familiar with the appliance and its capabilities before installing or operating. Failure to follow instructions could result in personal injury or property damage. This manual will assist you in getting the most out of your new appliance.
- ▶ 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 that the codes conflict with any content in this manual the local codes should be followed. Professional installation by a licensed plumber or certified water treatment professional is recommended.
- ▶ **WARNING!** Do not use water that is microbiologically unsafe without adequate disinfection before or after this system.
- ▶ This appliance is capable of operating at temperatures between 40°F and 110°F (4°C - 43°C). Do not use this appliance on hot water supplies.
- ▶ Do not install this appliance 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 IAPMO certified lubricant (provided with install kit) to all seals.
- ▶ This appliance 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 ahead of this appliance.
- ▶ It is not uncommon for sediment, precipitated iron or hardness to be present in water supplies. Precipitated minerals or sediments can cause damage to the seals and piston. This is considered a harsh environment and the seals and piston would not be covered by warranty stated or otherwise.
- ▶ 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 the raw water quality. An Annual Maintenance kit is available for this purpose.
- ▶ 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. The manufacturer 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.



# SPECIFICATION

Specifications	ECS-20 Item #15010410	ECS-24 Item #15010411	ECS-34 Item #15010412	ECS-39 Item #15010414
Maximum Hardness Removal	19,500 grains	24,180 grains	34,320 grains	39,000 grains
Factory Settings - High Efficiency				
Salt Used	1.5 lbs	2.1 lbs	2.4 lbs	3.0 lbs
Water Used	9.6 gal	11.7 gal	15.8 gal	17.9 gal
System Capacity	7,300 grains	10,200 grains	11,700 grains	15,400 grains
High Capacity Settings				
Salt Used	3.0 lbs	3.7 lbs	5.3 lbs	6.0 lbs
Regeneration Water Used	16.9 gal	21.4 gal	32.5 gal	34.6 gal
System Capacity	12,000 grains	16,800 grains	19,200 grains	25,000 grains
Coconut Activated Carbon	No	No	Yes	No
Integrated Meter in Bypass	Yes	Yes	Yes	Yes
Plumbing Connections	3/4" or 1"	3/4" or 1"	3/4" or 1"	3/4" or 1"
Flow Rate @ 15 psi Pressure Drop	10.9 gpm	10.2 gpm	10.0 gpm	10.0 gpm
Salt Storage Capacity	80 lbs	120 lbs	170 lbs	170 lbs
Shipping Weight	58.5 lb	68.3 lb	84.3 lb	87.5 lb
Maximum Efficiency	5,600 grains /lb salt			
Electrical Requirements	120V 50/60 Hz			
Maximum Water Temperature	120 degrees Fahrenheit			
Water Pressure	min. 20 - max. 120 psi			
Foot Print	13 inches wide x 18 inches long			

**Working Temperature:**  
This unit must be operated at temperatures between 40°F and 110°F (4°C - 43°C).

**Working Pressure:** This water conditioner 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 conditioner.

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.

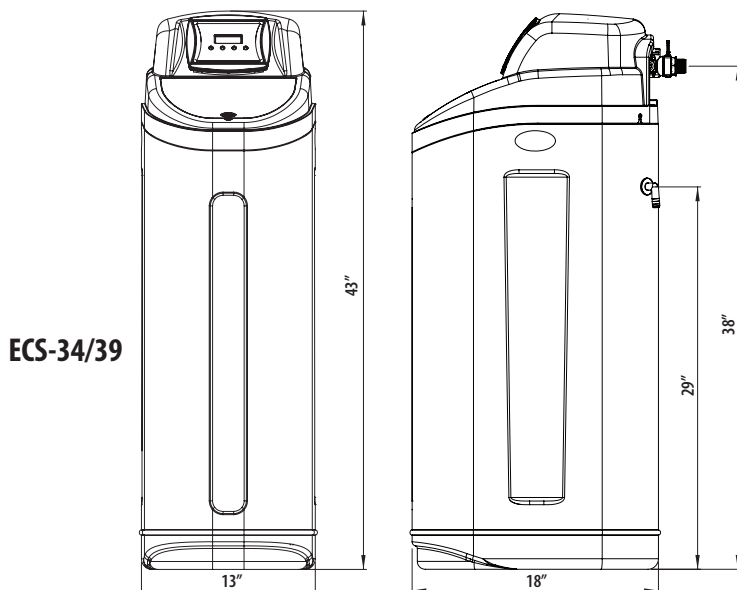
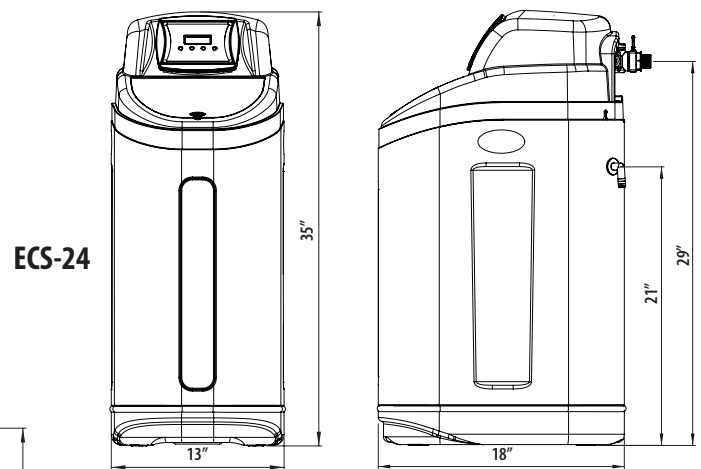
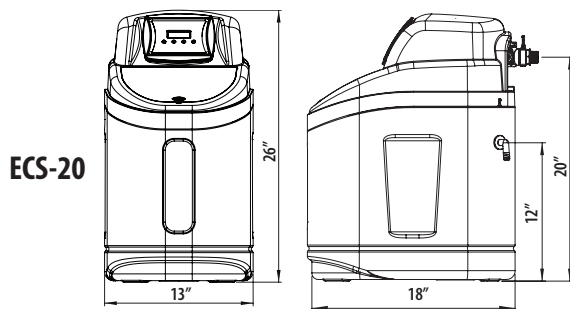
\* Do not use water that is microbiologically unsafe without adequate disinfection before or after the system.

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

# SYSTEM DIMENSIONS



# UNPACKING / INSPECTION

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.**

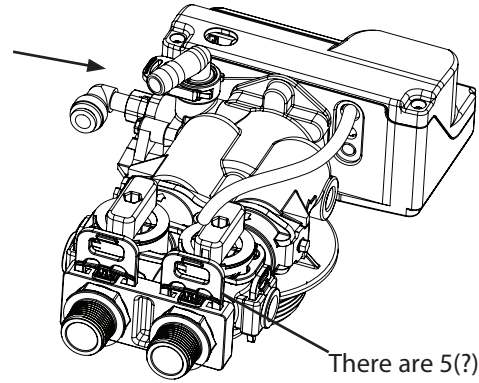
Small parts, needed to install the Conditioner, are in a parts box. To avoid loss of the small parts, keep them in the parts bag until you are ready to use them.

## What is included in the box?

For Models EFT20, EFT30, EFT40, you will expect the following:

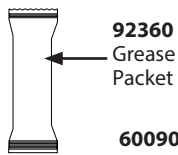
1. Control Valve
2. Tank
3. Parts Box
4. Owners Manual
5. Drain Hose & Clamp (Not included in some brands)

1. Control Valve



There are 5(?) Red clips. Please check to make sure you have all of them.

### 3. Parts Box



92360  
Grease  
Packet

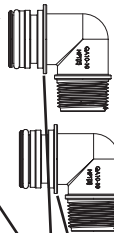
60090003  
2X 1" Straight  
Adapter

60090010  
2 X 3/4"  
Elbow  
Adapter)

60010630  
Transformer

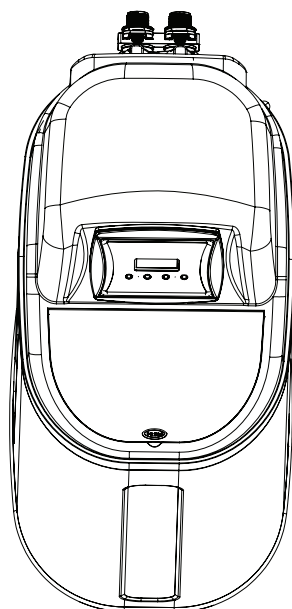
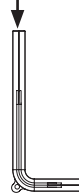


18280  
Upper Basket

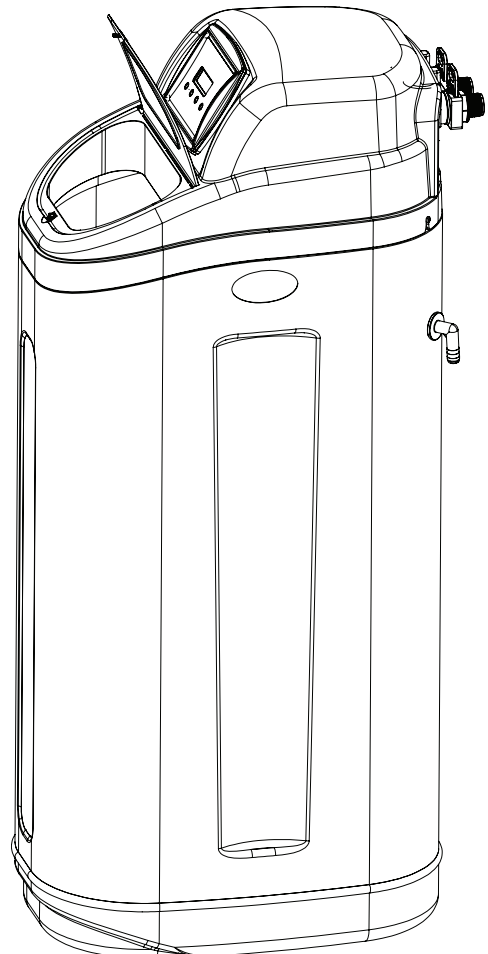


60010026  
O Rings Attached

60010006  
Bypass Tool



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



# CHECK VALVE TYPE AND VALVE SERIAL #

Check to make sure Valve Type is Upflow (UF) (left Sticker shown below). The right Sticker shows the serial # of the control valve. The middle sticker is a dataplate which provides information of Serial # and Date of Manufacture of complete system. Both Serial # labels are important for troubleshooting.

Please record these numbers on the back page of this manual for future reference.

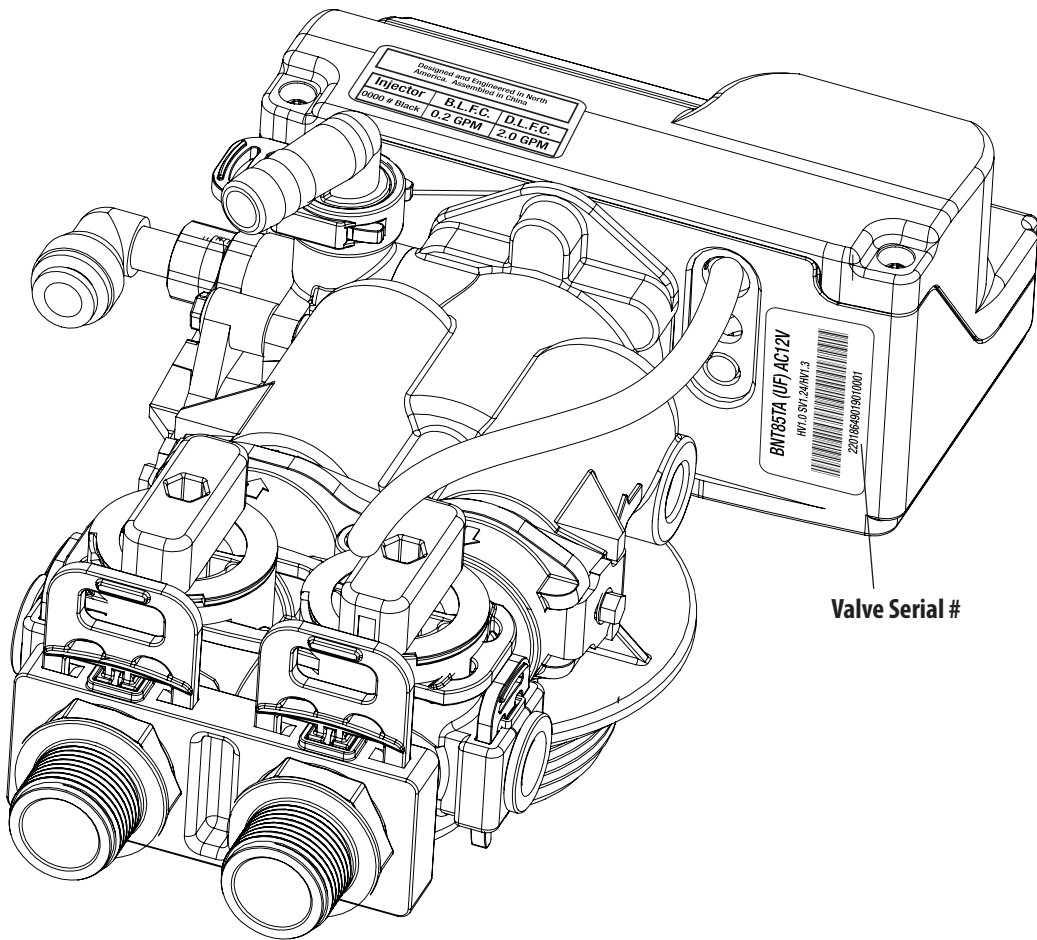


Valve Serial #



Complete System Serial #

**NOTE**  
For cabinet models the labels are usually located under salt lid area.

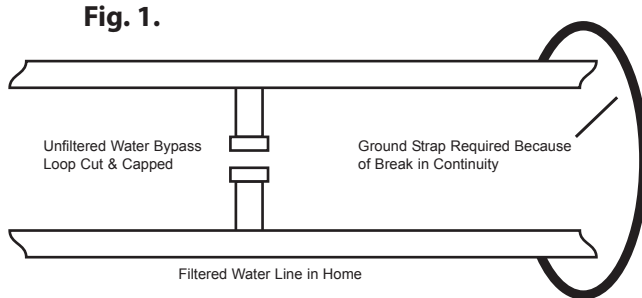


Valve Serial #

# 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.



## Inspecting and Handling Your New System\*

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

Do not turn the conditioner 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 conditioner. To maintain full valve flow, 3/4" or 1" pipes to and from the conditioner fittings are recommended. You should maintain the same, or larger, pipe size as the water supply pipe, up to the conditioner 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 conditioner 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 conditioner unit is initially placed in service, the conditioner tank may have been laid on its side during transit. If this occurs, back-wash the conditioner 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

## Planning Your Installation

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

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

## INSTALLATION STEPS

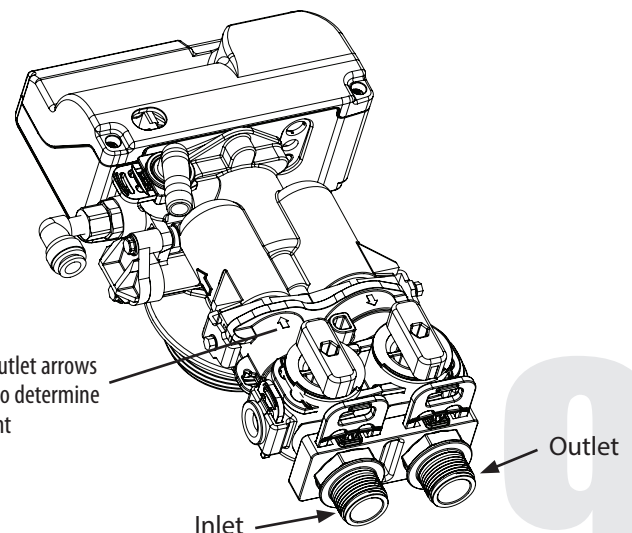
1. Determine the best location for your water conditioner, bearing in mind the location of your water supply lines, drain line and 120 volt AC electrical outlet. Subjecting the conditioner to freezing or temperatures above 43°C (110°F) will void the warranty.
2. Make sure the bypass is attached well to the control valve. Connect the straight or elbow connectors to the bypass with red clips. Connect the inlet and outlet of the water conditioner 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.
3. Apply Teflon Tape and Orings to the fittings
4. Connect Conditioner 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.
5. **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.
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.

### 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 21, **Plumbing System Clean-Up**, for instructions on some procedures that may need to be performed first.

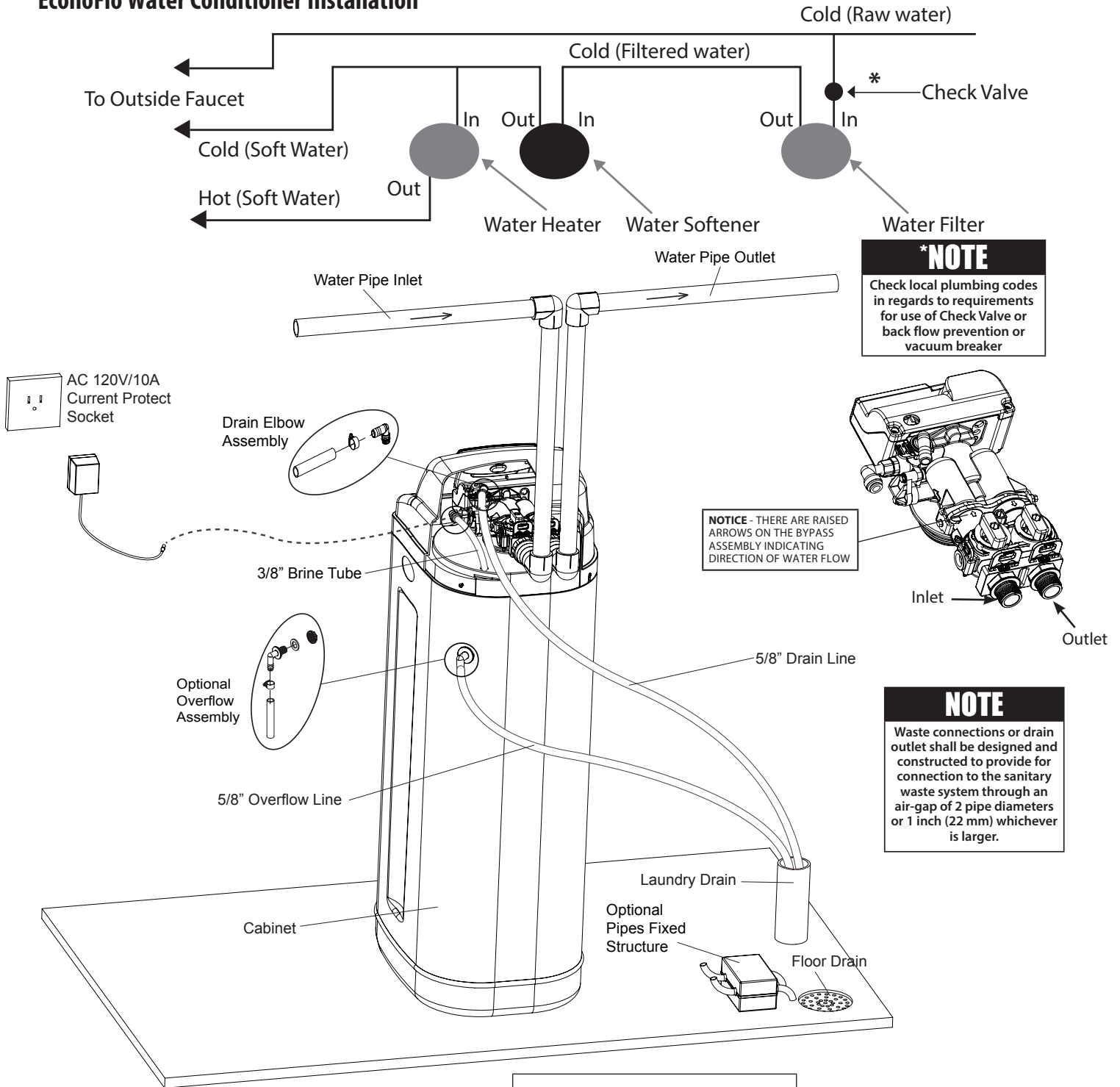


Please notice the inlet and outlet arrows on the valve as shown here to determine the position of the equipment

# INSTALLATION

**Connect Conditioner 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.

## EconoFlo Water Conditioner Installation



**\*NOTE**  
Check local plumbing codes in regards to requirements for use of Check Valve or back flow prevention or vacuum breaker

**NOTICE** - THERE ARE RAISED ARROWS ON THE BYPASS ASSEMBLY INDICATING DIRECTION OF WATER FLOW

**NOTE**  
Waste connections or drain outlet shall be designed and constructed to provide for connection to the sanitary waste system through an air-gap of 2 pipe diameters or 1 inch (22 mm) whichever is larger.

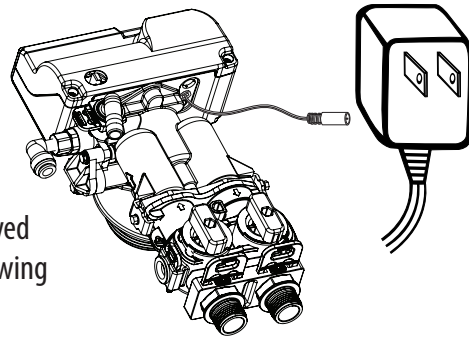
**CAUTION!**  
Never insert drain line directly into a drain, sewer line, or trap. Always allow an air gap between the drain line and the wastewater to prevent the possibility of sewage being back-siphoned into the conditioner.



# STARTUP & PROGRAMMING

## 1. Connect the Transformer to the Valve

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

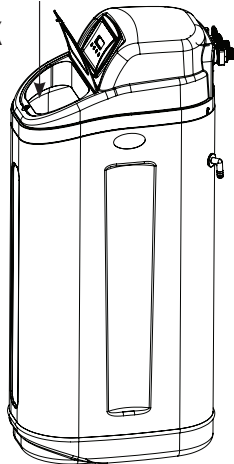


The control valve is controlled with simple, user-friendly electronics displayed on an LCD screen. When power is connected, the screen will show the following information in sequence:

1. Date & Time
2. Regeneration Days (Time interval between backwashes)
3. Remaining Days (days left before backwash begins)
4. Regeneration Time (Time of day when backwash starts)
5. Last Regeneration Date (Last date when system backwashed)
6. Current Flow Rate (GPM) (flow rate of water being currently used)
7. Peak Flow Rate (GPM) (Max recorded flow rate of the water)

## 2. Add Water to Brine Tank

Open the cabinet salt lid and add water. Do not add salt to the brine tank at this time.



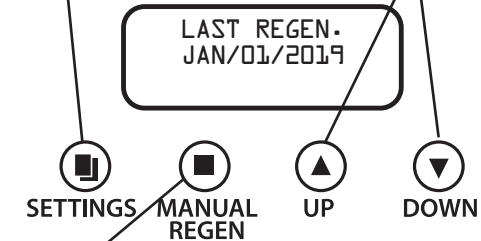
### Key Pad Configuration

#### SETTINGS BUTTON

The function of this key is to enter the level one programming mode where the valve settings can be adjusted.

#### UP / DOWN

These buttons are used to increase or decrease the value of the settings while in the programming mode.



#### MANUAL REGEN BUTTON

This button has two functions. The first is to initiate a manual regeneration by holding the button for 3 or more seconds. The second function is while in programming mode, pressing this key allows the user to change the value of each setting.

## 3. Manually Regenerate the Valve

- 3a. 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 until the drain water appears to be clear of any fines or color.
- 3b. Plug in the valve. Allow the valve to continue its cycles until complete and back in service. Allow the valve to stay in each position for 2 - 3 minutes to purge air from the system and the valve. Failure to properly purge the system may result in unsatisfactory performance. This process can be performed more than once if necessary to purge air and color or fines from the system before finishing start up. Once the system is purged properly you can open the outlet of the bypass valve. Because your plumbing system has been disturbed it is advisable to remove screens from faucets and flush all lines until clear. **See Plumbing System Clean-Up on page 19.**
- 3c. The Valve is already programmed from factory. Please set the date and time of day, feedwater hardness and people as shown -in '4. PROGRAMMING YOUR CONDITIONER' on following pages:

## 4. PROGRAMMING YOUR Conditioner

The valve has 2 levels of programming – Level 1 and Level 2\* (See page 27 for Level 2 programming). **This unit is factory set for the correct size, you are required to program the date, the time, the number of people in the home and the correct hardness setting. Please review compensated hardness calculation before entering the hardness number from your water analysis.**

**\*Please call Canature WaterGroup before attempting to change any Level 2 values as this can affect the performance of your unit.**



# STARTUP & PROGRAMMING (CONTINUED)

## 4. PROGRAMMING YOUR Conditioner

The valve has 2 levels of programming – Level 1 and Level 2\* (See page 38 for Level 2 programming). **This unit is factory set for the correct size, you are required to program the date, the time, the number of people in the home and the correct hardness setting. Please review compensated hardness calculation before entering the hardness number from your water analysis.**

*\*Please call Canature WaterGroup before attempting to change any Level 2 values as this can affect the performance of your unit.*

### Level 1 PROGRAMMING:

#### STEP 1 : Set Current Time

**1.** Press **SETTINGS** (⏏) for 3 seconds to unlock screen.

**2.** The display will read "Press **SETTINGS** key (⏏) for 3 sec to unlock".

**3.** After 3 seconds, the display will beep confirming unlock

**4.** Press **SETTINGS** (⏏) again and the hour value becomes highlighted

**5.** Press **MANUAL REGEN** (⏏) once and the highlighted value flashes.

**6.** Now press **UP** (▲) or **DOWN** (▼) key to change the hour values to current time.

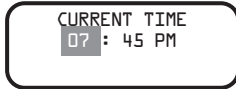
**7.** Press **MANUAL REGEN** (⏏) again. Hour value will be accepted and minute value will start flashing.


**8.** Now press **UP** (▲) or **DOWN** (▼) key to change the minute value to current time.

**9.** Press **MANUAL REGEN** (⏏) again. Minute value will be accepted and AM/PM value will start flashing.

**10.** Now press **UP** (▲) or **DOWN** (▼) key to change the value to AM or PM

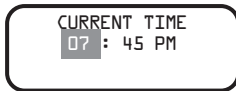
# STARTUP & PROGRAMMING (CONTINUED)



- 11. Press MANUAL REGEN**  again to accept. Flashing stops & hour value is highlighted again.

**PROCEED TO STEP 2 >**

## STEP 2 : Set Current Date



- 12. Press DOWN**  to advance to CURRENT DATE. The month value is highlighted



- 13. Press MANUAL REGEN**  again and the MONTH value flashes



- 14. Now press UP**  or **DOWN**  key to change the value to current month.



- 15. MANUAL REGEN**  again. Month value is accepted and the DAY starts flashing



- 16. Now press UP**  or **DOWN**  key to change the value to current day of the month




- 17. Press MANUAL REGEN**  again. Date value is accepted and the YEAR starts flashing



- 18. Now press UP**  or **DOWN**  key to change the value to current day of the month



- 19. Press MANUAL REGEN**  again to accept. Flashing stops & MONTH value is highlighted again.

**PROCEED TO STEP 3**

# STARTUP & PROGRAMMING (CONTINUED)

## STEP 3 : Set Number of People in the House



20. Press **DOWN** (▼) key to advance to NUMBER OF PEOPLE.



21. Press **MANUAL REGEN** (■) once and the value flashes.



22. Press to **UP** (▲) or **DOWN** (▼) key to change the NUMBER OF PEOPLE in your home.



23. Press **MANUAL REGEN** (■) again to accept the value. Highlight stops flashing.



24. Press **DOWN** (▼) key to advance to WATER HARDNESS. The value is highlighted.

**PROCEED TO STEP 4**

## STEP 4 : Setting Water Hardness\*

This value is the hardness value of your water in grains per gallon (GPG). If you have the reading in PPM or mg/L, simply divide that by 17.1 to get the reading in GPG.

You must also add (5 x iron level in PPM) to the hardness value.

$$\text{HARDNESS VALUE} = \text{YOUR WATER HARDNESS} + (5 \times \text{Iron concentration in PPM})$$

For example, if your water hardness is 20 GPG and the iron level is 0.3 PPM, the hardness value you enter must be:

$$20 + 5 \times (0.3) = 20 + 1.5 = 21.5 \text{ GPG}$$

Note: If you do not know your water hardness, please call customer service for details on how to send us a water sample and receive a free water analysis. In the meantime, you can leave the hardness value at default setting.

### \*NOTE

If you do not know your water hardness, please call customer service for details on how to send us a water sample and receive a free water analysis. In the meantime, you can leave the hardness value at default setting.

**CUSTOMER SERVICE:  
1-877-288-9888**



25. Press **MANUAL REGEN** (■) again. HARDNESS value starts flashing



26. Now press **UP** (▲) or **DOWN** (▼) to set feed water hardness & press **MANUAL REGEN** (■) again to accept.

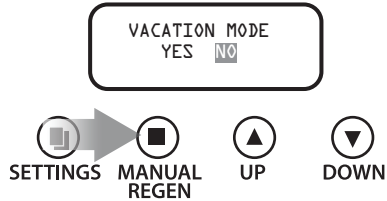
27. Now press **DOWN** (▼) key to advance to VACATION MODE. Press **DOWN** (▼) key to exit or press **MANUAL REGEN** (■) to set VACATION MODE.

**PROCEED TO STEP 5**

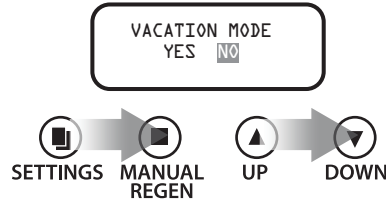
# STARTUP & PROGRAMMING (CONTINUED)

## STEP 5 : Setting Vacation Mode

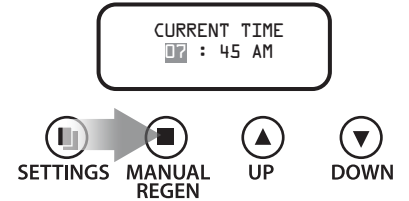
This function may be activated during a prolonged absence, such as a vacation for more than 2 weeks. The system will perform a brief backwash and rinse based on advanced setting. The purpose is to keep the water fresh in the conditioner tank and plumbing system.



28. To set VACATION MODE, press **MANUAL REGEN** and 'NO' flashes.



28. Press **DOWN** key to change setting to 'YES'.  
29. Press **MANUAL REGEN** to accept value.



30. Press **DOWN** key and display shows current time with hour highlighted.  
31. Press **SETTINGS** to exit programming.

By selecting the vacation mode, the normal display will show the following in sequence:

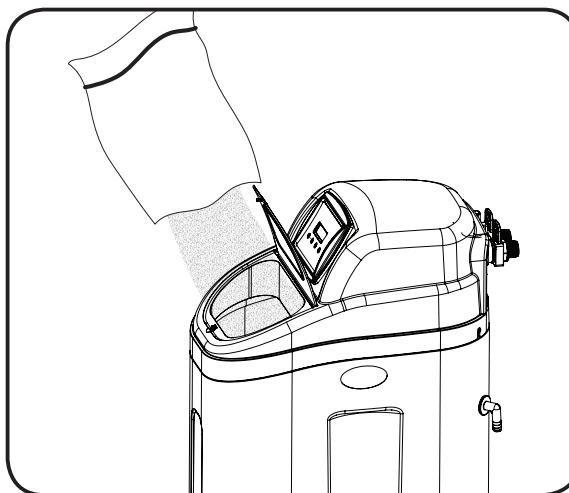
- Current date and time
- Regeneration days : 07 days
- Remaining days : \_\_ Days
- Regeneration time : 2:00 AM
- Last Regeneration date :
- Current Flow Rate : \_\_ GPM
- Peak Flow Rate : \_\_ GPM

After returning from vacation, reset the VACATION MODE to "NO".

**YOUR UNIT IS NOW READY FOR SERVICE**

## \*Add Salt to the Brine Cabinet

Put 40 kgs of crystal water conditioner 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.**

### \*NOTE

#### Resin Cleaner

An approved resin cleaner **MUST** be used on a regular basis if your water supply contains iron.

**See page 22 - Res-Up® Feeder Installation Instructions**

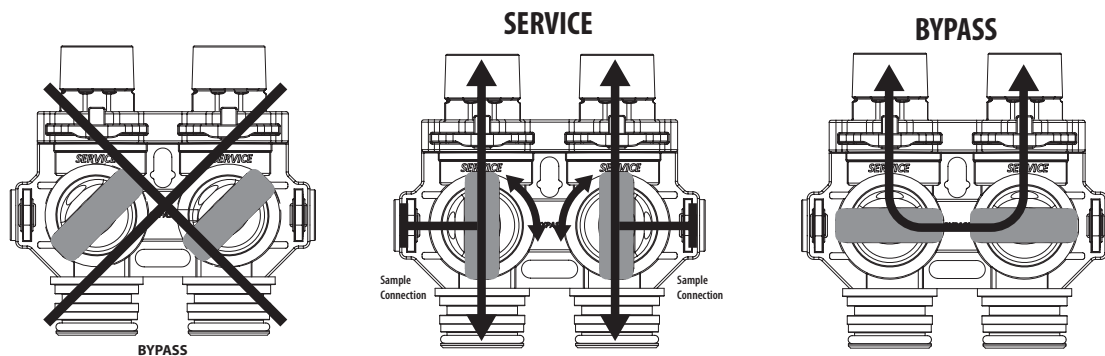
## Automatic Water Bypass

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 conditioner maintenance, you can isolate your water conditioner 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 conditioner, simply rotate the knobs clockwise (as indicated by the word BYPASS and arrow) until they lock. You can use your water related fixtures and appliances as the water supply is bypassing the conditioner. 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 unconditioned water could bypass through the valve.**



## New Sounds

You may notice new sounds as your water conditioner operates. The regeneration cycle lasts approximately 1.5 hours to 3.0 hours depending on the specific model. During this time, you 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 be 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 conditioner system, pour 4 to 6 ounces of resin mineral cleaner Pro-Rust Out 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

## 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 additional inspection is required see page 24.
- 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.

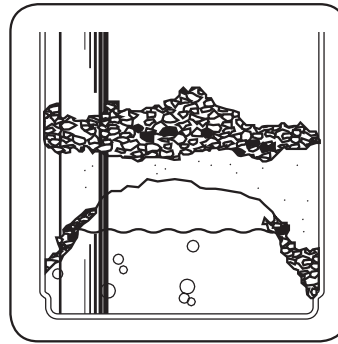
Maintenance of your new water conditioner requires very little time or effort but it is essential. Regular maintenance will ensure many years of efficient and trouble free operation.

**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 conditioner.



**CAUTION!**

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

**CAUTION!**

Incorrect start up, water above the salt level, (not enough salt in tank) will both effect the units capacity and result in hardness slippage. Should either of these situations happen or the unit fails to regenerate for any other reason please first correct the problem. Then regenerate the unit manually 2 times in a row to restore the reserve capacity and bring the media bed back up to specification.

## 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).

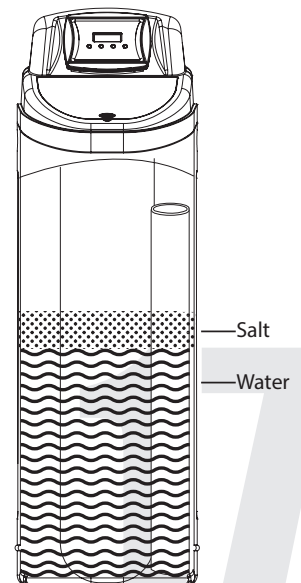
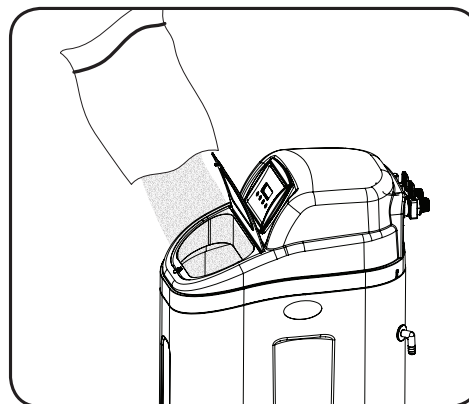
## Checking the Salt Level

Check the salt level monthly. Remove the lid from the cabinet or brine tank, make sure salt level is always above the brine level.

## Add Salt to the Brine Cabinet

Put 40 kgs of crystal water conditioner salt in the brine tank. The unit will automatically fill the water to the correct level when it regenerates. Use only clean salt labeled for water conditioner use, such as crystal, pellet, nugget, button or solar. The use of rock salt is discouraged because it contains insoluble silt and sand which build up in the brine tank and can cause problems with the system's operation. Add the salt directly to the tank, filling no higher than the top of the brine well.

**NOTE :THE WATER LEVEL SHOULD BE BELOW THE SALT LEVEL ALL THE TIME**

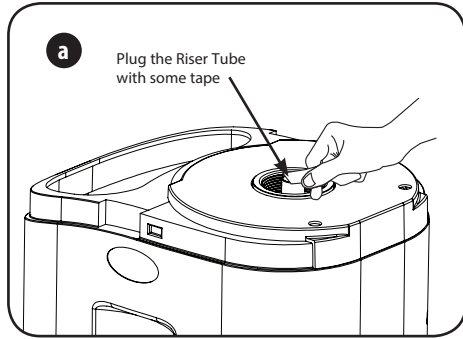


# REPLACING MEDIA

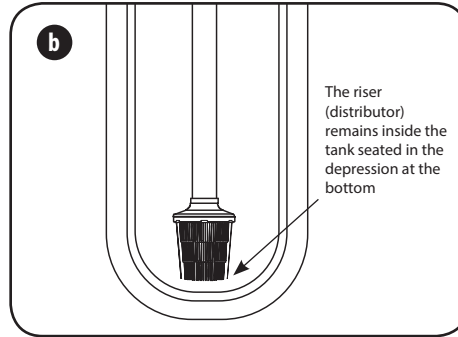


The unit should be depressurized before installing or replacing media

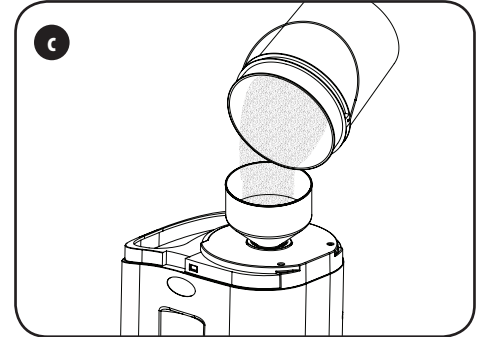
**1. Media Installation (When Necessary).** Models including and higher than 2 CF (Models 60, 90) of media are shipped with separate media in pails or boxes. Models lower than 2 CF of media come loaded with media and this step can be skipped for new installation.



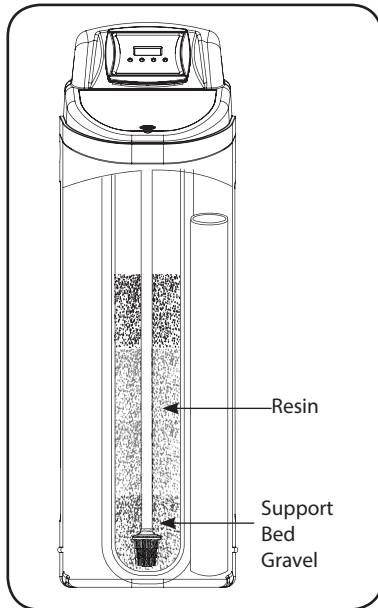
**a)** Lube the bottom oring (picture **d**) and attach the upper cone to the valve.



**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.)



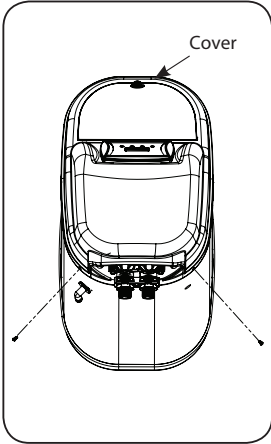
Fill tank one quarter full of water to protect distribution during gravel installation. Place the media into the tank in the order indicated above. Slowly and carefully add the gravel support bed and the filtration media leveling each layer as it is placed into the tank.



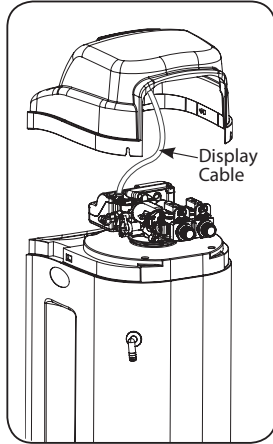
# SERVICING VALVE

## 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.

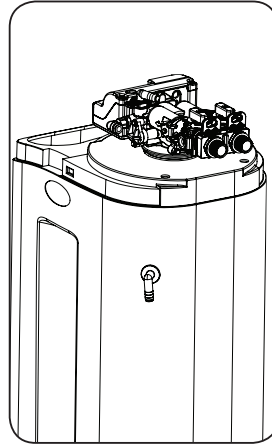


1. Unscrew the 2 screws from the cover .

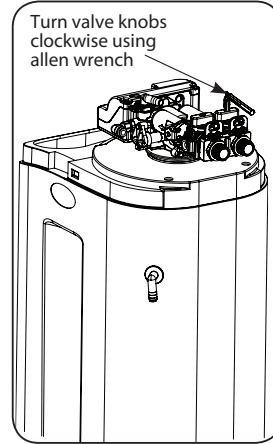


2. Disconnect display cable.

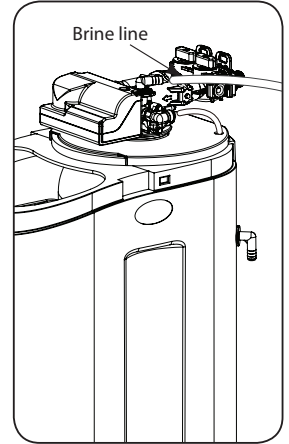
Meter cable



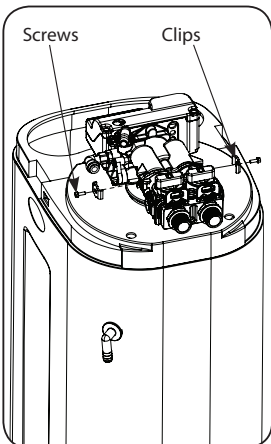
3. Remove cover.



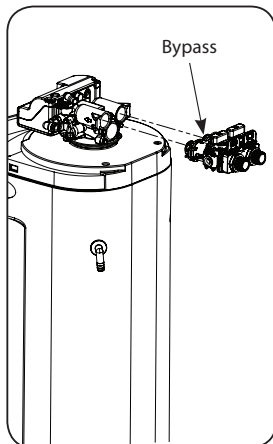
4. Bypass the water flow to the conditioner by turning the valve knobs clockwise.



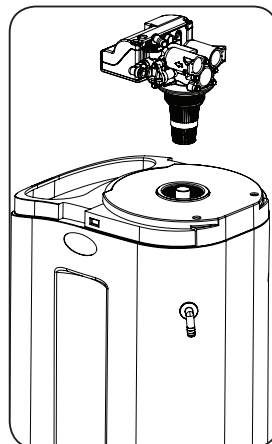
5. Remove the brine line.



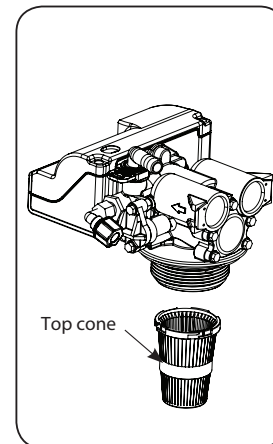
6. Remove the clips and screws that connect valve and bypass



7. Remove the bypass from the valve

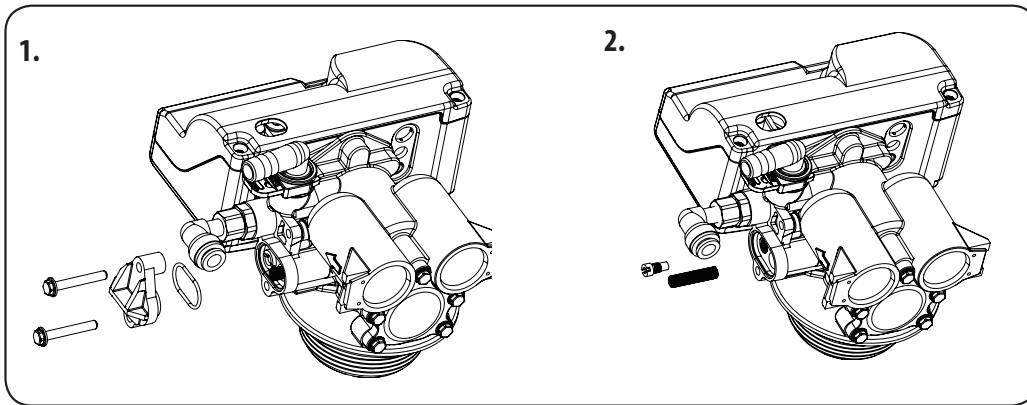


8. Remove the control valve.



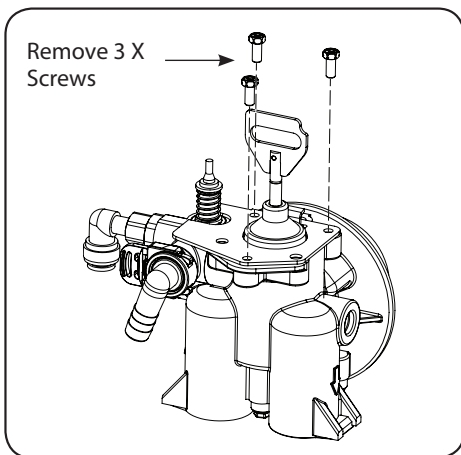
11. Remove the top cone.

# CLEAN INJECTOR ASSEMBLY

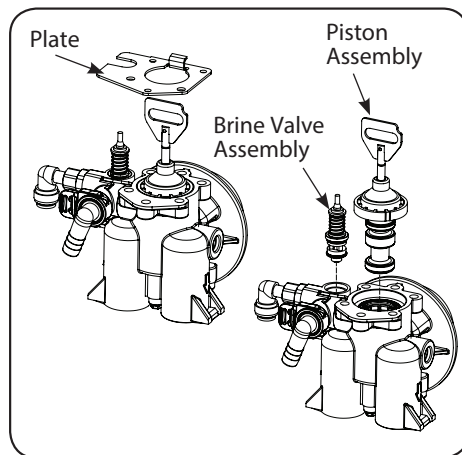


1. Remove two screws of the injector cap.
2. Pull the Injector Cap off, Remove the injector assembly, oring and screen, clean the injectors with Res Care solution, vinegar, or similar solution such as CLR. Replace the injectors , snug only do not overtighten.

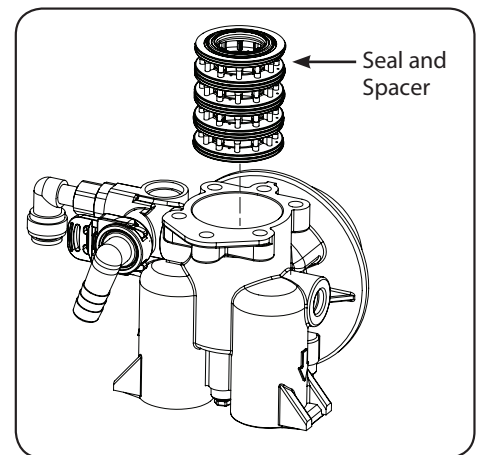
# PISTON AND/OR BRINE VALVE ASSEMBLY REPLACEMENT



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



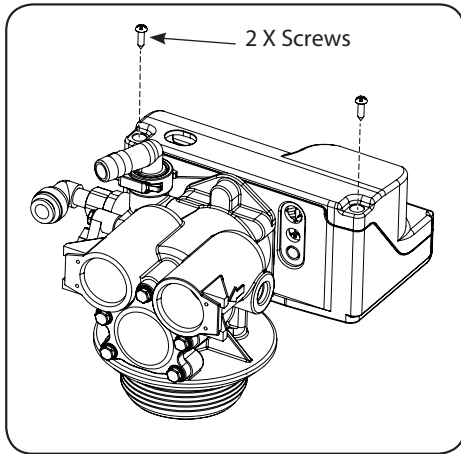
3. Remove the plate from the valve body and pull the Piston Assembly from the valve. The brine valve assembly can also be removed in this stage.
4. Remove the seal spacer assembly, grease it with silicone lubricant and put back in.



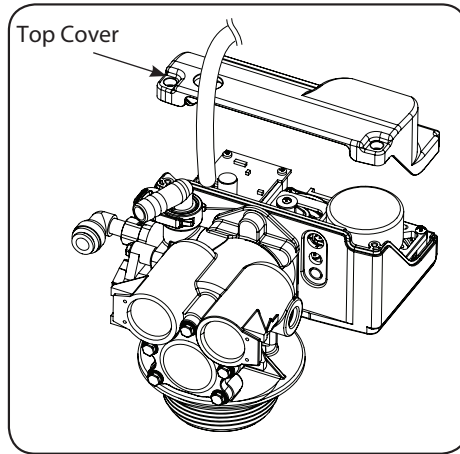
5. Replace piston assembly followed by timer assembly.
6. Replace the piston assembly and reverse following steps in this section

THE FOLLOWING 'REPLACEMENT SECTION', PAGES 21 TO 24 CONTAIN CONTENT THAT SHOULD ONLY BE USED BY A QUALIFIED SERVICE TECHNICIAN:

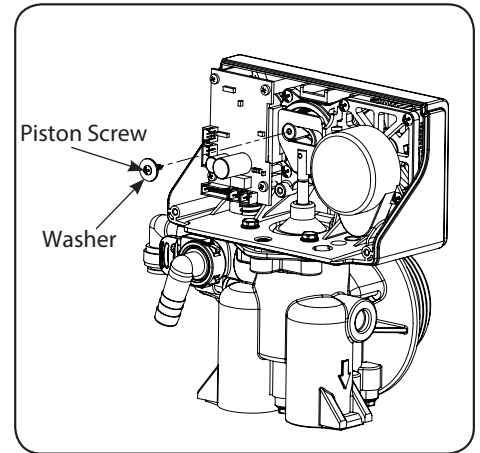
## TIMER REPLACEMENT



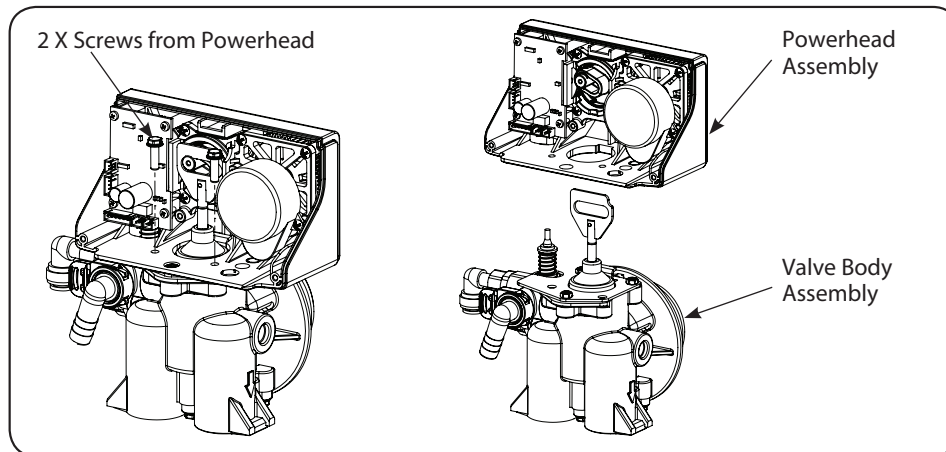
1. Remove two screws from the top of the valve cover



2. Remove top cover



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




4. Remove the two screws from the powerhead as shown

5. Lift the powerhead from the valve body assembly

6. Replace the powerhead by reverse following the steps in this section

 **WARNING!**

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

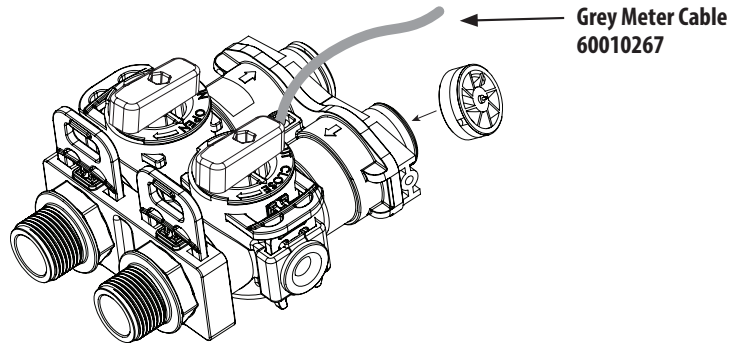
 **CAUTION!**

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

# REPLACING THE BYPASS AND METER CABLE

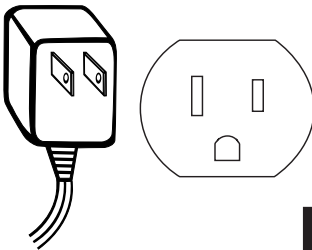
60095101

Bypass comes with Meter and Grey Meter Cable



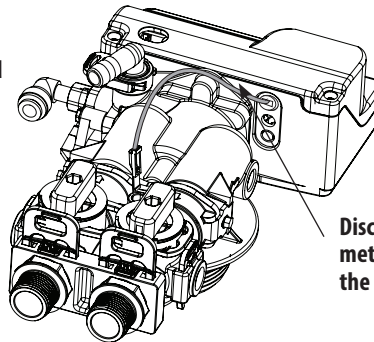
## Step 1

Unplug the power from the wall socket.



## Step 2\*

Remove 2 screws and clips from bypass.



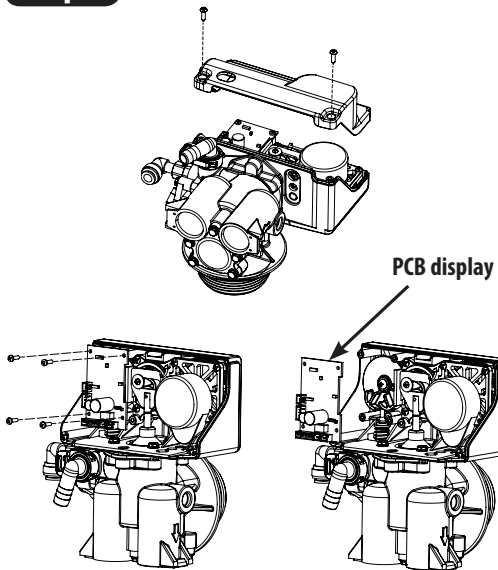
Disconnect the meter cable from the bypass.

## \*NOTE

Water to the household needs to be turned off and pressure relieved before Step 2

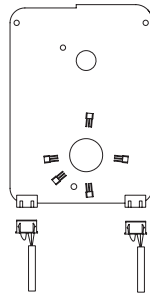
## Step 3

Remove Cover.



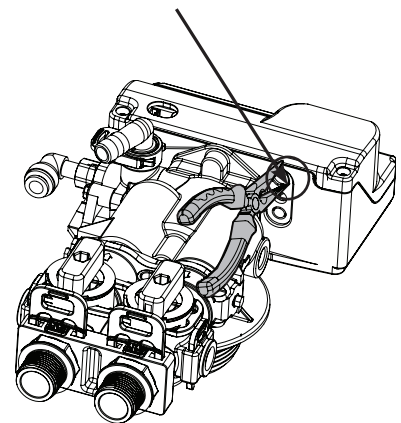
## Step 4

Disconnect the cables from the front PCB display.



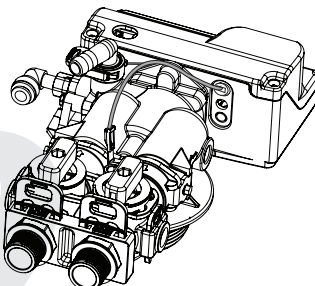
## Step 5

Remove strain relief with pliers.



## Step 6

Replace the old cable with the new Cable.



## Step 7

Assemble the valve. Plug the power supply back into the wall socket and follow the programming shown on right:

For 85HE Valves press MANUAL REGENT+UP+DOWN for 3 seconds to get to Factory Settings.

Or:

To enter the programming press and hold the MENU button for three seconds to unlock the screen.

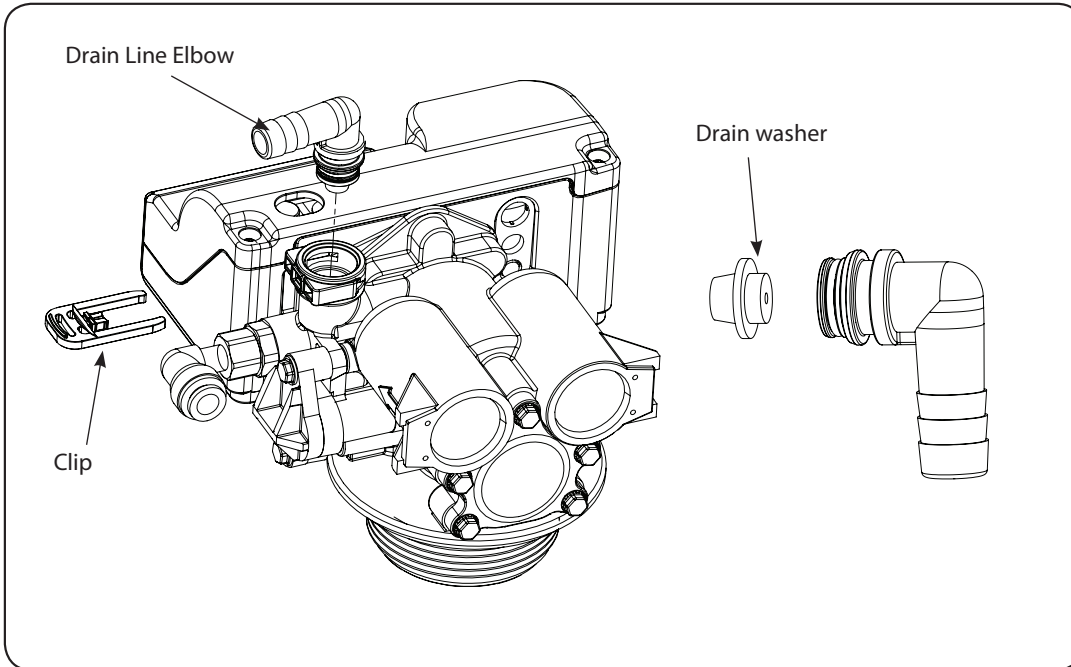
When the screen is unlocked, press and hold the DOWN arrow button for 3s to enter the code entry screen.

Enter the code number 119 using the UP and DOWN arrows. Press the MANUAL/REGEN to step through the digit.

Press the SET to step through to METER RATIO and set as per chart below\*:

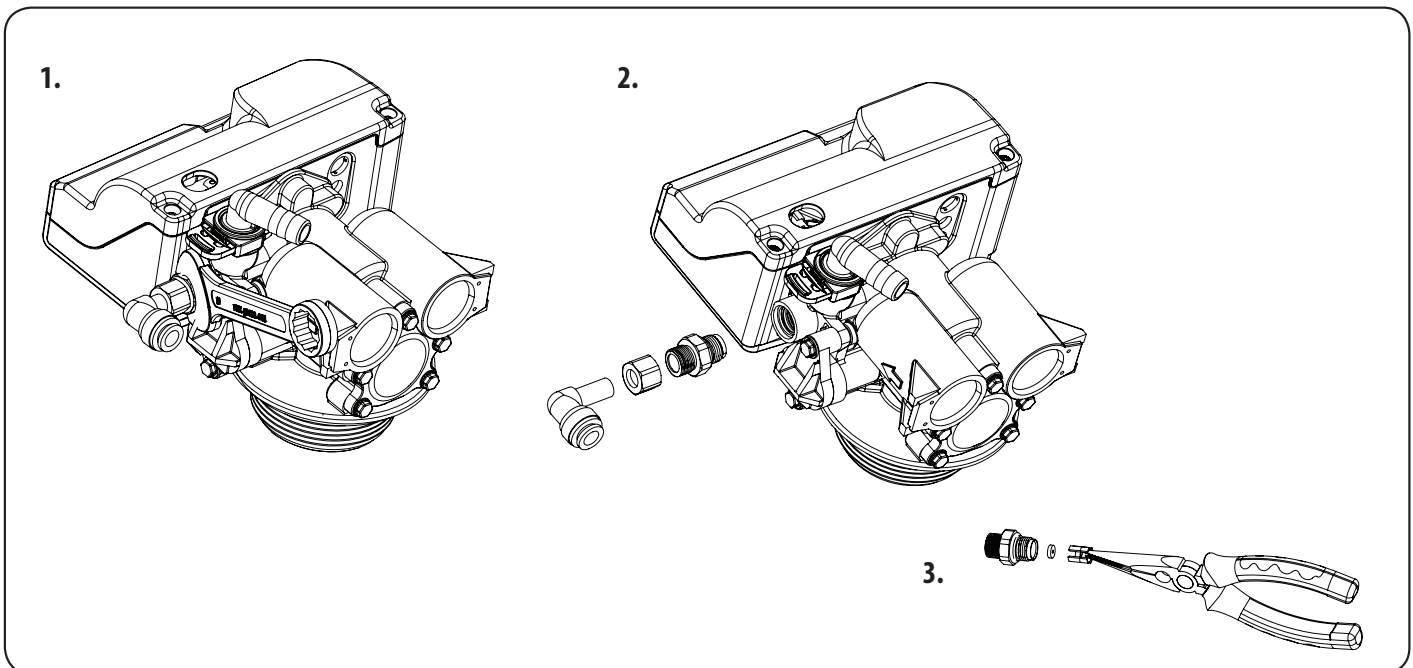
Press the SET to step through to PROGRAMING COMPLETE and past this until TIME OF DAY screen appears.

# REPLACE DRAIN LINE FLOW CONTROL



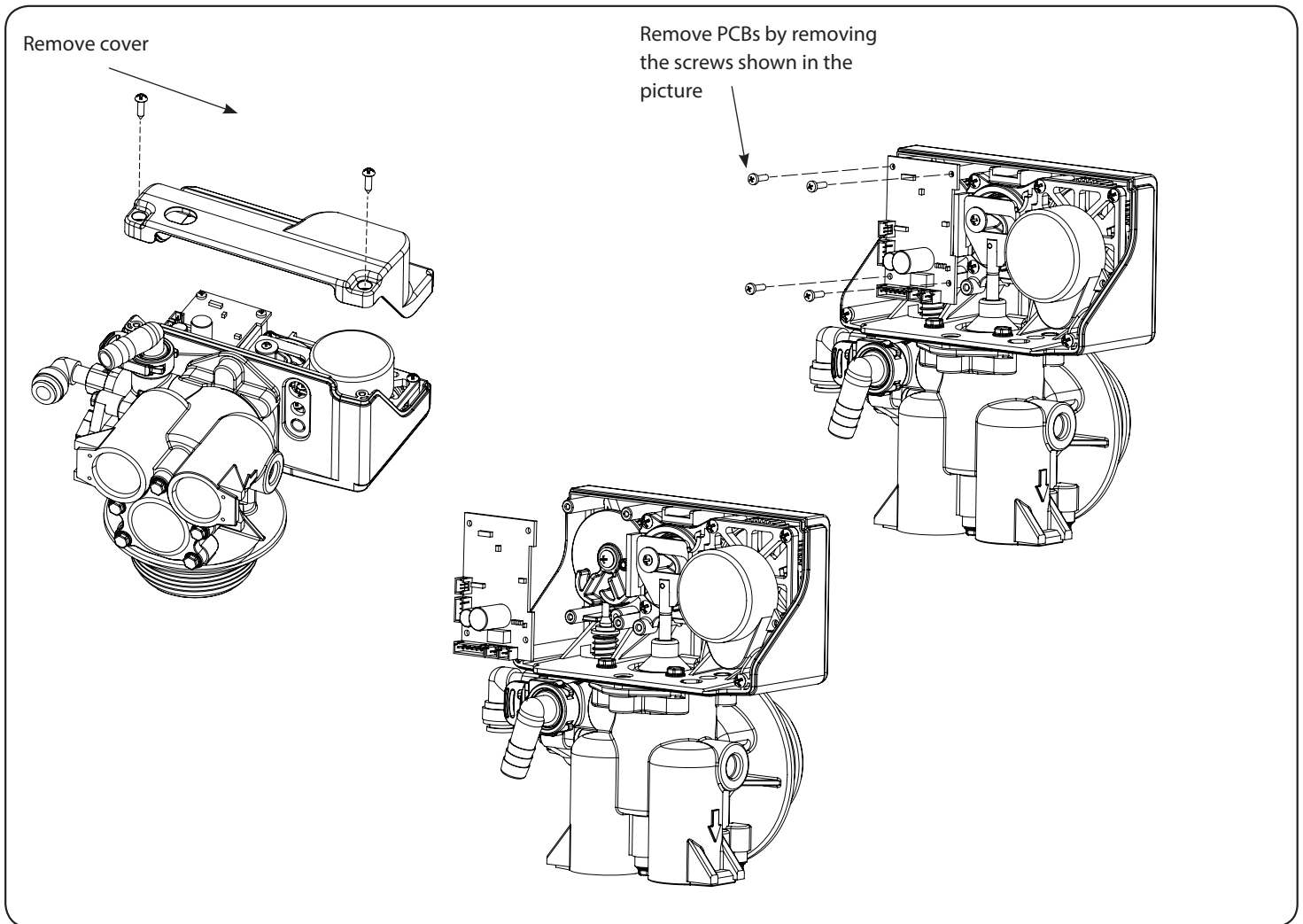
1. Pull the drain line clip and remove the drain line elbow and washer
2. Clean/replace drain line washer

# REPLACE BRINE LINE FLOW CONTROL

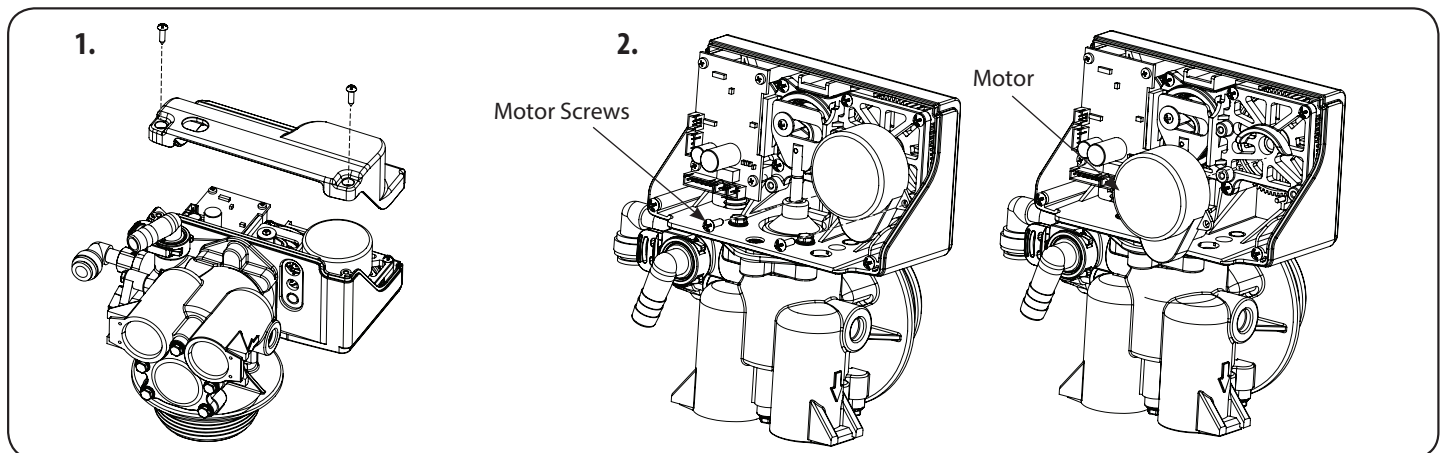


1. Loosen the brine line nut with wrench
2. Remove brine line elbow
3. Clean/replace brine line washer

# REPLACING PCBS



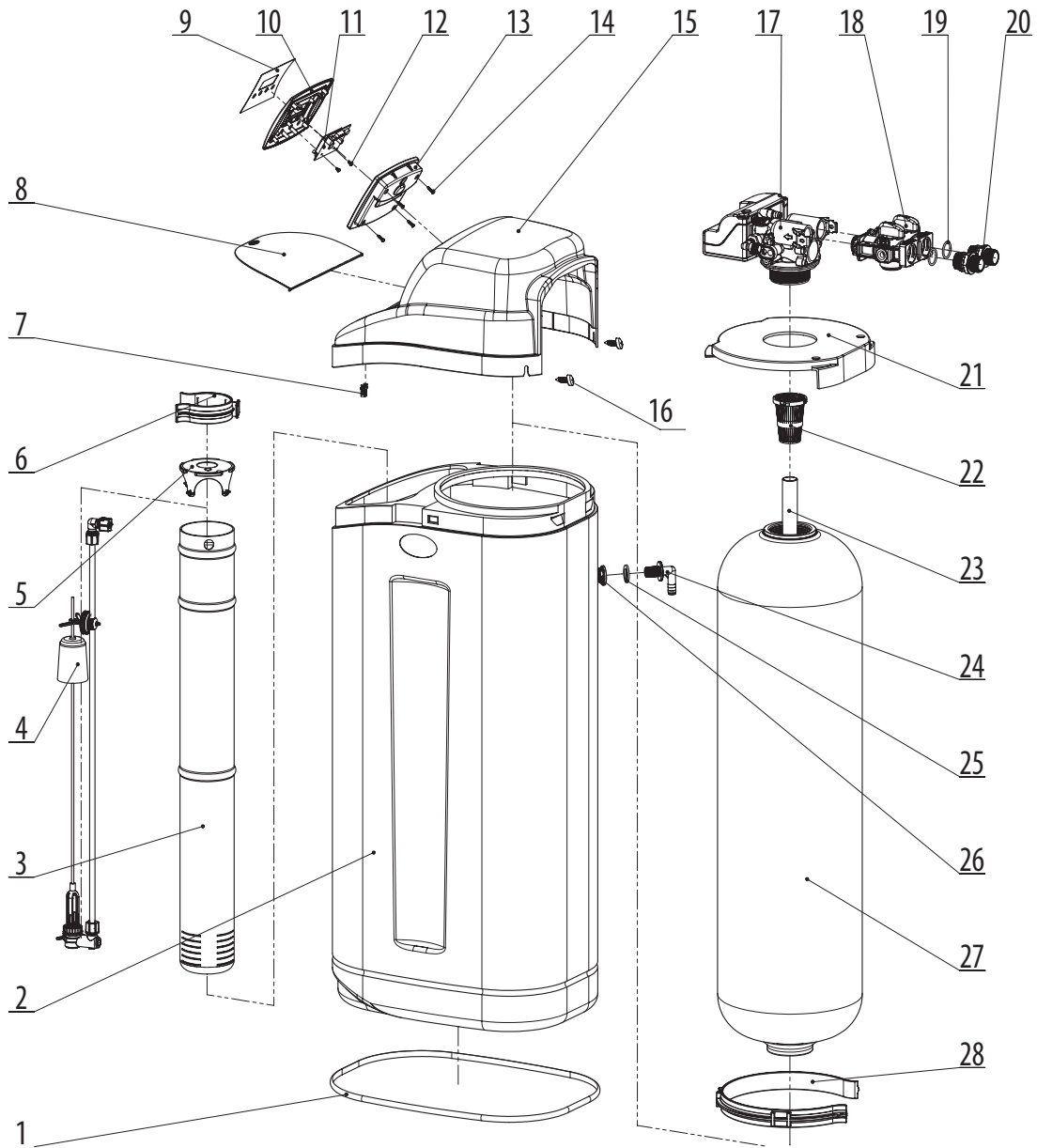
# REPLACE MOTOR



1. Remove cover by removing two screws
2. Remove motor screws as shown and pull the motor



# PARTS BREAKDOWN



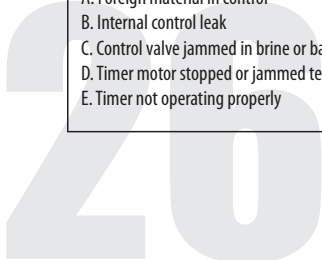
No.	Part # (Water group)	Part # (Canature)	Description	Qty
28	60010361	21710110	10" Pressure Tank Clamp	1
27	25010043	07591035	1035 Pressure tank	1
26	60010005	13010004	Overflow Adaptor	1
23	50010008	02030016	D-Tube(35")	1
22	18280	07060009	Top Cone(1")	1
21	60010360	07050018	Tank Fixed Plate	1
20	60010019	21319011	QC Adaptor Straight 1"NPT	2
19	60010026	26010143	O-Ring 22.4X3.55	4
18	60095101	22050100B	Canature Bypass Valve C/W Meter	1
17	10010006	22018178	Control Valve Assembly(CS6)	1
16		13000410	Screw 3.9x9.5	2
15		07030068	High Cover(CS6-1035)	1
14	60010099	13000426	Piston Screw ST2.9x13	4

No.	Part # (Water group)	Part # (Canature)	Description	Qty
13		05030025B	Bottom Cover of Controller	1
12	60010572	13000401	Screw 2.9x6.5	2
11	60010051	05030020	85 Display Board	1
10		07030258E	Face plate of Controller	1
9	80082109	50030084D	Controller Label	1
8	60010241	07030069	Salt Lid CS6	1
7	60010242	30010005	Latch For Salt Lid CS6	1
6	60010362	21710104B	4" Brine Well Clamp	1
5	55010018	07030098	4" Brine Well Cap	1
4	55010023	07010014G	Safety Float Assembly	1
3	55010010	07030055W	0435 Brine Well	1
2		07000031K	Conditioner Cabinet(CS6-1035)	1
1		19010404	Decoration Strip(Blue)	1



# TROUBLE SHOOTING

Problem	Possible Solutions
<b>1. CONDITIONER DELIVERS UNTREATED WATER</b> A. Bypass valve is open B. No salt in brine tank C. Injector or screen plugged D. Insufficient water flowing into brine tank E. Hot water tank hardness F. Leak at distributor tube G. Internal valve leak H. Flow meter jammed I. Flow meter cable disconnected or not plugged into meter cap J. Improper programming	A. Close bypass valve B. Add salt to brine tank and maintain salt level above water level C. Replace injectors and screen D. Check brine tank fill time and clean brine line flow tank control if plugged E. Make sure distributor tube is not cracked. Check O ring and tube pilot F. Make sure distributor tube is not cracked. Check O ring and tube pilot G. Replace seals and spacers and/or piston H. Remove obstruction from flow meter I. Check meter cable connection to timer and meter cap J. Reprogram the control to the proper regeneration type, inlet water hardness, capacity or flow meter size.
<b>2. CONDITIONER FAILS TO REGENERATE</b> A. Electrical service to unit has been interrupted B. Timer is not operating properly C. Defective valve drive motor D. Improper programming E. Meter not metering	A. Assure permanent electrical service (check fuse, plug, chain or switch) B. Replace timer C. Replace drive motor D. Check programming and reset as needed E. Verify by opening faucet and checking current flow - if no flow replace bypass/meter assembly
<b>3. UNIT USES TOO MUCH SALT</b> A. Improper salt setting B. Excessive water in brine tank C. Improper programming	A. Check salt usage and salt setting B. See #7 C. Check programming and reset as needed
<b>4. LOSS OF WATER PRESSURE</b> A. Iron build-up in line to water conditioner B. Iron build-up in water conditioner C. Inlet of control plugged due to foreign material broken loose from pipes by recent work done on plumbing system. D. Parallel connectors plugged	A. Clean line to water conditioner B. Clean control and add resin cleaner to resin bed. Increase frequency of regeneration C. Remove piston and clean control D. Inspect parallel connections and clean as required
<b>5. LOSS OF RESIN THROUGH DRAIN LINE</b> A. Air in water system B. Drain line flow control is too large	A. Assure that well system has proper air eliminator control. Check for dry well condition. B. Ensure drain line flow control is sized
<b>6. IRON IN CONDITIONED WATER</b> A. Fouled resin bed B. Iron content exceeds recommended parameters	A. Check backwash, brine draw and brine tank fill. Increase frequency of regeneration. Increase backwash time. B. Add iron removal conditioner system
<b>7. EXCESSIVE WATER IN BRINE TANK</b> A. Plugged drain line flow control B. Brine valve failure C. Improper programming D. Not drawing brine	A. Clean flow control B. Replace brine valve C. Check programming and reset as needed D. See #8 - A
<b>8. SALT WATER IN SERVICE LINE</b> A. Plugged injector system B. Timer not operating properly C. Foreign material in brine valve D. Foreign material in brine line flow control E. Low water pressure F. Improper programming	A. Clean injector and replace screen B. Replace timer C. Clean or replace brine valve D. Clean brine line flow control E. Raise water pressure F. Check programming and reset as needed
<b>9. CONDITIONER FAILS TO DRAW BRINE</b> A. Drain line flow control is plugged B. Injector is plugged C. Injector screen is plugged D. Line pressure is too low E. Internal control leak F. Improper programming G. Timer not operating properly	A. Clean drain line flow control B. Clean or replace injectors C. Replace screen D. Increase line pressure (line pressure must be at least 20 psi at all times) E. Change seals and spacers and/or piston assembly F. Check programming and reset as needed G. Replace timer
<b>10. CONTROL CYCLES CONTINUOUSLY</b> A. Faulty hall sensor on circuit	A. Replace circuit board
<b>11. DRAIN FLOWS CONTINUOUSLY</b> A. Foreign material in control B. Internal control leak C. Control valve jammed in brine or backwash position D. Timer motor stopped or jammed teeth E. Timer not operating properly	A. Remove piston assembly and inspect bore. Remove foreign material and check control in various regeneration positions B. Replace seals and/or piston assembly C. Replace piston and seals and spacers D. Replace timer motor and check all gears for missing teeth E. Replace timer



# IMPORTANT WARRANTY AND MAINTENANCE INFORMATION

**Please have the information below filled out and available when calling in for parts or warranty:**

Model number:
Serial number:
Valve Serial number:
Date installed:

**Additional notes:**

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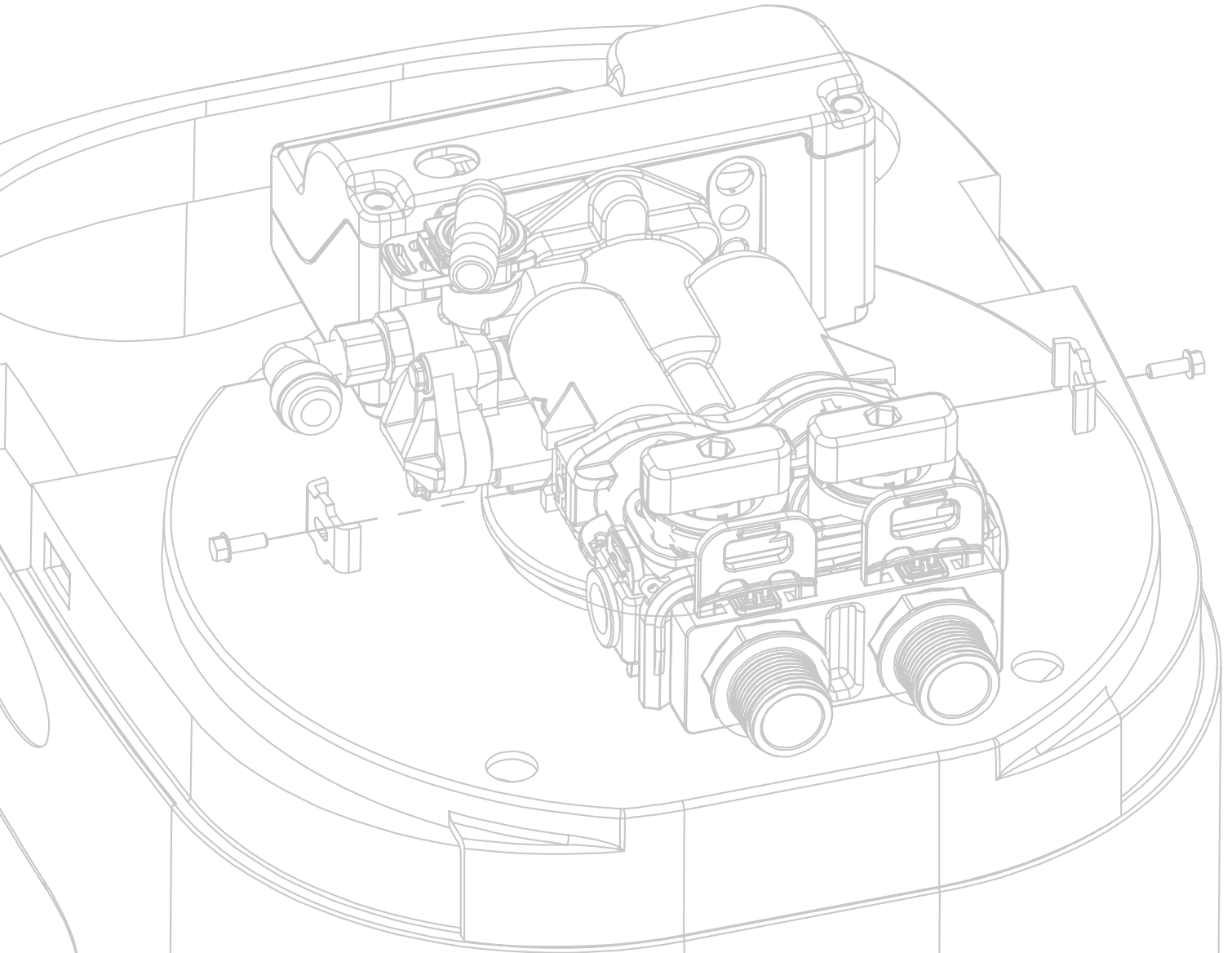
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