



165 Series Water Softener

 IAPMO R & T Certified
against CSA B483.1

 IAPMO R & T Certified
against NSF/ANSI 44

- 1. Page 21 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

4655 McDowell Rd. W
Phoenix, AZ 85035

Table of Contents

READ THIS PAGE FIRST BEFORE STARTING INSTALLATION	3
EFFICIENCY STATEMENT	4
HOW YOUR WATER CONDITIONER WORKS	5
SPECIFICATIONS	
SPECIFICATION / SYSTEM DIMENSIONS	6
BRINE TANK DIMENSIONS	7
INSTALLATION	
UNPACKING / INSPECTION OF TWIN TANK MODEL	9
UNPACKING / INSPECTION OF CABINET MODEL	11
BEFORE INSTALLATION	13
PREPARATIONS	14
PREPARATIONS / INSTALLATION STEPS	15
INSTALLING BRINE TANK	16
WATER SOFTENER INSTALLATION	17
CABINET WATER SOFTENER INSTALLATION	18
OPERATION	
STARTUP INSTRUCTIONS	19
MAINTENANCE INSTRUCTIONS	21
RES-UP® FEEDER INSTALLATION INSTRUCTIONS	23
SERVICING 165 VALVE	25
REPLACEMENT	
TIMER REPLACEMENT	26
REPLACING THE BYPASS AND METER CABLE	27
CLEAN INJECTOR ASSEMBLY / PISTON AND/OR BRINE VALVE ASSEMBLY REPLACEMENT	28
REPLACE METER ASSEMBLY / REPLACE MOTOR	29
REPLACE DRAIN LINE FLOW CONTROL / REPLACING PCBS	30
PARTS BREAKDOWN	31
PARTS	
POWERHEAD	32
VALVE BODY	33
BYPASS	34
CABINET	35
MASTER PROGRAMMING	36

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.
- ▶ 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. 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

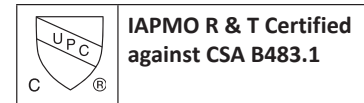
WARNING: used to indicate a hazard which could cause injury or death if ignored.

EFFICIENCY STATEMENT

This product is efficiency rated according to NSF/ANSI 44. The stated efficiencies are valid only at the specified salt dosages and maximum service flow rate.

PERFORMANCE DATA SHEET						
MODEL NUMBER	165-75	165-100	165-150	165-200	165-250	165-300
Qty High Capacity Resin	0.75 ft3	1.0 ft3	1.5 ft3	2.0 ft3	2.5 ft3	3.0 ft3
Rated Service Flow (gpm)	7.5	11.0	11.2	12.4	12.6	12.9
Pressure Drop at Rated Service Flow (psi)	7.0	15.0	15.0	15.0	15.0	15.0
Rated Softening Capacity (grains)	9,609 @ 2.25lbs	13,269 @ 3lbs	20,443 @ 4.5lbs	27,258 @ 6lbs	32,559 @ 9lbs	40,887 @ 9lbs
Efficiency (grains/lb salt)	4,271	4,543	4,543	4,543	4,543	4,543
Max. Flow Rate to Drain (gpm)	2.0	2.0	2.4	3.5	4.0	5.0
Working Pressure	Min.20 • Max. 125 psi					
Operating Temperature	Min 39 - Max. 100 degrees Fahrenheit					

These softeners conform to NSF/ANSI 44 for the specific performance claims as verified and substantiated by test data. These models are efficiency rated. The efficiency rating is valid only at the stated salt dose and maximum service flow rate. They have a demand initiated regeneration (D.I.R.) feature that complies with specific performance specifications intended to minimize the amount of regenerant brine and water used in their operation. These softeners have a rated softener efficiency of not less than 3350 grains of total hardness exchange per pound of salt (based on sodium chloride) and shall not deliver more salt than their listed ratings. The rated salt efficiency is measured by laboratory tests described in NSF/ANSI Standard 44. These tests represent the maximum possible efficiency that the systems can achieve. Operational efficiency is the actual efficiency after the system has been installed. It is typically less than the efficiency due to individual application factors including water hardness, water usage, and other contaminants that reduce the softener's capacity. These systems are not intended for use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system. For best results, use plain, white block salt. Refer to Installation/operation manual and warranty for further details on installation, parts and service, maintenance and further restrictions or limitations to the use of the product.



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					
165-75	19,875	16,500	10,500	8.0	1.5	8 x 44	0.75	15.8 x 32.1	250	84
165-100	26,500	22,000	14,000	10.0	2.0	9 x 48	1.00	18.1 x 34.5	300	104
165-150	39,750	33,000	21,000	12.0	2.4	10 x 54	1.50	18.1 x 34.5	300	133
165-200	53,000	44,000	28,000	13.0	3.0	12 x 52	2.00	20.3 x 37.4	400	153
165-300	79,500	66,000	42,000	15.0	5.0	14x65	3.00	20.3 x 37.4	400	220
165-75C	19,875	16,500	10,500	8.0	2.0	9 x 35	0.75	13.0x22.5x44.0	300	84
165-100C	26,500	22,000	14,000	10.0	2.4	10 x 35	1.00	13.0x22.5x44.0	300	104

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,

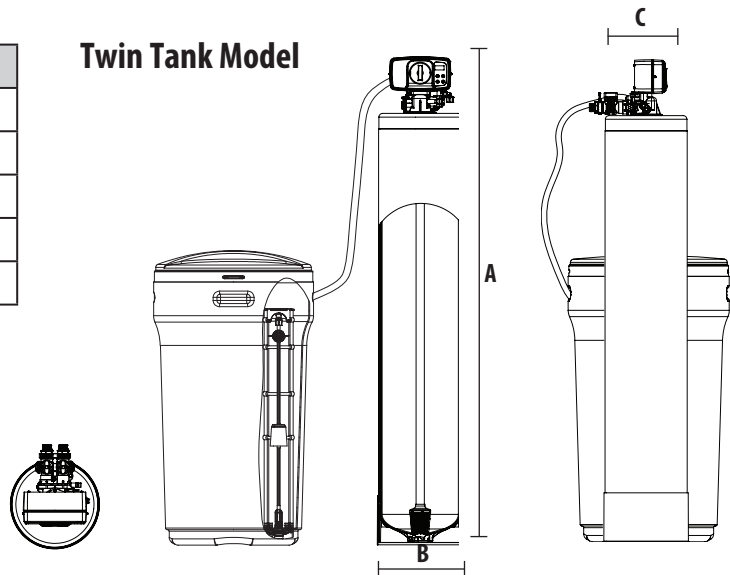
without obligation to change previously manufactured products or to note the change.

- * 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

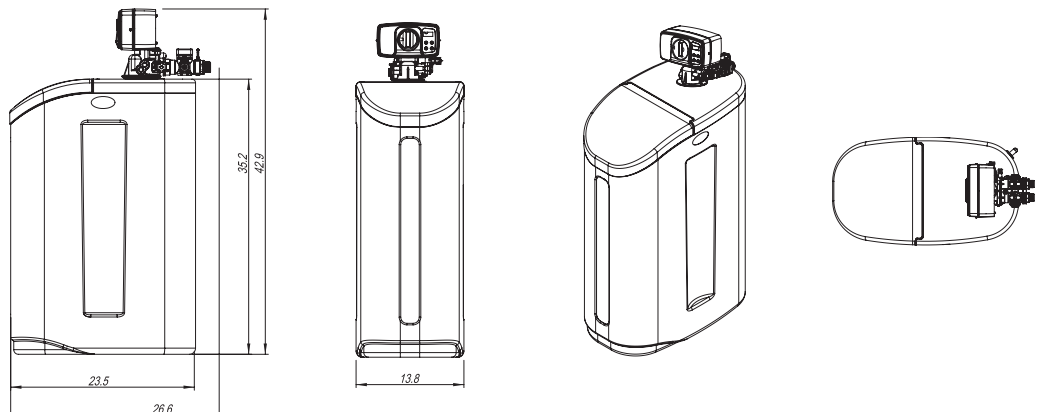
SYSTEM DIMENSIONS

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



Cabinet Model

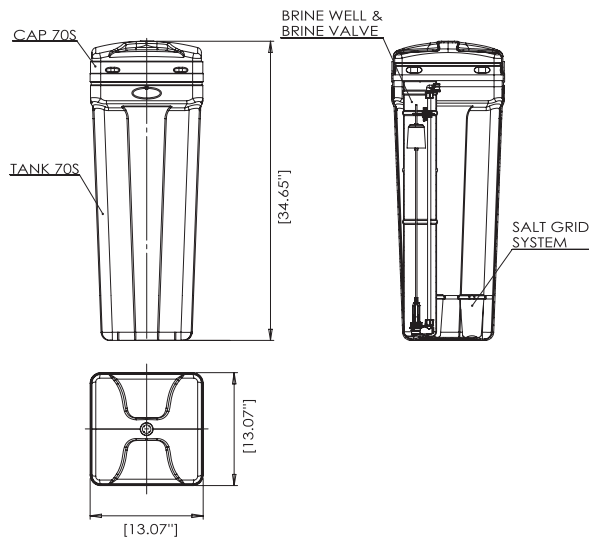


BRINE TANK DIMENSIONS

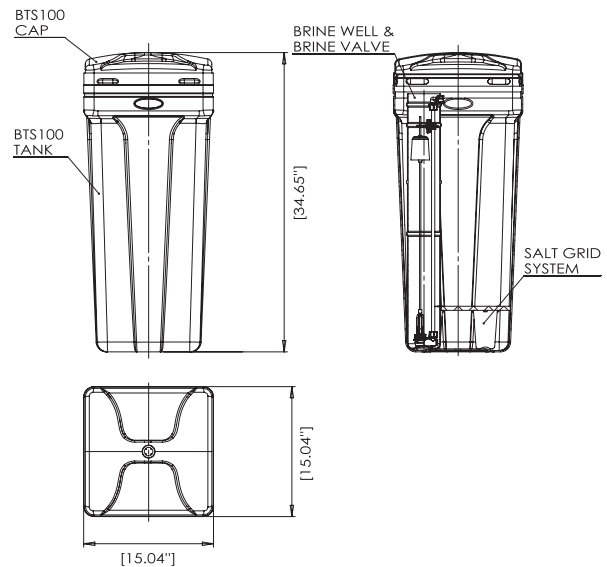
Model	Color	Liquid Volume		Tank Dimensions (inches)	5 Pack Carton Dimensions (inches)	Salt Capacity	
		US Gal	Liters	L x W x H	L x W x H	Lbs	Kg
Brine Tanks							
BTR-70	Black	20.3	76.5	15.8 x 32.1	16.7 x 16.7 x 61.0	185.0	92.8
BTR-70	Blue	20.3	76.7	15.8 x 32.1	16.7 x 16.7 x 61.0	185.0	92.8
BTR-100	Vanilla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

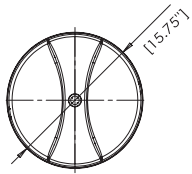
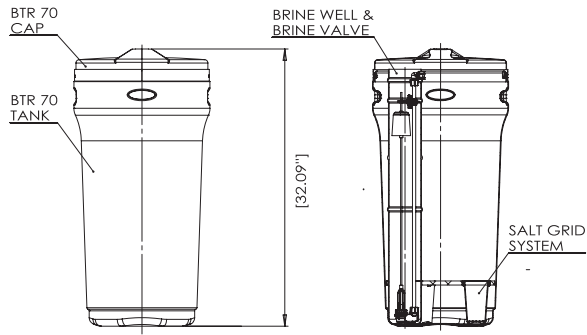
Dimensions BTS70



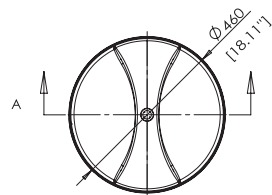
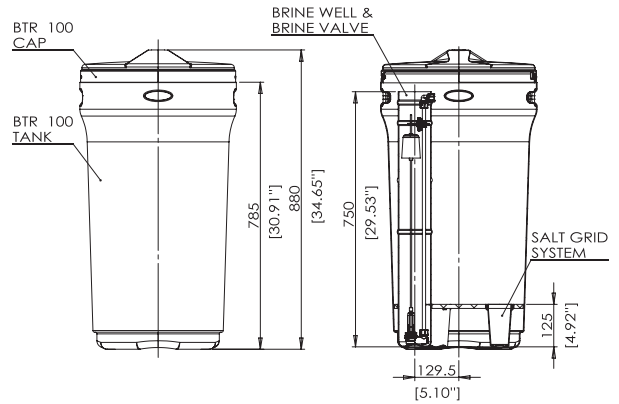
BTS100



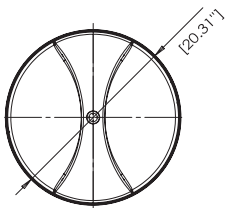
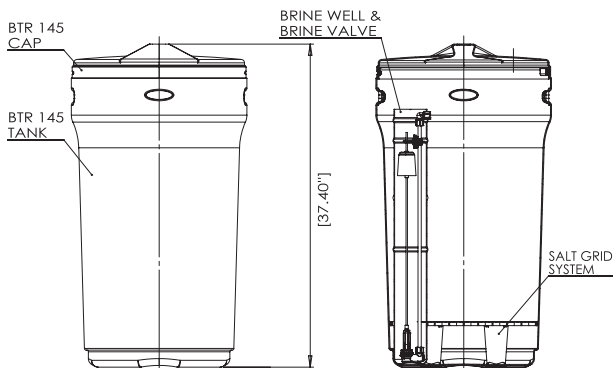
BTR70



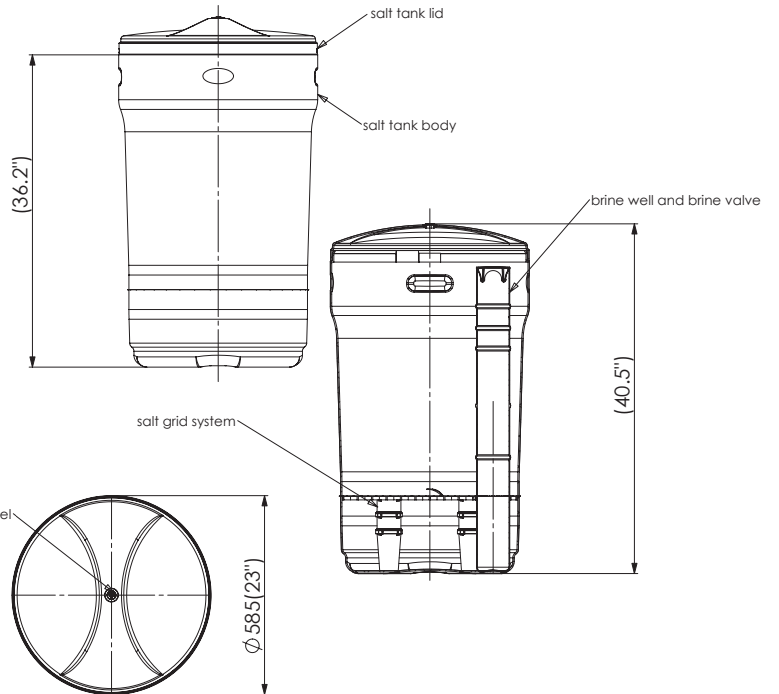
BTR100



BTR145



BTR200



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.

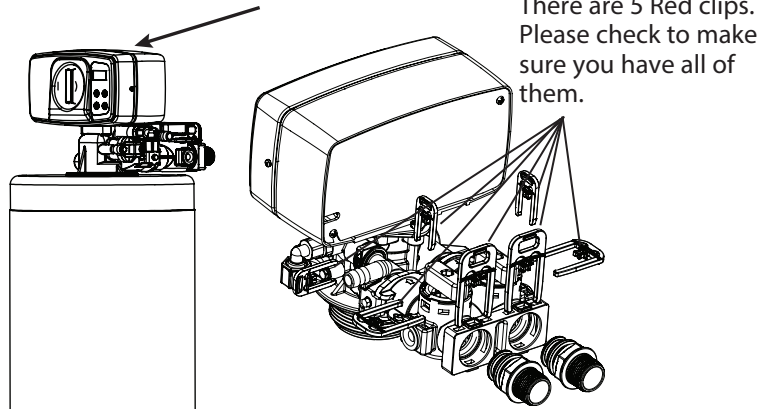
Small parts, needed to install the Softener, are in a parts box. To avoid loss of the small parts, keep them in the parts bag until you are ready to use them.

What is included in the box?

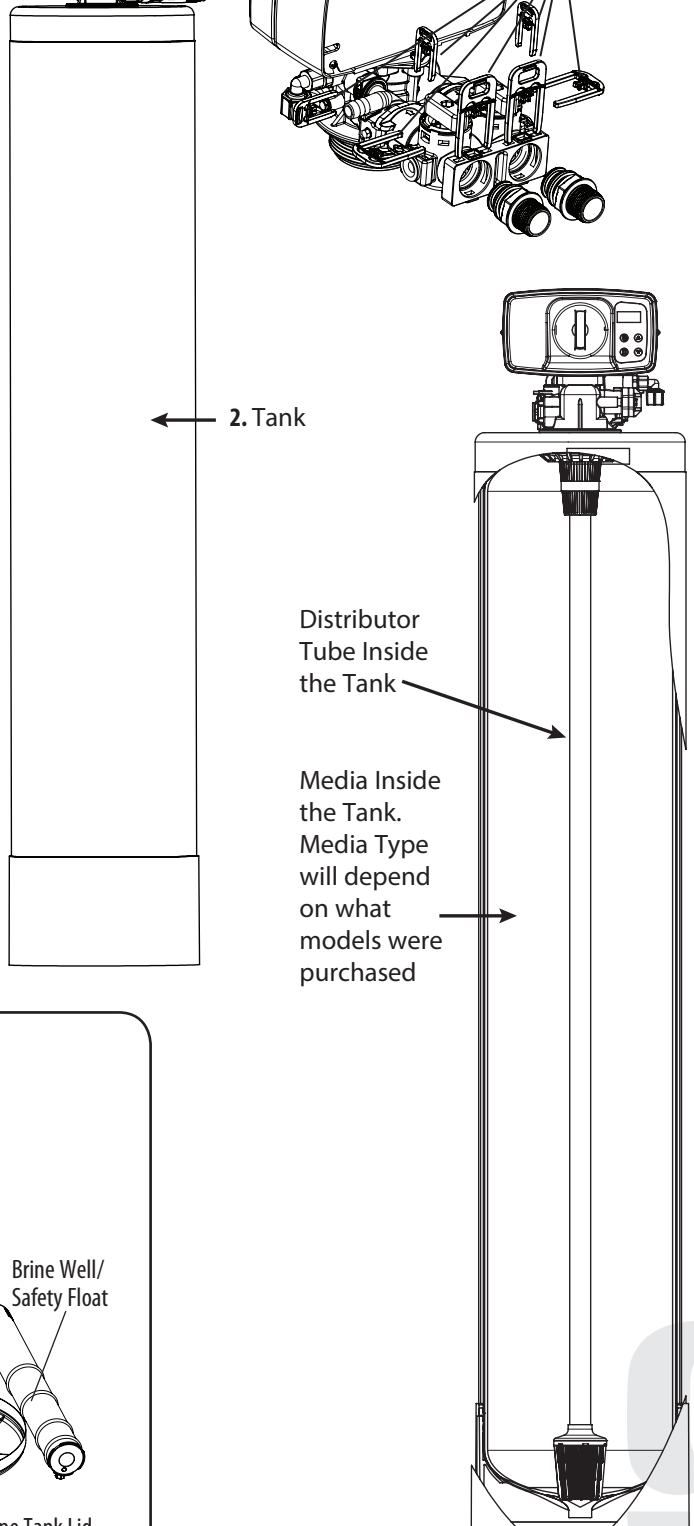
For Models 75,10,15,20, you will expect the following:

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

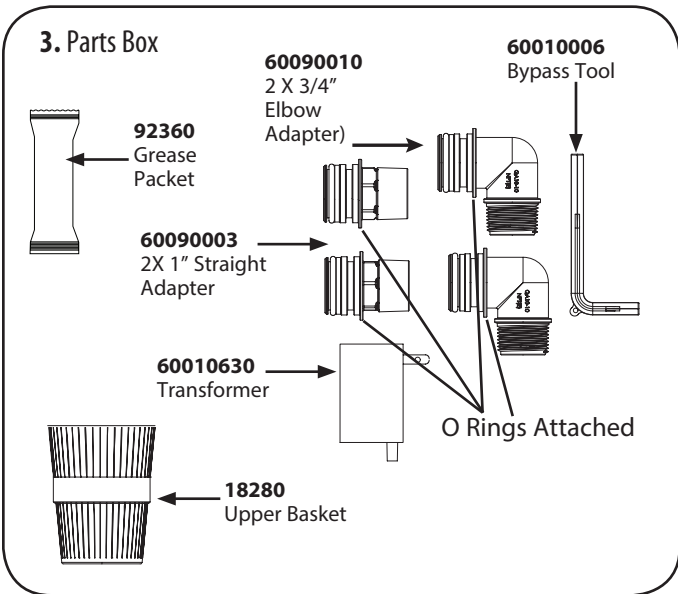
1. Control Valve



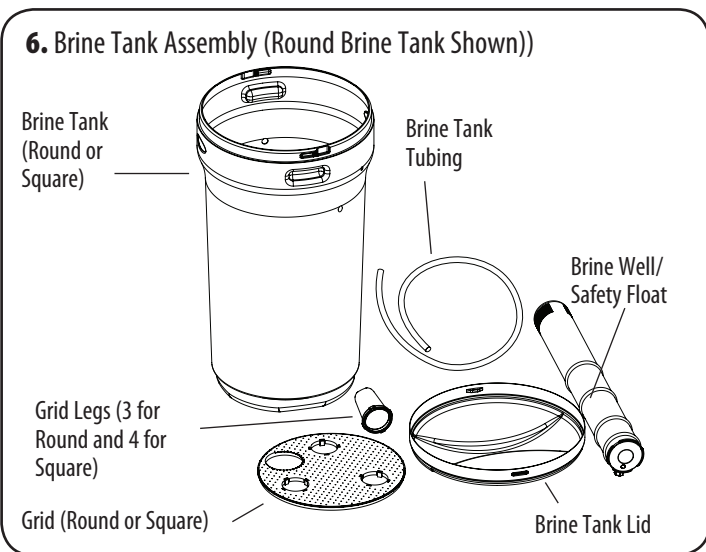
2. Tank



3. Parts Box



6. Brine Tank Assembly (Round Brine Tank Shown)



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

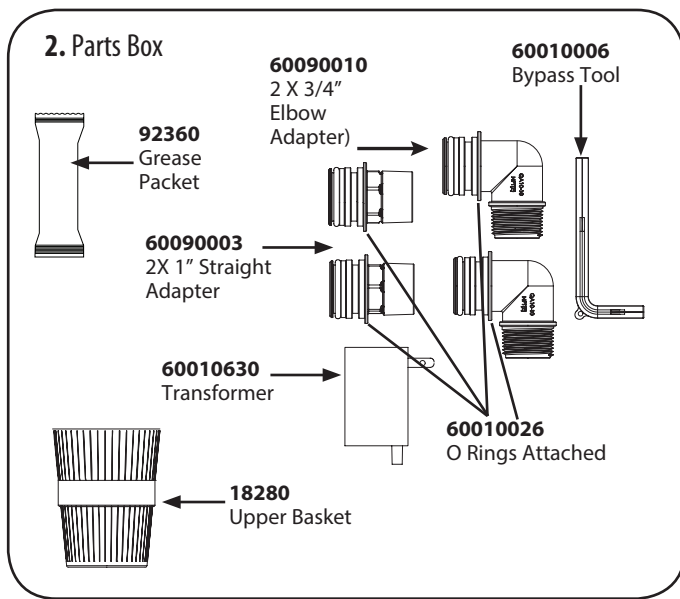
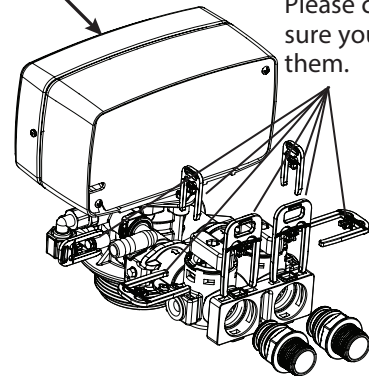
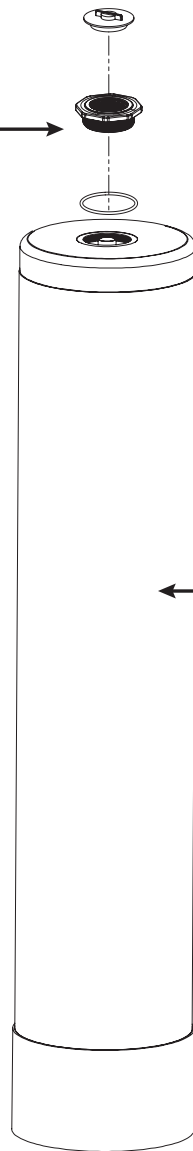
What is included with 30 and 40 models?

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

2. Control Valve

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

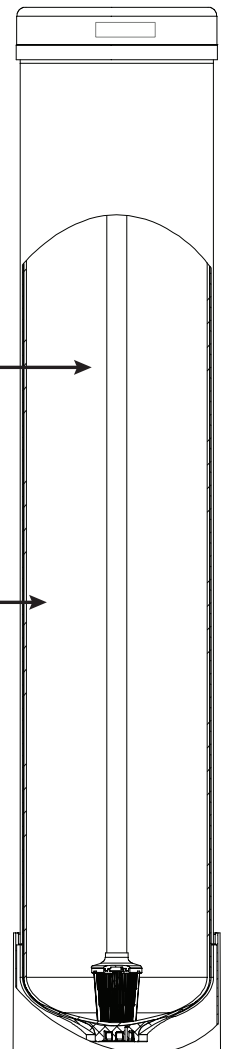
Models 30, 40 will get Adaptor and Oring Shown



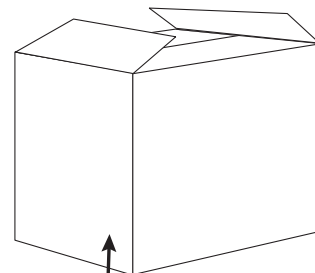
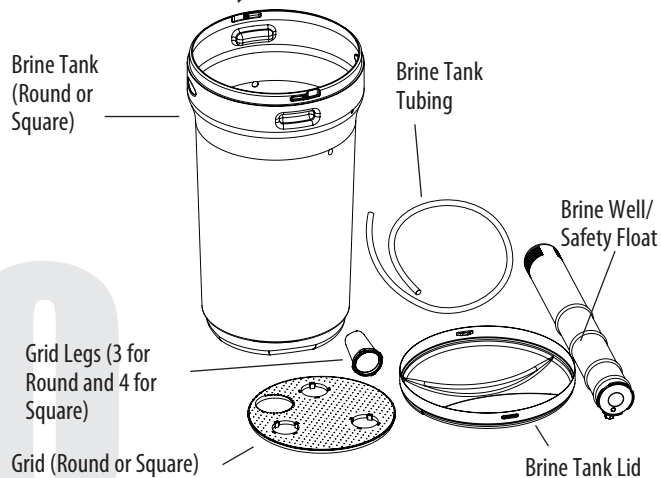
1. Tank

Distributor Tube Inside the Tank

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



5. Brine Tank Assembly

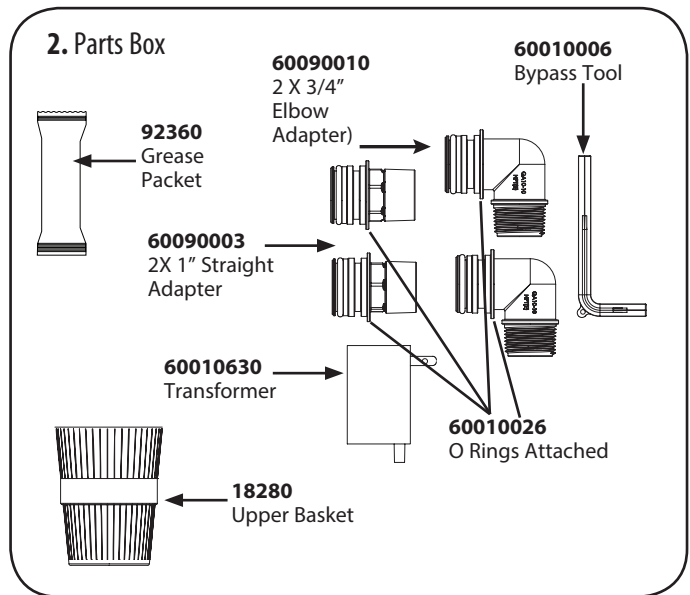
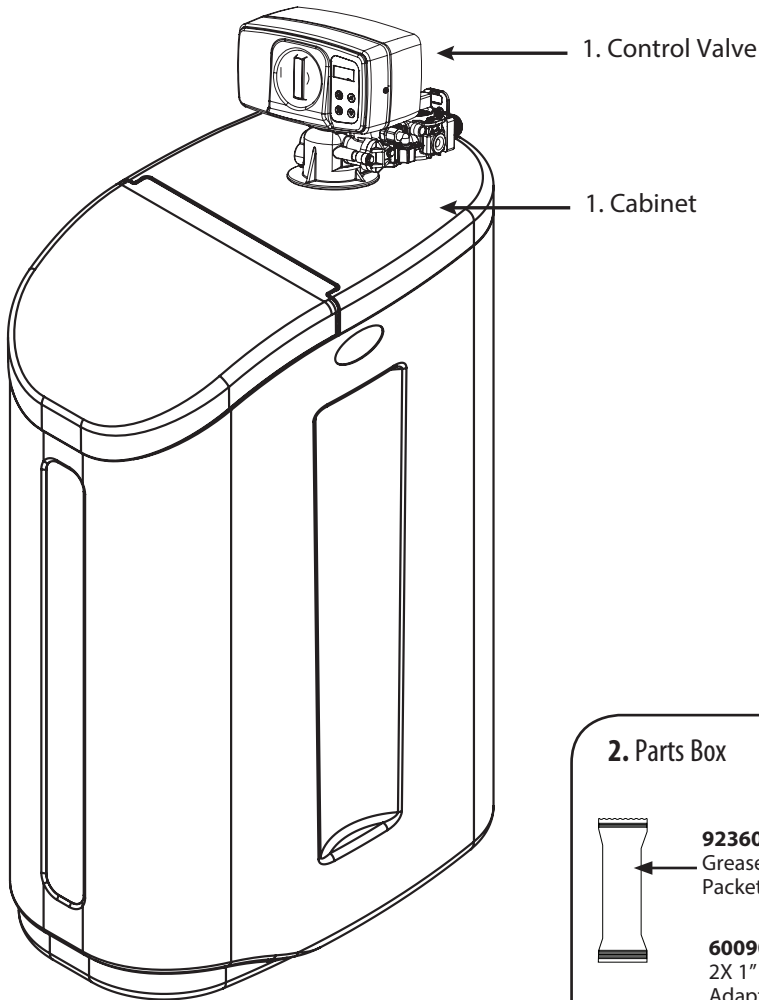


3. Media Box (Qty depends on Models)

10

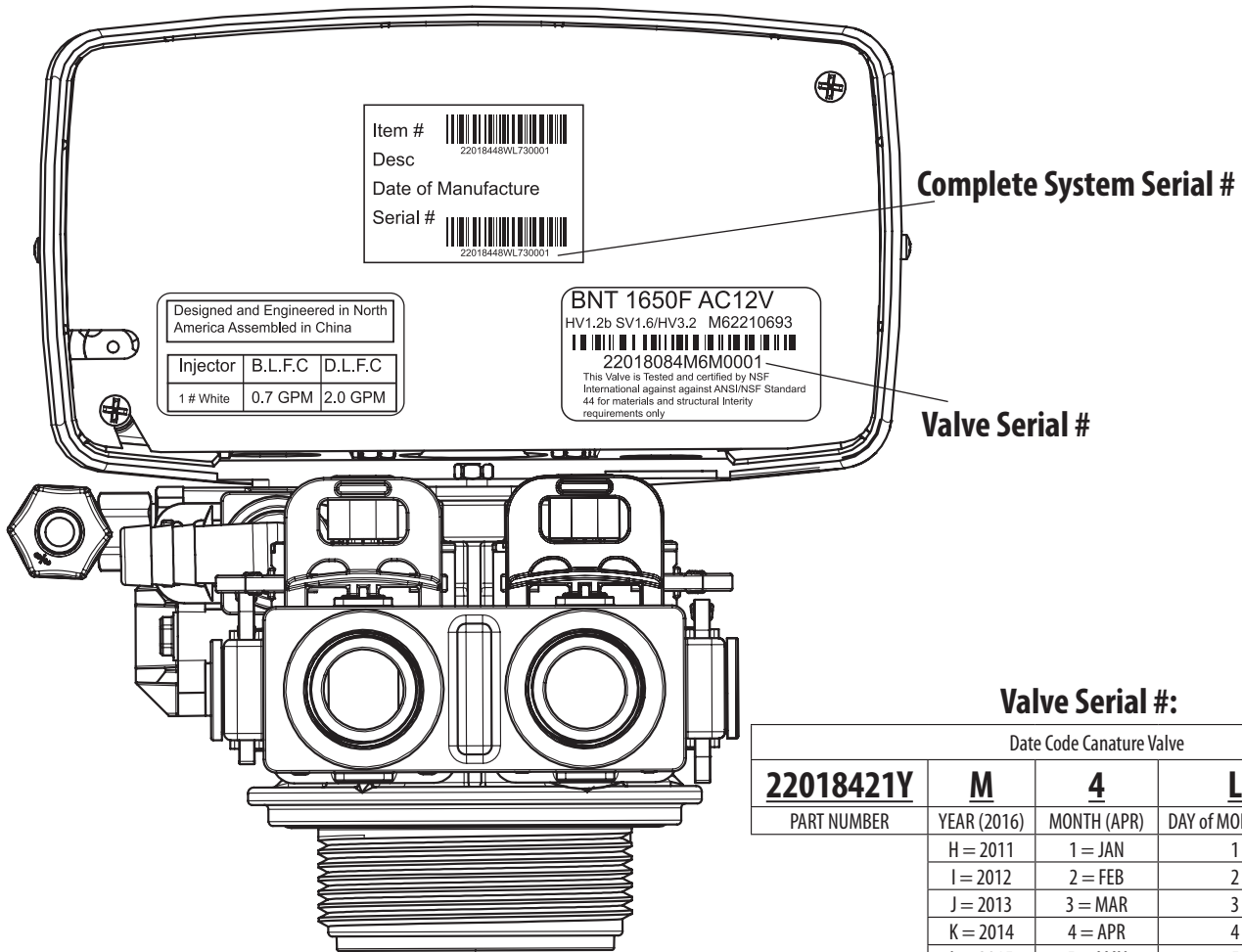
UNPACKING / INSPECTION OF CABINET MODEL

1. Cabinet with Valve attached
2. Parts Box
3. Drain Line and Hose Clamp (Not Included with some models)



Check Valve Type and Valve Serial

Check to make sure the valve type is what you ordered. The serial # label on the left will show 1650 (DF) for downflow valve and 1650 (UF) for upflow valve The right Sticker shows the serial # of the control valve. The middle Sticker is dataplate which provides information of Serial # and Date of Manufacture of complete system. Both Serial # labels are important for troubleshooting.



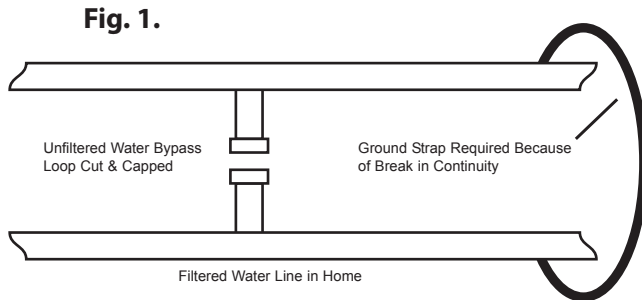
Valve Serial #:

Date Code Canature Valve				
22018421Y	M	4	L	0001
PART NUMBER	YEAR (2016)	MONTH (APR)	DAY of MONTH (21)	BATCH NUMBER
H = 2011	1 = JAN	1		
I = 2012	2 = FEB	2		
J = 2013	3 = MAR	3		
K = 2014	4 = APR	4		
L = 2015	5 = MAY	5		
M = 2016	6 = JUN	6		
N = 2017	7 = JUL	7		
O = 2018	8 = AUG	8		
P = 2019	9 = SEP	9		
Q = 2020	A = OCT	A = 10		
	B = NOV	B = 11		
	C = DEC	C = 12		
		D = 13		
		E = 14		
		F = 15		
		G = 16		
		H = 17		
		I = 18		
		J = 19		
		K = 20		
		L = 21		
		M = 22		
		N = 23		
		O = 24		
		P = 25		
		Q = 26		
		R = 27		
		S = 28		
		T = 29		
		U = 30		
		V = 31		

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 165 Softener*

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

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

Do not turn the filter unit upside down.

To Insure this Product Functions Properly:

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

MECHANICAL:

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

Tools Required for Installation:

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

- ▶ Two adjustable wrenches
- ▶ Additional tools may be required if modification to home plumbing is required.
- ▶ Plastic inlet and outlet fittings are included with the filter. To maintain full valve flow, 3/4" or 1" pipes to and from the filter fittings are recommended. You should maintain the same, or larger, pipe size as the water supply pipe, up to the filter inlet and outlet.
- ▶ Use copper, brass, or PEX pipe and fittings.
- ▶ Some codes may also allow PVC plastic pipe.
- ▶ ALWAYS install the included bypass valve, or 3 shut-off valves. Bypass valves let you turn off water to the filter for repairs if needed, but still have water in the house pipes.
- ▶ 5/8" OD drain line is needed for the valve drain. A 10' length of hose is not included with some brands.

NOTE

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



CAUTION!

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

See Fig. 1.

NOTE

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

NOTE

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

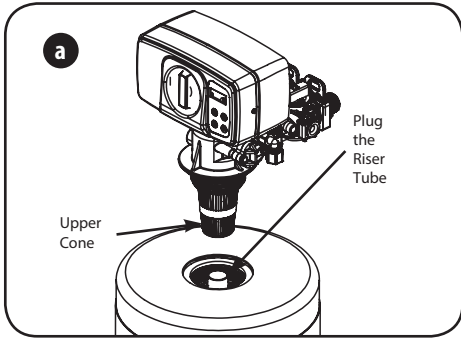
*NOTE

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

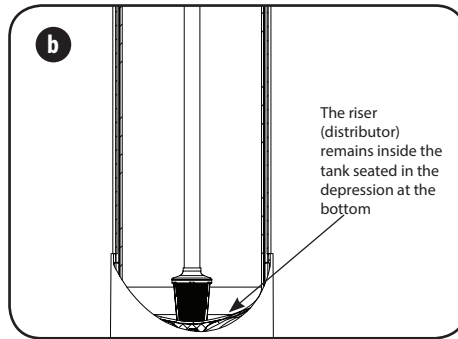
PREPARATIONS

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.

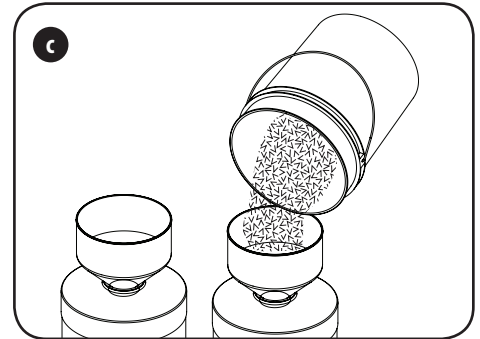
CAUTION!
The unit should be depressurized before installing or replacing media



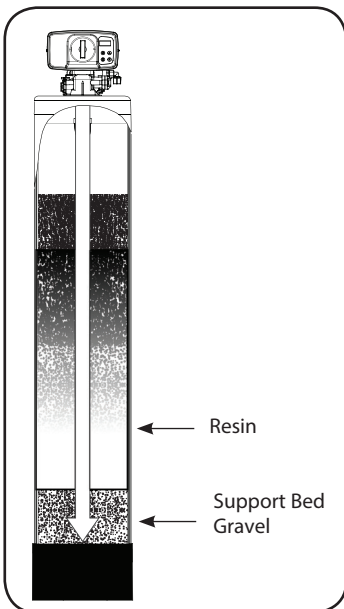
a) Lube the bottom oring (picture d) and attach the upper cone to the valve.



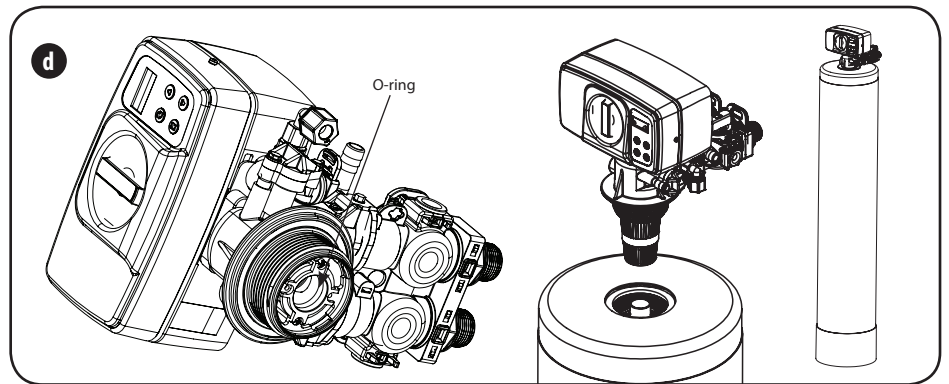
b) Temporarily plug the open end of the riser tube to ensure that no resin or gravel falls down into the distribution. The riser (distributor) remains inside the tank seated in the depression at the bottom. Plug tube with a tape. Remove after media is loaded.



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.)



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.



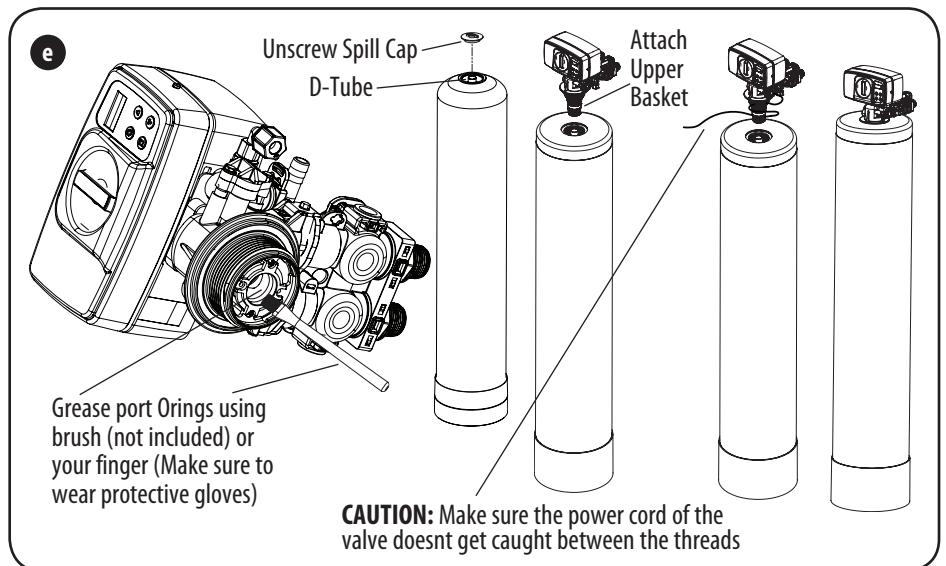
d) Unplug the riser tube, carefully position the valve over it and turn the valve into the threads in the fiberglass tank, tightening securely into tank. Note: Ensure that the internal O-ring in the valve fits securely over the riser tube. Silicone grease (part # 92360) or other food grade lubricant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

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.

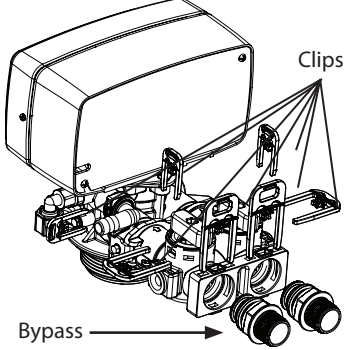
CAUTION

WEAR DUST MASK



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.

PREPARATIONS



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

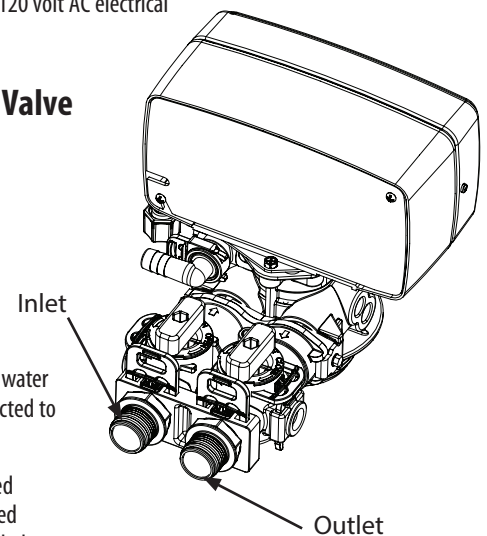
Facts to Remember When Planning Your Installation

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

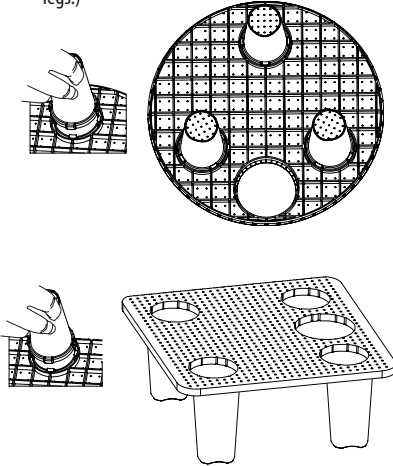
Outside faucets used to water lawns and gardens should not supply softened water. A new water line is often required to be connected to supply hard water to the inlet of the water softener and to the outside faucets. Cut the water line between where it enters the house and before any lines that branch 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

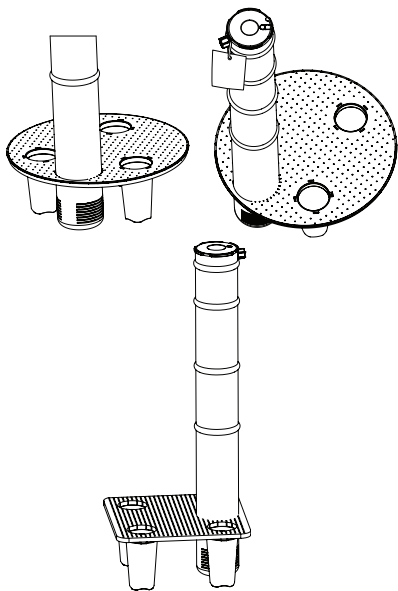


INSTALLING BRINE TANK

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



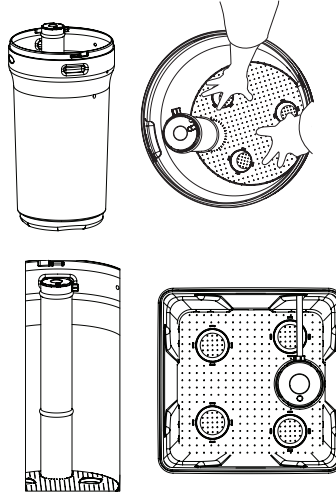
b) Insert the brine well assembly inside the grid plate as well below.



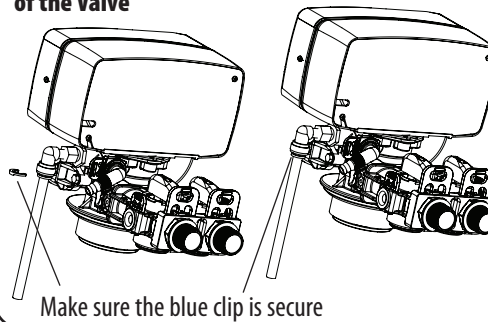
c) Drop the brine grid with brine well inside the brine tank such that the nut fitting faces the hole on the brine tank. Then press the grid evenly inside the brine tank until the brine grid legs touches the bottom of the brine tank.

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

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



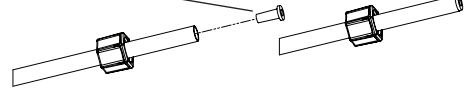
Attaching Brine Tubing to the Brine Line of the Valve



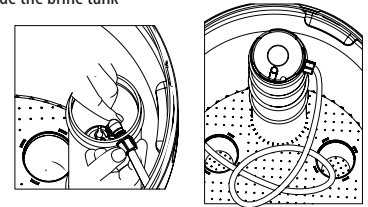
Make sure the blue clip is secure

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

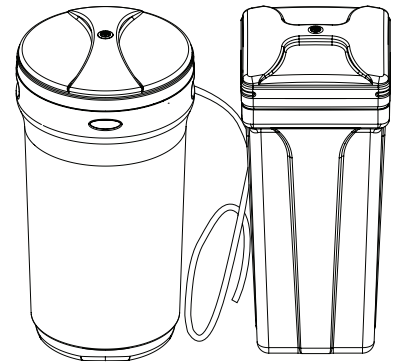
Insert Sleeve



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 below.



*NOTE

Resin Cleaner

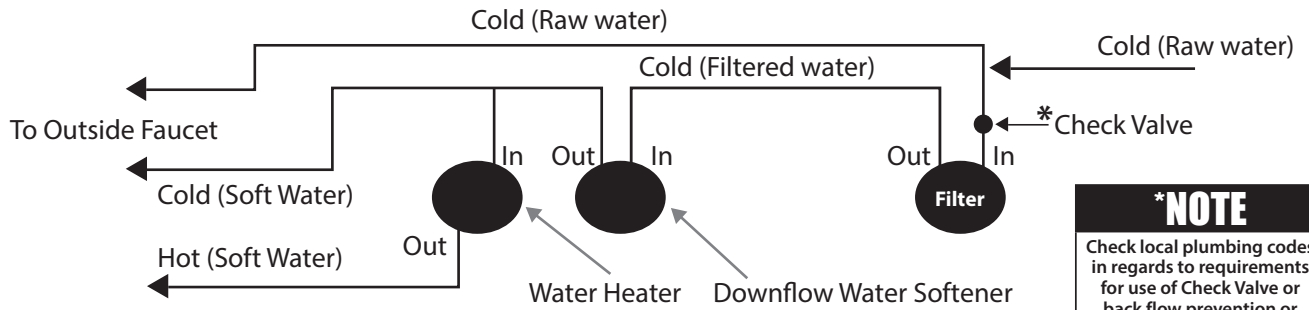
An approved resin cleaner MUST be used on a regular basis if your water supply contains iron.

See page 23 - Res-Up® Feeder Installation Instructions

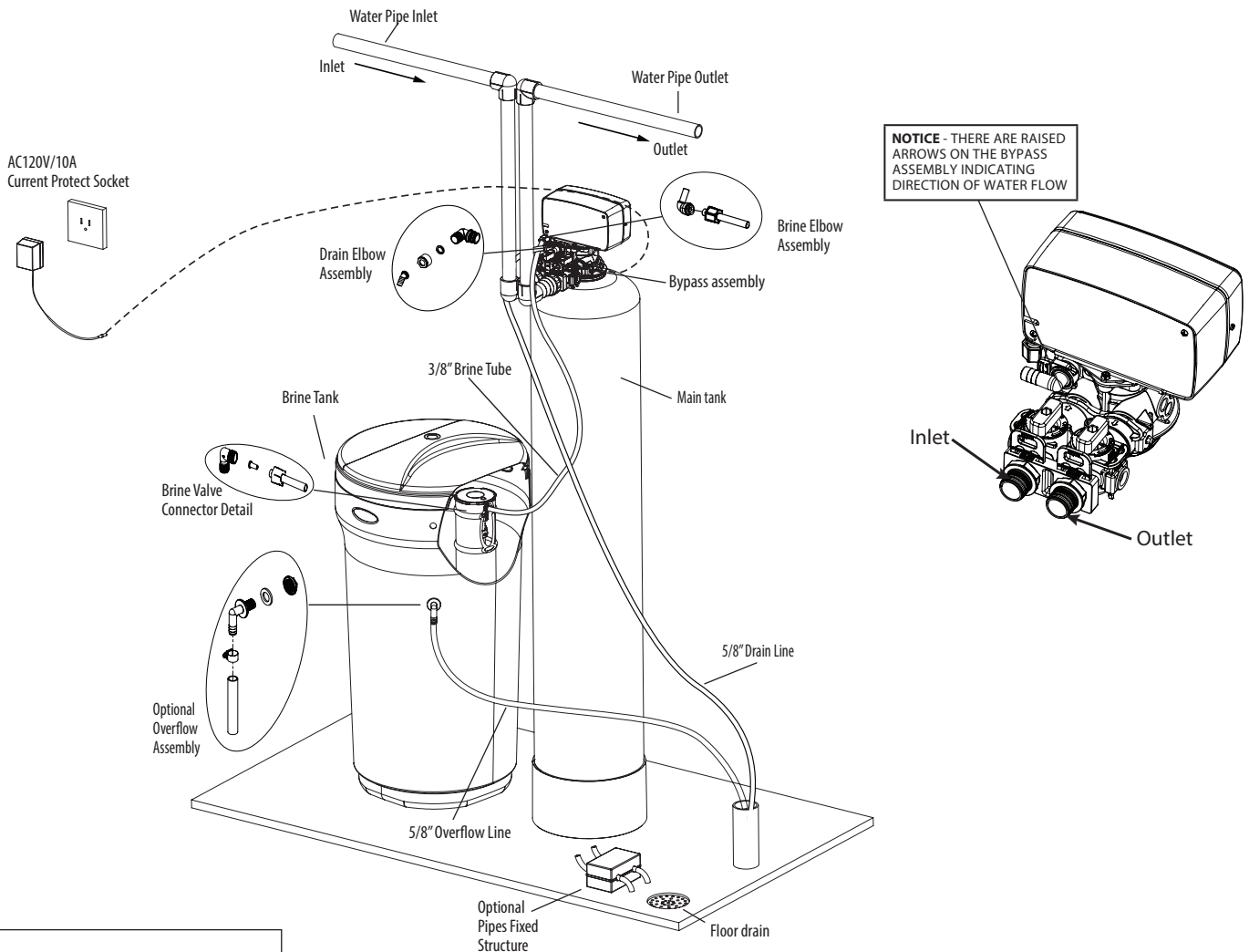
INSTALLATION

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.

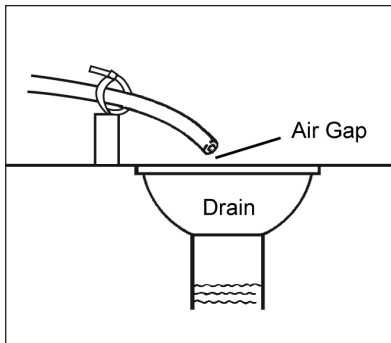
Downflow Water Softener Installation



***NOTE**
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

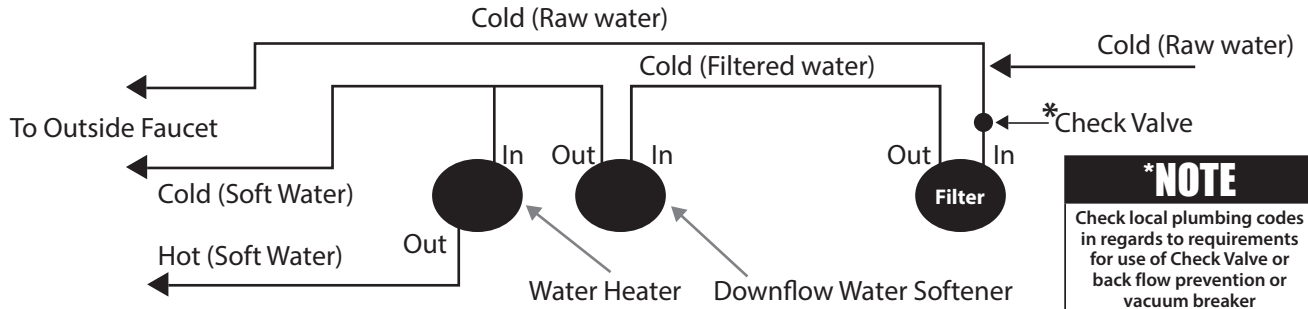


NOTE
Waste connections or drain outlet shall be designed and constructed to provide for connection to the sanitary waste system through an air-gap of 2 pipe diameters or 1 inch (22 mm) whichever is larger.

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.

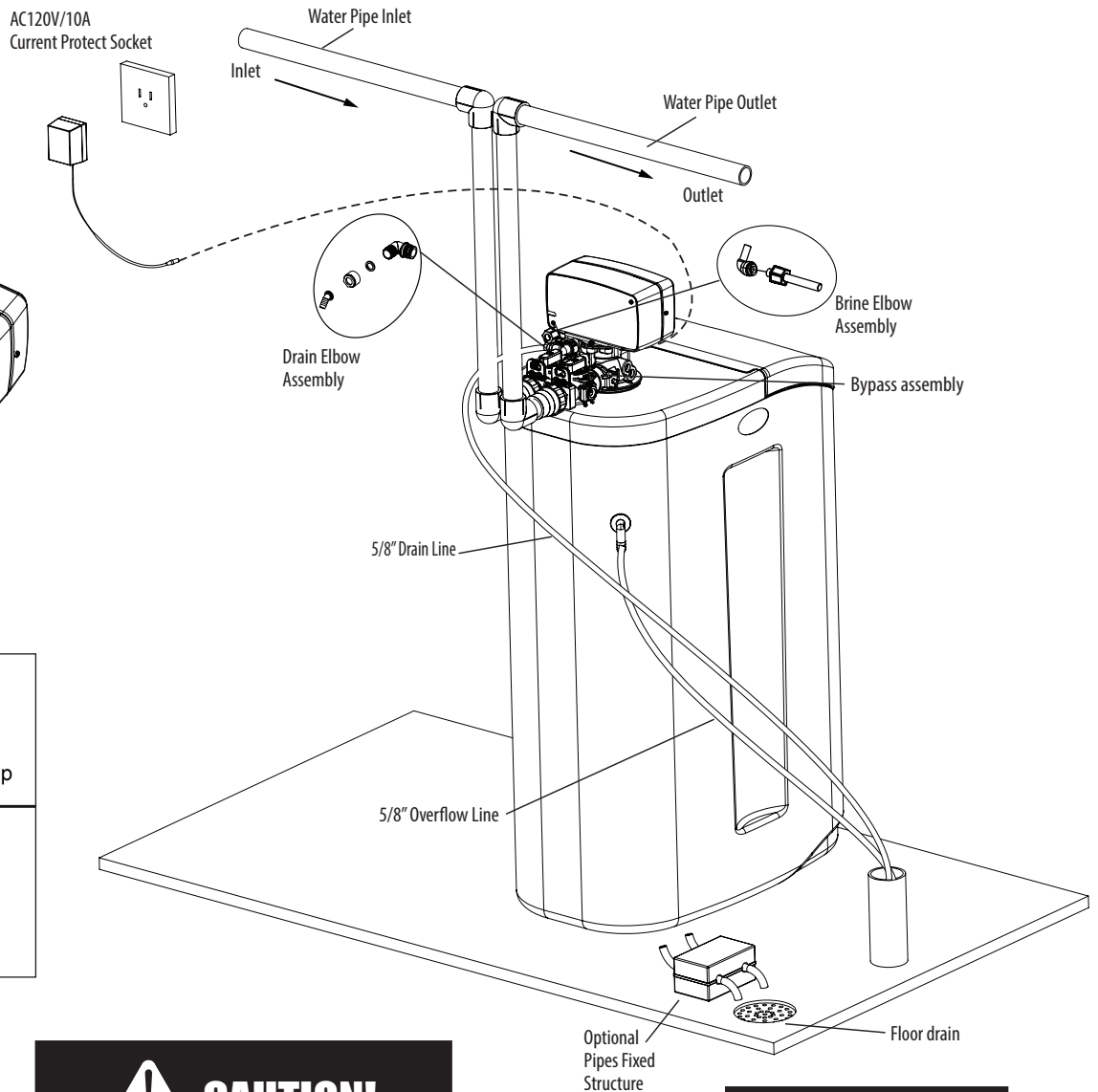
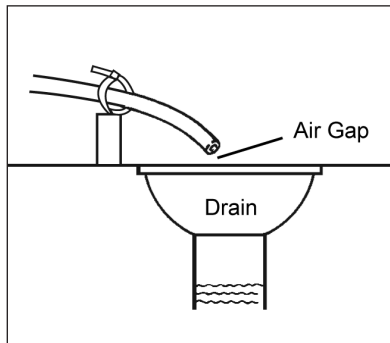
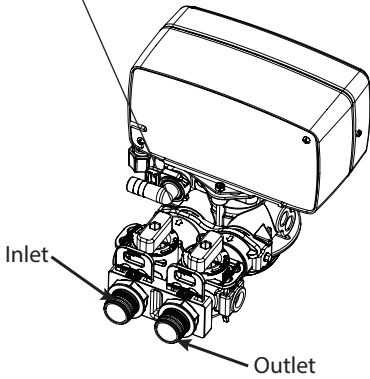
INSTALLATION

Downflow Cabinet Water Softener Installation



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

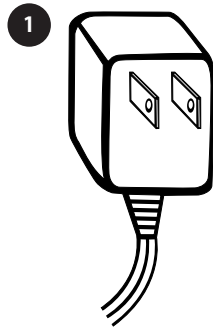
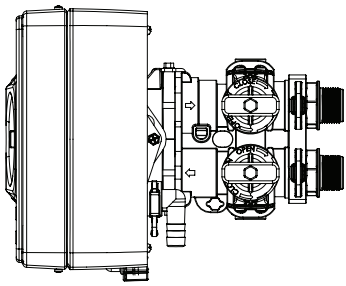
NOTICE - THERE ARE RAISED ARROWS ON THE BYPASS ASSEMBLY INDICATING DIRECTION OF WATER FLOW



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.

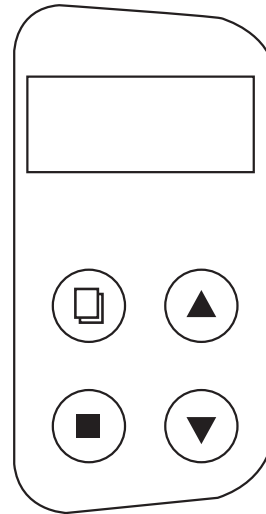
NOTE
Waste connections or drain outlet shall be designed and constructed to provide for connection to the sanitary waste system through an air-gap of 2 pipe diameters or 1 inch (22 mm) whichever is larger.

STARTUP INSTRUCTIONS



1. Connect the transformer to the valve. Plug the 12-volt transformer into a 120 VAC 60 Hz outlet.
2. 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.

Familiarize with Button Configuration:



Key Pad Configuration:



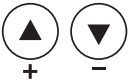
MENU

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



SET

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



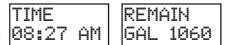
+












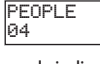
-

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

3. Power and Program the Valve

Attach the Transformer cable to the valve and plug in the transformer to the 110V Power outlet. you will notice the two screens on right will alternate.

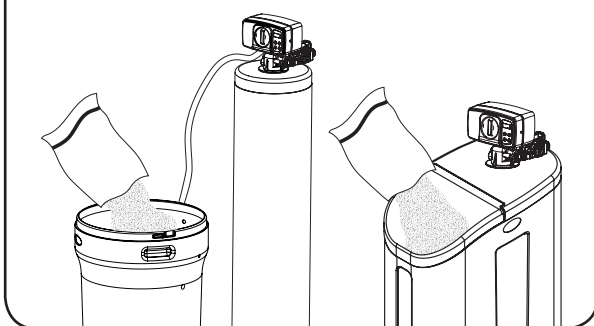


1. Press MENU key  to advance to TIME OF DAY. TIME OF DAY will flash. 
2. Press the UP or DOWN key   to adjust the TIME OF DAY. Press & hold the UP or DOWN key   to quickly advance the hour and minutes. When desired time is displayed press SET  to advance to the HARDNESS setting. HARDNESS will flash. 
3. Press the UP or DOWN key   to adjust the HARDNESS (Min 1.Max 199). When desired hardness is displayed press SET  to advance to the PEOPLE setting (Min1/Max9). People will flash. 
4. When desired number of people is displayed press SELECT to complete programming.



KEYPAD

4 Add Salt to the brine tank/cabinet



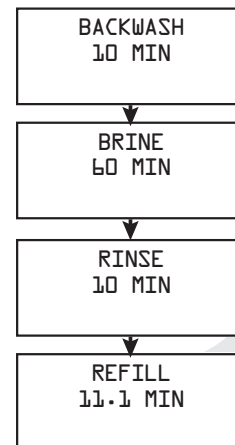
4. Put 40 kgs of crystal water softener salt in the brine tank. The unit will automatically fill the water to the correct level when it regenerates.

Manual Regeneration Using Keypad

Press "Setting Key" Once for Delayed Regenerations or Hold for 5 Seconds for Immediate Regeneration

Below is the sequence of Regeneration cycles

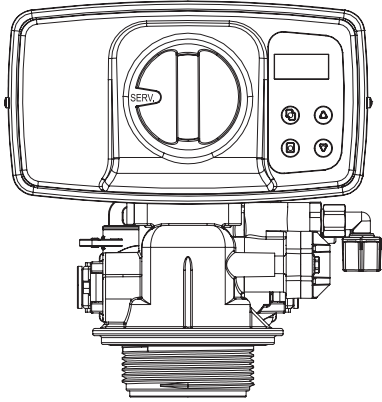
1. Backwash
2. Brine Draw and Slow Rinse
3. Rinse
4. Brine Refill



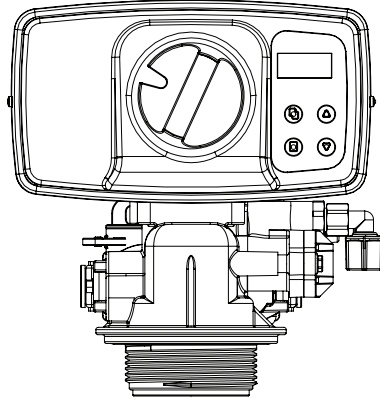
Manual Regeneration

To start an immediate regeneration turn the knob clockwise from the service position (9:00) to the 10:00 position. Within a few seconds the an immediate regeneration will begin. Using the knob you can manually advance to the next position. Pressing any button will also advance to the next position.

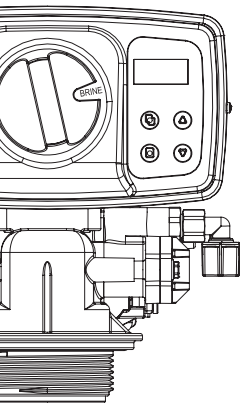
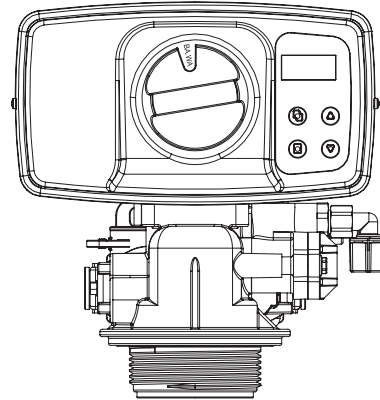
For Delayed Regeneration, Press Settings Button Once



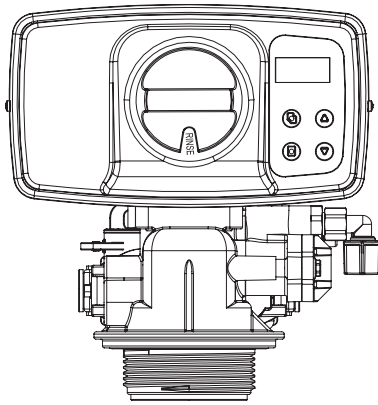
SERV.
Service



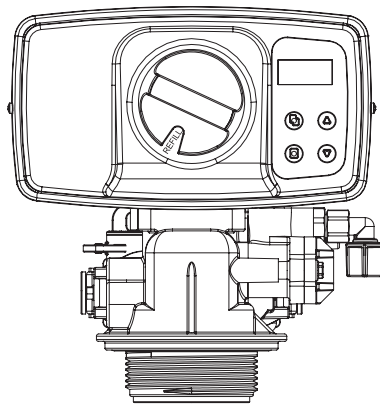
BA.WA.
BACKWASH



BRINE



RINSE



REFILL

MAINTENANCE INSTRUCTIONS AND SCHEDULE

System Check List

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: 877-288-9888**

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:

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 on clean municipal supplies every 2 - 3 years should be sufficient but the first check should be done after 1 year. See inspection and replacement of Piston assembly and seal and spacer kit, page 26.
- The injectors should be cleaned/inspected or replaced every year depending on the water quality and use. See Clean Injector Assembly, page 27.
- Maintenance Kit (60010564) should be used for servicing control on an annual basis. The maintenance kit consists of piston assembly, seals and spacers, injectors.

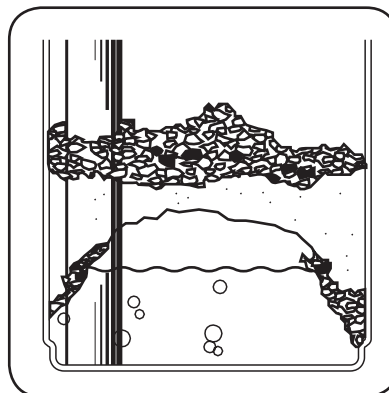
Maintenance of your new water conditioner requires very little time or effort but it is essential. Regular maintenance will ensure many years of efficient and trouble free operation.

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 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.



CAUTION!

Never subject your conditioner to freezing, vacuum or direct sun light.

MAINTENANCE INSTRUCTIONS AND SCHEDULE

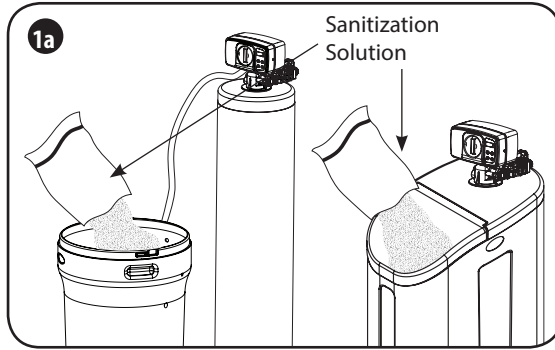
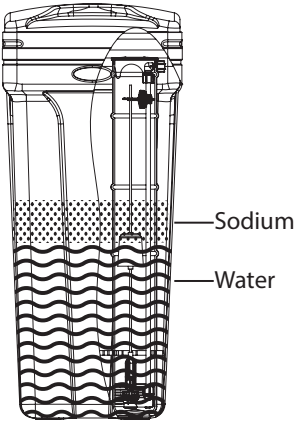
Checking the Salt Level

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

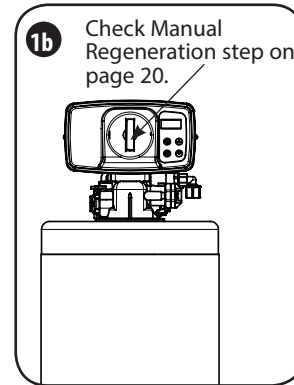
Add Salt to the Brine Tank

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



1a. Pour entire packet of Sani-System Liquid Concentrate – Part # 50032 (24 packets) into the brine well. If no brine well is present, pour entire packet into bottom of brine tank when salt is nearly empty.



1b. Manually regenerate the softener according to the manufacturer's specifications.

CAUTION!

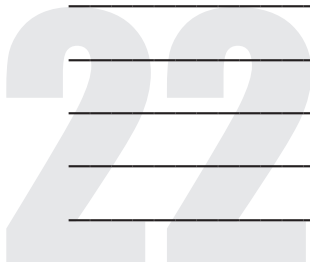
Incorrect start up, water above the salt level, (not enough salt in tank) will both effect the units capacity and result in hardness slippage. Should either of these situations happen or the unit fails to regenerate for any other reason please first correct the problem. Then regenerate the unit manually 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:



Care of Your Softener

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

Servicing Components

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

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

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

Resin Cleaner

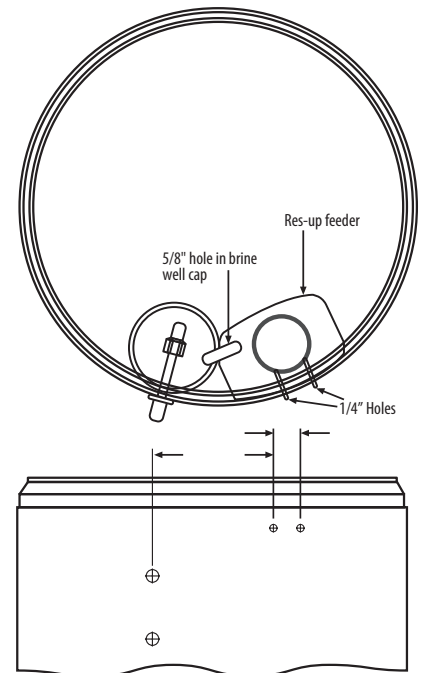
An approved resin cleaner **MUST** be used on a regular basis if your water supply contains iron. The amount of resin cleaner and frequency of use is determined by the quantity of iron in your water (consult your local representative or follow the directions on the resin cleaner package).

RES-UP® FEEDER INSTALLATION INSTRUCTIONS (OPTIONAL)

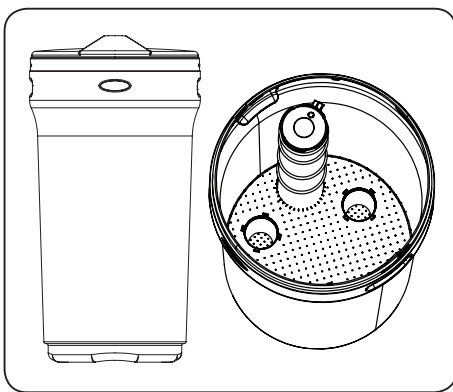
Res-Up Feeders attach to your brine tank and automatically dispense the Res-Up cleaner into the brine solution where it cleans the resin during the regeneration cycle.

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.

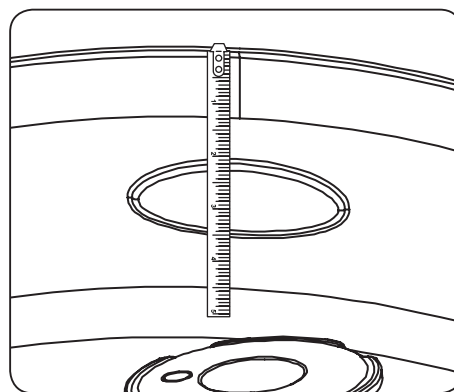
Res-up Feeder Bottle (Chemical sold Separately)
The 12 cc feeder (Part # 33010) is for conditioners up to 64,000 grains (2 ft3 of resin).
The 30 cc feeder (Part # 33018) is for larger conditioners over 64,000 grains.
Pro-Res Care Chemicals
Item #45147 Pro-ResCare - Gallon
Item #45148 Pro-ResCare - Quart



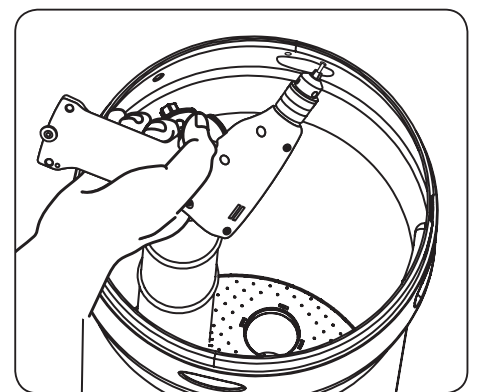
Install Resup Feeder - Round Brine Tank



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

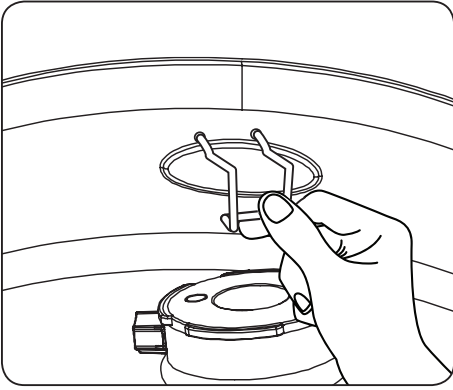


2. Measure 2 inches from the top of the tank beside the oblong molding.

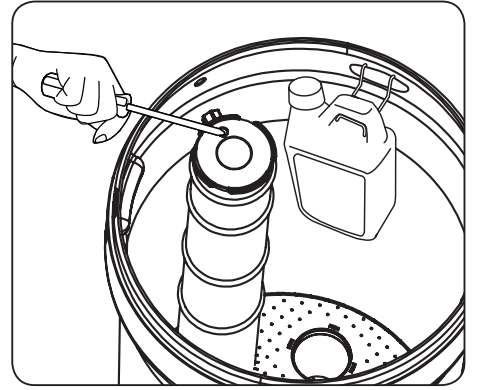
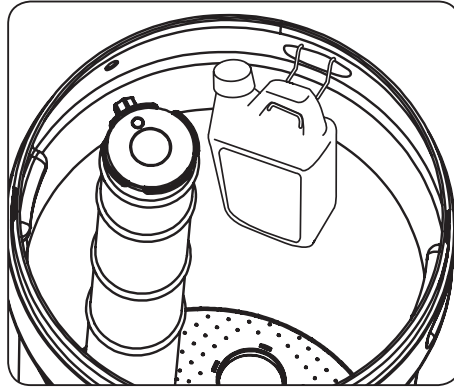


3. Mark the location of the holder and drill.

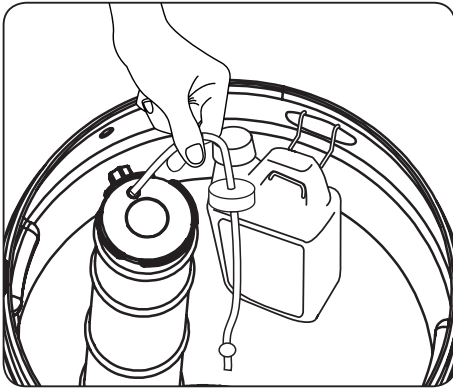
Install Resup Feeder - Round Brine Tank - continued



4. Install the holder and the Res Care Solution

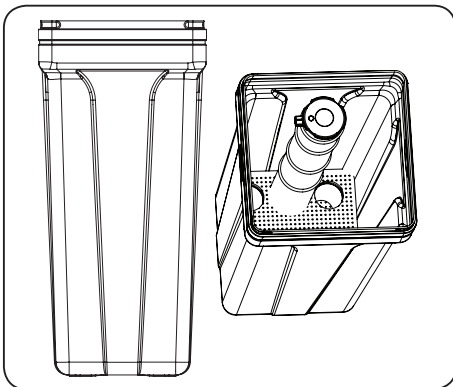


5. Take off the small hole cover on the Brine Well lid.

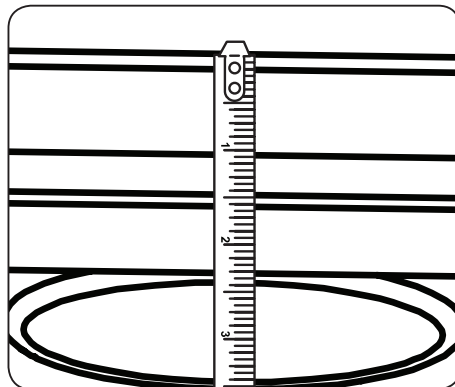


6. Take off the cover of the Res care bottle . Insert the wick, making sure it touches the bottom of the bottle. Insert the other end of the tube completely into the hole in the brine well cap. Automatic feeding will start in a few hours.

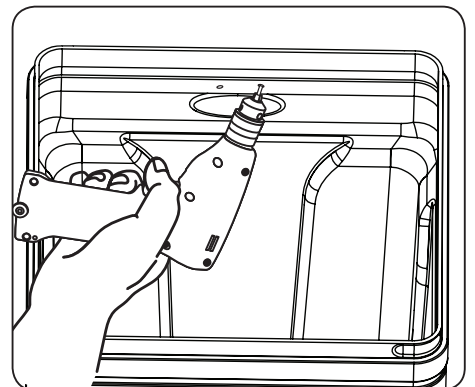
Install Resup Feeder in Square Brine Tank



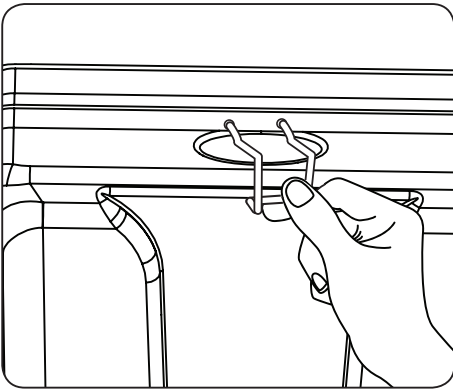
1. Install the grid and brine well inside the square tank.



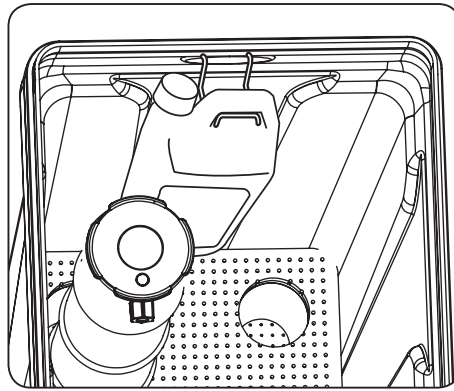
2. Measure 2 inches from the top of the tank beside the oblong molding.



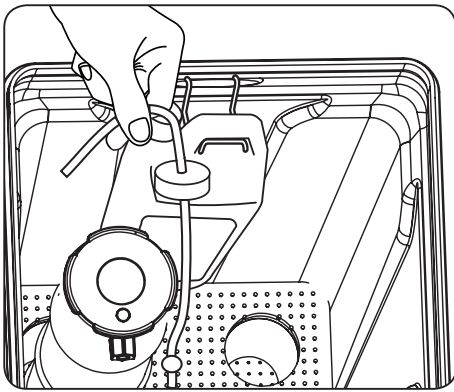
3. Mark the location of the holder and drill.



4. Install the holder and the Res Care Solution



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



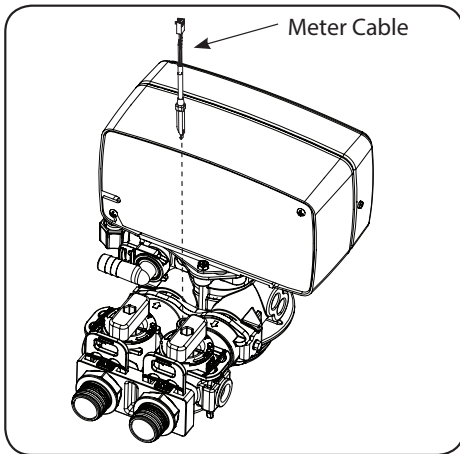
6. Take off the cover of the Res care bottle . Insert the wick, making sure it touches the bottom of the bottle. Insert the other end of the tube completely into the hole in the brine well cap. Automatic feeding will start in a few hours.

SERVICING 165 VALVE

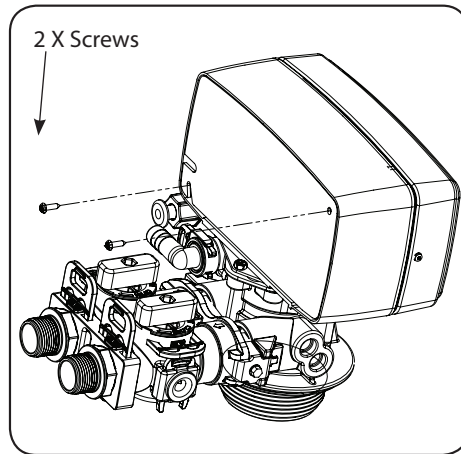
Before Servicing

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.

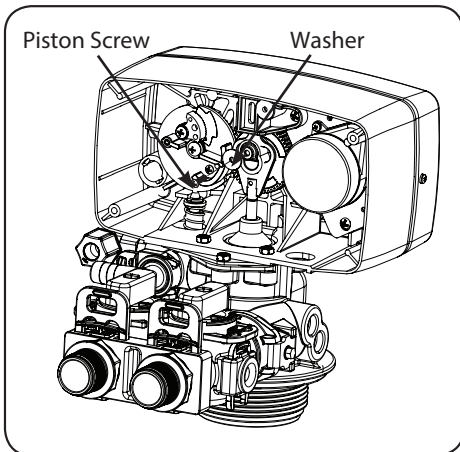
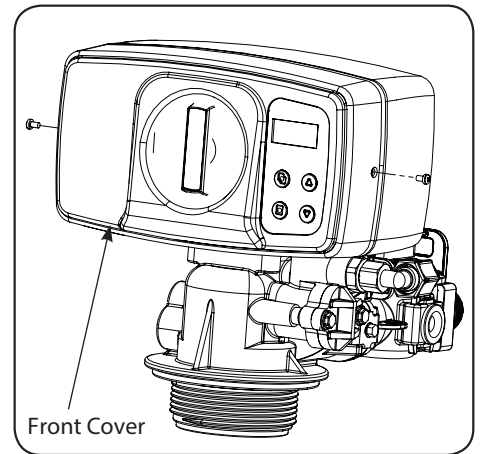
TIMER REPLACEMENT



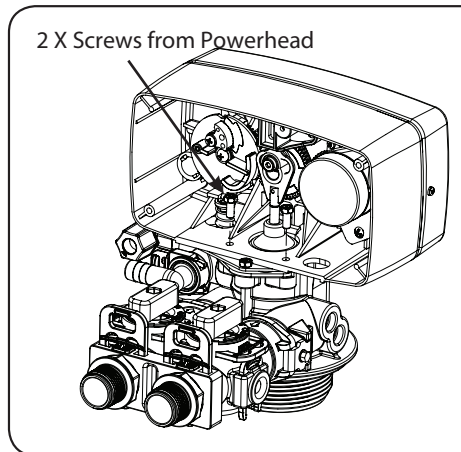
1. Disconnect the meter cable from the meter. (If flow meter is attached)



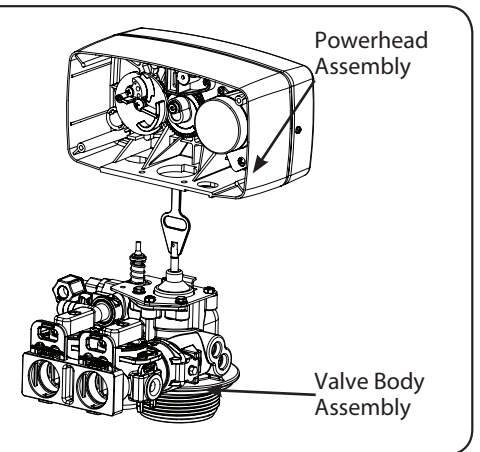
2. Remove two screws from the back of the valve cover



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

 **WARNING!**

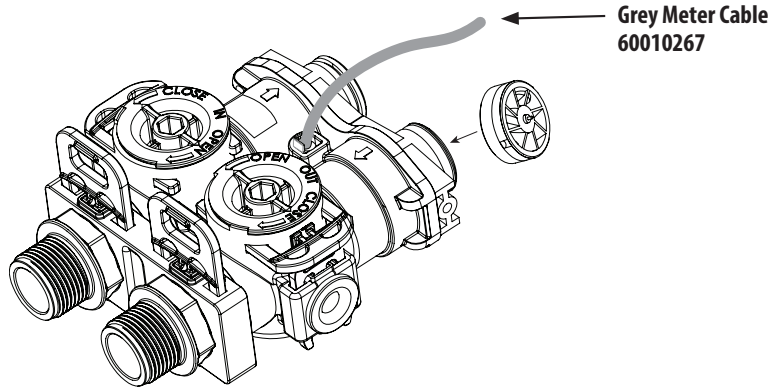
ELECTRICAL SHOCK
HAZARD! UNPLUG THE UNIT
BEFORE REMOVING THE
COVER OR ACCESSING ANY
INTERNAL CONTROL PARTS

 **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.

Remove PCBs by removing the screws shown in the picture

PCB display

Step 4
Disconnect the cables from the front PCB display.

Step 5
Remove strain relief with pliers.

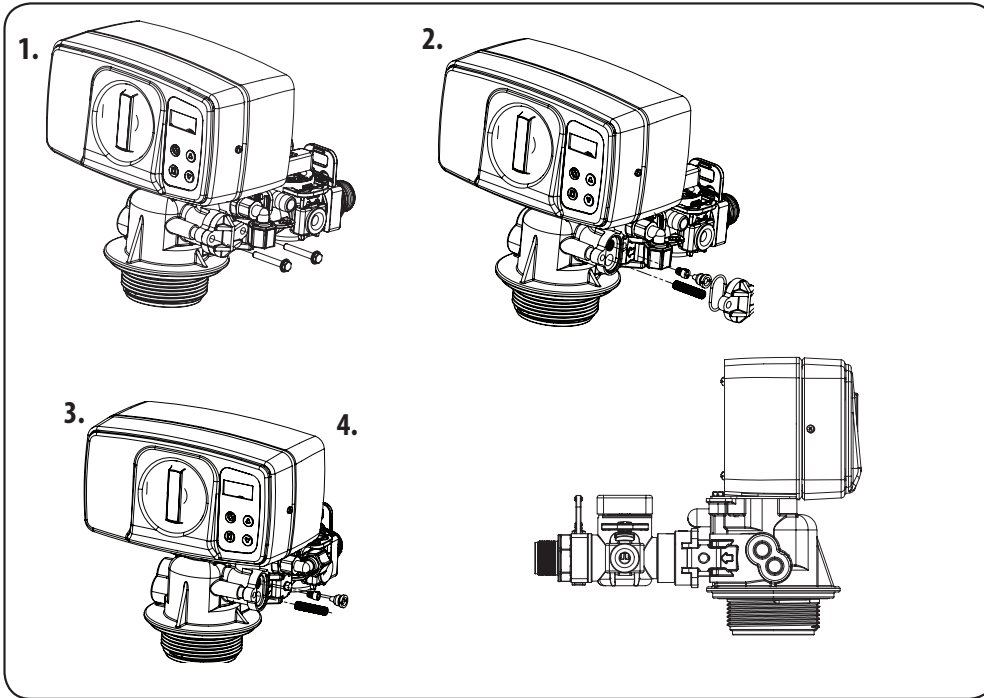
Step 6
Replace the old cable with the new Cable.

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 the new value as per chart below*:
 For 65 Series Valves press SELECT+UP+DOWN for 3 seconds to get to Factory Settings
 For 465/565 Valves press SET/REGEN.+UP+DOWN for 3 seconds to get to Factory Settings.
 Press the SET to step through to PROGRAMING COMPLETE and past this until TIME OF DAY screen appears.

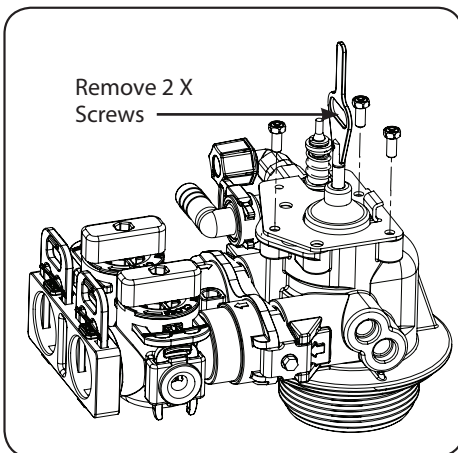
Valve	Region	Meter Ratio
165	U.S Gallon	4.443

CLEAN INJECTOR ASSEMBLY

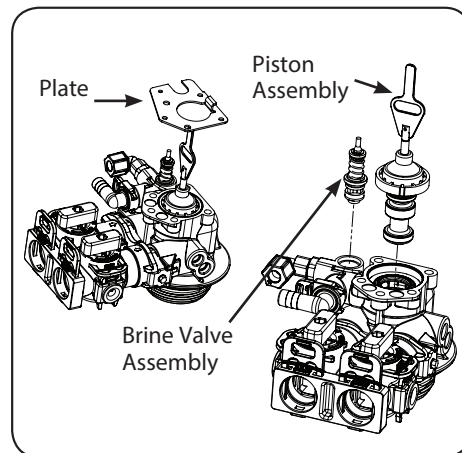


1. Remove two screws of the injector cap.
2. Pull the Injector Cap Out
3. Remove the injector assembly, oring and screen
4. Clean the injectors and replace cap

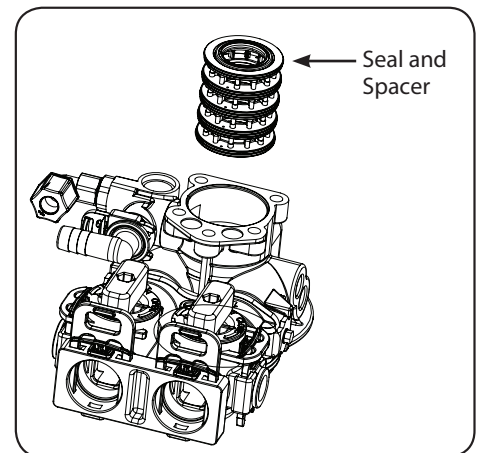
PISTON AND/OR BRINE VALVE ASSEMBLY REPLACEMENT



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



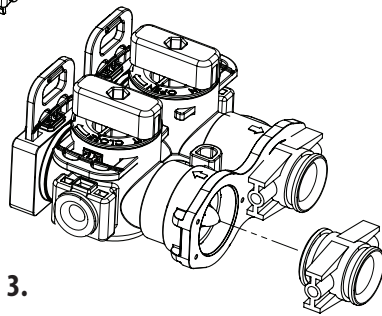
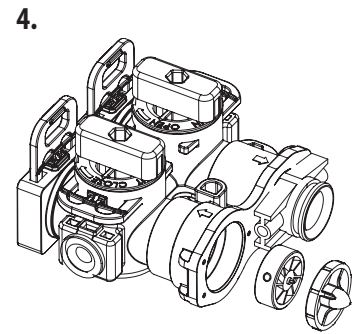
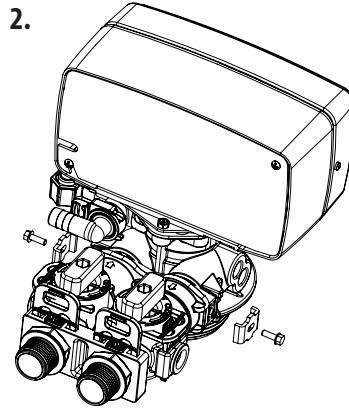
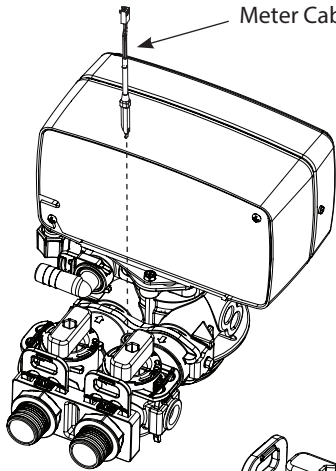
3. Remove the plate from the valve body and pull the Piston Assembly from the valve. The brine valve assembly can also be removed in this stage.
4. Remove the seal spacer assembly, grease it with silicone lubricant and put back in.



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

REPLACE METER ASSEMBLY

1. Meter Cable

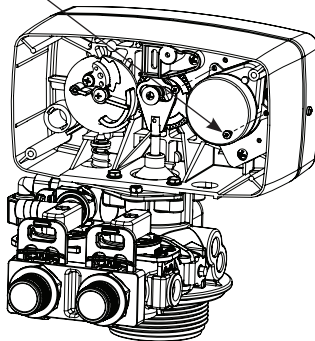
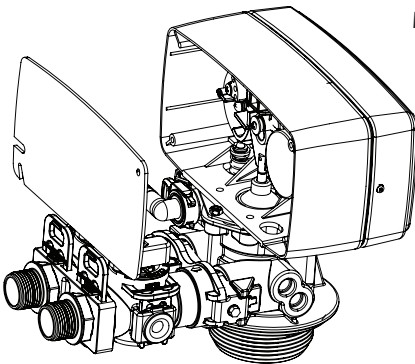


3.

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

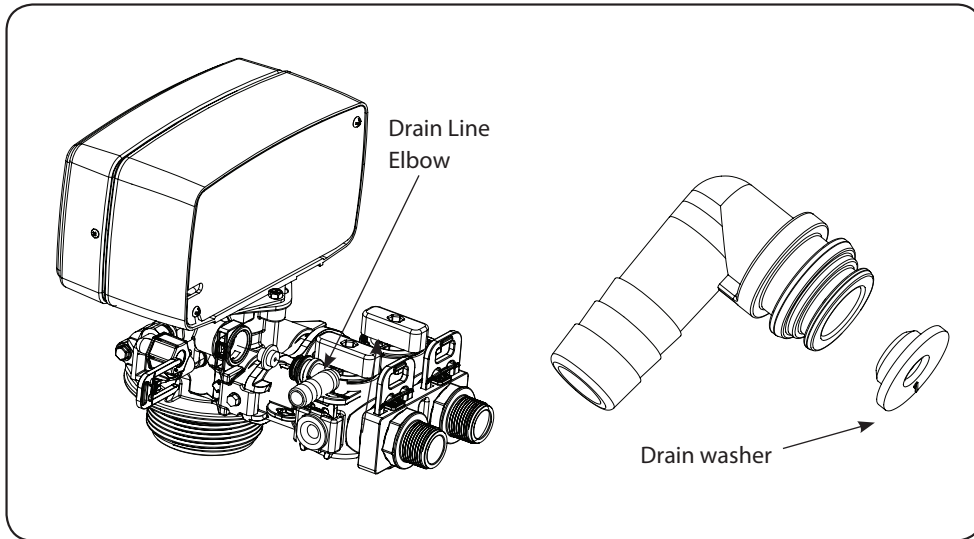
REPLACE MOTOR

Motor Screws



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

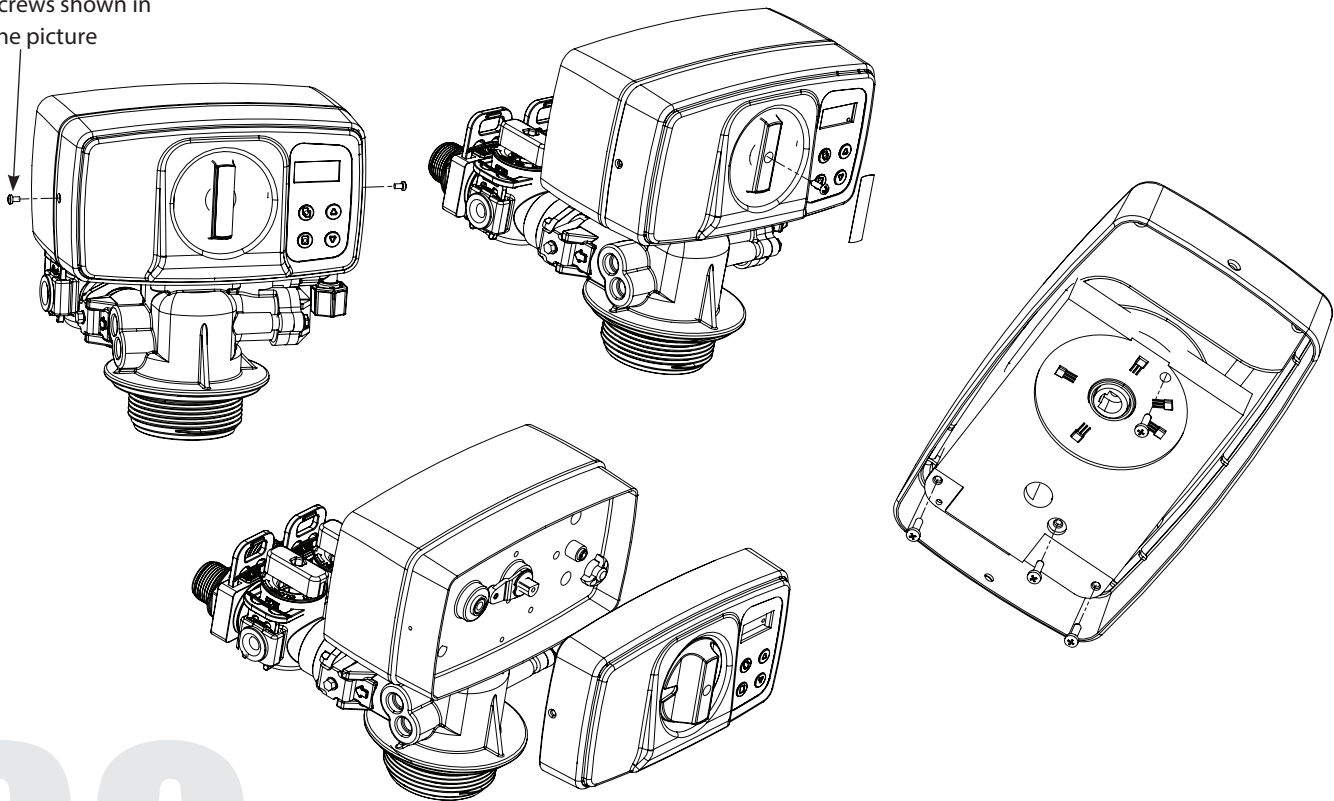
REPLACE DRAIN LINE FLOW CONTROL



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

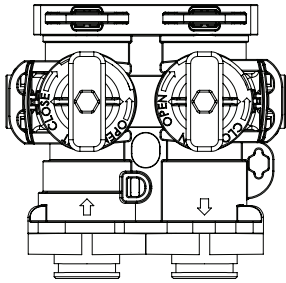
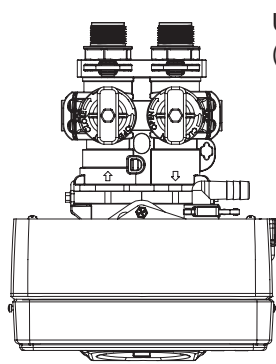
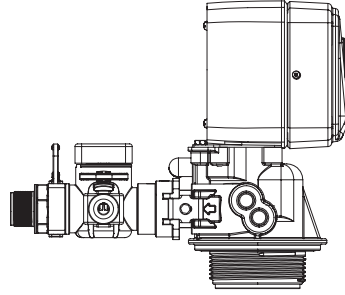
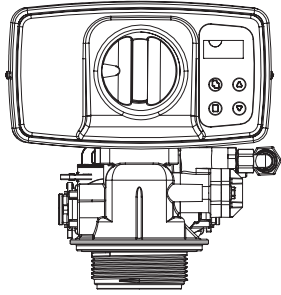
REPLACING PCBS

Remove PCBs by removing the screws shown in the picture



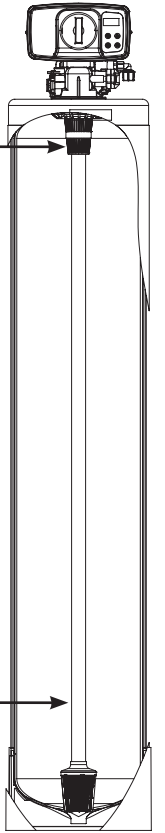
PARTS BREAKDOWN

Control Valve



Bypass - 60010002

Upper Cone
(18280)

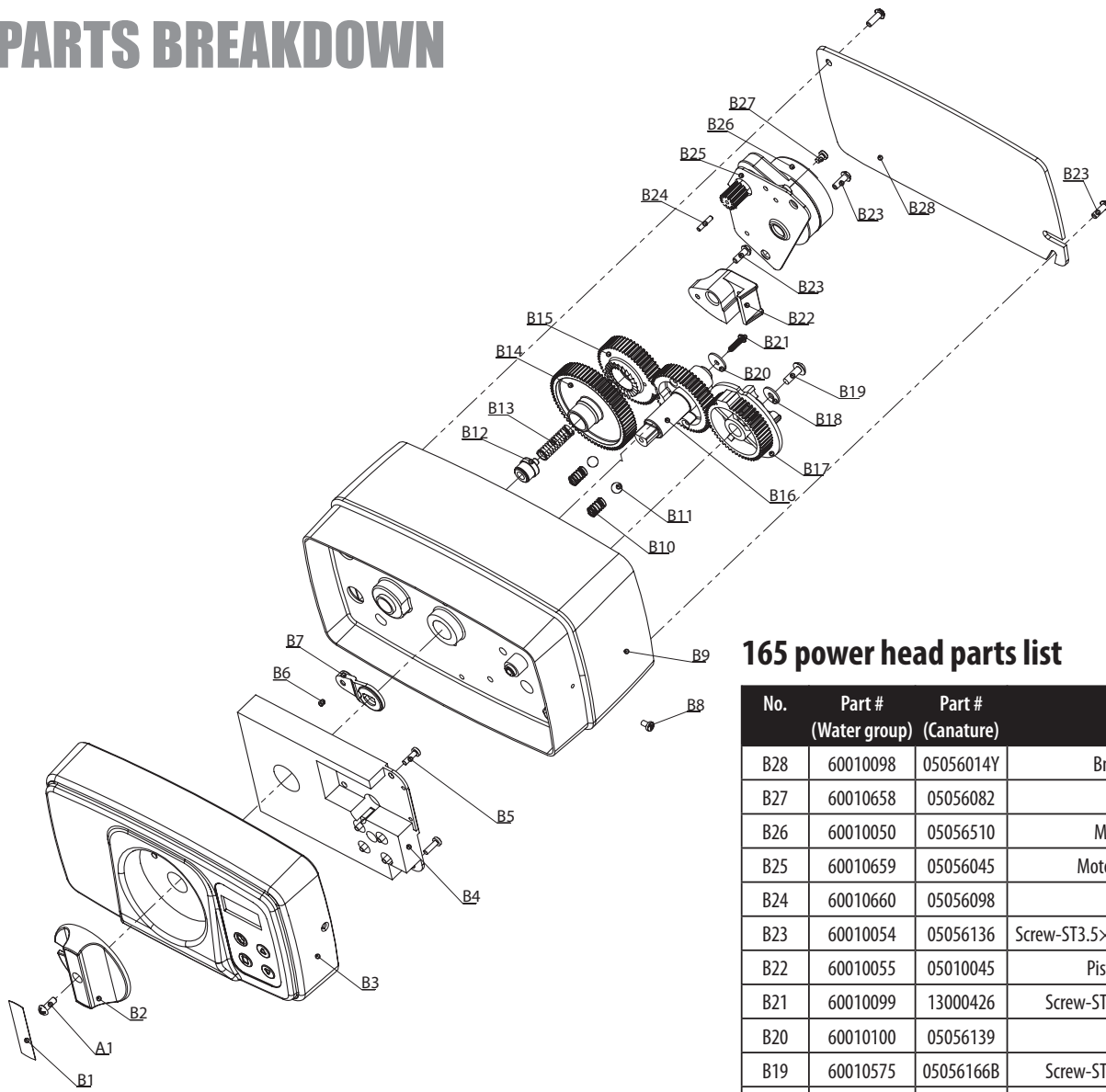


Distributor

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
400	16 x 65	25030002 and 50040036	Not Available	Not Available	50010010		

PARTS BREAKDOWN



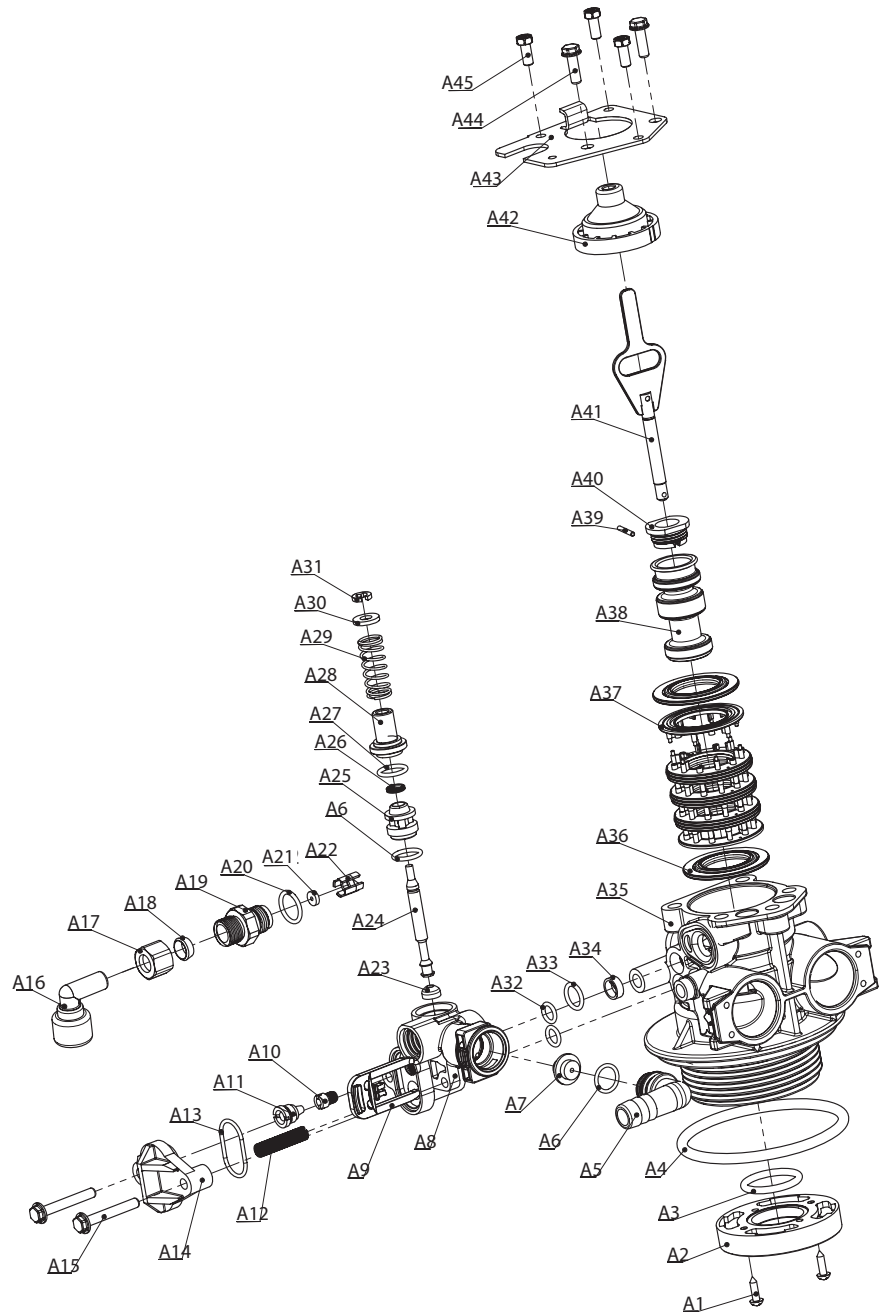
165 power head parts list

No.	Part # (Water group)	Part # (Canature)	Description	Qty
B28	60010098	05056014Y	Bnt65 Back Cover	1
B27	60010658	05056082	Screw-M3×5	2
B26	60010050	05056510	Motor-12v/2rpm	1
B25	60010659	05056045	Motor Mounting Plate	1
B24	60010660	05056098	Motor Pin	1
B23	60010054	05056136	Screw-ST3.5×13(Hexagon with Washer)	4
B22	60010055	05010045	Piston Stem Holder	1
B21	60010099	13000426	Screw-ST2.9×13(Large Wafer)	1
B20	60010100	05056139	Washer-3x13	1
B19	60010575	05056166B	Screw-ST4.2×12(Large Wafer)	1
B18	60010661	05056141B	Screw-ST4.2×12(Large Wafer)	1
B17	60010662	05056211	Brine Gear	1
B16	60010663	05056005	Main Gear	1
B15	60010669	05056501	Bnt165 Drive Gear	1
B14	60010665	05056002	Idler Gear	1
B13	60010103	05056094	Spring Idler	1
B12	60010666	05056502	Spring Retainer	1
B11	60010667	05056092	Ball-1/4inch	2
B10	60010668	05056095	Spring Detent	2
B9	60010669	05056001Y	Bnt65 Housing	1
B8	60010670	05056509	Screw-ST2.9×10(CSK)	2
B7	60010671	05056503	Magnet Holder	1
B6	60010672	05010023	Magnet-φ3×2.7	1
B5	60010673	05010037	Screw-ST2.9×10	5
B4	60010107	05056549C	Bnt165 PCB Board	1
B3	60010674	05056500W	Bnt165 Front Cover	1
B2	60010675	05056008	Bnt65 Knob	1
A1	60010574	05056084	Screw-ST3.5×13	1
B1	80080003	05056111	Bnt65 Knob Label	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	60010508	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	
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



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

Injector Assemblies

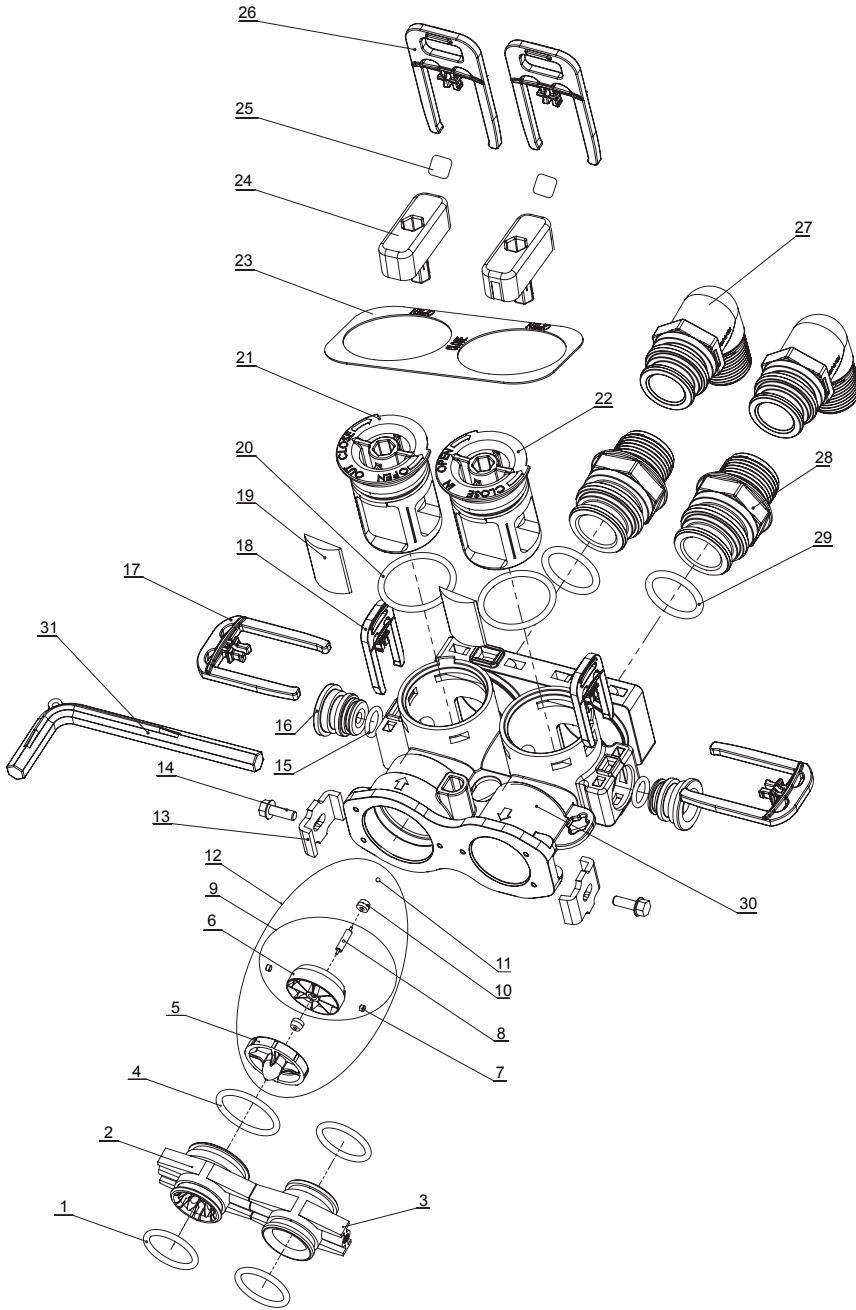
Part #	Part Description
60010110	BLFC BUTTON #2 0.3GPM A32
60010082*	BLFC BUTTON #2 0.7GPM A32
60010128	BLFC BUTTON 0.2GPM
60010601	INJECTOR SET #0000 BLACK THROAT
60010602	NOZZLE #0000 BLACK THROAT
60010603	INJECTOR SET #000 GREY THROAT
60010604	NOZZLE #000 GREY THROAT
60010605	INJECTOR SET #00 VIOLET THROAT
60010606	NOZZLE #00 VIOLET THROAT
60010607	INJECTOR SET #0 RED THROAT
60010608	NOZZLE #0 RED THROAT
60010609*	INJECTOR SET #1 WHITE THROAT
60010610*	NOZZLE #1 WHITE THROAT
60010611	INJECTOR SET #2 BLUE THROAT
60010612	NOZZLE #2 BLUE THROAT

Injector Assemblies

Part #	Part Description
60010613	INJECTOR SET #3 YELLOW THROAT
60010614	NOZZLE #3 YELLOW THROAT
60010685	INJECTOR SET #4 GREEN THROAT
60010686	NOZZLE #4 GREEN THROAT
60010131	DLFC #1 1.5GPM
60010132	DLFC #2 2.0GPM
60010133	DLFC #3 2.4GPM
60010135	DLFC #5 3.5GPM
60010041	DLFC #6 4GPM
60010169	DLFC #7 5GPM
60010136	DLFC #A 5.0GPM
60010137	DLFC #B 7.0GPM
60010138	DLFC #C 11.0GPM

* Default

PARTS BREAKDOWN

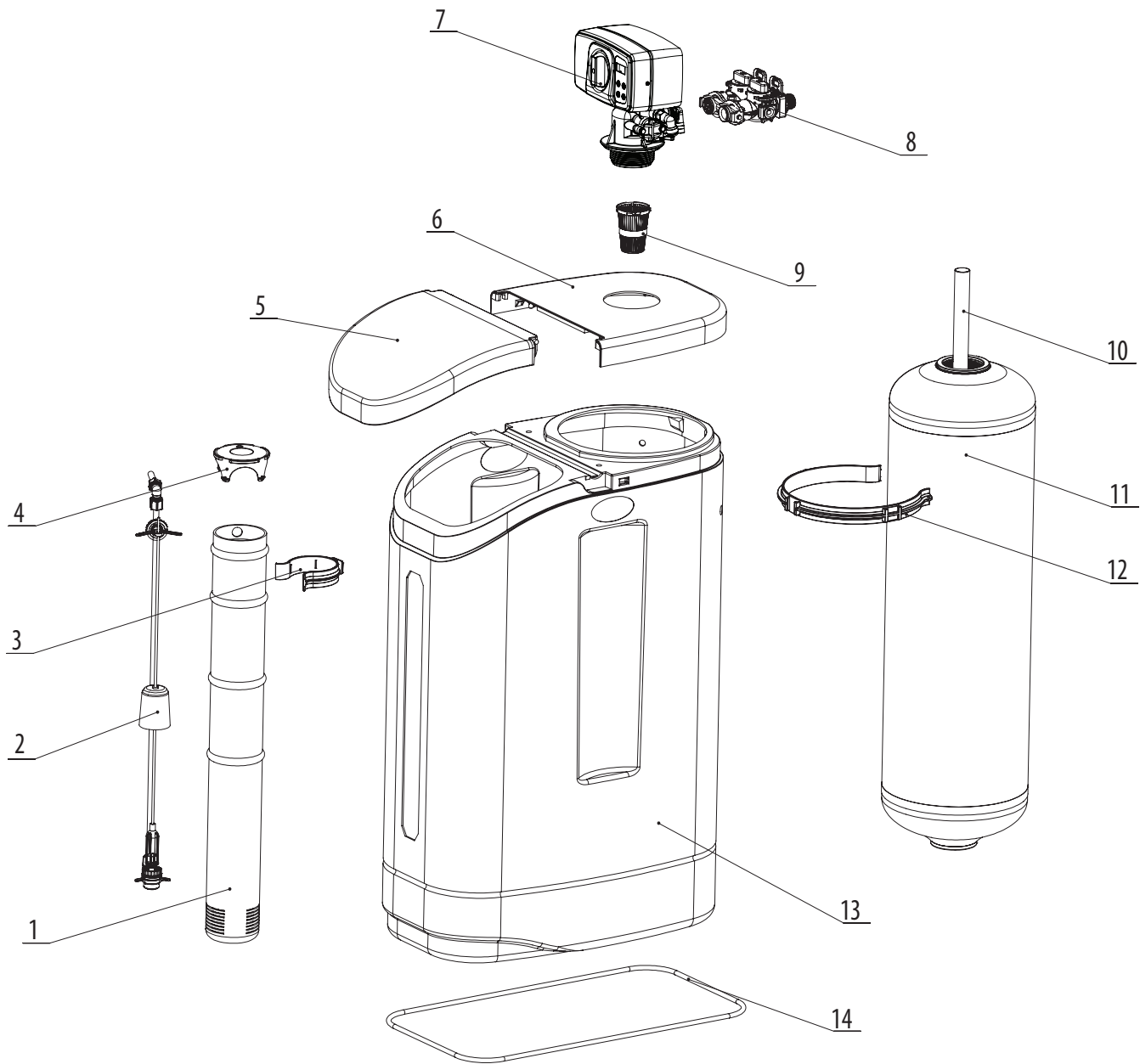


Bypass Parts List

No.	Part #	Description	Qty
32	60010267	Grey Meter Cable cc	1
31	60010006	Bypass Tool	1
30		063 Bypass Body	1
29	60010026	O-ring on Inlet and Outlet	2
28	60010019	Straight 1" NPT Inlet and Outlet	2
27	60010023	Elbow 3/4" NPT Inlet and Outlet	2
26	60010025	Secure Clip Inlet and Outlet	2
25	60010740	Direction Indication Label	2
24	60010740	Bypass Knob	2
23	60010740	Bypass Indication Plate	1
22	60010740	Bypass Shaft(Inlet)	1
21	60010740	Bypass Shaft(Outlet)	1
20	60095614	O-ring(30×2.65)	2
19	60010740	Shaft Seal	2
18	60010069	Plug Clip(Red)	2
17	60010740	Shaft Clip(Red)	2
16	60010209	Bypass Plug	2
15	60010044	O-ring(12×2)	2
14	60010126	Screw M4×12	2
13	60010046	SS Clip	2
12		Meter Spare Parts	1
11		Bush Ball	1
10		Bush	2
9		Meter Assy	1
8	60010238 *60010308	Impeller Pin	1
7		Magnet	2
6		Impeller	1
5		Impeller Support	1
4	60010102	O-ring(27×3)	1
3	60010079	Valve-Bypass Connector(Inlet)	1
2	60010101	Valve-Bypass Connector(Outlet)	1
1	60010562	O-ring(23×3)	3

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

PARTS BREAKDOWN







Cabinet Parts List

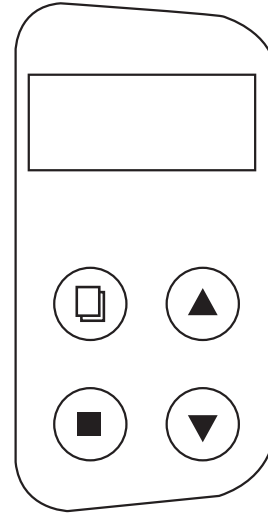
No.	Part #	Description	Qty
14		Trim Strip	1
13		Softener Cabinet(Grey)	1
12	60010361	Pressure Tank Clamp	1
11	25020019	TANK ASSY 935 NAT	1
	25020020	TANK ASSY 1035 NAT	1
10	50010020	Distribution Assy-1035	1
9	18280	Top Cone	1
8	60095097-1	Bypass Valve Assy	1
7		165 Control Valve(Grey)	1
6	55010031	Softener Low Cover	1
5	85010132	Softener Salt Lid	1
4	55020002	Brine Well Cap	1
3	60010362	Brine Well Clamp	1
2	55010023	0435 Brine Valve	1
1	55010010	0435 Brine Well	1

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.



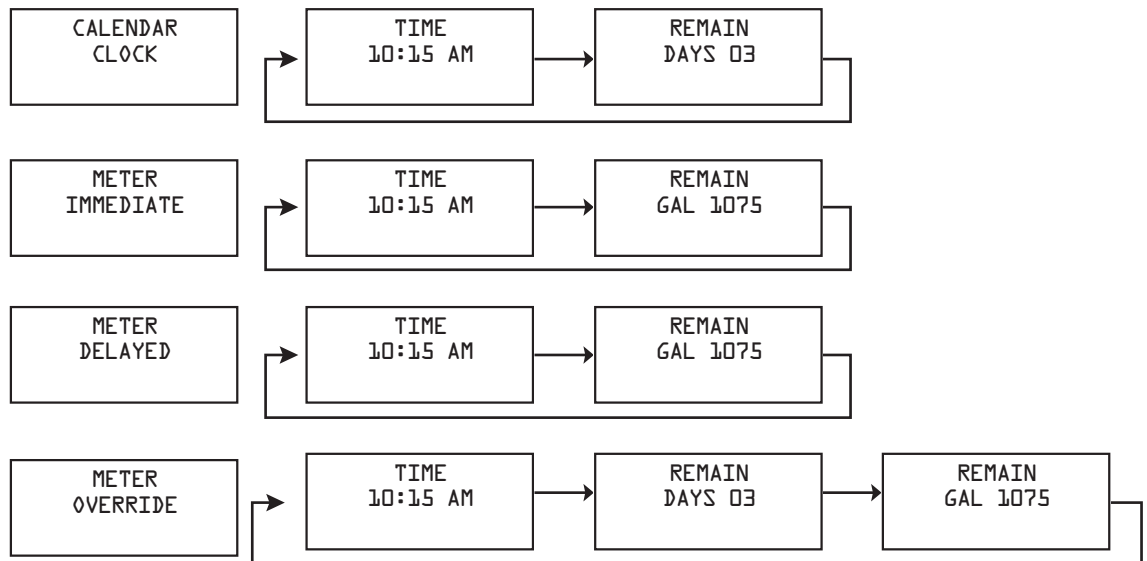
PROGRAMMING LEVELS

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 SET key (■) UP and DOWN keys (▲) (▼) Hold until you hear a beep (3 seconds).

Press UP or DOWN key (▲) (▼) to advance each page.

Press SET key (■) to initiate a change.

Press UP or DOWN key (▲) (▼) to change value.

Press SET key (■) 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

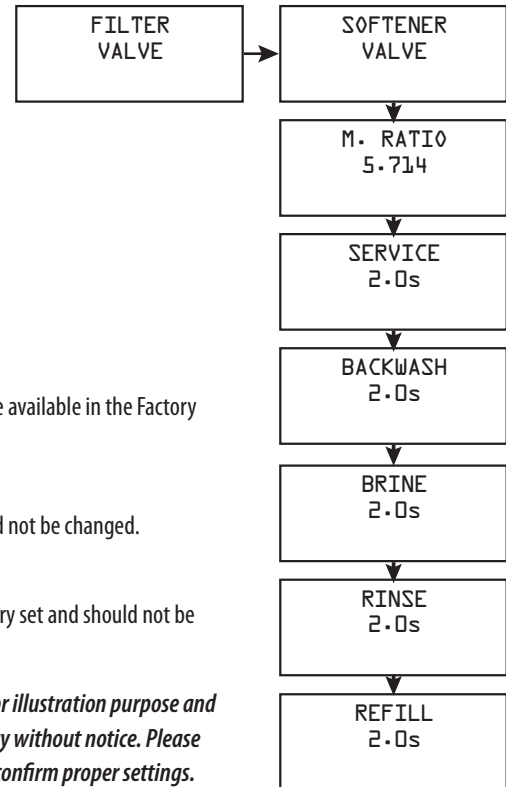
The meter ratio calibrates the pulse from the flow meter into gallons. This value is factory set and should not be changed.

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

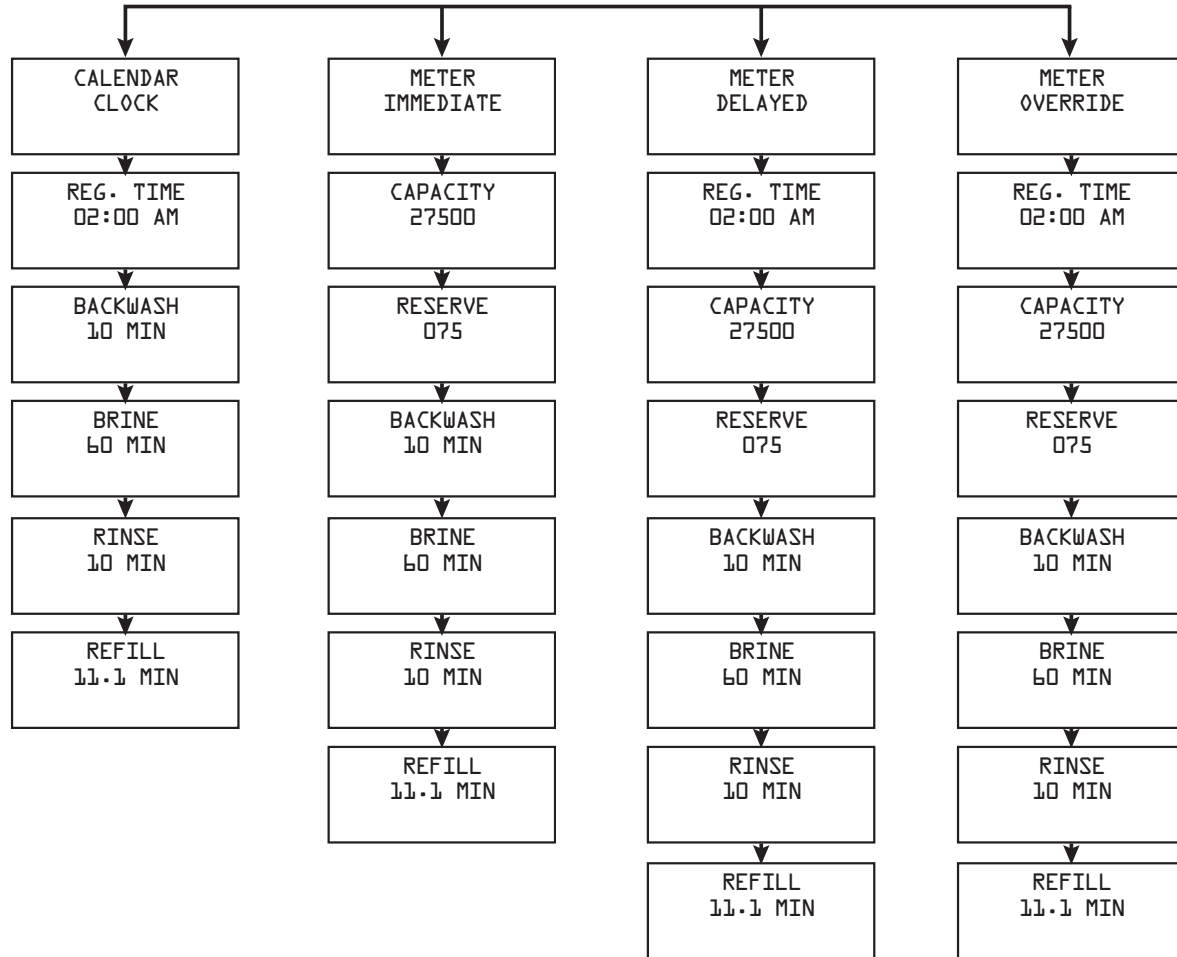
FACTORY OPTIONS (LEVEL II)

Press UP and DOWN keys   Hold until you hear a beep (3 seconds).

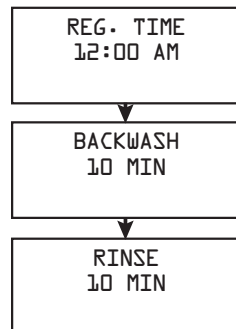
Press UP or DOWN key   to change value.

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

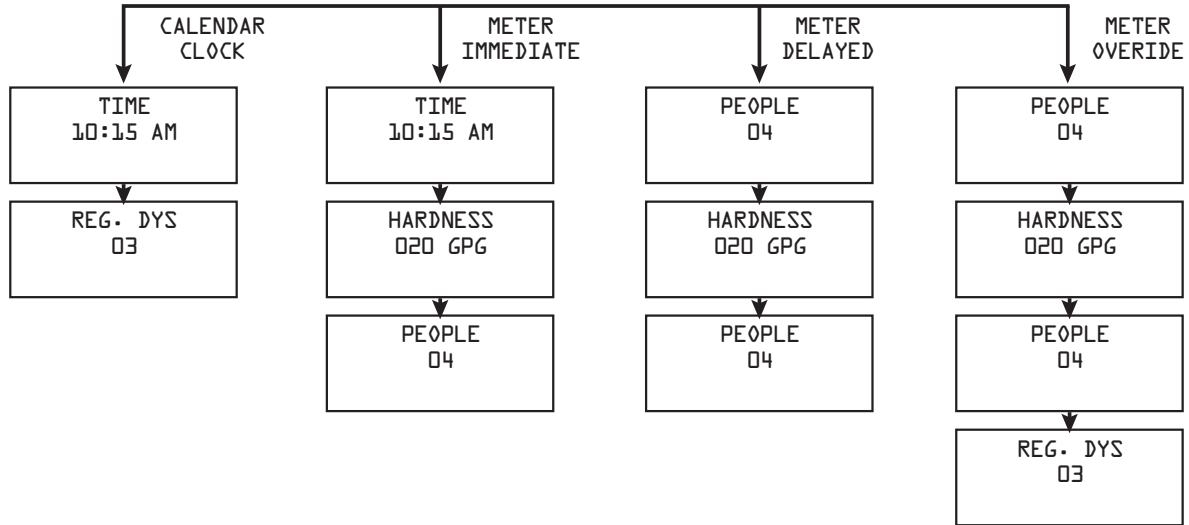
USER SETTINGS (LEVEL I)

Press MENU key 

Press UP or DOWN key   to change value.

Press SELECT to accept change and advance to next page.

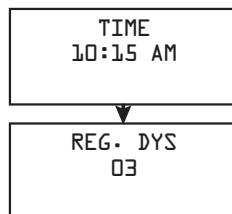
SOFTENER MODE

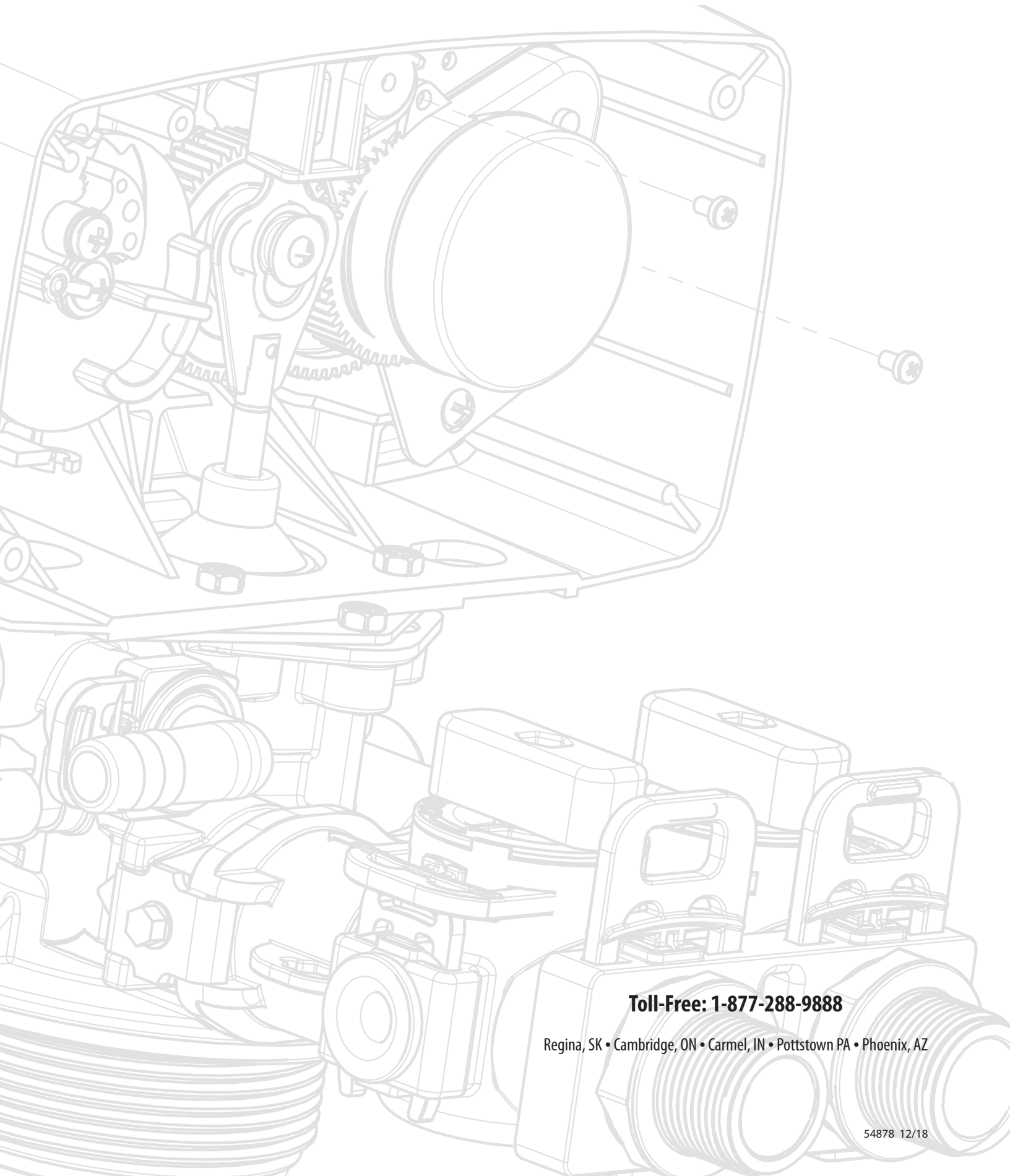


CAUTION:

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.

FILTER MODE





Toll-Free: 1-877-288-9888

Regina, SK • Cambridge, ON • Carmel, IN • Pottstown PA • Phoenix, AZ