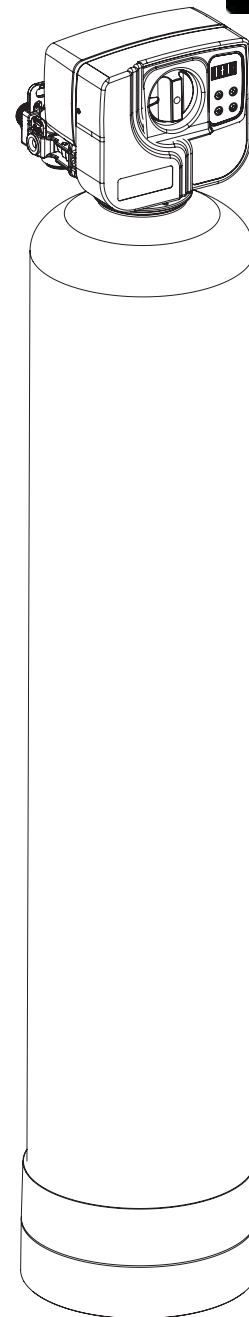
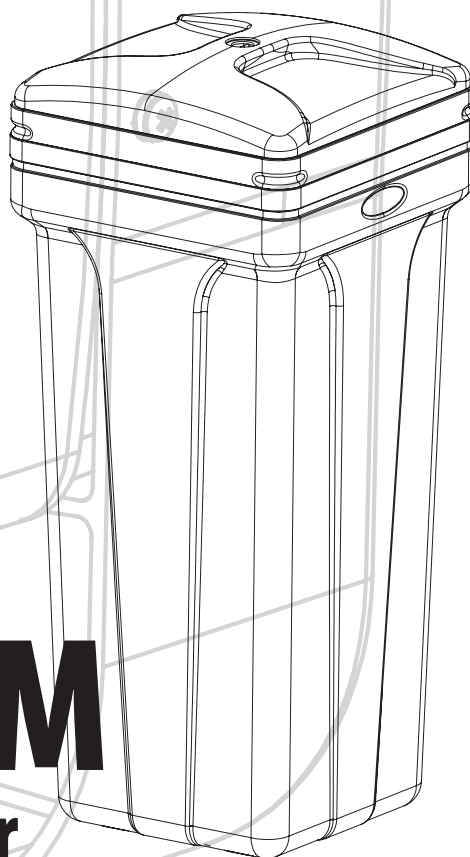


IAPMO R & T Certified  
against CSA B483.1

# 765 HIM

## Water Softener



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.

### Canada West

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

7503 35th St. SE  
Calgary, AB T2C 1V3

### Canada East

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

### U.S.A.

7229 University Ave NE  
Fridley, MN 55432

9760 Mayflower Park Drive,  
Suite 110  
Carmel, IN 46032

4655 McDowell Rd. W  
Phoenix, AZ 85035

56 Lightcap Rd.  
Pottstown, PA 19464

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# 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.

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 by a water softener.

Water softeners remove hardness in the water by exchanging particles in the water, or ions. They remove hard ions such as 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.

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

Model	Capacity Grains			Flow Rate		Mineral Tank Size	Resin Cu. Ft.	Brine Tank / Cabinet Size Inches	Salt Cap Lbs	Shipping Weight Lbs
	@ 10 lbs/cu ft	@ 6 lbs/cu ft (Factory Setting)	@ 3 lbs/cu ft	Service USGPM	Backwash USGPM					
HT765HIM-75	19,875	16,500	10,500	8.0	1.5	8 x 44	0.75	15.8 x 32.1	250	84
HT765HIM-100	26,500	22,000	14,000	10.0	2.0	9 x 48	1.00	18.1 x 34.5	300	104
HT765HIM -150	39,750	33,000	21,000	12.0	2.4	10 x 54	1.50	18.1 x 34.5	300	133
HT765HIM-200	53,000	44,000	28,000	13.0	3.0	12 x 52	2.00	20.3 x 37.4	400	153
HT765HIM-300	79,500	66,000	42,000	15.0	5.0	14x65	3.00	20.3 x 37.4	400	220

Working Temperature = 34-110°F (1-43°C)  
 (Do not subject the unit to freezing temperatures)  
 Working Pressure = 30-125 PSIG (137-861 kPa)  
 Voltage = 120V / 60 Hz  
 Pipe Size = 3/4" or 1"

- At the stated service flow rates, the pressure drop through these devices will not exceed 15 psig.
- Changing salt settings from factory setting may require changing injector sizes to achieve stated capacities
- The manufacturer reserves the right to make product improvements which may deviate from the specifications and descriptions stated herein,

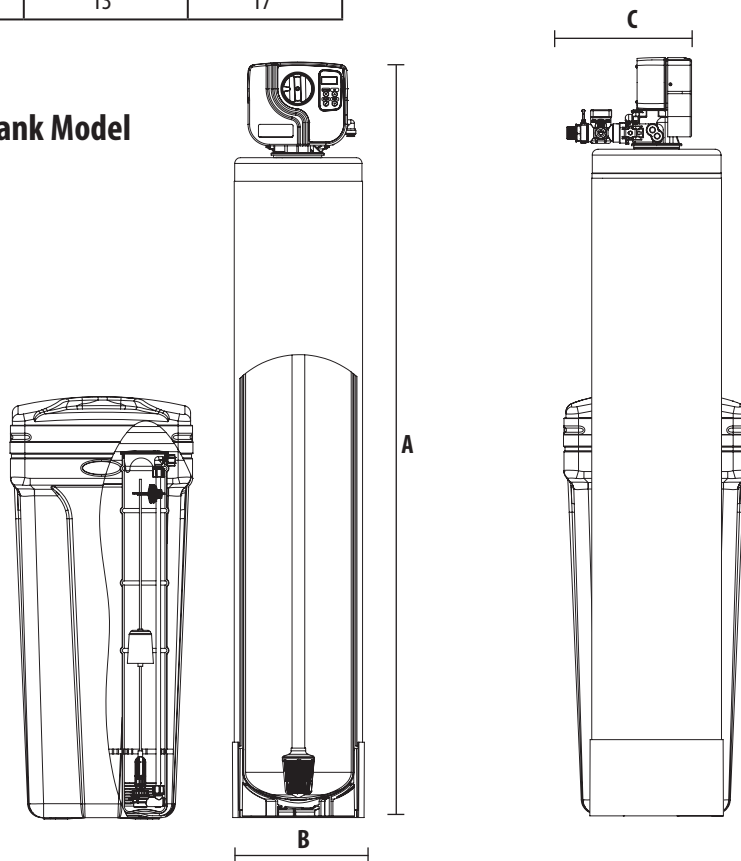
without obligation to change previously manufactured products or to note the change.

- \* Do not use water that is microbiologically unsafe without adequate disinfection before or after the system.
- \* Iron content must not exceed 1 ppm. Beyond 1 ppm an iron softener must be used. Periodic media cleaning is required by Pro-Res Cleaner is iron level exceed 0.3 ppm

## SYSTEM DIMENSIONS

Models	A (Inches)	B (Inches)	C (Inches)
75	53"	9"	13"
100	57"	9"	13"
150	63"	10"	15"
200	61"	12"	16"
300	63"	13"	17"

**Twin Tank Model**

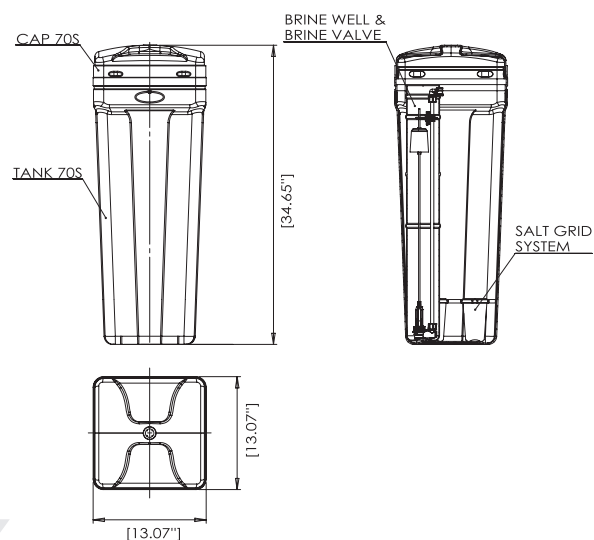


# BRINE TANK DIMENSIONS

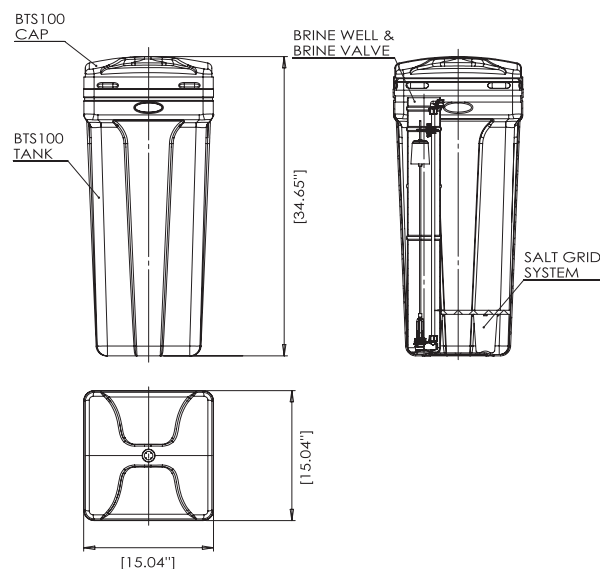
Model	Color	Liquid Volume		Tank Dimensions (inches)	5 Pack Carton Dimensions (inches)	Salt Capacity	
		US Gal	Liters	L x W x H	L x W x H	Lbs	Kg
Brine Tanks							
EWT-70	Black	20.3	76.5	15.8 x 32.1	16.7 x 16.7 x 61.0	185.0	92.8
EWT-70	Blue	20.3	76.7	15.8 x 32.1	16.7 x 16.7 x 61.0	185.0	92.8
EWT-100	Vanilla	29.5	111.5	18.1 x 34.7	18.9 x 18.9 x 65.6	270.0	122.2
EWT-100	Black	29.5	111.5	18.1 x 34.7	18.9 x 18.9 x 65.6	270.0	122.2
EWT-100	Blue	29.5	111.5	18.1 x 34.7	18.9 x 18.9 x 65.6	270.0	122.2
EWT-145	Black	42.3	159.7	20.3 x 37.4	21.9 x 21.9 x 72.2	385.0	174.2
EWT-200	Grey	53.0	200.3	23.0 x 40.5	24.6 x 24.6 x 84	700.0	316.7
EWT-70	Black	19.0	71.8	13.1 x 13.1 x 34.7	14.4 x 14.4 x 62	175.0	92.8
EWT-70	Blue	19.0	71.8	13.1 x 13.1 x 34.7	14.4 x 14.4 x 62	175.0	92.8
EWT-100	Vanilla	25.0	94.5	15.0 x 15.0 x 34.7	16.6 x 16.7 x 61	230.0	104.1
EWT-100	Black	25.0	94.5	15.0 x 15.0 x 34.7	16.6 x 16.7 x 61	230.0	104.1
EWT-100	Blue	25.0	94.5	15.0 x 15.0 x 34.7	16.6 x 16.7 x 61	230.0	104.1

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

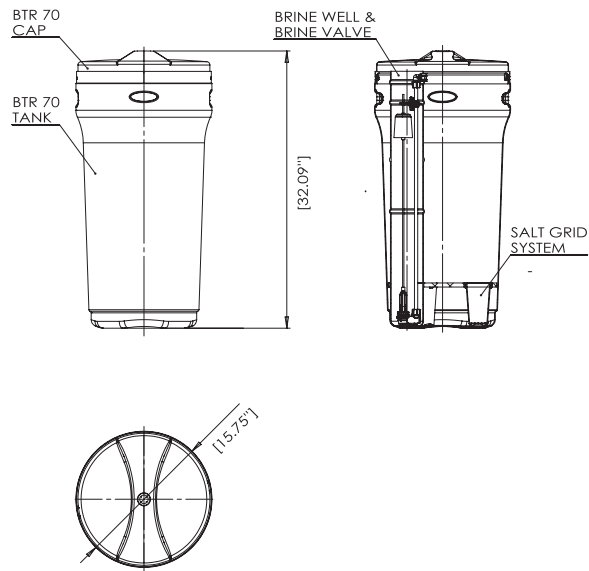
## Dimensions EWT70



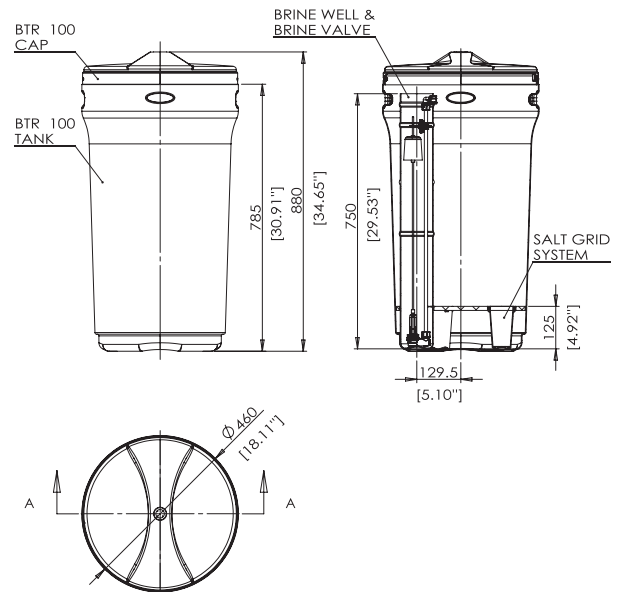
## EWT100



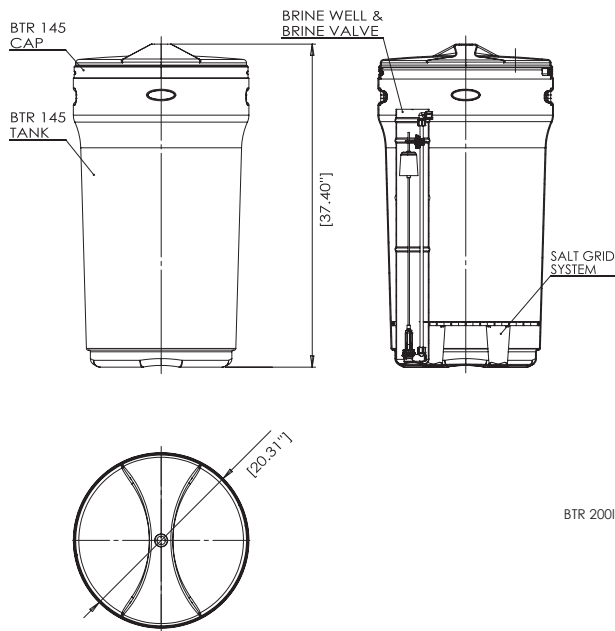
## EWT70



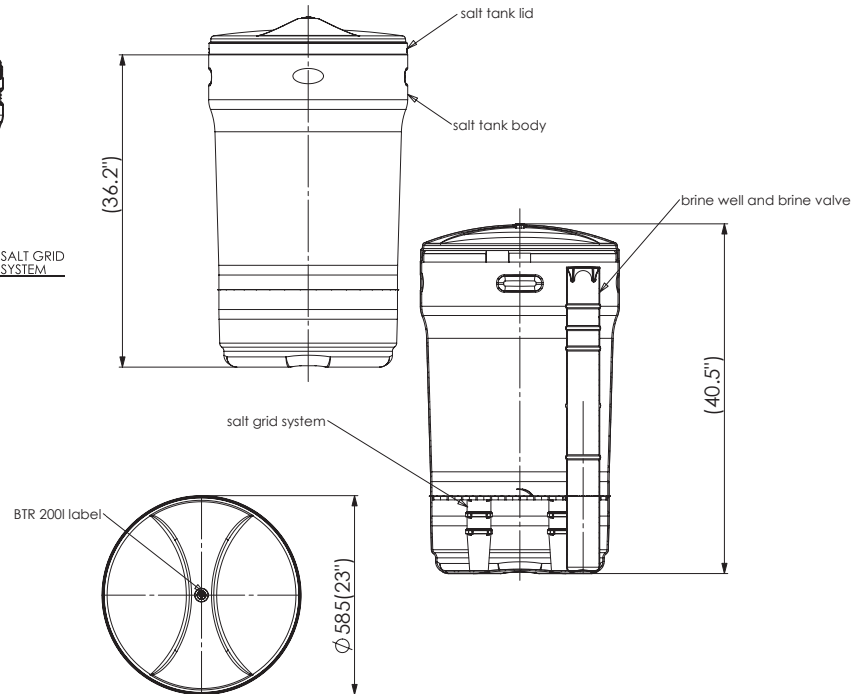
## EWT100



## EWT145



## EWT200



# UNPACKING / INSPECTION OF TWIN TANK MODEL

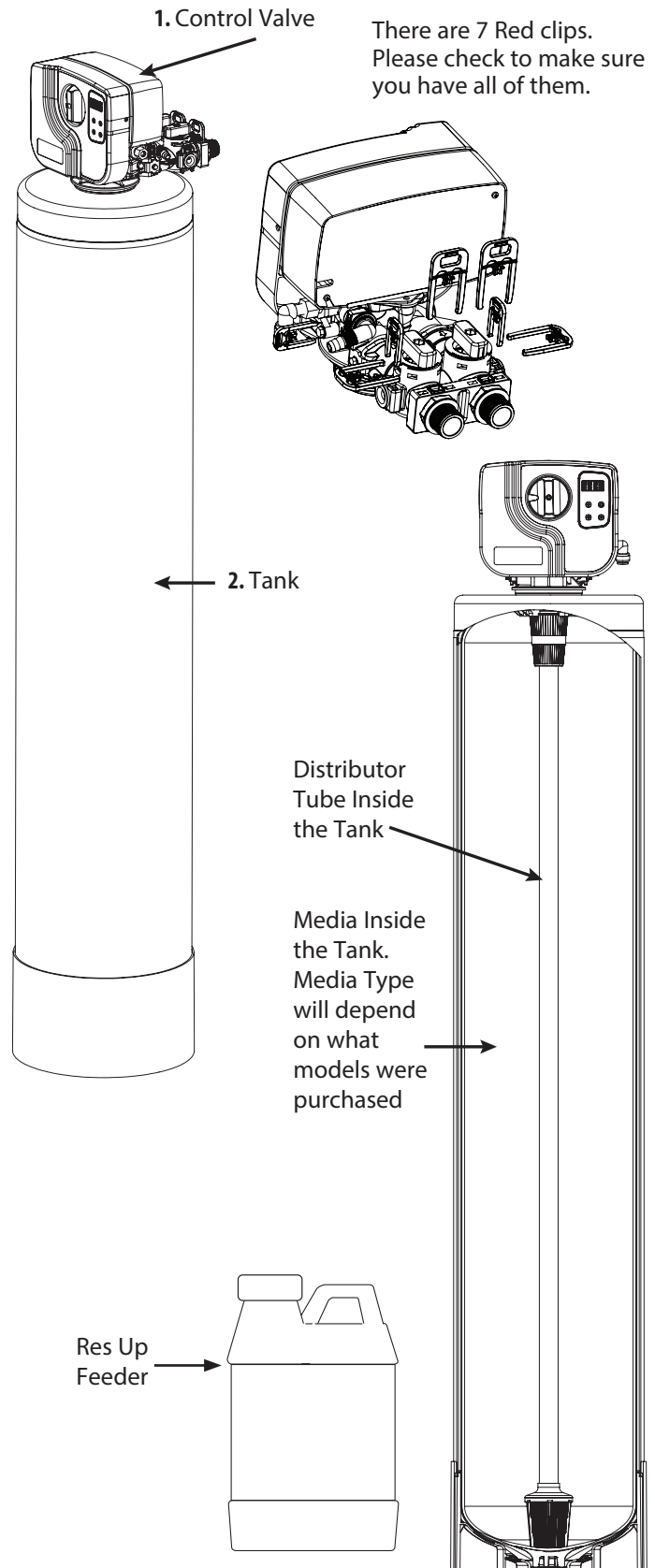
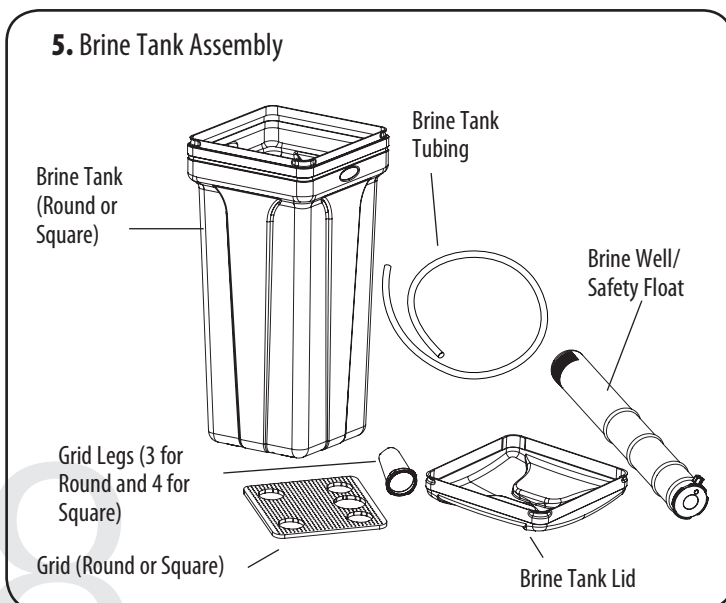
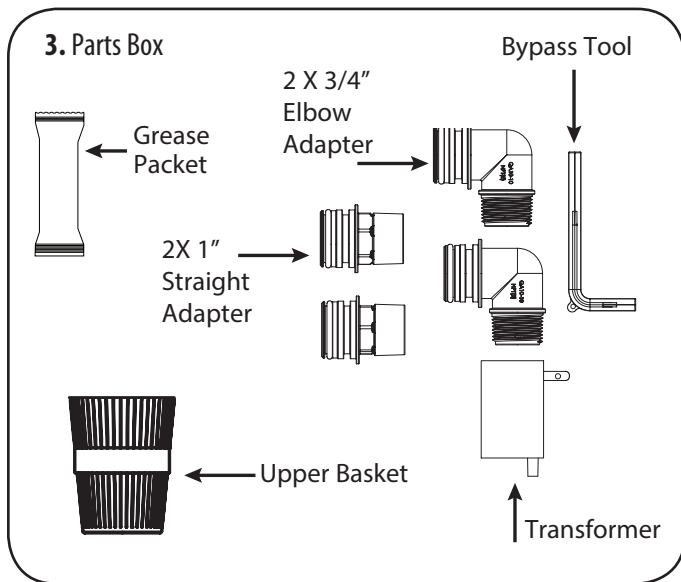
Be sure to check the entire unit for any shipping damage or parts loss. Also note damage to the shipping cartons. Contact the transportation company for all damage and loss claims. The manufacturer is not responsible for damages in transit.

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?

For Models 75,10,15,20, you will expect the following:

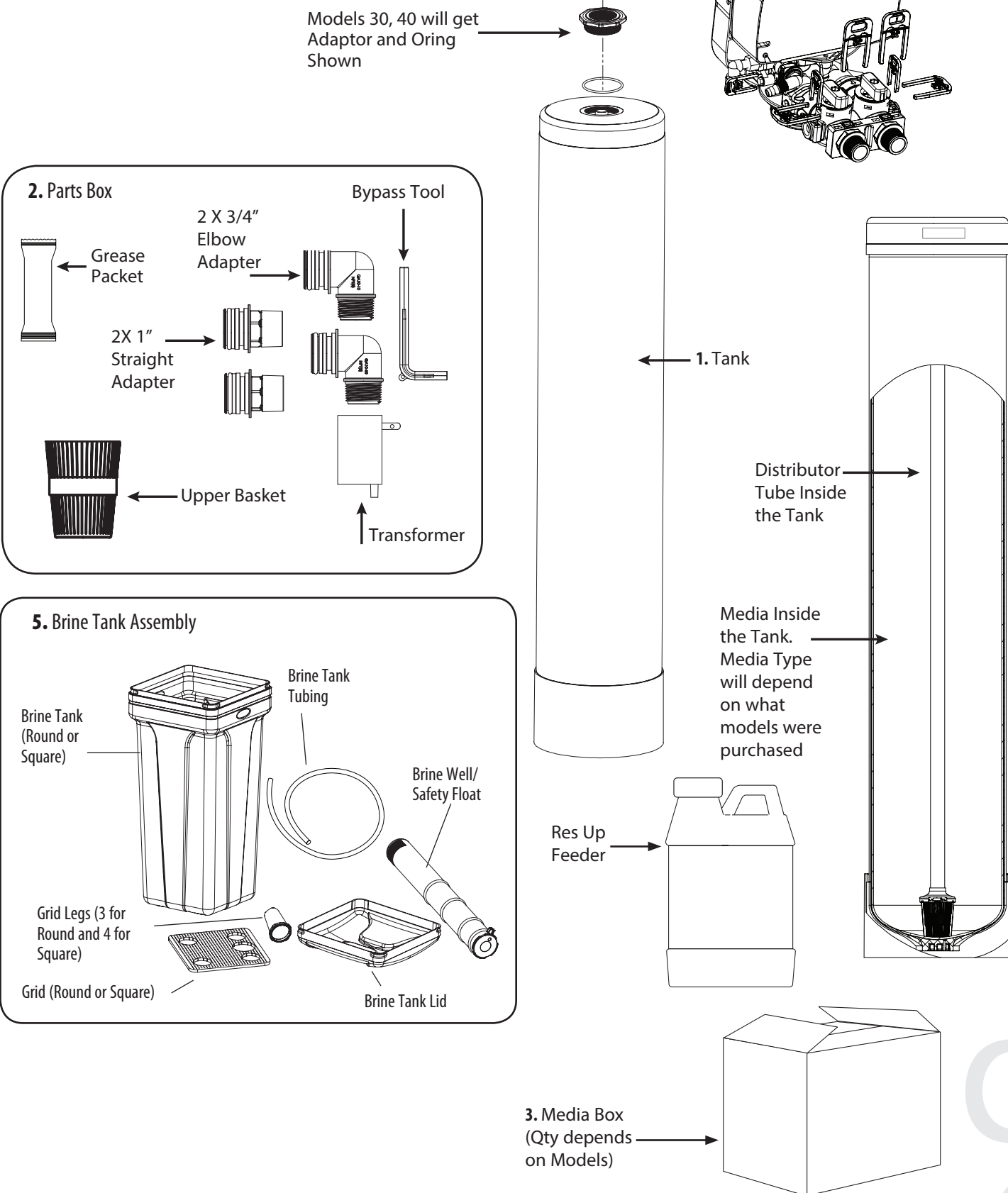
1. Control Valve
2. Tank
3. Parts Box
4. Owners Manual
5. Drain Hose & Clamp (Not included in some brands)
6. Brine Tank Assembly



## For Models 30 and 40 the media and Control Valve is packaged separately in carton and bags

### What is included with 30 and 40 models?

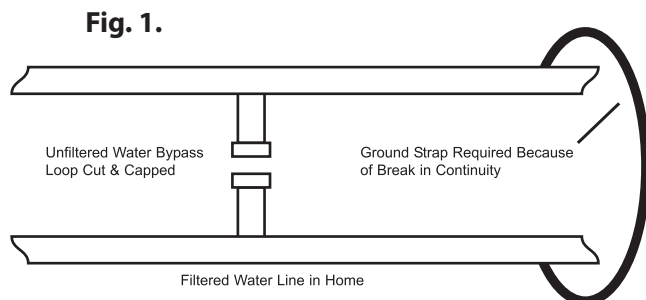
1. Tank (Models 30 and 40 will get an Adapter and Oring attached to the tank)
2. Control Valve with Parts Box
3. Media Boxes (Qty 3 for 30 and Qty 4 for 40)
4. Drain Line and Hose Clamp (Not Included with some models)
5. Brine Tank Assembly



# 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 765 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.**

- S Two adjustable wrenches
- S Additional tools may be required if modification to home plumbing is required.
- S 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.
- S Use copper, brass, or PEX pipe and fittings.
- S Some codes may also allow PVC plastic pipe.
- S 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.
- S 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.

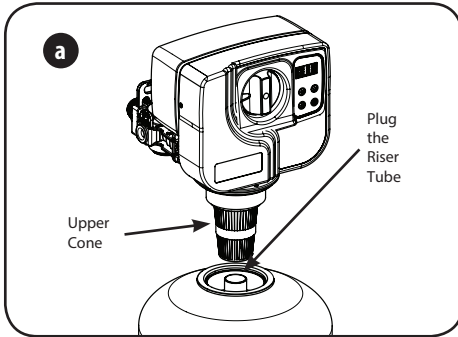
# PREPARATIONS



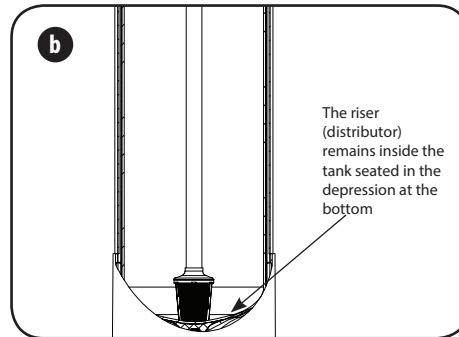
**CAUTION**

The unit should be depressurized before installing or replacing media

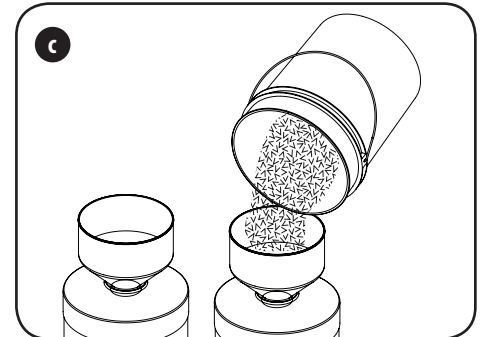
**1. Media Installation (When Necessary).** Models including and higher than 2 CF (Models 250,300) of media are shipped with separate media in pails or boxes. Models lower than 2 CF of media come loaded with media and this step can be skipped for new installation.



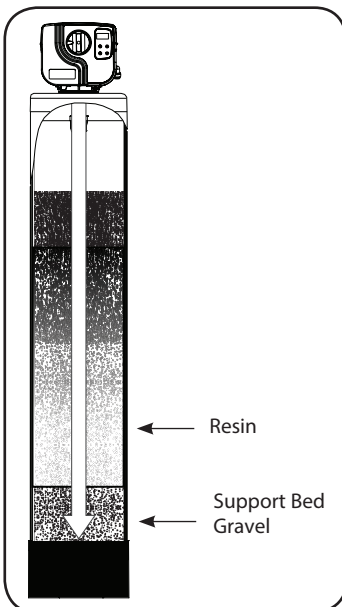
**a)** Lube the bottom oring (picture **d**) and attach the upper cone to the valve.



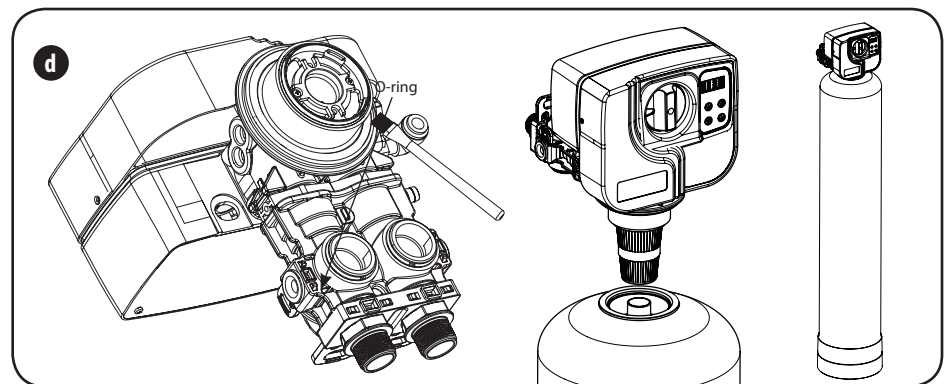
**b)** Temporarily plug the open end of the riser tube to ensure that no resin or gravel falls down into the distribution. The riser (distributor) remains inside the tank seated in the depression at the bottom. Plug tube with a tape. Remove after media is loaded.



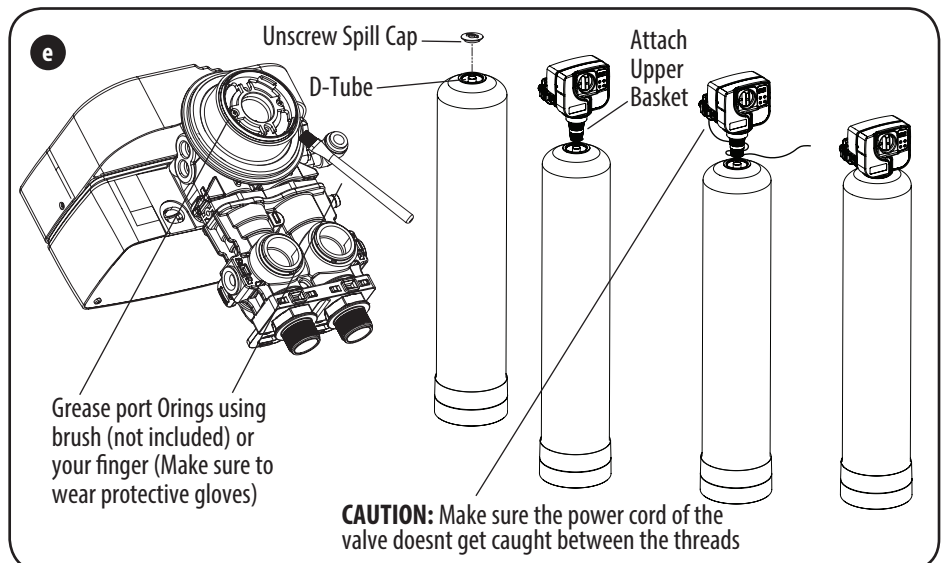
**c)** Fill support bed first. The media will not always spill down inside the tank and may need to be swept inside. The large funnel (sold separately makes filling the tank easier and neater. (Or an empty 1 gallon or 4 liter container with the bottom cut out makes a good funnel.)



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.



**d)** Unplug the riser tube, carefully position the valve over it and turn the valve into the threads in the fiberglass tank, tightening securely into tank. Note: Ensure that the internal O-ring in the valve fits securely over the riser tube. Silicone grease (part # 92360) or other food grade lubricant may be applied to the O-ring to ease installation of the riser tube.



**d)** Lube the bottom Valve Orings with the grease supplied, Attach the Upper Basket. Unscrew the spill cap. Carefully Slide the D-Tube inside the Valve and Screw the Valve inside the Tank such that the power cord doesn't get caught between the valve and the tank.



**CAUTION!**

Make sure that the unit is de-pressurized before conducting this task.



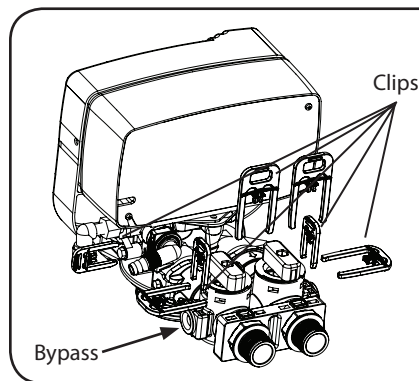
**CAUTION!**

DO NOT use petroleum based lubricants as they will cause swelling of O-ring seals.





# PREPARATIONS



## 3. Attaching Bypass to Valve (If required in case of replacing the control valve. The new control valve comes with bypass attached)

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 Softener 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.

# INSTALLATION STEPS

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 left hand side of the valve and out on the right hand side

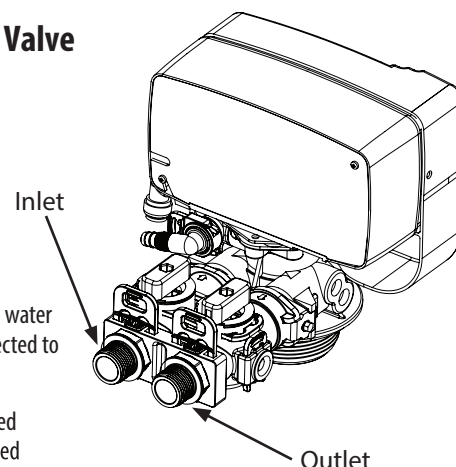
## Facts to Remember When Planning Your Installation

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.

## 2. Water Lines

Outside faucets used to water lawns and gardens should not supply softened water. A new water line is often required to be connected to supply hard water to the inlet of the water softener and to the outside faucets. Cut the water line between where it enters the house and before any lines that branch off to feed the hot water heater or other fixtures in the house and as near the desired location of the water softener as possible. Install a tee fitting on the feed end of the cut pipe, and an elbow fitting on the other end. Install piping from the tee to the inlet of the water softener and from the elbow to the outlet of the softener. To sever the water lines which branch off to feed any outside faucets, cut the branch lines approximately two inches from the fitting on the main water line. Install an elbow on the end of the pipe nearest the outside faucet and a cap on the end connected to the existing water line. Install piping from the tee installed on the inlet line to the water softener to the elbow installed on the pipe to the outside faucet. Following this procedure will result in all lines in the house, with the exception of the outside faucets, but including the water heater and therefore the hot water lines, being supplied with soft water.

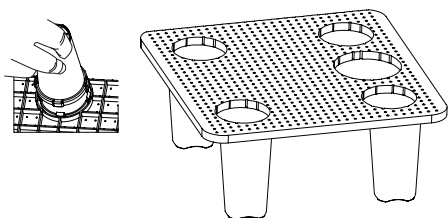
## Downflow Valve



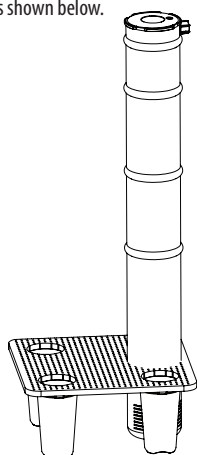
# INSTALLING BRINE TANK

## 5. Assembling Brine Tank

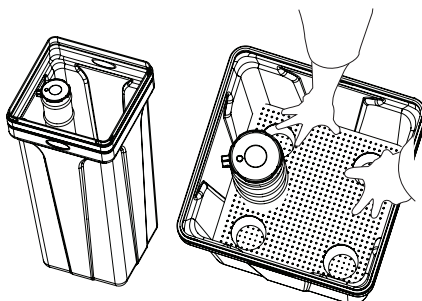
a) Attach the four brine grid legs to grid plate. The legs will snap on to the tabs of the salt plate making a "click" sound.



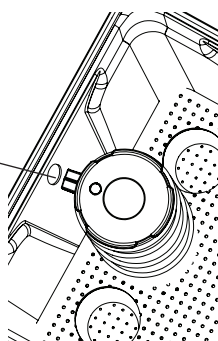
b) Insert the brine well assembly inside the grid plate as shown below.



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.

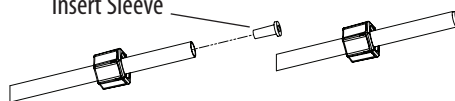


**IMPORTANT:** The hole in the brine tank should line up with the brine line as shown.

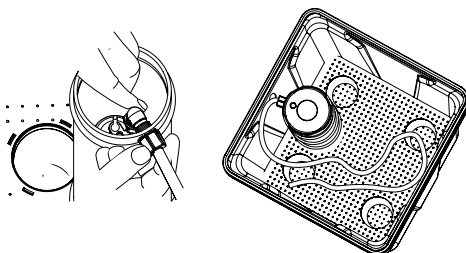


d) Take the brine tube and insert the nut and plastic sleeve as shown below.

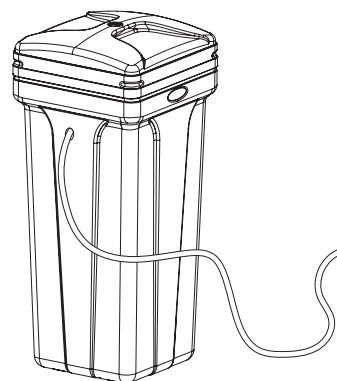
Insert Sleeve



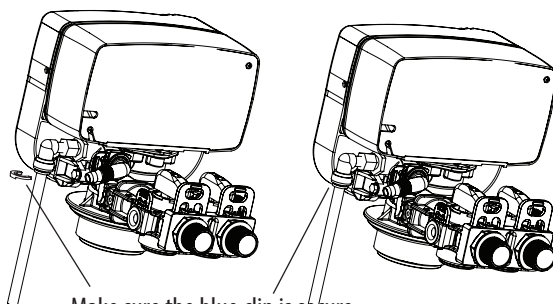
e) Insert the tube in the float assembly elbow and hand tighten the nut. In many cases the brine line already come installed from the factory. Leave the other end of the brine line tube inside the brine tank



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 on right.



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

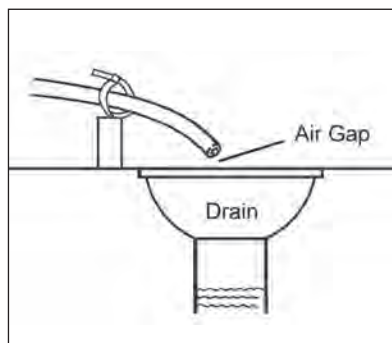
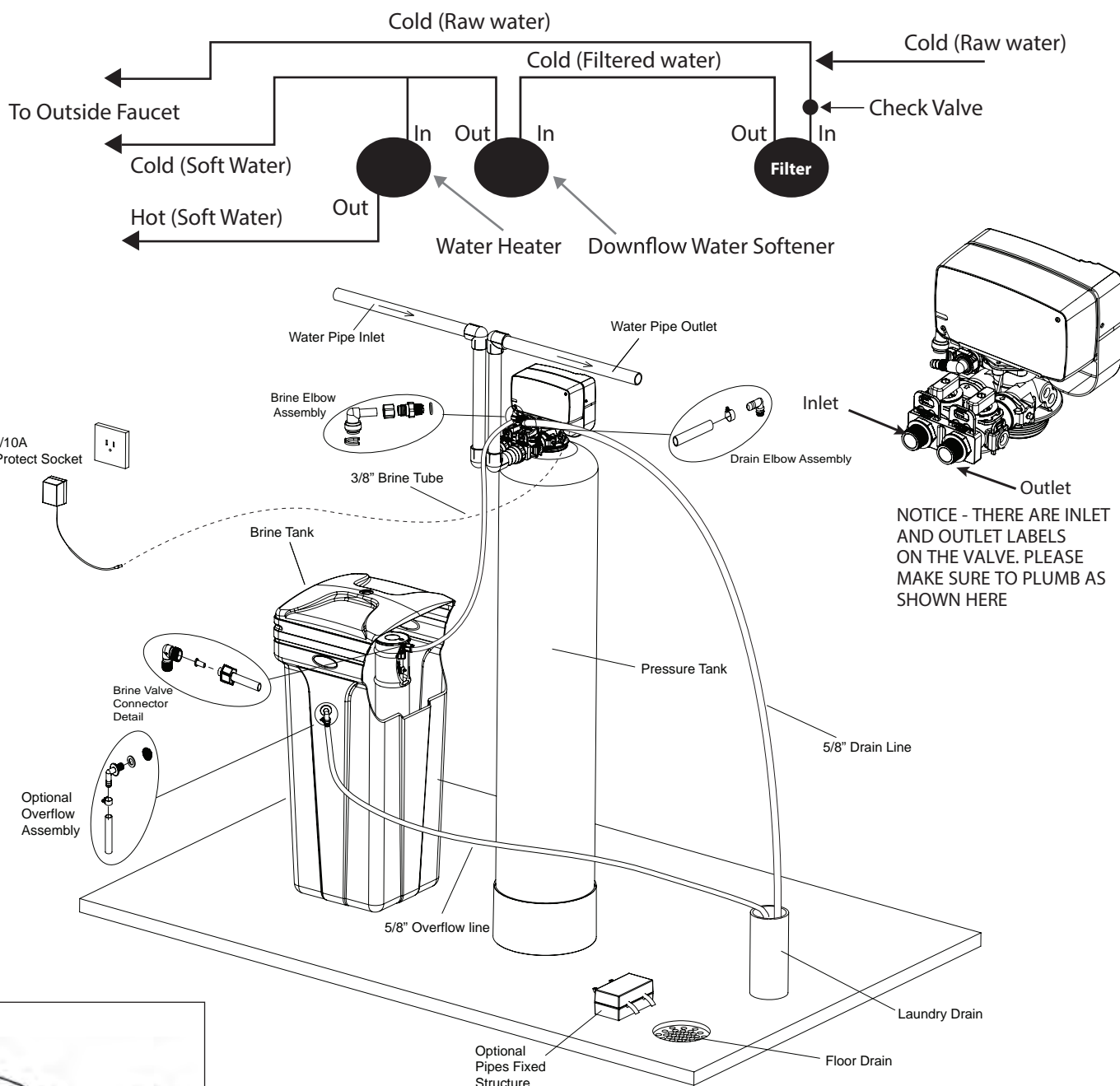


Make sure the blue clip is secure

# INSTALLATION

**Connect Softener 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.

## Downflow Water Softener Installation



### 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.



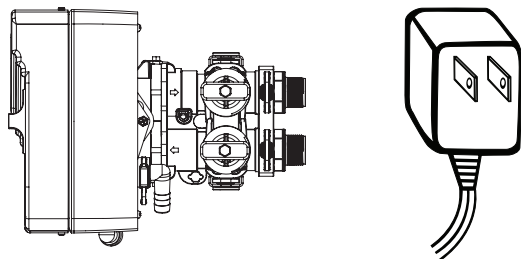
### CAUTION!

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 INSTRUCTIONS

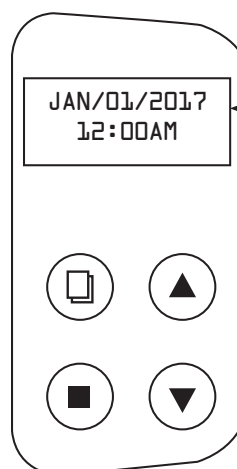
## 1. Connect the Transformer to the Valve

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



## 2. Screen Display

Familiarize with Button Configuration:



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

## 3. 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.

**EWT-100 -2.5 US Gallons**

## Key Pad Configuration:



**MENU**

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



**SET**

This function is to accept the values if changed and advance to the next page in the menu.



**+**



**-**

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

## 4. Manually Regenerate the Valve

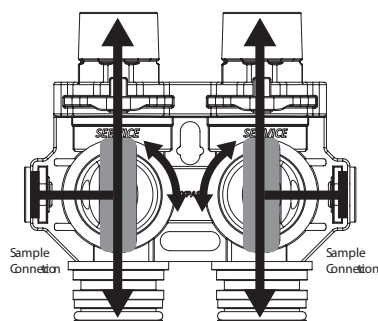
Manually step the valve to the BACKWASH position. If screen is locked, press **MENU** Key for 3 seconds to unlock.

Manually Regenerate the Valve and move it to backwash position.

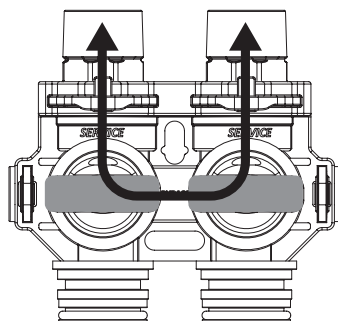
Press **SET** Button for 3 seconds. Press **SET/REGEN** Button once to select delayed or immediate regeneration.

Use Up and Down Arrows   to Select. Immediate and Press **SET** Key Press **MENU** Button to exit and start Regen

### SERVICE



### BYPASS



**MANUAL REGEN**  
Delay Immediate

**BACKWASH**  
BRINE DRAW  
RINSE (SKIP)  
REFILL (SKIP)

**Regen Sequence** - Once in Regeneration, the cycle can be skipped by pressing any button.

### BACKWASH

||||| 15 Minutes

### BRINE DRAW

||||| 50 Minutes

# STARTUP INSTRUCTIONS (CONTINUED)

## 4. 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

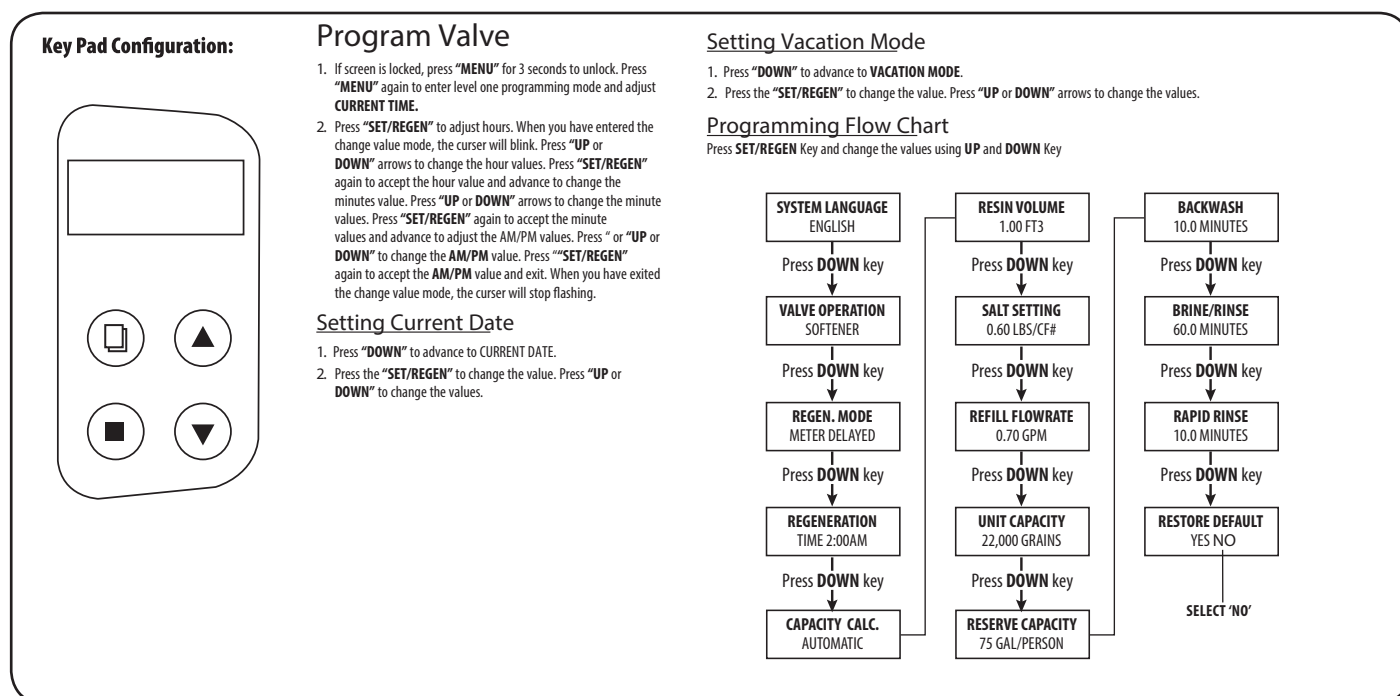
- 4a. Open the inlet on the bypass valve slightly and very slowly allow water to enter the unit. (If the water enters too quickly it will push the media up into the control valve and get plugged).

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.

- 4b. 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.

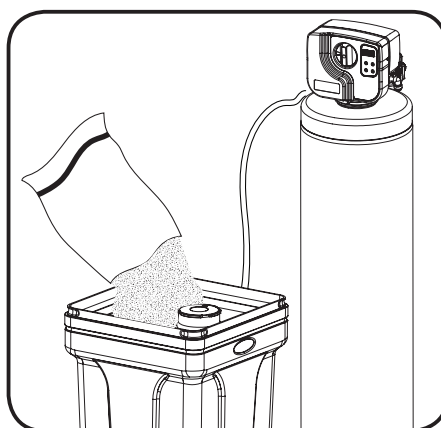
- 4c. Plug in the valve. Allow the valve to continue its cycles until complete and back in service

- 4d. The Valve is already programmed from factory. Please set up date and time of day and feedwater iron as shown below:



## 5. 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.**

# DURING REGENERATION

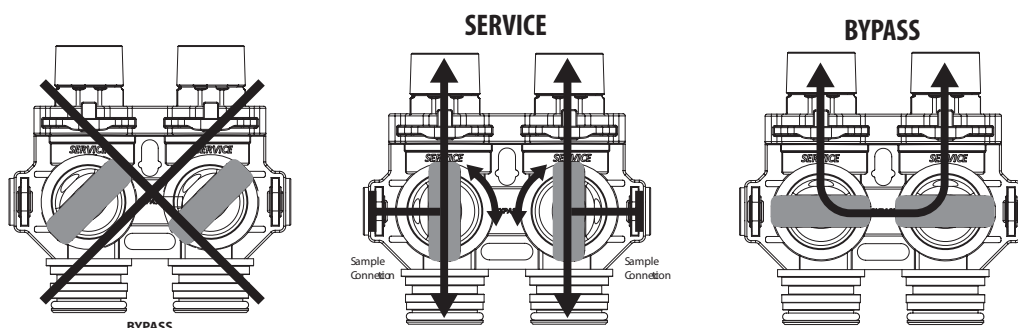
## Automatic Water Bypass

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 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

## 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.

## NOTE

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



# 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 additional 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.

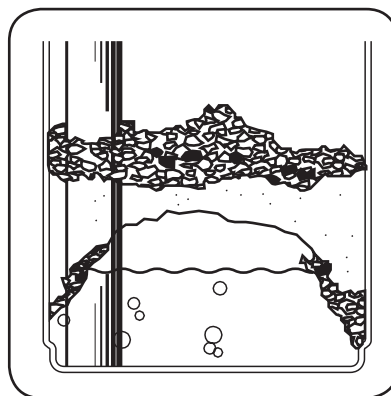
Maintenance of your new water conditioner requires very little time or effort but it is essential. Regular maintenance will ensure many years of efficient and trouble free operation.

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



# MAINTENANCE INSTRUCTIONS AND SCHEDULE

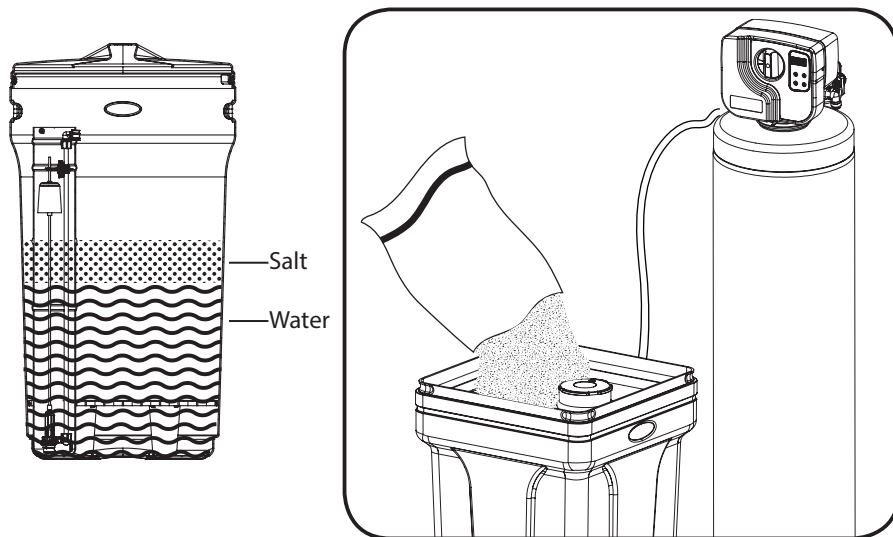
## Checking the Salt Level

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 Tank

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. 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**



## 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.

## 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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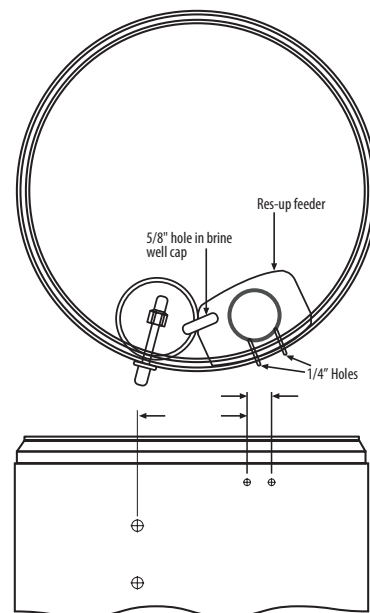
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# RES-UP® FEEDER INSTALLATION INSTRUCTIONS

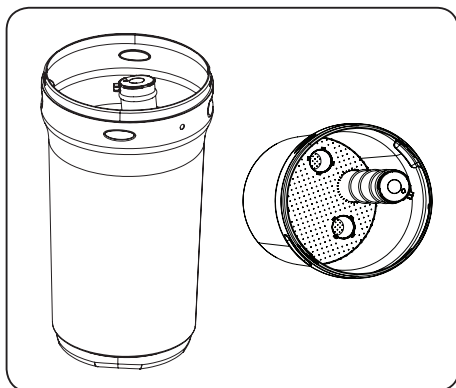
Res-Up Feeders attach to your brine tank and automatically dispense the Res-Up cleaner into the brine solution where it cleans the resin during the regeneration cycle.

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

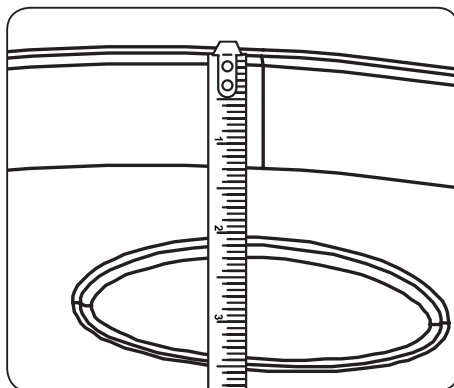
Res-up Feeder Bottle (Chemical sold Separately)
The 12 cc feeder (Part # 33010) is for softeners up to 64,000 grains (2 ft3 of resin).
The 30 cc feeder (Part # 33018) is for larger softeners over 64,000 grains.
Pro-Res Care Chemicals
Item #45147 Pro-ResCare - Gallon
Item #45148 Pro-ResCare - Quart



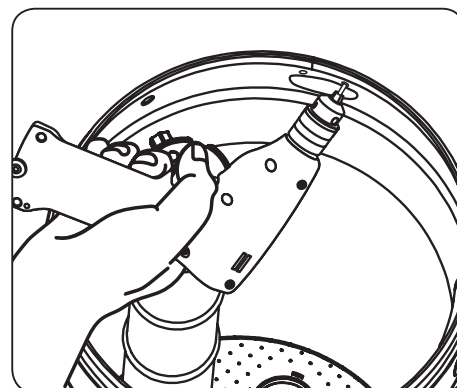
## Installation of Resup Feeder in Round Brine Tank



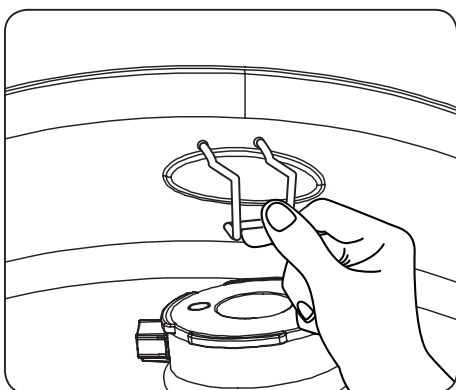
1. Install the grid and brine well inside the round tank.



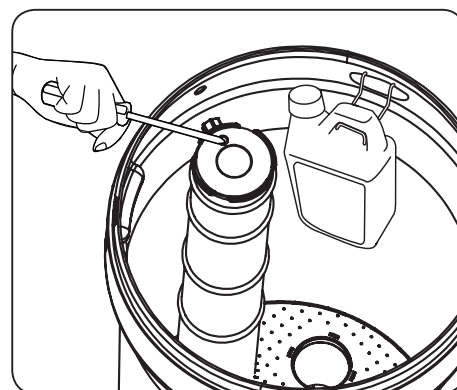
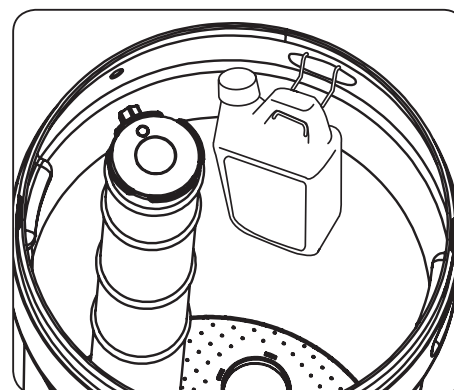
2. Measure 2 inches from the top of the tank beside the oblong molding.



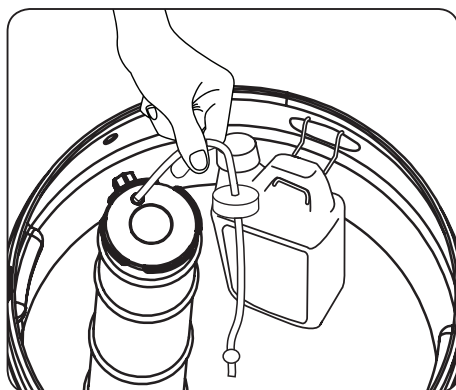
3. Mark the location of the holder and drill.



4. Install the holder and the Res Care Solution

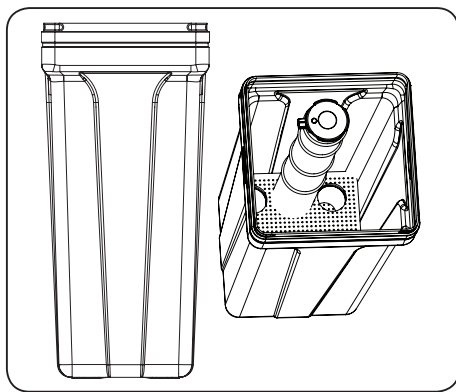


5. Take off the small hole cover on the Brine Well lid.

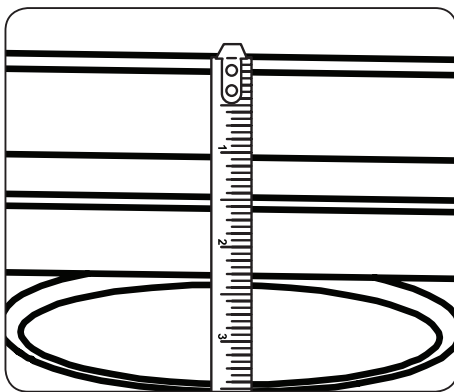


6. Take off the cover of the Res care bottle. Insert the wick, making sure it touches the bottom of the bottle. Insert the other end of the tube completely into the hole in the brine well cap. Automatic feeding will start in a few hours.

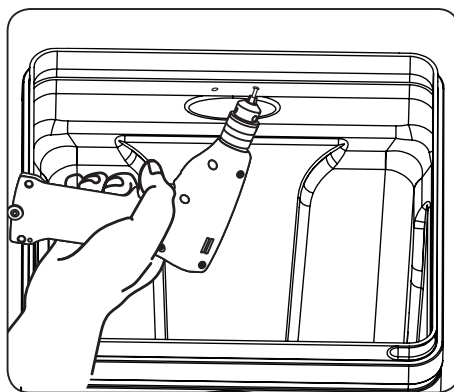
## Install Resup Feeder in Square Brine Tank



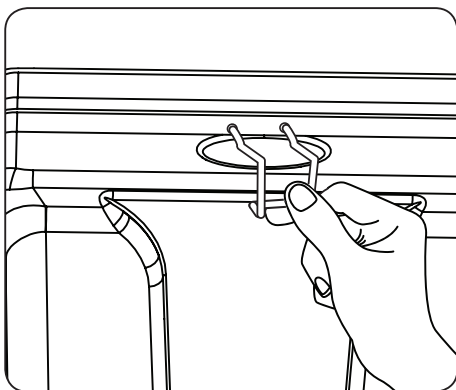
1. Install the grid and brine well inside the square tank.



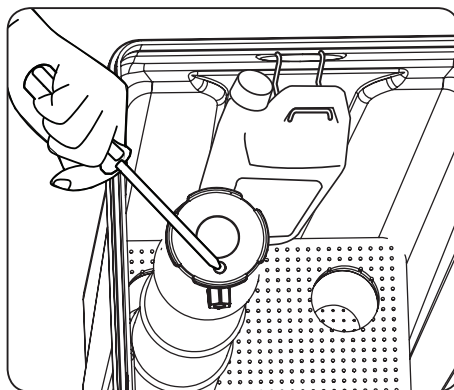
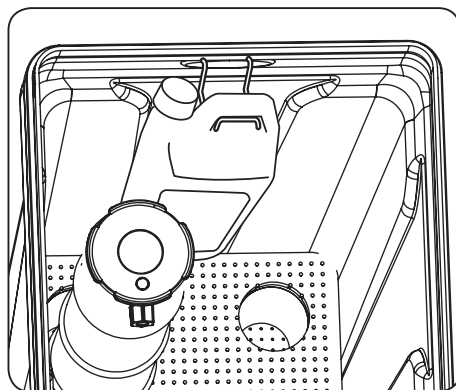
2. Measure 2 inches from the top of the tank beside the oblong molding.



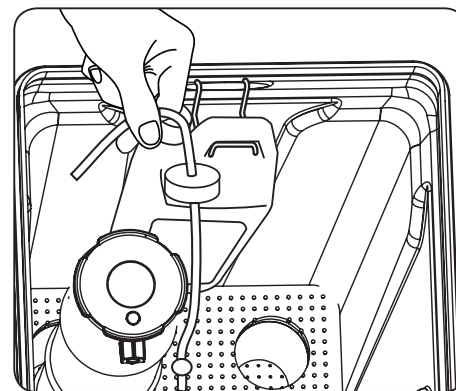
3. Mark the location of the holder and drill.



4. Install the holder and the Res Care Solution



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

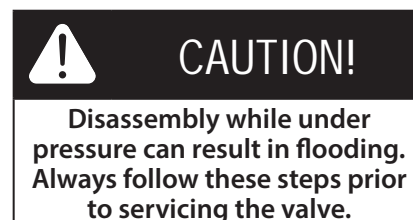
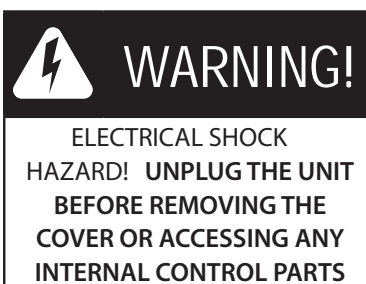


6. Take off the cover of the Res care bottle . Insert the wick, making sure it touches the bottom of the bottle. Insert the other end of the tube completely into the hole in the brine well cap. Automatic feeding will start in a few hours.

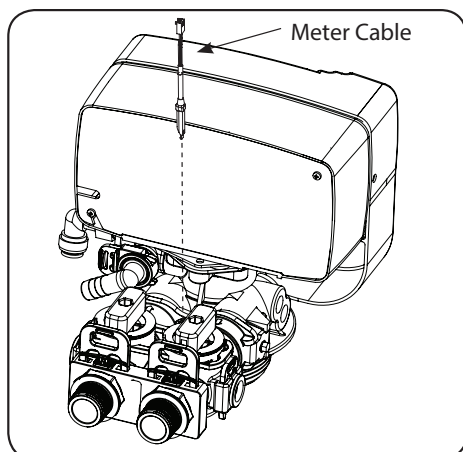
# SERVICING 765 VALVE

## Before Servicing

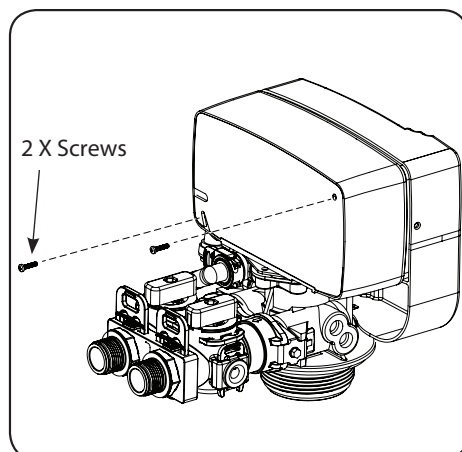
1. Turn off water supply to conditioner :
  - a. If the conditioner installation has a 3 valve bypass system first open the valve in the bypass line, then close the valves at the conditioner inlet & outlet.
  - b. If the conditioner has an integral bypass valve, put it in the bypass position.
  - c.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



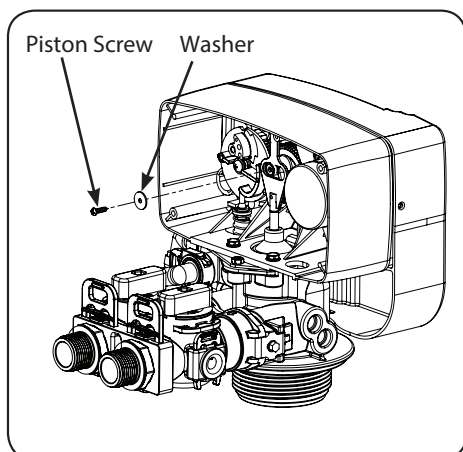
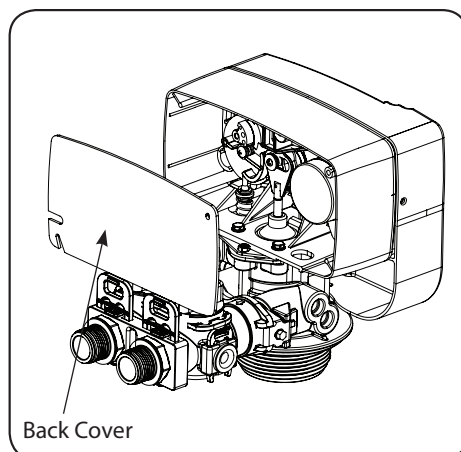
## TIMER REPLACEMENT



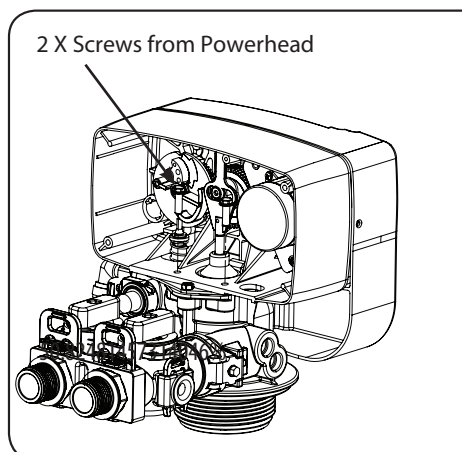
1. Disconnect the meter cable from the meter. (If flow meter is attached)



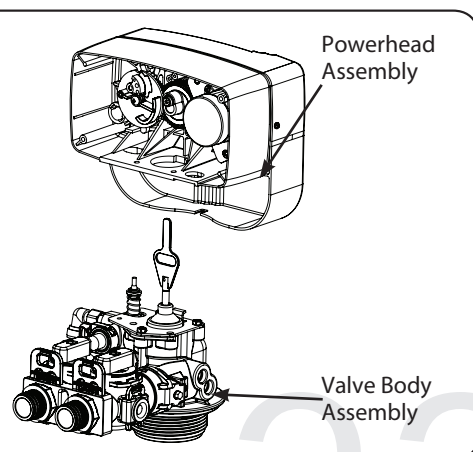
2. Remove two screws from the back of the valve cover



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

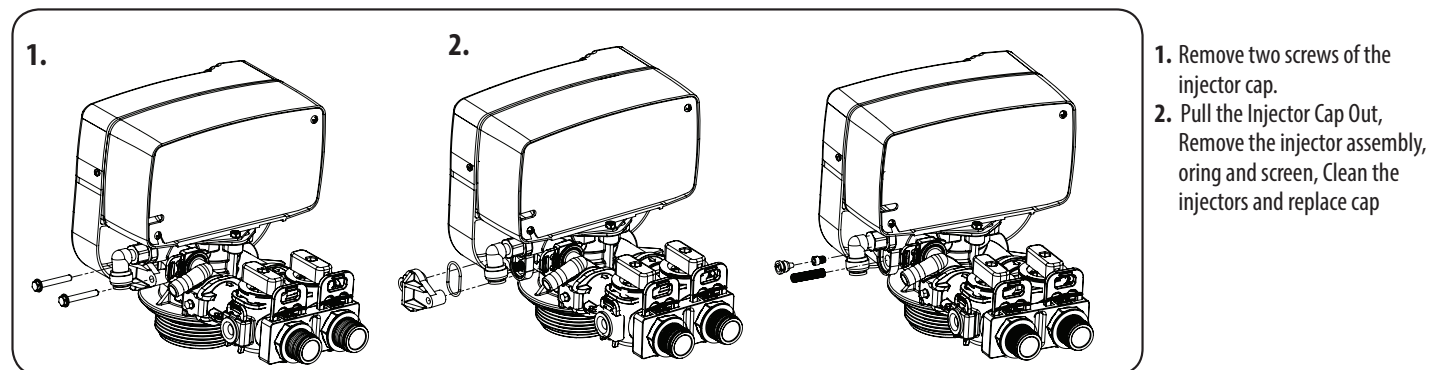


4. Remove the two screws from the powerhead as shown
5. Lift the powerhead from the valve body assembly

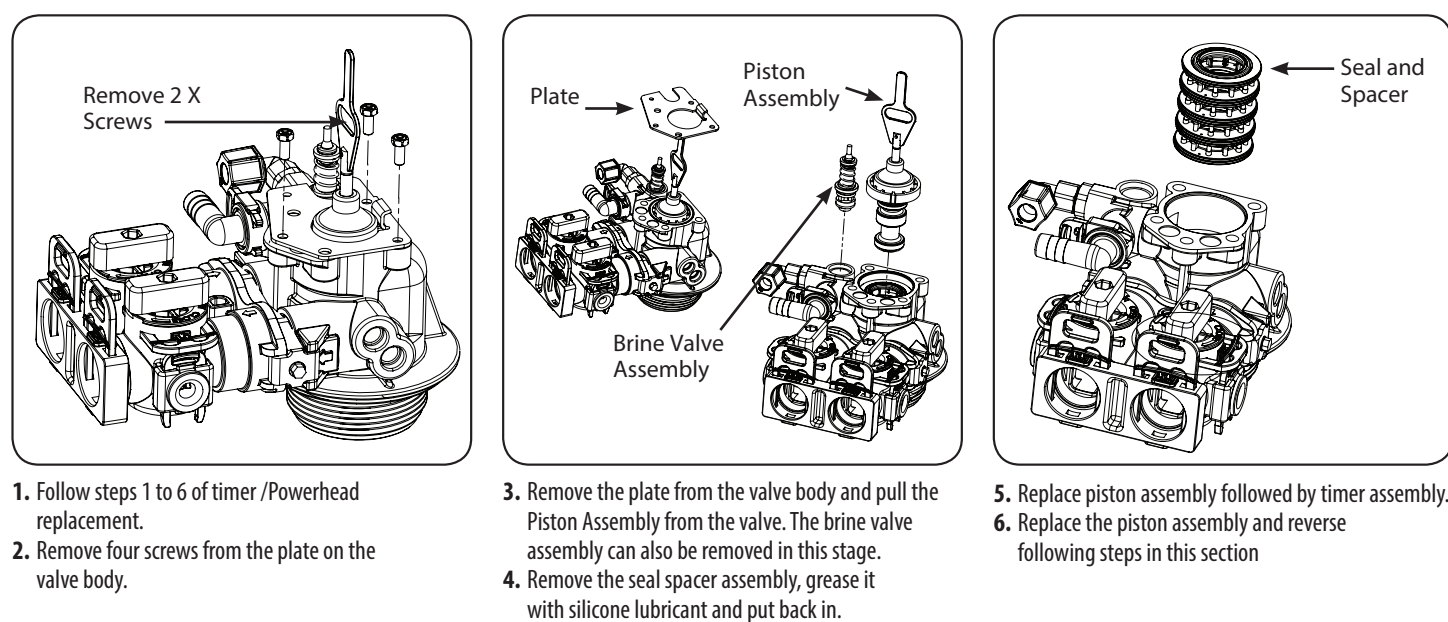


6. Replace the powerhead by reverse following the steps in this section

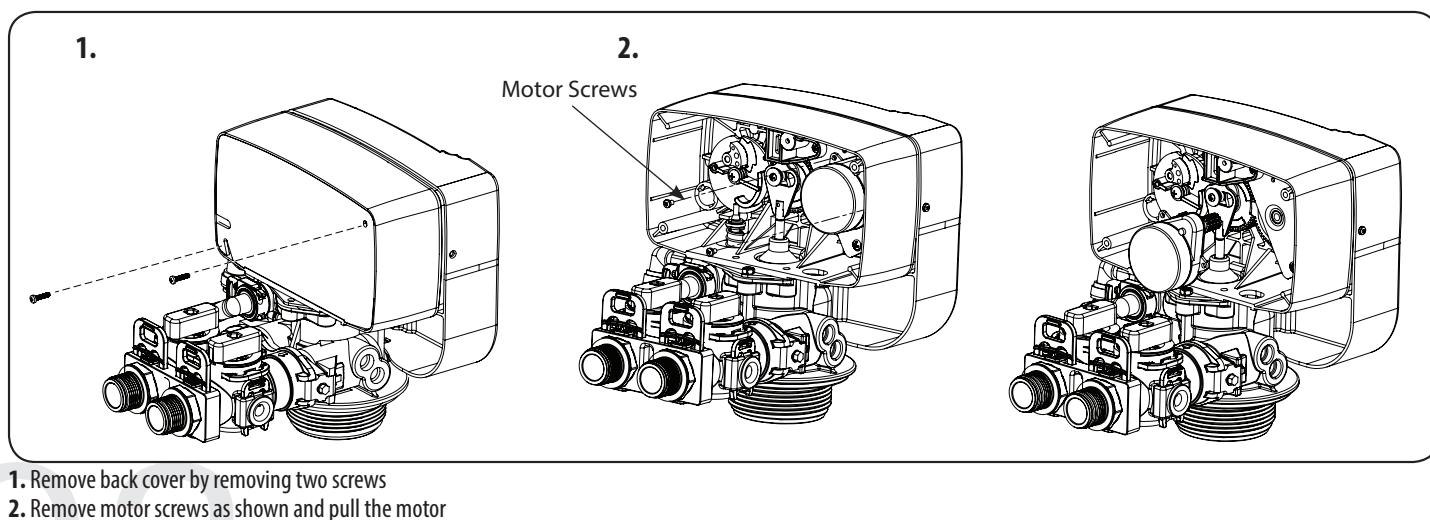
## CLEAN INJECTOR ASSEMBLY



## PISTON AND/OR BRINE VALVE ASSEMBLY REPLACEMENT



## REPLACE MOTOR

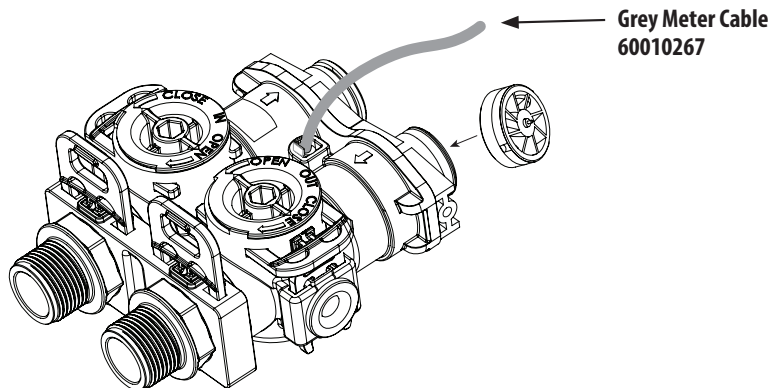




# REPLACING THE BYPASS AND METER CABLE

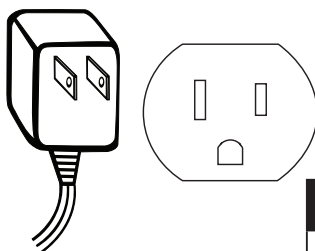
**60095101**

Bypass comes with Meter and Grey Meter Cable



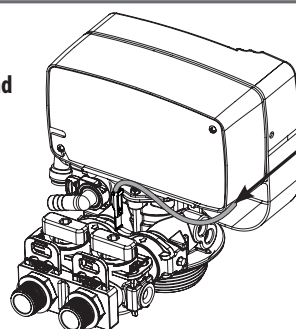
## Step 1

Unplug the power from the wall socket.



## Step 2\*

Remove 2 screws and clips from bypass.

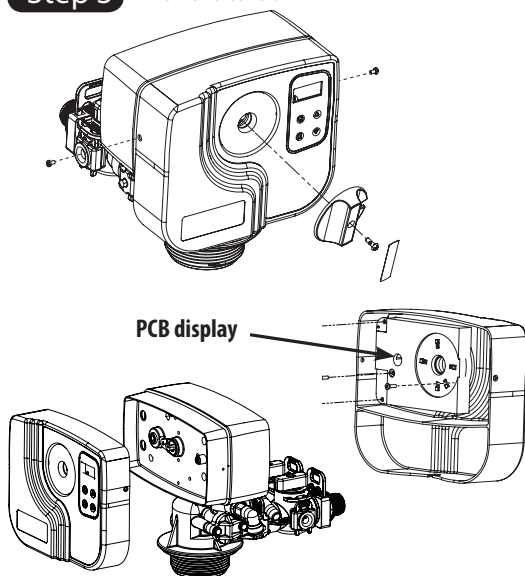


Disconnect the meter cable from the bypass.

## \*NOTE

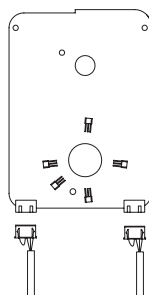
Water to the household needs to be turned off and pressure relieved before Step 2

## Step 3 Remove Cover.



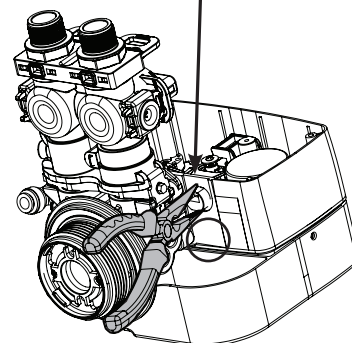
## Step 4

Disconnect the cables from the front PCB display.



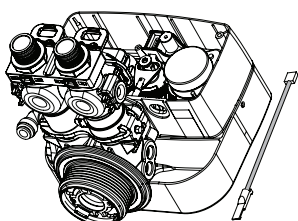
## Step 5

Remove strain relief with pliers.



## Step 6

Replace the old cable with the new Cable.



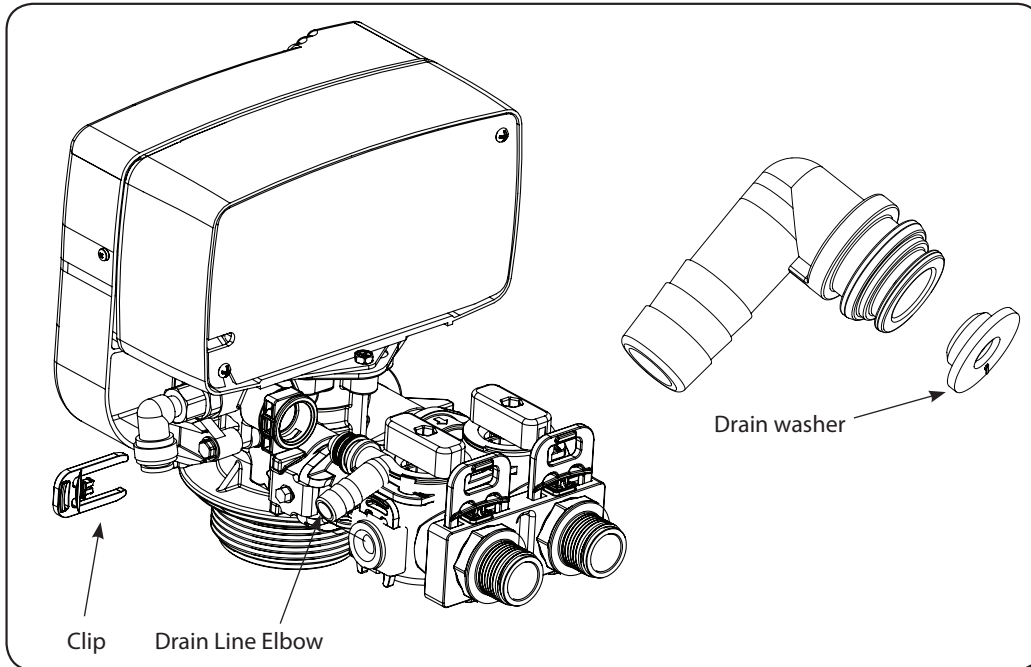
## Step 7

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

If there are "TB-L" and "TB-H" meter type options in PCB programming, select "TB-H".  
If the valve programming has no "TB-L" and "TB-H" options, change the meter ratio to new values per chart below  
For 65 Series Valves press SELECT+UP+DOWN for 3 seconds to get to Factory Setting  
For 465/565 Valves press SET/REGEN.+UP+DOWN for 3 seconds to get to Factory Settings.  
Press the **ET** to step through to PROGRAMING COMPLETE and past this until TIME OF DAY screen appears.

Valve	Region	Meter Ratio
765	U.S Gallon	4.428

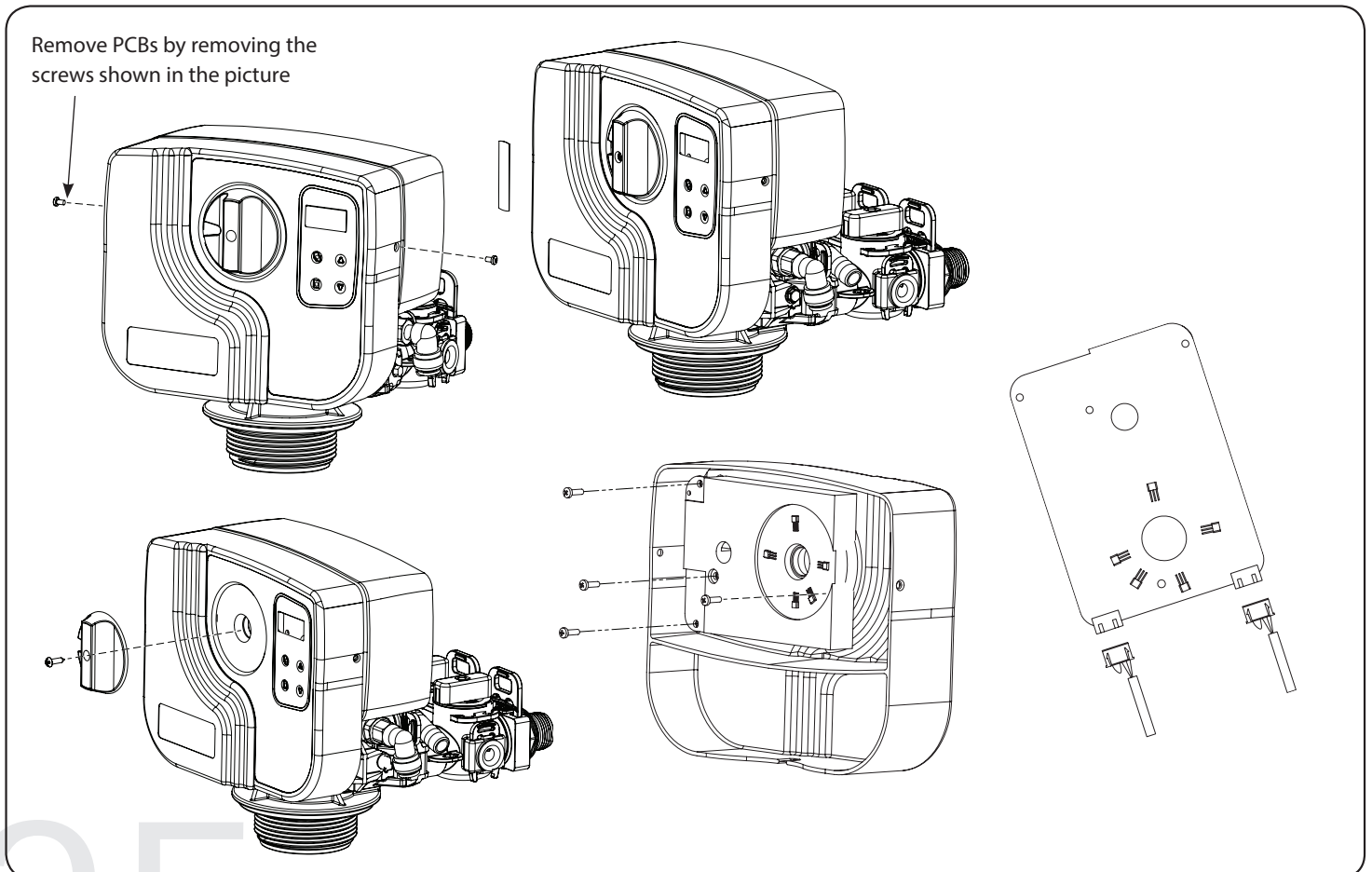
# REPLACE DRAIN LINE FLOW CONTROL



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

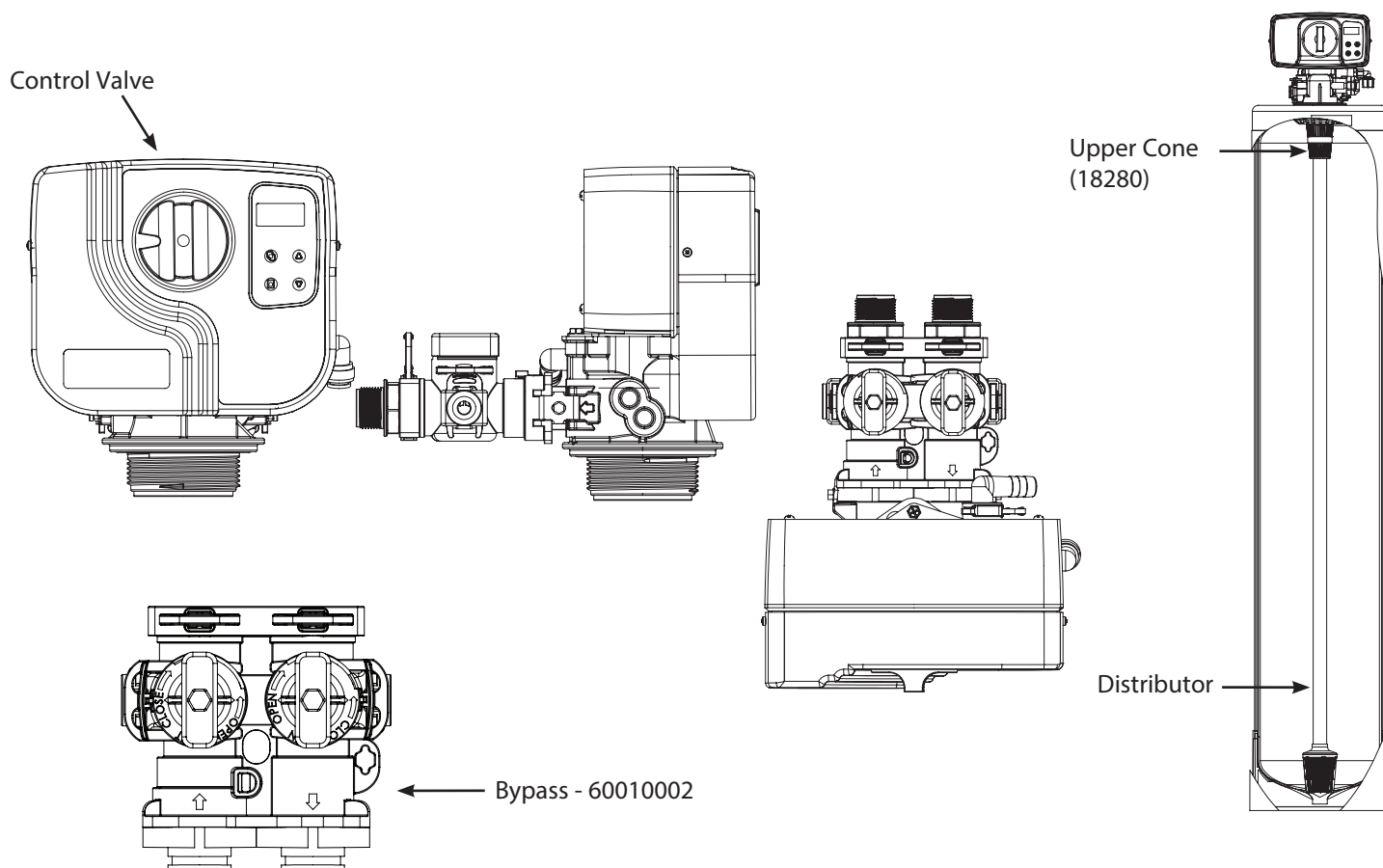
# REPLACING PCBS

Remove PCBs by removing the screws shown in the picture





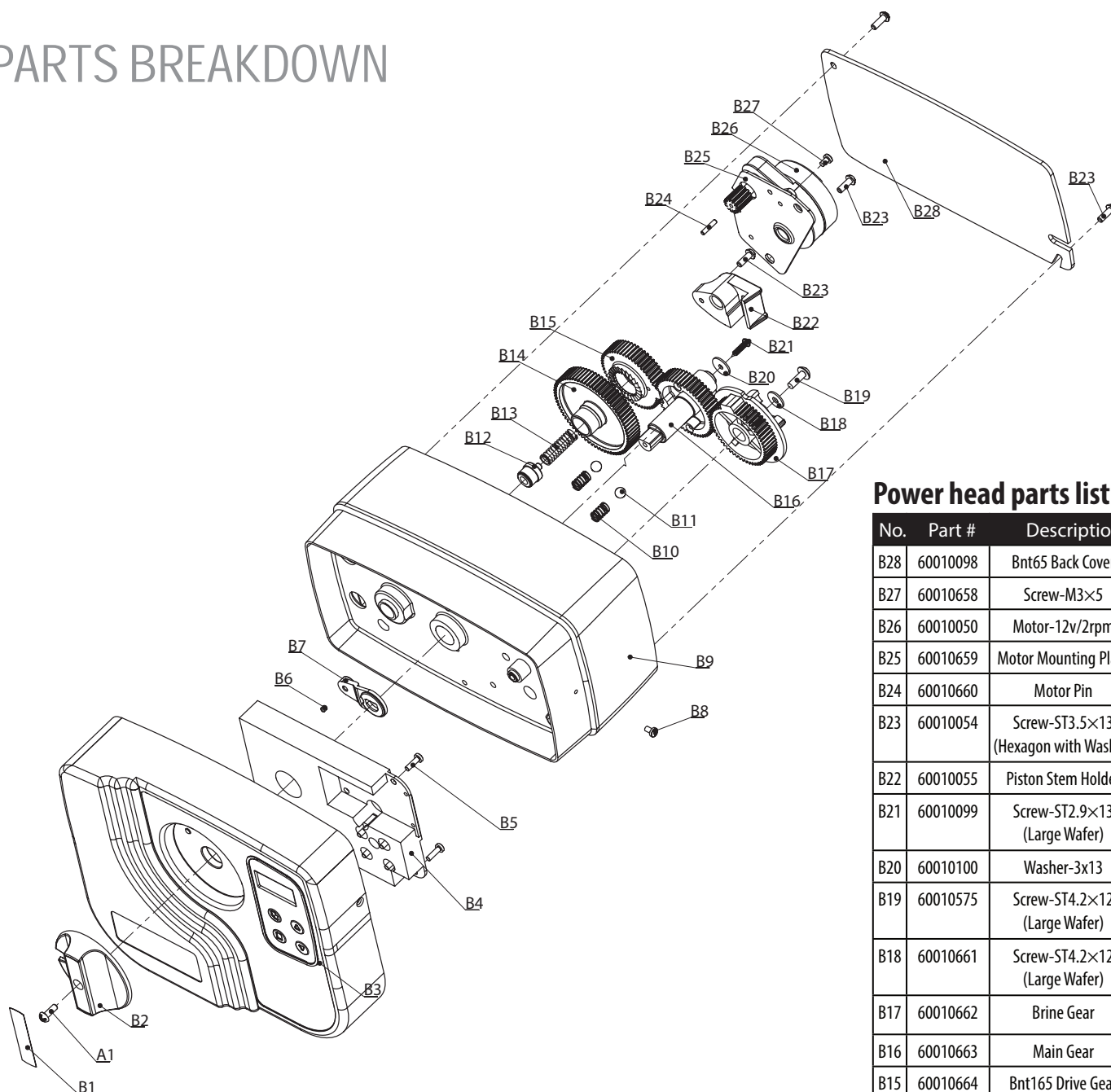
# PARTS BREAKDOWN



## Downflow Softener

Model	Mineral Tank Size	Tank # (Natural Color)	Tank # (Black Color)	Tank # (Blue Color)	Distrubutor#	Valve #	Media Bed
Softener Downflow (Single Tank)							
75	8 x 44	25010025	25010027	25010026	50010005	10010014	95600
100	9 x 48	25010034	25010036	25010035	50010005		95601
150	10 x 54	25010049	25010051	25010050	50010005		95606
200	12 x 52	25010058	25010060	25010059	50010005		95609
250	13 x 54	25010064	25010066	25010065	50010010		95610
300	14 x 65	25030001 and 50040039	Not Available	Not Available	50010010		95604

# PARTS BREAKDOWN



## Power head parts list

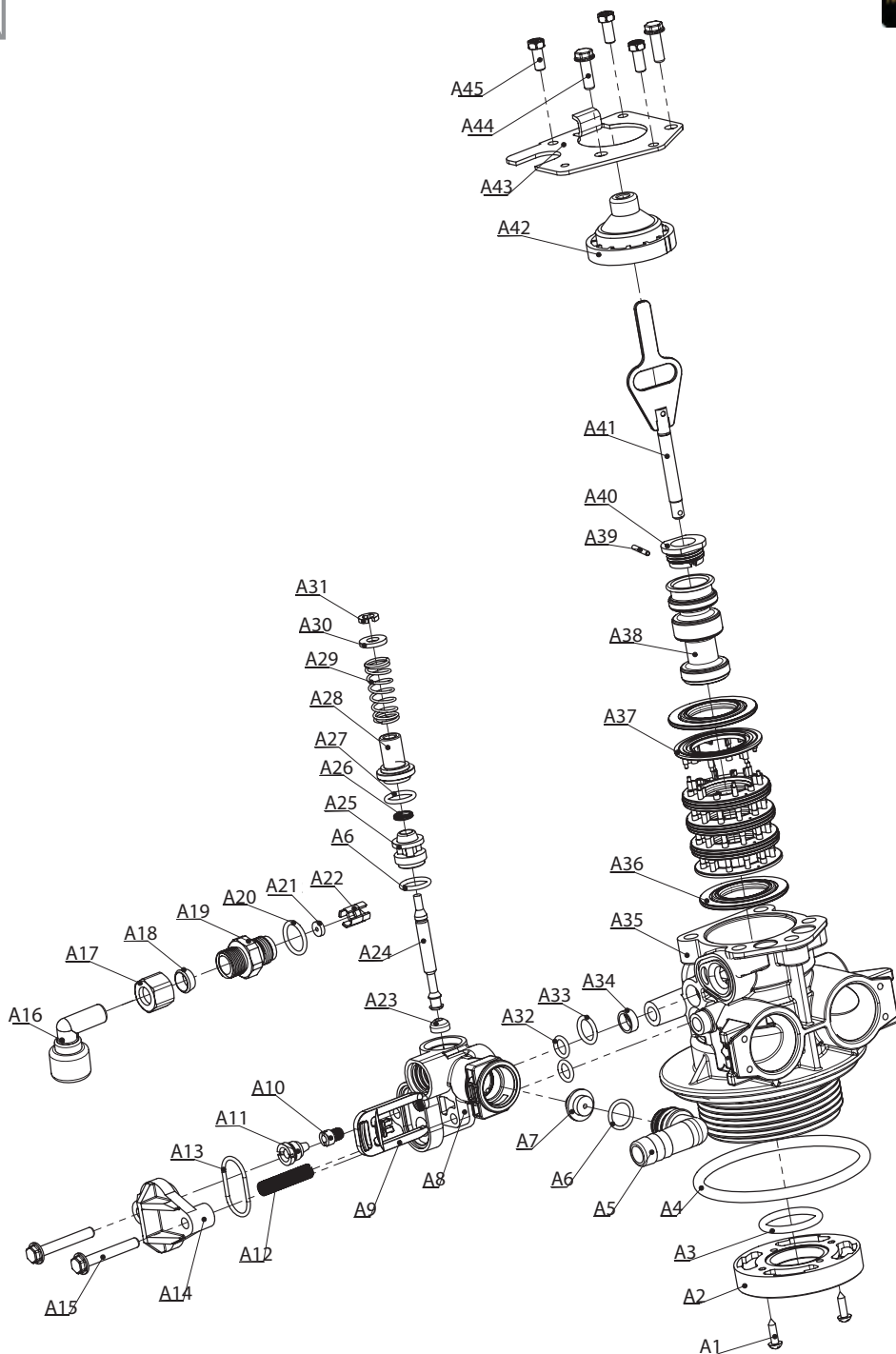
No.	Part #	Description	Qty
B28	60010098	Bnt65 Back Cover	1
B27	60010658	Screw-M3×5	2
B26	60010050	Motor-12v/2rpm	1
B25	60010659	Motor Mounting Plate	1
B24	60010660	Motor Pin	1
B23	60010054	Screw-ST3.5×13 (Hexagon with Washer)	4
B22	60010055	Piston Stem Holder	1
B21	60010099	Screw-ST2.9×13 (Large Wafer)	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	60010662	Brine Gear	1
B16	60010663	Main Gear	1
B15	60010664	Bnt165 Drive Gear	1
B14	60010677	Idler Gear	1
B13	60010103	Spring Idler	1
B12	60010666	Spring Retainer	1
B11	60010667	Ball-1/4inch	2
B10	60010668	Spring Detent	2
B9	60010669	Bnt65 Housing	1
B8	60010295	Screw-ST2.9×10 (CSK)	2
B7	60010671	Magnet Holder	1
B6	60010672	Magnet-φ3×2.7	1
B5	60010673	Screw-ST2.9×10	5
B4	60010107	Bnt165 PCB Board	1
B3	60010345	Bnt165 Front Cover	1
B2	60010675	Bnt65 Knob	1
A1	60010574	Screw-ST3.5×13	1
B1	80080003	Bnt65 Knob Label	1

Part #	Description	Qty
60010052	Transformer	1
60010105	Transformer Ext. Cable	1
60010115	Meter Cable 165 / 465 / 565 / 765	1
60010123	Power Cable	1

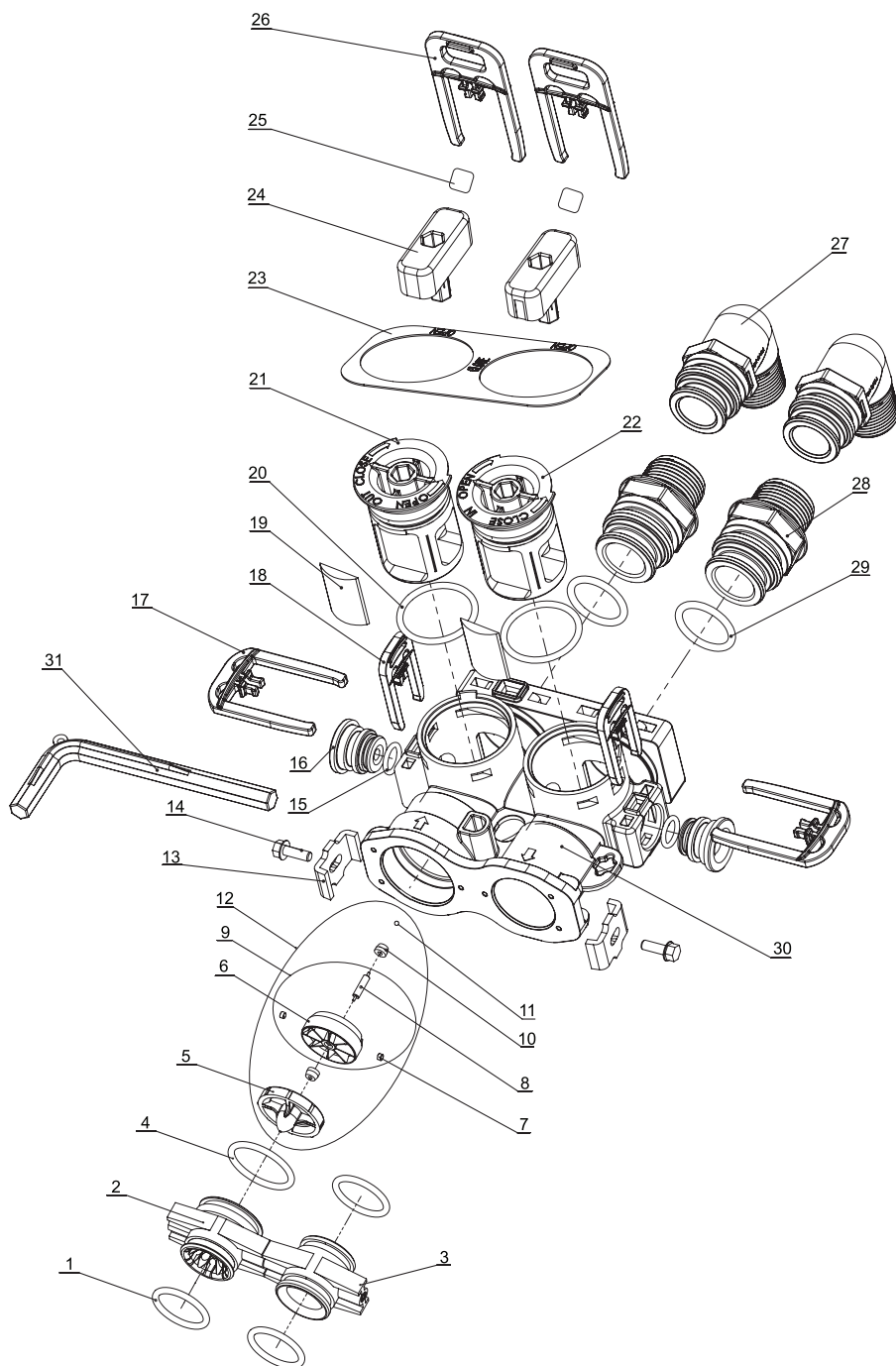
# PARTS BREAKDOWN

## 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 BREAKDOWN



## Bypass Parts List





No.	Part # (Water Group)	Part # (Manufacturer)	Description	Qty
32	60010267	05010108	Grey Meter Cable cc	1
31	60010006	70020007M	Bypass Tool	1
30		05056212	063 Bypass Body	1
29	60010026	26010143	O-ring on Inlet and Outlet	2
28	60010019	21319011N	Straight 1" NPT Inlet and Outlet	2
27	60010023	21319036N	Elbow 3/4" NPT Inlet and Outlet	2
26	60010025	21709003N	Secure Clip Inlet and Outlet	2
25	60010740	50040086	Direction Indication Label	2
24	60010740	05056220	Bypass Knob	2
23	60010740	61045012	Bypass Indication Plate	1
22	60010740	05056213	Bypass Shaft(Inlet)	1
21	60010740	05056214	Bypass Shaft(Outlet)	1
20	60095614	05030013	O-ring(30×2.65)	2
19	60010740	05056149B	Shaft Seal	2
18	60010069	05056172N	Plug Clip(Red)	2
17	60010740	21709004	Shaft Clip(Red)	2
16	60010209	05056146M	Bypass Plug	2
15	60010044	05056134	O-ring(12×2)	2
14	60010126	13000327	Screw M4×12	2
13	60010046	05056044B	SS Clip	2
12	60010238 *60010308	02170264	Meter Spare Parts	1
11		05040129	Bush Ball	1
10		05010019	Bush	2
9		02170263	Meter Assy	1
8		05010107	Impeller Pin	1
7		05010104	Magnet	2
6		05010105	Impeller	1
5		05010077	Impeller Support	1
4	60010102	26010046	O-ring(27×3)	1
3	60010079	05056025M	Valve-Bypass Connector(Inlet)	1
2	60010101	05010083N	Valve-Bypass Connector(Outlet)	1
1	60010562	05056129	O-ring(23×3)	3

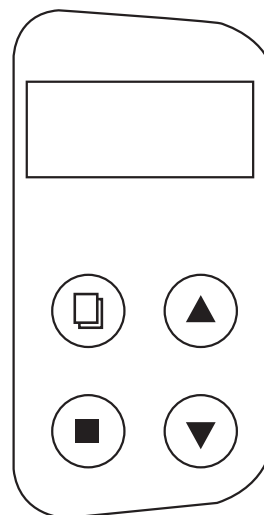
\*After 03/18 refer to '# 80150452 Manual Replacing Bypass & Grey Meter Cable'

# MASTER PROGRAMMING

## Familiarize with Button Configuration:

### Key Pad Configuration:

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



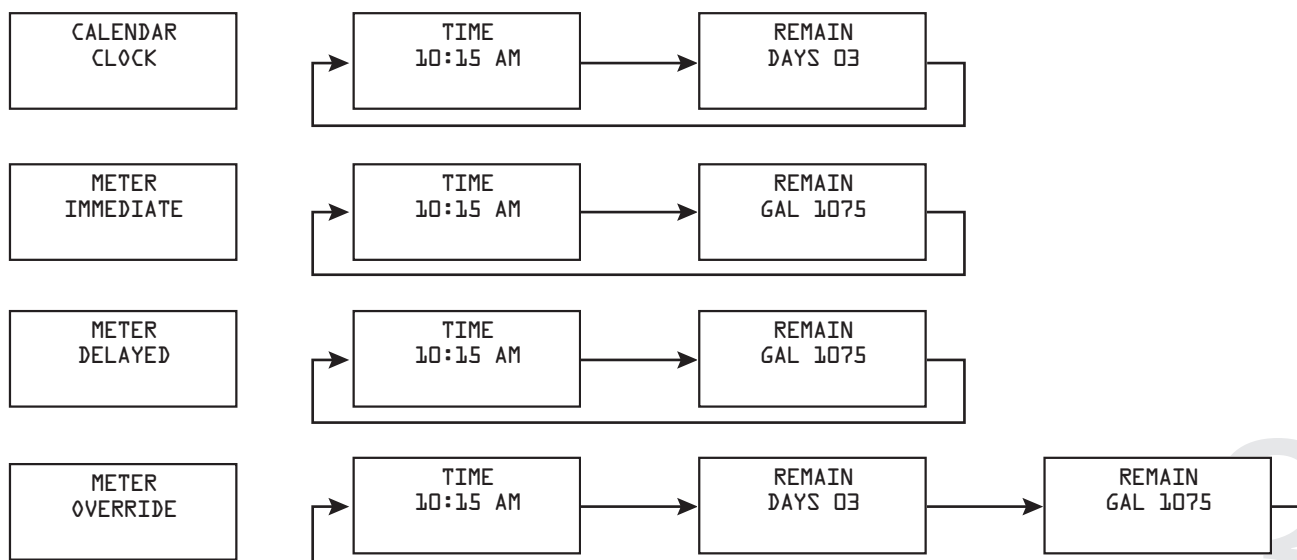
## PROGRAMMING LEVELS

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

PROGRAM LEVEL	USER ACCESS
MASTER (III)	These settings are programmed by the factory. The settings are important for the operation of the valve that should only be changed by a qualified person.
FACTORY (II)	These settings are programmed by the factory and should be adjusted when the valve is assembled into a unit or system. It contains important settings so the valve will operate properly for the type of system it is intended for. The settings should only be changed by qualified person.
USER SETTINGS(I)	These settings are programmed when the unit is installed. The settings should only be adjusted by a qualified person.

## MAIN DISPLAY OPTIONS

The main display page according to the regeneration mode setting. The display will alternate between the time of day, remaining gallons, and remaining days..



# MASTER PROGRAMMING

## MASTER OPTIONS (LEVEL III)

Press SETkey (■) UPor DOWNkey (▲) (▼) Hold until you hear a beep (3 seconds).

Press UPor DOWNkey (▲) (▼) to advance each page.

Press SETkey (■) to initiate a change.

Press UPor DOWNkey (▲) (▼) to change value.

Press SETkey (■) to accept value. Press UP or DOWN key (▲) (▼) to advance to next page.

## VALVE TYPE

The valve must be designated as either SOFTENER or FILTER. This change will determine what options are available in the Factory Settings.

## METER RATIO

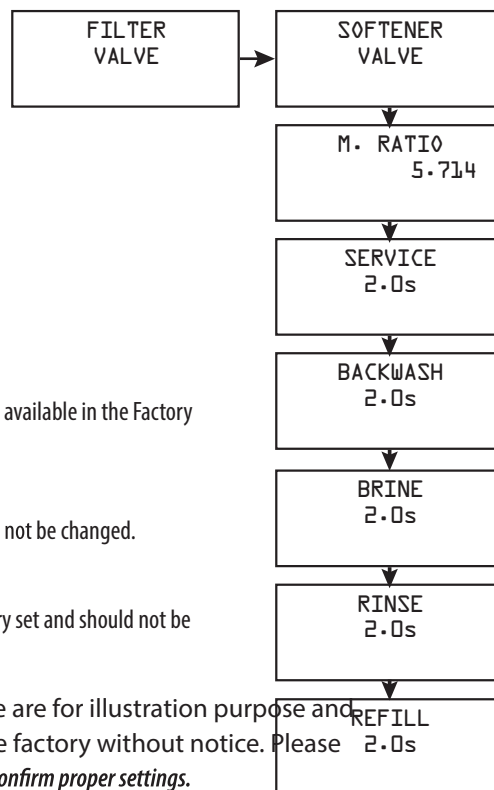
The meter ratio calibrates the pulse from the flow meter into gallons. This value is factory set and should not be changed.

## DELAY SETTINGS

The delay settings are used to precisely stop the motor / piston in the correct position. This value is factory set and should not be changed.

### CAUTION:

The values in this page are for illustration purpose and can be changed by the factory without notice. Please *contact Customer Service to confirm proper settings.*



# MASTER PROGRAMMING

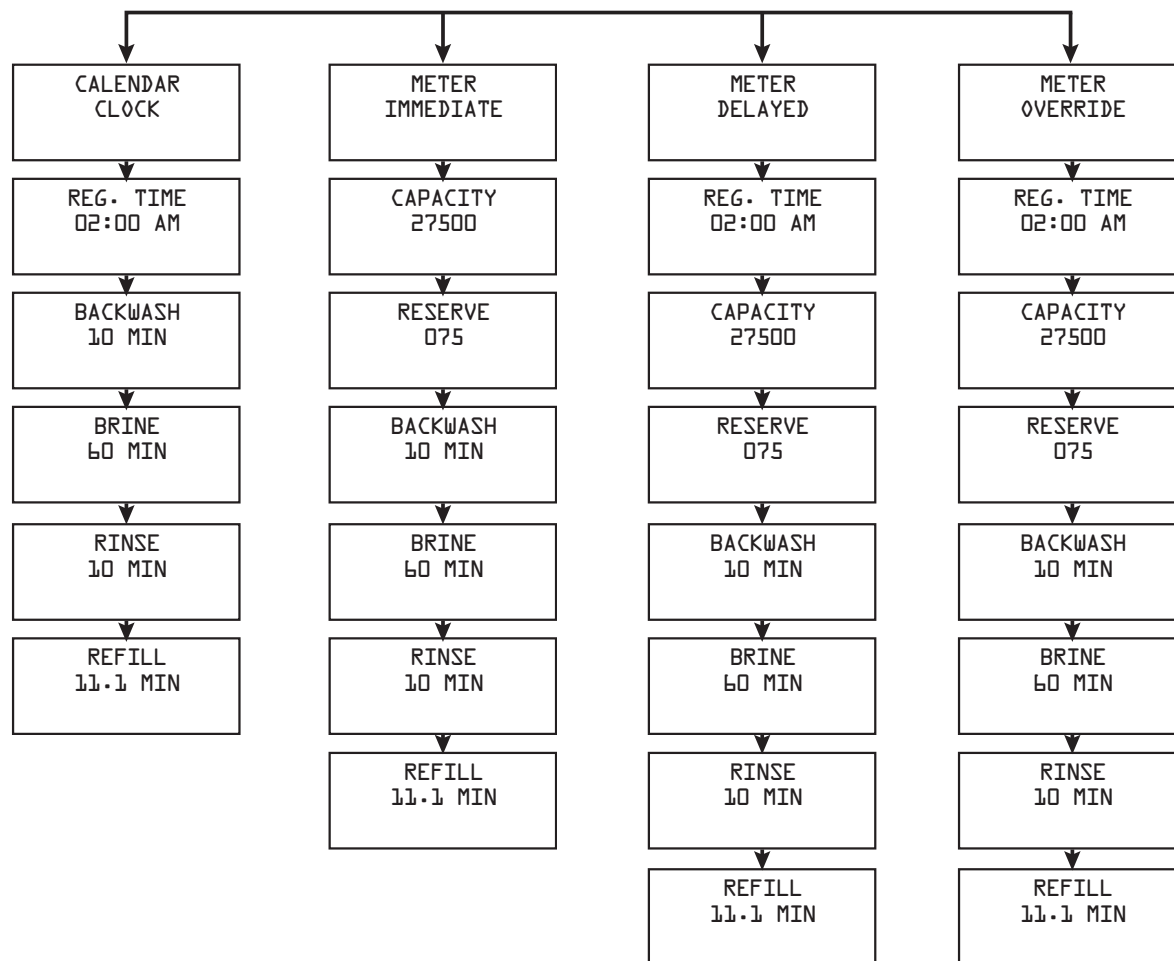
## FACTORY OPTIONS (LEVEL II)

Press UP or DOWN key   Hold until you hear a beep (3 seconds).

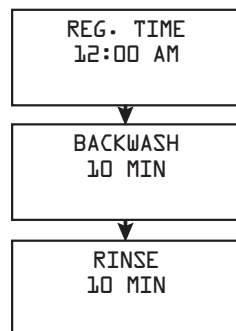
Press UP or DOWN key   to change value.

Press SET key  accept change and advance to next page.

## SOFTENER MODE



## FILTER MODE



### CAUTION:

The values in this page are for illustration purpose and can be changed by the factory without notice. Please contact Customer Service to confirm proper settings.



# MASTER PROGRAMMING

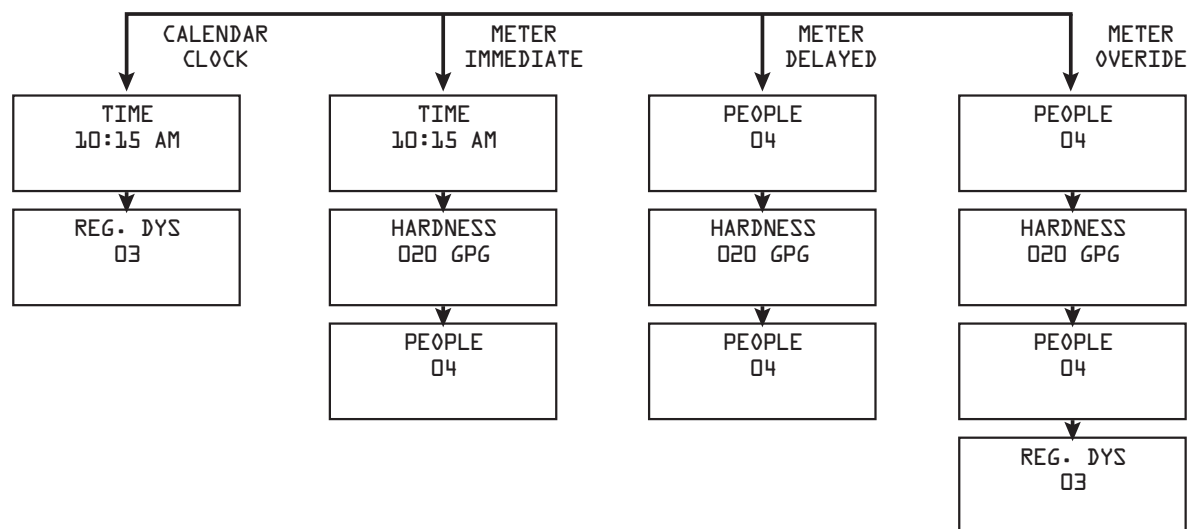
## USER SETTINGS (LEVEL I)

Press SETkey 

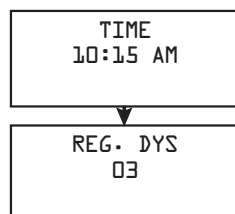
Press UP or DOWNkey   to change value.

Press SELECT to accept change and advance to next page.

### SOFTENER MODE



### FILTER MODE



#### CAUTION:

The values in this page are for illustration purpose and can be changed by the factory without notice. Please *contact Customer Service to confirm proper settings.*

