

485 SIMTAN CONDITIONER

Iron, Manganese & Tannin Removal

- 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	4645 McDowell Rd. W Suite 106 Phoenix, AZ 85035
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READ THIS PAGE FIRST

BEFORE STARTING INSTALLATION

- ▶ Read this manual thoroughly to become familiar with the appliance and its capabilities before installing or operating the new appliance. 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 new appliance.
- ▶ Installation must comply with all State, provincial or local regulations. Check with your local public works department for plumbing and sanitation codes. In the event the codes conflict with any content in this manual the local codes should be followed. Consult your licensed plumber for installation of this system.
- ▶ **WARNING!:** Do not use water that is microbiologically unsafe without adequate disinfection before or after this system.
- ▶ Do not install this appliance where it may be exposed to wet weather, direct sunlight, or temperatures outside of the range specified above.
- ▶ This appliance is designed to operate on pressures of 30 psi to 125 psi. If the water pressure is higher than the maximum use a pressure reducing valve in the water supply line to the device.
- ▶ This appliance is capable of operating at temperatures between 40°F and 110°F (4°C - 43°C). Do not use this appliance on hot water supplies.
- ▶ Avoid pinched o-rings during installation by applying (provided with install kit) NSF certified lubricant to all seals.
- ▶ It is not uncommon for sediment, precipitated iron or hardness to be present in water supplies. Precipitated minerals or sediments can cause damage to the seals and piston. This is considered a harsh environment and the seals and piston would not be covered by warranty stated or otherwise.
- ▶ It is recommended to regularly inspect and service the control valve on an annual basis. Cleaning and or replacement of piston, seals, and or spacers may be necessary depending on how harsh the conditions are. An Annual Maintenance kit is available for this purpose
- ▶ This publication is based on information available when approved for printing. Continuing design refinement could cause changes that may not be included in this publication. The manufacturer reserves the right to change the specifications referred to in this literature at any time, without prior notice.

INSTALL NOTES & SAFETY MESSAGES

Watch for the following messages in this manual:

NOTE

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

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

CAUTION!

Disassembly while under pressure can result in flooding.

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

WARNING!

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

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

HOW YOUR WATER CONDITIONER WORKS

SIMTAN conditioners remove hardness, iron, manganese and tannin in the water by an ion exchange process. They remove ions such as calcium, magnesium, iron and manganese in the water by trading it for sodium ions producing soft water. The tannin in the water is exchanged similarly through an exchange process exchanging the Tannin for Chloride ions in the water. Unlike the hardness, iron, manganese or tannin, sodium stays dissolved in water and does not form a scale, and the chloride does not re acquire sodium once being split through the ion exchange process so the sodium stays in a soft form as well. The charged resins contained in the SIMTAN eventually require regeneration. Regeneration is accomplished by washing the resin with a salt saturated brine solution that removes the unwanted minerals from the resin beds replenishing them ready for the next service cycle. This is why the SIMTAN requires a brine tank and salt. The SIMTAN when sized correctly can run for days before requiring a regeneration and when it does, it is replenished in only a matter of a few hours

Because the SIMTAN removes 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 SIMTAN be regenerated when it has reached 50–75% of the calculated hardness alone capacity. (**See compensated Hardness calculation on page 18**). This will minimize the potential for bed fouling.

Resin bed cleaning annually is recommended even with the automatic resin cleaner feeder in order to keep the bed in optimum condition.

Precision Brining: Precision brining means that your conditioner calculates the exact amount of brine required to regenerate saving up to 30% more salt
When your conditioner regenerates it will display 2 numbers for capacity 1 will be total capacity the other will be 70 % of capacity. The unit counts down to the end of the 70% then calculates how much of the 30% you used (your reserve) it then adjusts the brine amount accordingly and regenerates that evening. This feature means that your capacity will always be different after every regeneration therefore maximizing your salt use.

Brine Pre-Fill%: This is the percentage of the water that will be added to the brine tank after a regeneration. The default is 70%. The remaining amount of water will be added just prior to the regeneration and will be proportional to the amount of capacity left in the system.

Soft Water Recharge for High Usage: Should you reach the 70% capacity and then go beyond the 30% before it is time to regenerate the conditioner will do a quick regeneration to restore limited capacity to get it through the remainder of the day.

System Refresh: If you are away for an extended period of time the Conditioner does a refresh cycle to prevent any chance of bacterial growth or stagnation inside the conditioner.

Scrolling Diagnostics: By pressing any button to light the LCD display the unit will automatically begin scrolling important information for diagnostic purposes

Date and Time

Total Gallons and Remaining Gallons

Number of People: in the household as programmed at install

Reserve Capacity: calculated as 75 gallons per person

Estimated Days to Next: estimation of days to the next regeneration based on current consumption, hardness and capacity

Last Regeneration: the date of the last regeneration cycle by the conditioner

Total Regenerations: this is the total number of times the conditioner has regenerated

Total Gallons: total gallons treated by the conditioner

Over Run Total: – how many times Soft water recharge was required due to high usage

Current Flow Rate: will only display if treated water is running otherwise it would read 0

Peak Flow: maximum flow that has gone through the conditioner.

Delayed Regen OFF: – generally only used after servicing.

Regen Time: This is the time of day that the conditioner is scheduled to regenerate

Refill Time: The current calculated refill time for makeup brine (displays up to 70% of total brine required)

Valve Mode: current valve setting EG. Conditioner UF (up flow)

To stop the scrolling you can unlock the board as directed and press the down arrow to stop the scrolling. You can then use the down arrow to go to each of the diagnostics as required.

SPECIFICATION

Specifications	485SIMTAN-100	485SIMTAN-150	485SIMTAN-200	485SIMTAN-300
Purolite 850 Models*	15010480-1	15010481-1	15010482-1	15010483-1
Purolite 860 Models*	15011480-1	15011481-1	15011482-1	15011483-1
Factory Settings - High Capacity				
Salt Used - Per Regeneration	12.0 lbs	18.0 lbs	24.0 lbs	36.0 lbs
Water Used - Regeneration	64.3 gal	90.3 gal	124.6 gal	196.2 gal
Hardness Removal - Grains	30,000	45,000	60,000	90,000
Tannins Removal	2000 ppm	3000 ppm	4000 ppm	6000 ppm
Tank #1 Resin Quantity - Cubic Feet	1.0 ft	1.5 ft	2.0 ft	3.0 ft
Tank #2 Resin Quantity - Cubic Feet	1.0 ft	1.5 ft	2.0 ft	3.0 ft
Tank Size	9x48	10x54	12x52	14x65
Tank Jacket / Media Loaded	Yes	Yes	No	No
Brine Tank / Cabinet Size (Inches)	18.1 x 34.5	20.3 x 37.4	20.3 x 37.4	23.0 x 40.5
Salt Storage Capacity	240 lbs	350 lbs	350 lbs	420 lbs
Recommended Service Flow Rate	3.0 gpm	4.5 gpm	6.0 gpm	9.0 gpm
Back Wash Flow Rate	2.0 gpm	2.4 gpm	3.5 gpm	5.0 gpm
Shipping Weight	125 lbs	158 lbs	161 lbs	247 lbs
Regeneration Type	Counter-Current / Up Flow			
Maximum Hardness	75 Grains Per Gallon			
Maximum Tannins	3.0 ppm (Contact Customer Service for higher levels)			
Maximum Iron (Ferrous)	10.0 ppm			
Maximum Manganese	5.0 ppm			
Plumbing Connections	3/4" (Optional 1")			
Resin Type	Purolite® SST-60/A850/A860			
Electrical Requirements	Input 120V 60 Hz - Output 12V 650mA			
Water Temperature	Min. 39 - Max. 100 Degrees Fahrenheit			
Water Pressure	Min. 20 - Max. 125 psi			

* CALL CUSTOMER SERVICE TO DETERMINE CORRECT MODEL. WATER TEST RESULTS REQUIRED

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

Working Pressure: This water conditioner must be operated on pressures between 30 psi to 125 psi. If the water pressure is higher than 125 PSI, use a pressure reducing valve in the water supply line to the conditioner.
Voltage = 120V / 60 Hz
Pipe Size = 3/4" and 1"

- At the stated service flow rates, the pressure drop through these devices will not exceed 15 psig.
- The manufacturer reserves the right to make product improvements which may deviate from the specifications and descriptions stated herein, without obligation to change previously manufactured products or to note the change.

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

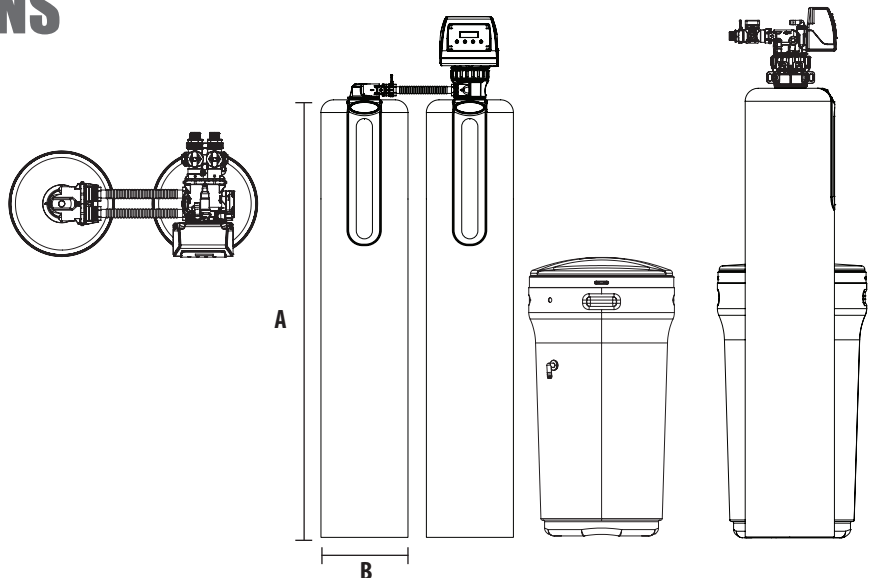
Peak flow rates intended for intermittent use only (10 minutes or less) and are for residential applications only. Do not use peak flow rate for commercial applications or for a continuous rate when treated water supplies are geothermal heat pump, swimming pool, etc.

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

All units come with plastic bypass

SYSTEM DIMENSIONS

Models	A (Inches)	B (Inches)
485SIMTAN-100	48	9
485SIMTAN-150	54	10
485SIMTAN-200	52	12
485SIMTAN-300	65	14

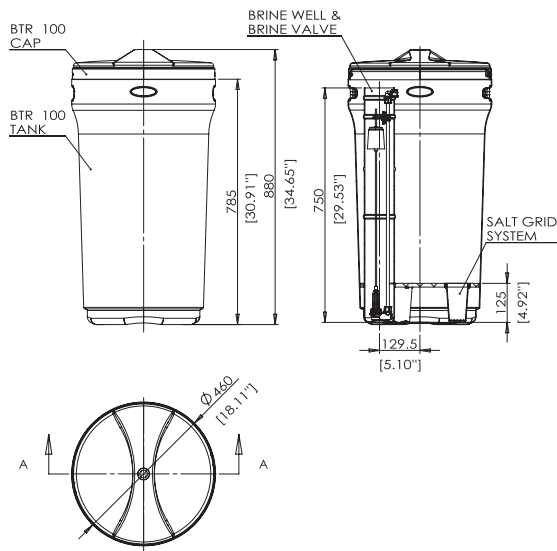


BRINE TANK DIMENSIONS

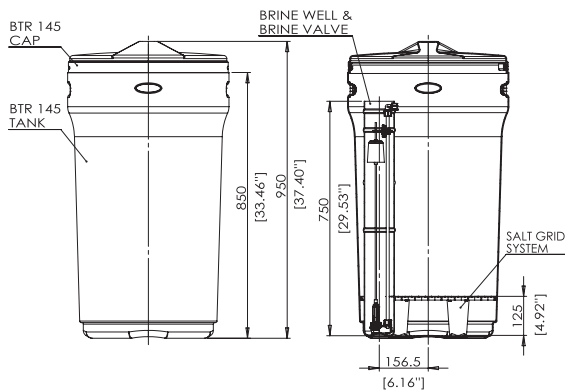
Model	Liquid Volume		Tank Dimensions (inches)	Salt Capacity	
	US Gal	Liters	L x W x H	Lbs	Kg
Brine Tanks					
BTR-100	29.5	111.5	18.1 x 34.7	270.0	122.2
BTR-145	42.3	159.7	20.3 x 37.4	385.0	174.2
BTR-200	53.0	200.3	23.0 x 40.5	700.0	316.7

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

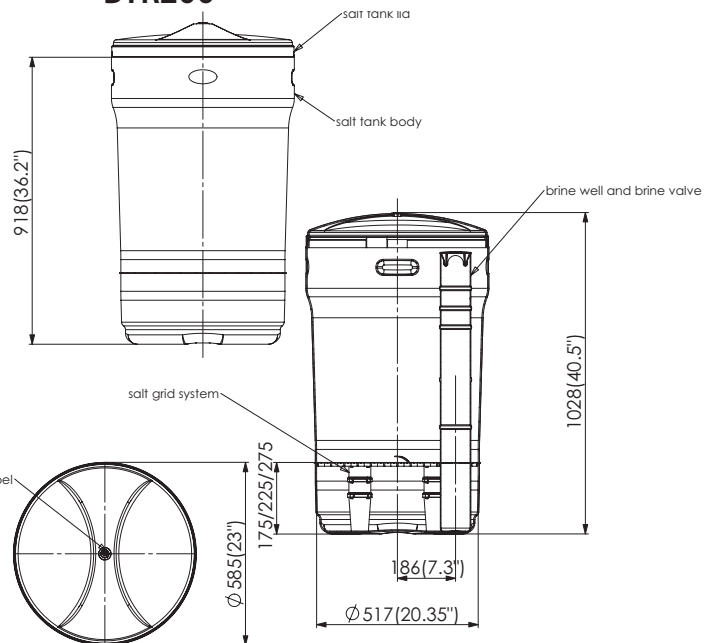
BTR100



BTR145



BTR200



UNPACKING / INSPECTION

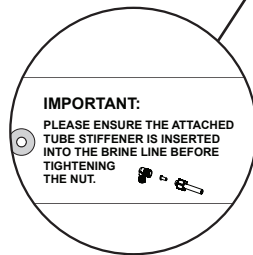
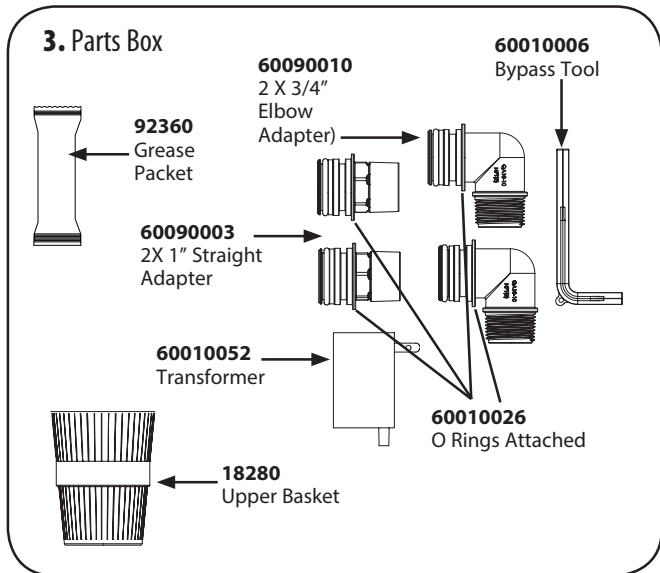
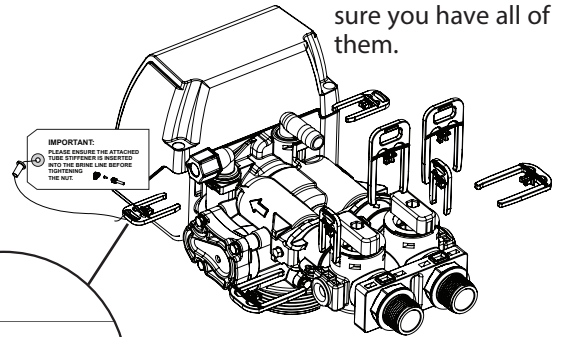
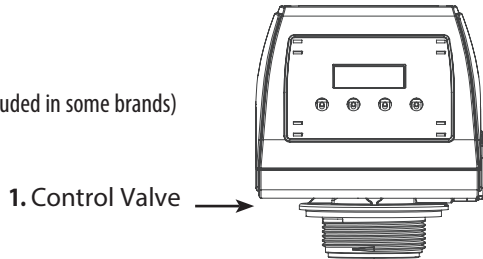
Be sure to check the entire unit for any shipping damage or parts loss. Also note damage to the shipping cartons. Contact the transportation company for all damage and loss claims. The manufacturer is not responsible for damages in transit.

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

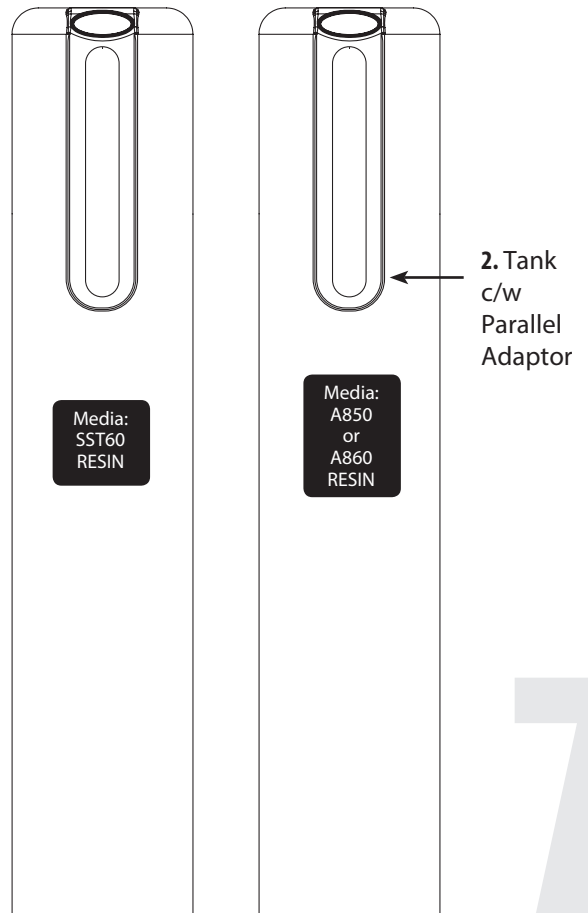
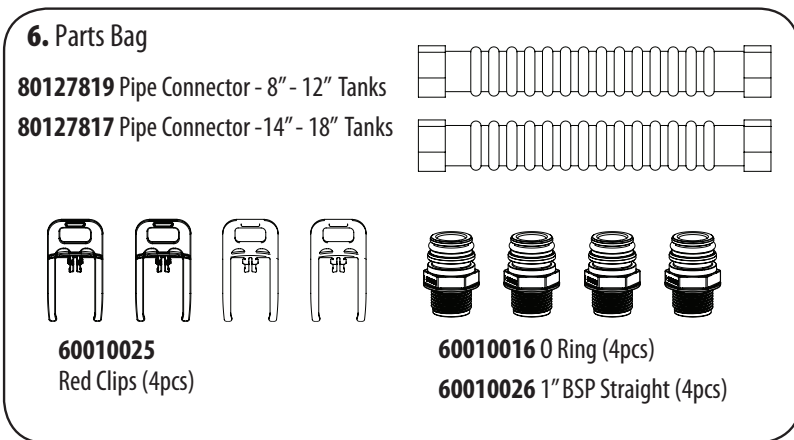
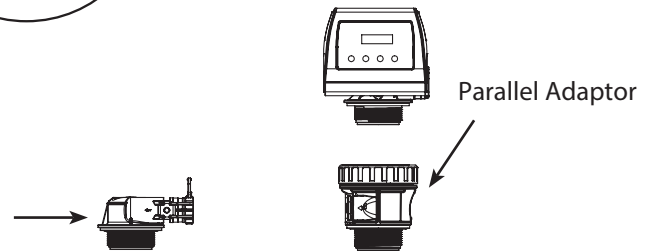
What is included in the box?

For Models 485SIMITAN-100, 485SIMITAN-150 and 485SIMITAN-200, you will expect the following. Shipping Carton Quantity – 2

1. Control Valve
2. Tank c/w Parallel Adaptor
3. Parts Box
4. Owners Manual
5. Drain Hose & Clamp (Not included in some brands)
6. Parts Bag
7. Tank c/w Adaptor



7. Tank c/w Adaptor



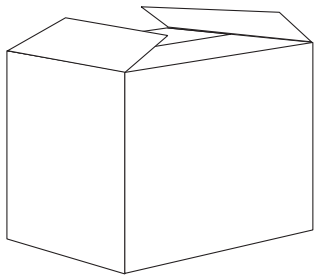
CAUTION!
DO NOT use petroleum based grease products.

For SIMTAN-300 model, the media and Control Valve is packaged separately in carton and bags

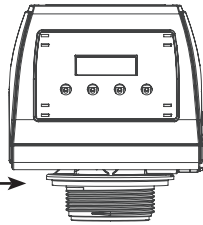
What is included with SIMTAN-300 model?

1. Tank c/w Adaptor
2. Tank c/w Parallel Adaptor
3. Qty 6 of Media Boxes
4. Drain Line and Hose Clamp (Not Included with some models)
5. Control Valve with Parts Box
6. Parts Bag

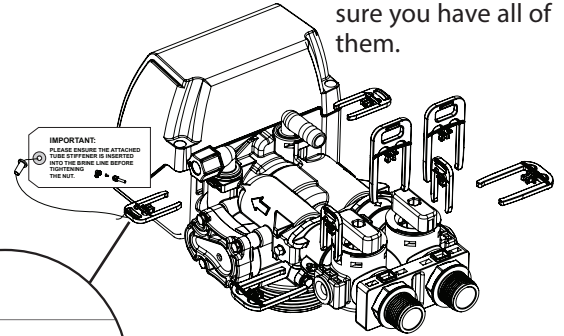
There are 8 Red clips. Please check to make sure you have all of them.



3. Media Box



5. Control Valve



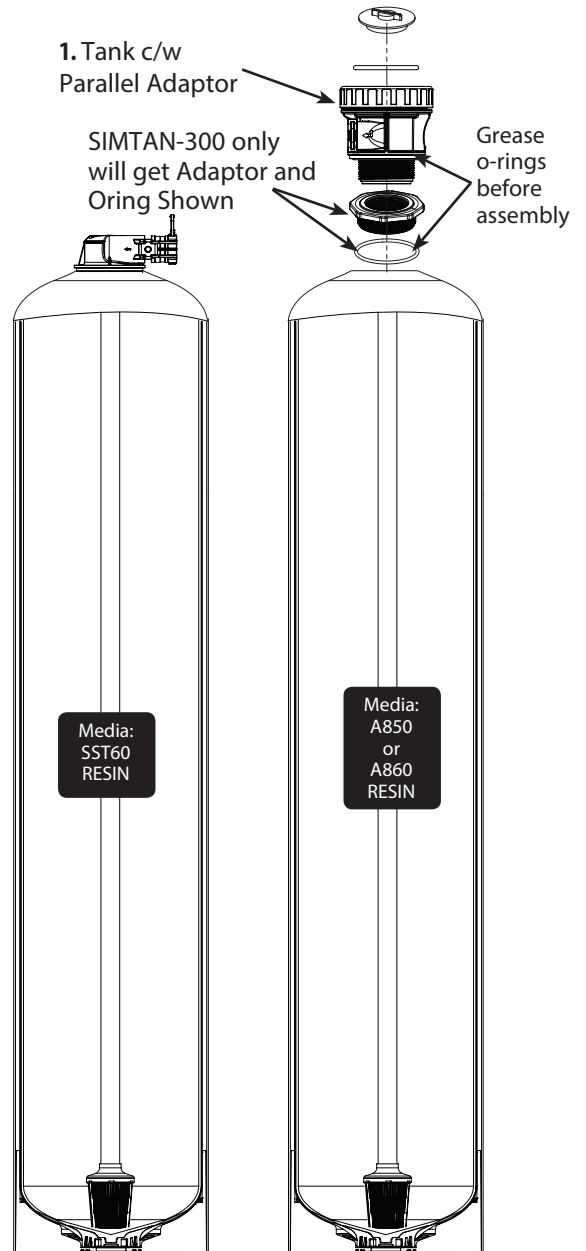
IMPORTANT:
PLEASE ENSURE THE ATTACHED TUBE STIFFENER IS INSERTED INTO THE BRINE LINE BEFORE TIGHTENING THE NUT.

5. Parts Box

- 92360 Grease Packet
- 60090003 2X 1" Straight Adapter
- 60010052 Transformer
- 18280 Upper Basket
- 60090010 2 X 3/4" Elbow Adapter
- 60010006 Bypass Tool
- 60010026 O Rings Attached

6. Parts Bag

- 80127819 Pipe Connector - 8" - 12" Tanks
- 80127817 Pipe Connector - 14" - 18" Tanks
- 60010025 Red Clips (4pcs)
- 60010016 O Ring (4pcs)
- 60010026 1" BSP Straight (4pcs)

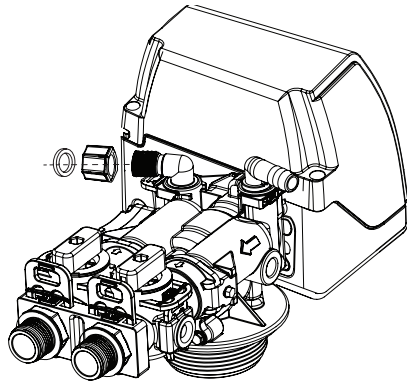


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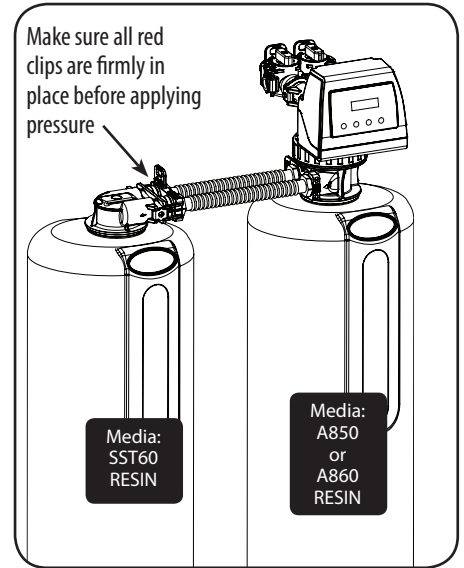
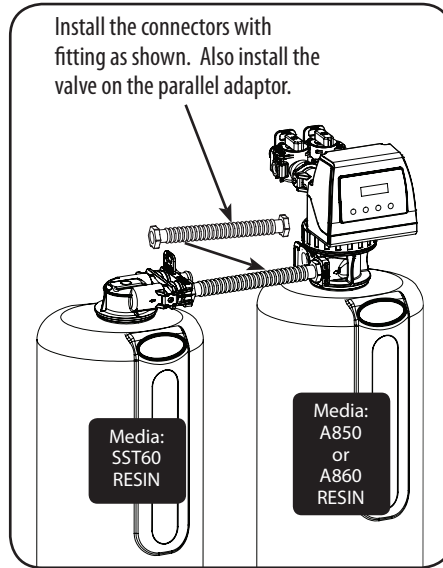
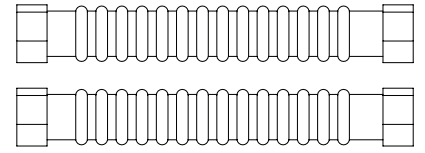
CAUTION!
DO NOT use petroleum based grease products.

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

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

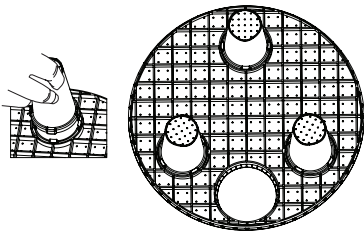


Pipe connector - 14" - 18" / 8" - 12" Tanks x 2

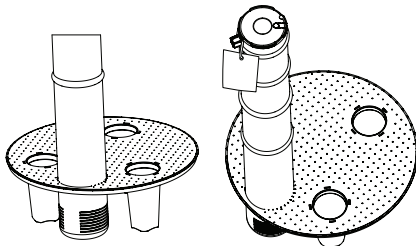


ASSEMBLING BRINE TANK*

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

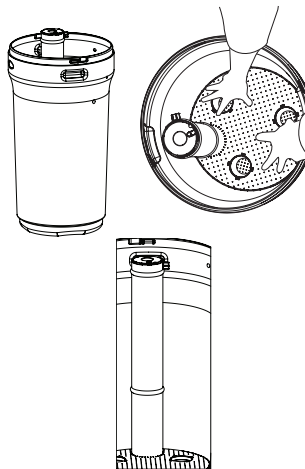


b) Insert the brine well assembly inside the grid plate as well below.

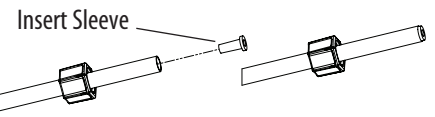


c) Drop the brine grid with brine well inside the brine tank such that the nut fitting faces the hole on the brine tank. Then press the grid evenly inside the brine tank until the brine grid legs touches the bottom of the brine tank.

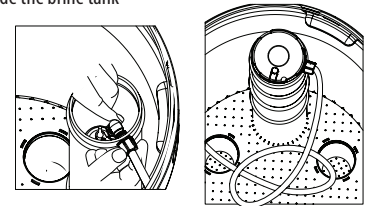
IMPORTANT:
IN ROUND
BRINE TANK, IT
IS IMPORTANT
TO ALIGN THE
HANDLE TO
THE BRINE
WELL AS
SHOWN



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



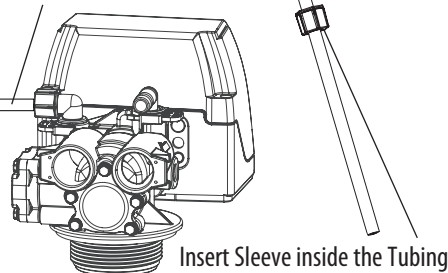
e) Insert the tube in the float assembly elbow and hand tighten the nut. In many cases the brine line already come installed from the factory. Leave the other end of the brine line tube inside the brine tank



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



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



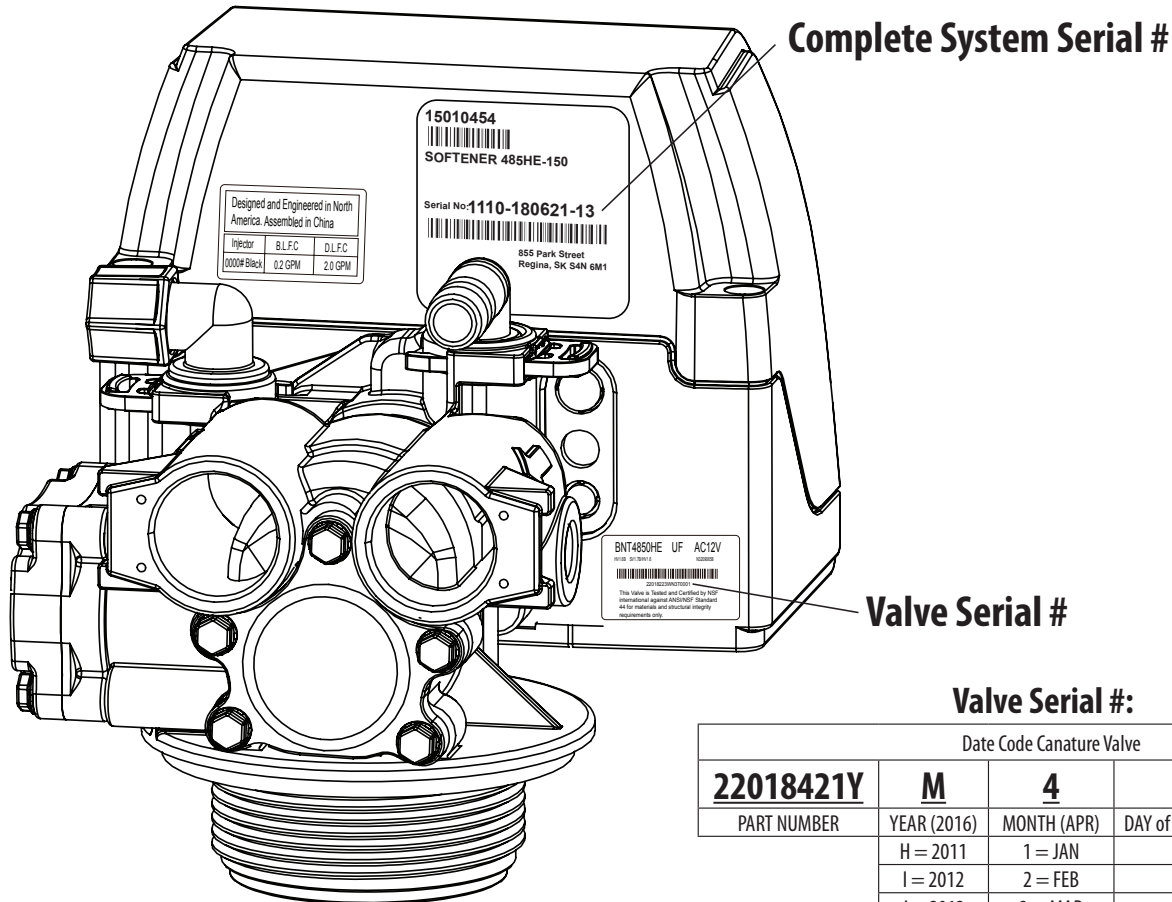
*NOTE

Resin Cleaner
An approved resin cleaner **MUST** be used on a regular basis if your water supply contains iron.
See page 22 - Res-Up® Feeder Installation Instructions

CHECK VALVE TYPE AND VALVE SERIAL

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

Please record these numbers for future use on page 20 in the maintenance section.



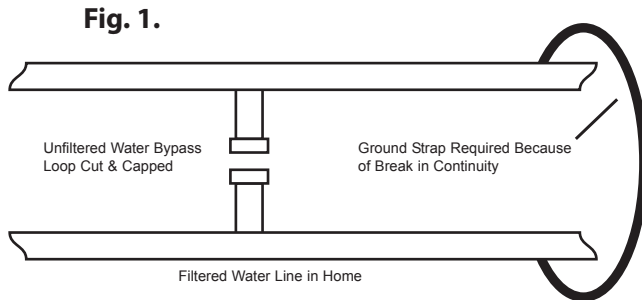
Valve Serial #:

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 New System*

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

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

Do not turn the conditioner unit upside down.

To Insure this Product Functions Properly:

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

MECHANICAL:

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

Tools Required for Installation:

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

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

NOTE

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



CAUTION!

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

See Fig. 1.

NOTE

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

NOTE

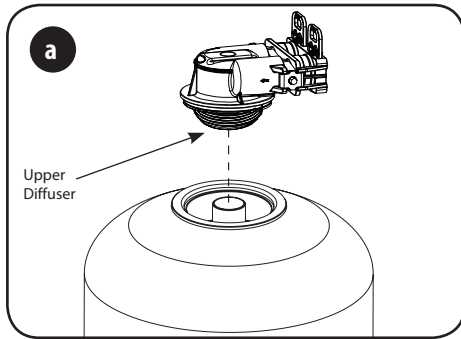
If a severe loss in water pressure is observed when the conditioner unit is initially placed in service, the conditioner tank may have been laid on its side during transit. If this occurs, backwash the conditioner to "reclassify" the media.

*NOTE

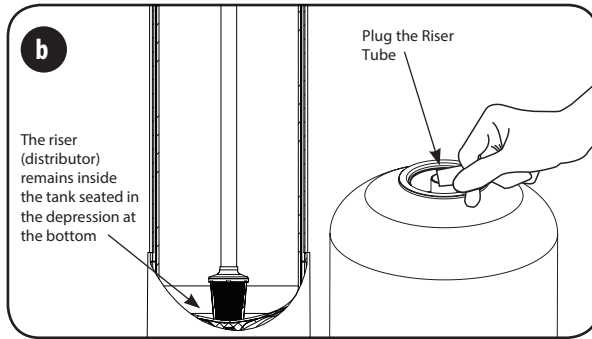
Due to transportation and climatic conditions all connections including the valve to the tank need to be checked at time of installation and tightened if necessary.

PREPARATIONS

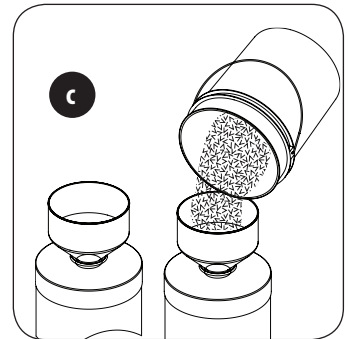
- 1. Media Installation (When Necessary).** Models larger than 2.0 CF of media are shipped with separate media in pails or boxes. All other model sizes come pre-loaded from the factory and this step is not required upon installation.



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

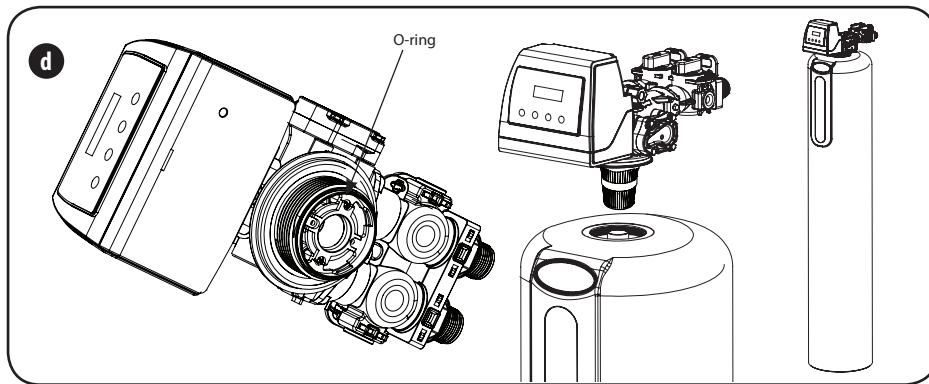


- b)** Temporarily plug the open end of the riser tube to ensure that no resin or gravel falls down into the distribution. The riser (distributor) remains inside the tank seated in the depression at the bottom.
Plug tube with a tape. Remove after media is loaded.



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

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



- 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.

NOTE

Never make a direct connection into a waste drain. A physical air gap of at least 1.5" should be used to avoid bacteria and wastewater travelling back through the drain line into the conditioner .

NOTE

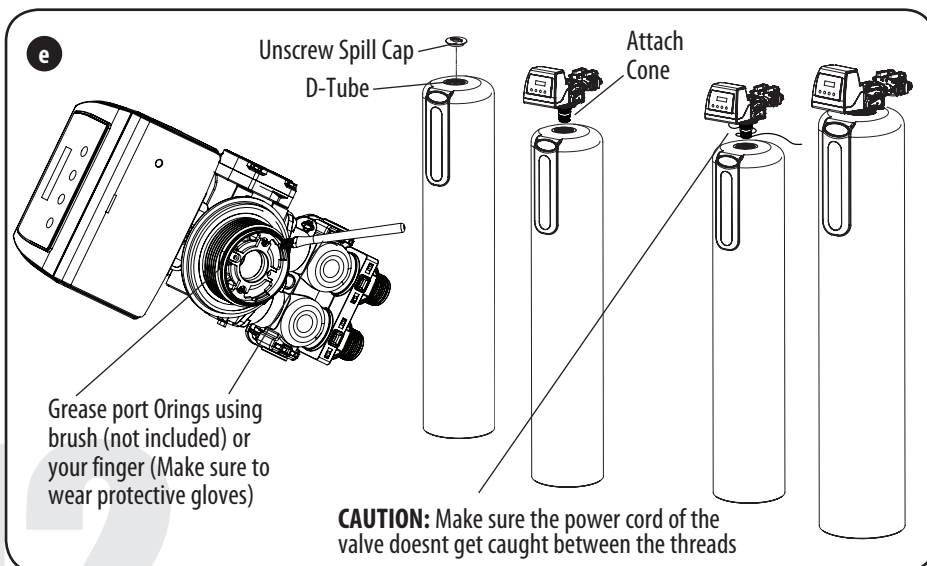
The unit is not ready for service until you complete the start-up instructions, page 16.

CAUTION!

The unit should be depressurized before installing or replacing media

CAUTION!

DO NOT use petroleum based grease products.



Grease port Orings using brush (not included) or your finger (Make sure to wear protective gloves)

CAUTION: Make sure the power cord of the valve doesn't get caught between the threads

- d)** Lube the bottom Valve Orings with the grease supplied, Attach the Cone. 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

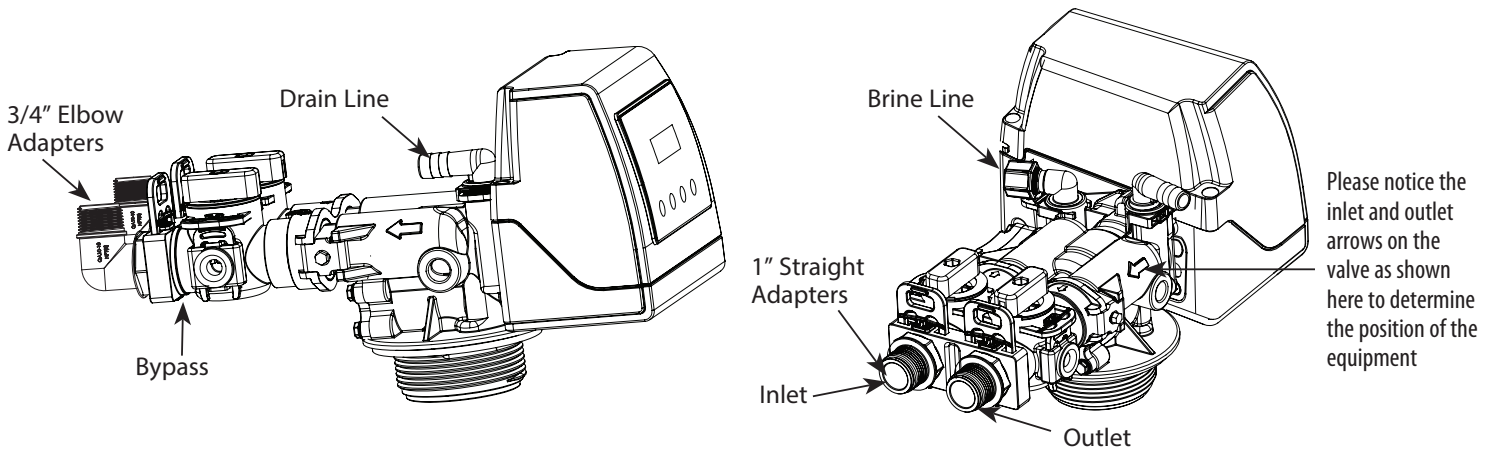
Planning Your Installation

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

1. All installation procedures must conform to local and state or provincial plumbing codes.
2. Outside faucets used to water lawns and gardens should not supply untreated water, replace untreated water with feed water to the unit. If necessary to do this please install check valve, **see page 15**. A new water line is often required to be connected to supply untreated water to the inlet of the water conditioner and to the outside faucets.
3. Locate as close as possible to the water supply source.
4. Locate as close as possible to a floor or laundry tub drain.
5. Locate in correct relationship to other water conditioning equipment. if closer than 10 feet please install check valve in accordance with local plumbing codes.
6. Conditioners should be located in the supply line before the water heater. Temperatures above 110°F (43°C) will cause damage to conditioners.
7. Do not install a conditioner or conditioner in a location where freezing temperatures occur. Freezing may cause permanent damage to this type of equipment and will void the factory warranty.
8. Allow sufficient space around the unit for easy servicing.
9. Keep the conditioner out of direct sunlight. The sun's heat may soften and distort plastic parts.

INSTALLATION STEPS

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



2. Make sure the bypass is attached well to the control valve. Connect the straight or elbow connectors to the bypass with red clips. Connect the inlet and outlet of the water conditioner to the plumbing of the house. The control valve must not be submitted to temperatures above 43°C (110°F). When sweat fittings are used, to avoid damaging the control valve, solder the threaded copper adapters to the copper pipe and then, using Teflon tape, screw the assembly into the bypass valve.
Do not use pipe thread compound as it may attack the material in the valve body.
3. Apply Teflon Tape and Orings to the fittings
4. Connect Conditioner to the house plumbing. Any solder joints near the valve must be done before connecting any piping to the valve. Always leave at least 6" (152 mm) between the valve and joints when soldering pipes that are connected to the valve. Failure to do this could cause damage to the valve.
5. **Drain Line connection:** Attach 1/2" ID, 5/8" OD drain hose to the hose barb and tighten securely with a hose clamp. Run the drain line to a floor drain or a laundry drain. Complete any necessary plumbing.

INSTALLATION STEPS

- *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.

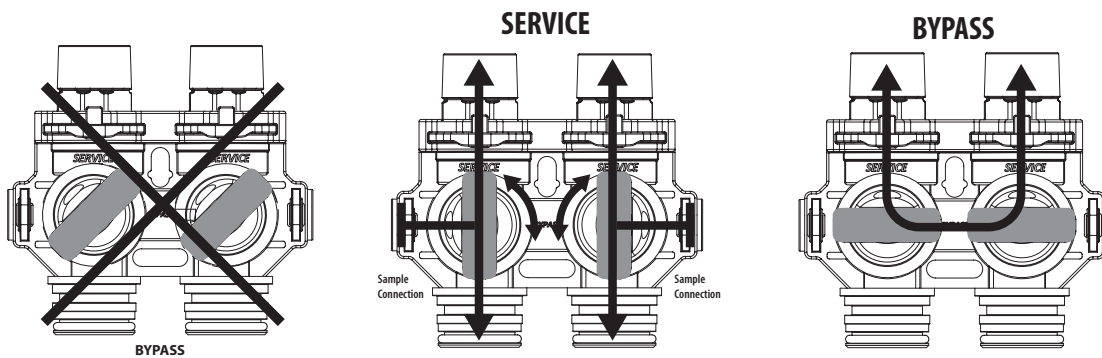
*Automatic Water Bypass

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. See 'STARTUP & PROGRAMMING', pages 16 & 19 for more info on Regeneration Programming.

*Manual Water Bypass

In case of an emergency such as conditioner maintenance, you can isolate your water conditioner from the water supply using the bypass valve located at the back of the control. In normal operation the bypass is open with the ON/OFF knobs in line with the INLET and OUTLET pipes. To isolate the conditioner, simply rotate the knobs clockwise (as indicated by the word BYPASS and arrow) until they lock. You can use your water related fixtures and appliances as the water supply is bypassing the conditioner. However, the water you use will be hard. To resume treated service, open the bypass valve by rotating the knobs counterclockwise. **Please make sure bypass knobs are completely open otherwise the unconditioned water could bypass through the valve.**



- Make sure there are no leaks in the plumbing system before proceeding. Close the water tap when water runs clean.
- Open the brine tank salt lid and add water until there is approximately 3" (75 mm) of water in the tank. Do not add salt to the brine tank at this time.

NOTE

If the plumbing system is used as the ground leg of the electric supply, continuity should be maintained by installing ground straps around any nonconductive plastic piping used in installation.
- See page 11

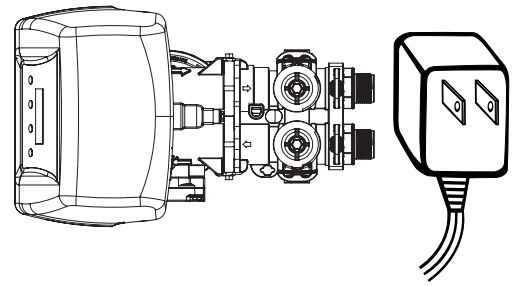
NOTE

Before starting installation, read page 20, **Plumbing System Clean-Up**, for instructions on some procedures that may need to be performed first.

STARTUP & PROGRAMMING

STEP 1. Connect the Transformer to the Valve

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



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

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

STEP 2. Add Water to Brine Tank

Open the brine tank /cabinet salt lid and add water as per the info below.

Do not add salt to the brine tank at this time.

BRINE TANK MODEL – Water to be Added at the Time of Installation:

BTR-100 (18.1" x 34.7") - 2.5 US Gallons **BTR-145** (20.3 x 37.4) - 3.25 US Gallons

BTR-200 (23.0" x 40.5") - 5.5 US Gallons

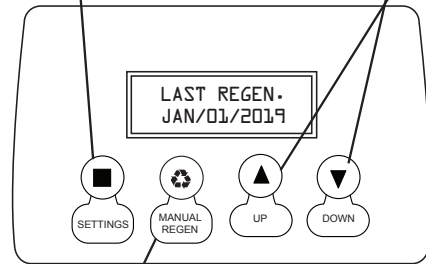
Key Pad Configuration

SETTINGS BUTTON

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

UP / DOWN

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



MANUAL REGEN BUTTON

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

STEP 3. Manually Regenerate the Valve

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

STEP 4. PROGRAMMING YOUR CONDITIONER'

PRESS SETTINGS KEY
3 SEC TO UNLOCK

AUG/30/2019
12:15AM

BACKWASH
10:00 REMAIN

1. The display will read "PRESS SETTINGS KEY [SETTINGS] 3 SEC TO UNLOCK".
2. After 3 seconds, the display will beep confirming unlock.
3. Press and hold **MANUAL REGEN** [MANUAL REGEN] to start Manual Regeneration process
4. The display will read time remaining. **ALLOW TO FINISH FULL CYCLE.**

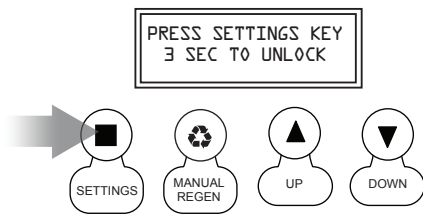
STEP 4. PROGRAMMING YOUR CONDITIONER


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

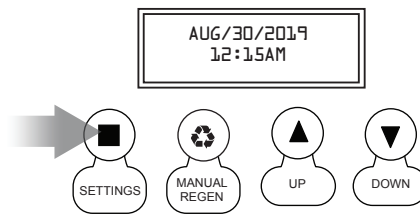
***Please call Canature WaterGroup before attempting to change any Level 2 values as this can affect the performance of your unit.**

STARTUP & PROGRAMMING (CONTINUED)

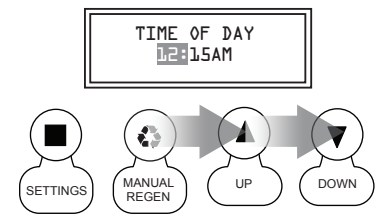
Level 1 PROGRAMMING:



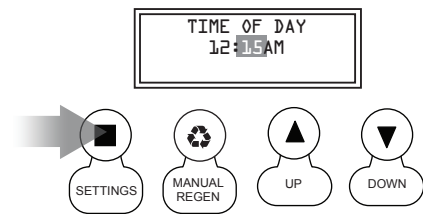
1. The display will read "PRESS SETTINGS KEY  3 SEC TO UNLOCK".
2. After 3 seconds, the display will beep confirming unlock.



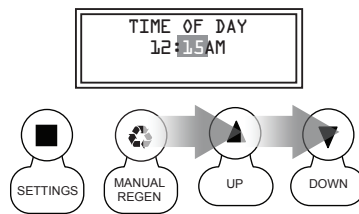
3. Press **SETTINGS**  until you hear beep.



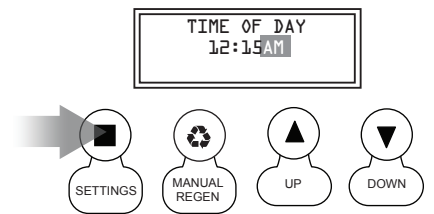
4. Now press **UP**  or **DOWN**  key to change the hour value to current time.



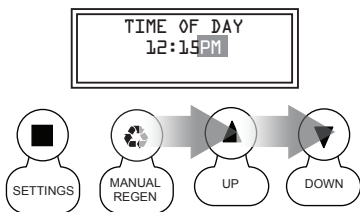
5. Press **SETTINGS**  once to highlight the value.



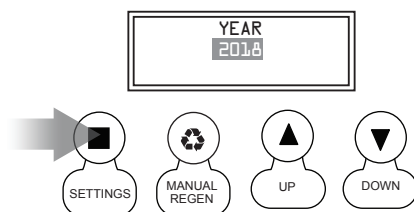
6. Now press **UP**  or **DOWN**  key to change the minute value to current time.



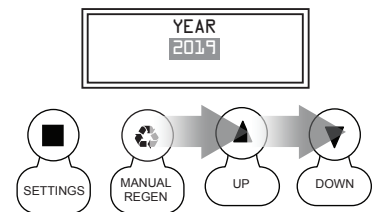
7. Press **SETTINGS**  once to highlight the value.



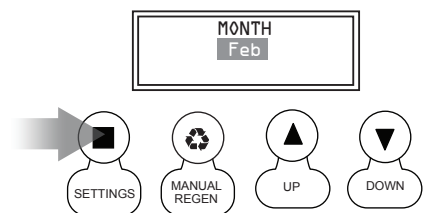
8. Now press **UP**  or **DOWN**  key to change the AM/PM values to current time.



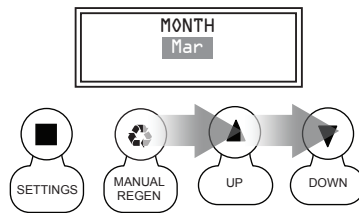
7. Press **SETTINGS**  once to highlight the value.





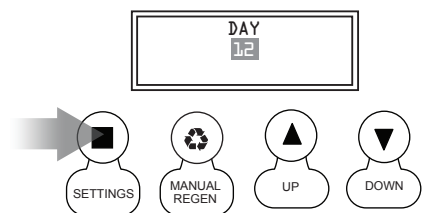
8. Now press **UP**  or **DOWN**  key to change the YEAR value to current year.



9. Press **SETTINGS**  once to highlight the current month.



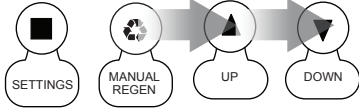
10. Now press **UP**  or **DOWN**  key to change the MONTH value to desired month.



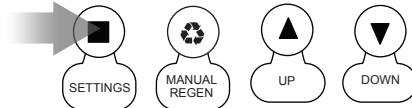
11. Press **SETTINGS**  once to highlight DAY #.

STARTUP & PROGRAMMING (CONTINUED)

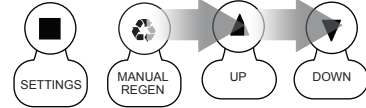
Level 1 PROGRAMMING: - CONTINUED



12. Now press **UP** (▲) or **DOWN** (▼) key to change the DAY value to desired day.



13. Press **SETTINGS** (■) once to highlight value.



14. Now press **UP** (▲) or **DOWN** (▼) key to change HARDNESS value.
*See calculation below:

*Calculating Compensated Hardness for Water where Iron or Manganese is Present

From your water analysis.

Iron x 4 = grains of hardness and or Manganese x 8 = grains of hardness. These numbers can be found on your water analysis report, and the equivalent grains of hardness should be added to your total hardness number. The new sum of these numbers is the hardness to be entered during programming below.

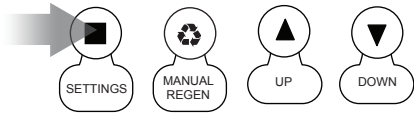
EG

Iron = 0.5 ppm x 4 = 2.0 gpg

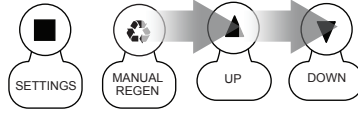
Mang = 0.3 x 8 = 2.4 gpg (always round up) = 3.0 gpg

Hardness = 15 gpg + 2.0 (compensated iron) + 3.0 (compensated manganese) = 20 gpg
enter 20 as the hardness when programming below.

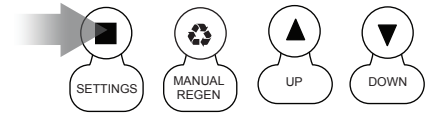
Iron _____ x 4 + Manganese x 8 _____ + Hardness = Total Hardness _____ **(Enter this amount)**



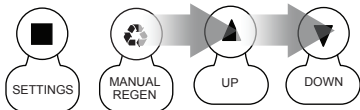
15. Press **SETTINGS** (■) once to highlight value.



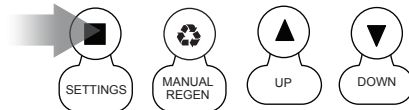
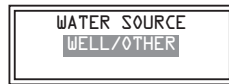
16. Now press **UP** (▲) or **DOWN** (▼) key to change # of PEOPLE.



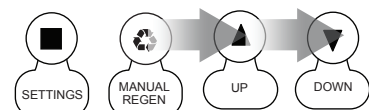
17. **FACTORY SET DO NOT ADJUST!**



18. **FACTORY SET DO NOT ADJUST!**

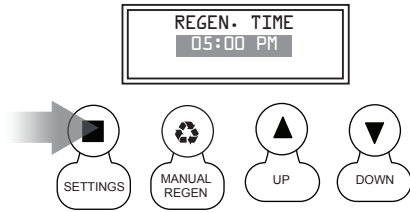


19. **FACTORY SET DO NOT ADJUST!**

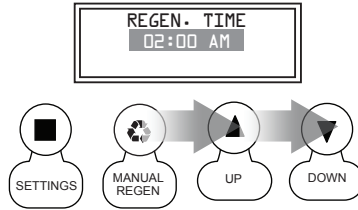


20. **FACTORY SET DO NOT ADJUST!**

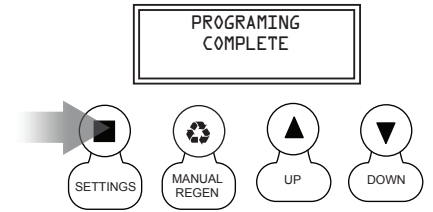
STARTUP & PROGRAMMING (CONTINUED)



21. Press **SETTINGS** (■) once to highlight value.



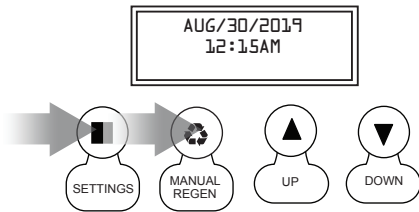
22. Now press **UP** (▲) or **DOWN** (▼) keys to change REGEN. TIME.



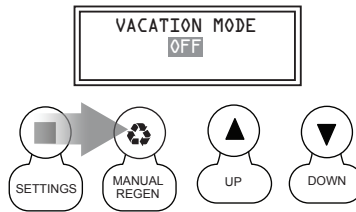
21. Press **SETTINGS** (■) once to COMPLETE PROGRAMING.

SETTING VACATION MODE

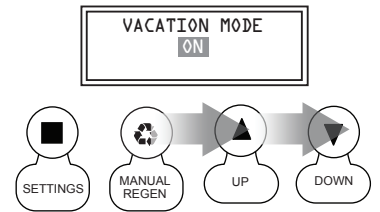
This function may be activated during a prolonged absence, such as a vacation for more than 2 weeks. The system will perform a brief backwash and rinse based on advanced setting. The purpose is to keep the water fresh in the softener tank and plumbing system.



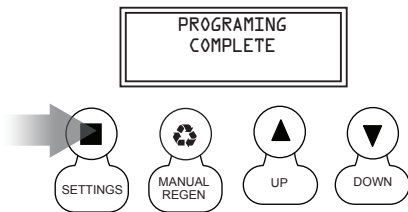
1. To set VACATION MODE, press & hold **SETTINGS** (■) and **MANUAL REGEN** (♻️) until you hear a beep.



2. Press **MANUAL REGEN** (♻️) to VACATION MODE setting.



3. Now press **UP** (▲) or **DOWN** (▼) keys to change to ON.



4. Press **SETTINGS** (■) once to COMPLETE PROGRAMING.

STARTUP & PROGRAMMING (CONTINUED)

*Add Salt to the Brine Tank

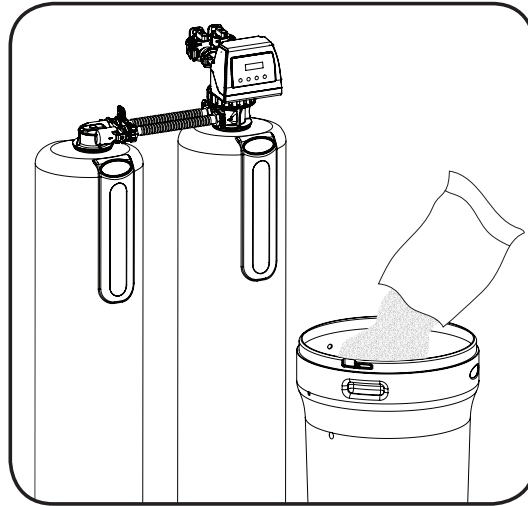
Put 40 kgs of crystal water conditioner salt in the brine tank. The unit will automatically fill the water to the correct level when it regenerates.

*NOTE

RESIN CLEANER

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

See page 22 - Res-Up® Feeder Installation Instructions



Start up and programming complete. Unit is now operational.

NOTE

NEW SOUNDS

You may notice new sounds as your water conditioner operates. The regeneration cycle lasts approximately 1.5 hours to 3.0 hours depending on the specific model. During this time, you will be able to hear water running intermittently to the drain, depending on the proximity of the unit to the sleeping area and the 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 may be the only practical solution to prevent continued staining originating from this source. After completing the installation of the conditioner, clean the water heater by following these instructions:

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

NOTE

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

Dishwasher

Consult owners' handbook and follow manufacturer's instructions.

Toilet Flush Tanks

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

MAINTENANCE INSTRUCTIONS AND SCHEDULE

Service Schedule

- The seals and spacers along with the piston assembly should be inspected/cleaned or replaced every year depending on the inlet water quality and water usage. See inspection and replacement of Piston assembly and seal and spacer kit, page 21, figure 2.
- The injectors should be cleaned/inspected or replaced every year depending on the water quality and use. See Clean Injector Assembly, page 21, figure 3
- SERVICING OF PARALLEL ADAPTOR should be done annually. All connections need to be inspected for leaks, the cross pipes should be removed and inspected for blockage. If there is no evidence of leaking on the adapter no further inspection is required. If additional inspection is required see page 24.
- The media should be replenished or replaced depending of inlet water quality and water consumption. Check with your water treatment expert on the media bed change frequency.
- Maintenance Kit (60010307) should be used for servicing control on an annual basis. The maintenance kit consists of piston assembly, seals and spacers, injectors.

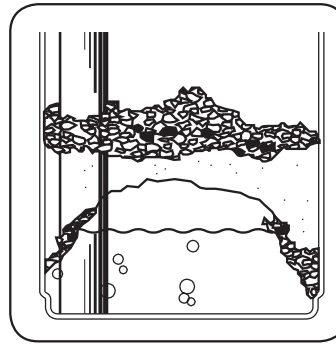
Maintenance of your new water conditioner requires very little time or effort but it is essential. Regular maintenance will ensure many years of efficient and trouble free operation.

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

Bridging

Humidity or the wrong type of salt may create a cavity between the water and the salt. This action, known as "bridging", prevents the brine solution from being made, leading to your water supply being hard.

If you suspect salt bridging, carefully pound on the outside of the plastic brine tank or pour some warm water over the salt to break up the bridge. This should always be followed up by allowing the unit to use up any remaining salt and then thoroughly cleaning out the brine tank. Allow four hours to produce a brine solution, then manually regenerate the conditioner.



CAUTION!

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

Cleaning of your Brine / Salt tank

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

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

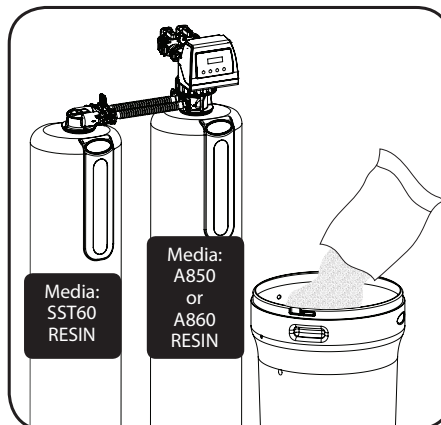
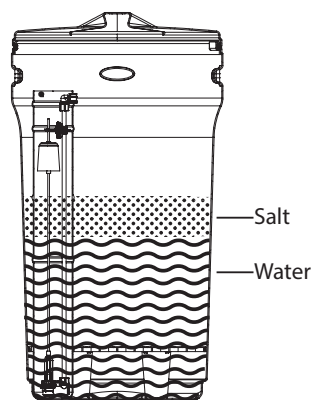
Checking the Salt Level

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

Add Salt to the Brine Tank

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

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



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.

MAINTENANCE INSTRUCTIONS AND SCHEDULE

Care of Your Conditioner

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

Resin Cleaner

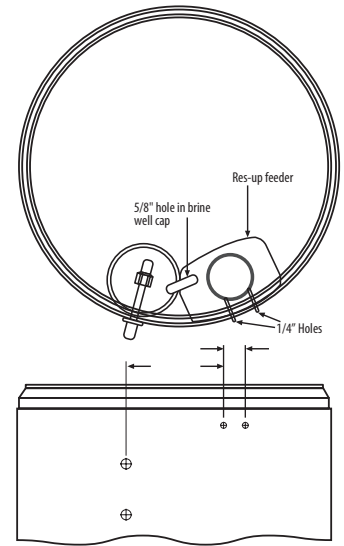
An approved resin cleaner **MUST** be used on a regular basis if your water supply contains iron. The amount of resin cleaner and frequency of use is determined by the quantity of iron in your water (consult your local representative or follow the directions on the resin cleaner package).

RES-UP® FEEDER INSTALLATION INSTRUCTIONS (OPTIONAL)

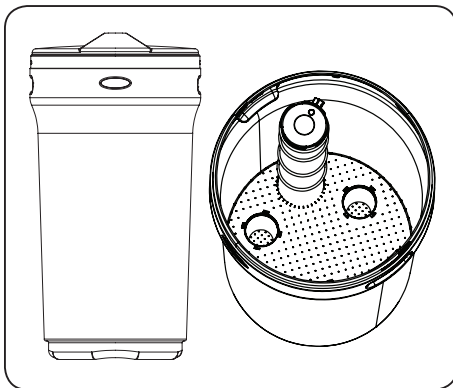
Res-Up Feeders attach to your brine tank and automatically dispense the Res-Up cleaner into the brine solution where it cleans the resin during the regeneration cycle.

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

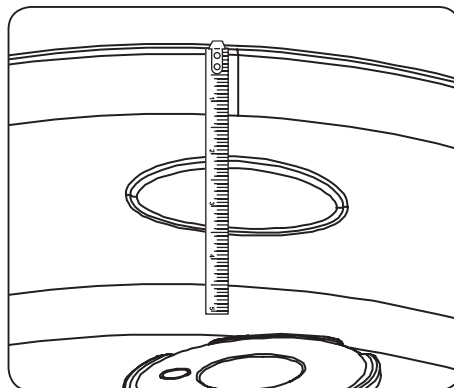
Res-up Feeder Bottle (Chemical sold Separately)
The 12 cc feeder (Part # 33010) is for conditioners up to 64,000 grains (2 ft3 of resin).
The 30 cc feeder (Part # 33018) is for larger conditioners over 64,000 grains.
Pro-Res Care Chemicals
Item #45147 Pro-ResCare - Gallon
Item #45148 Pro-ResCare - Quart



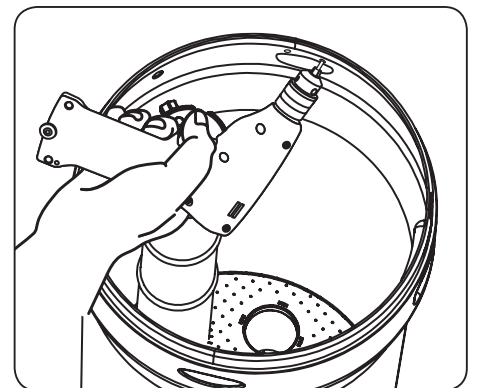
Install Resup Feeder



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

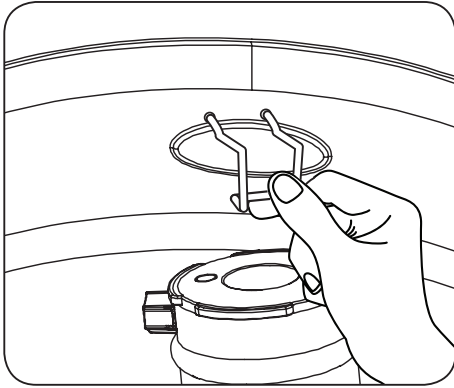


2. Measure 2 inches from the top of the tank beside the oblong molding.

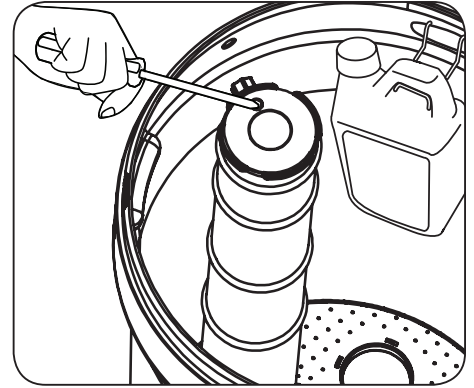
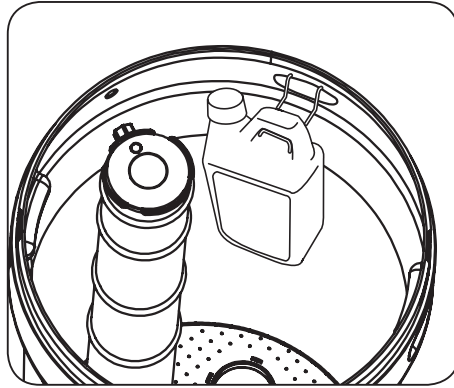


3. Mark the location of the holder and drill.

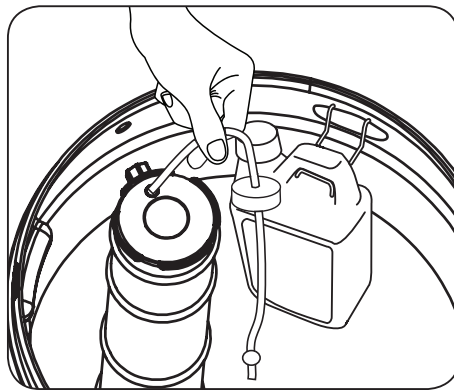
RES-UP® FEEDER INSTALLATION INSTRUCTIONS (OPTIONAL)



4. Install the holder and the Res Care Solution



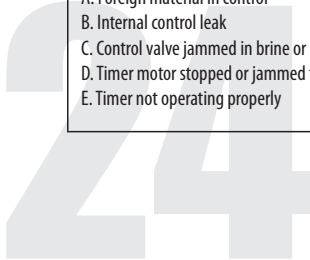
5. Take off the small hole cover on the Brine Well lid.



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.

TROUBLE SHOOTING GUIDE

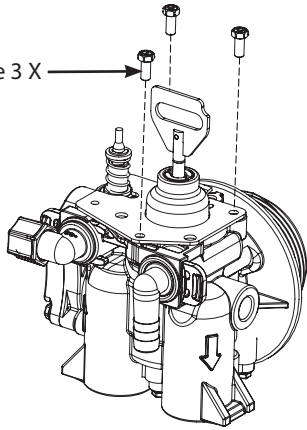
Problem	Possible Solutions
1. CONDITIONER DELIVERS UNTREATED WATER A. Bypass valve is closed B. No salt in brine tank C. Injector or screen plugged D. Insufficient water flowing into brine tank E. Hot water tank hardness F. Leak at distributor tube G. Internal valve leak H. Flow meter jammed I. Flow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



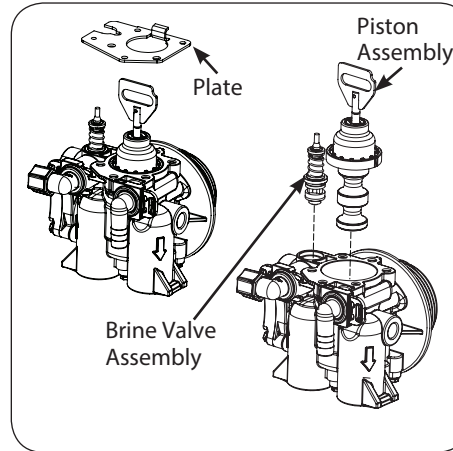
INSPECTION AND REPLACEMENT OF PISTON ASSEMBLY AND SEAL AND SPACER KIT

Fig. 2

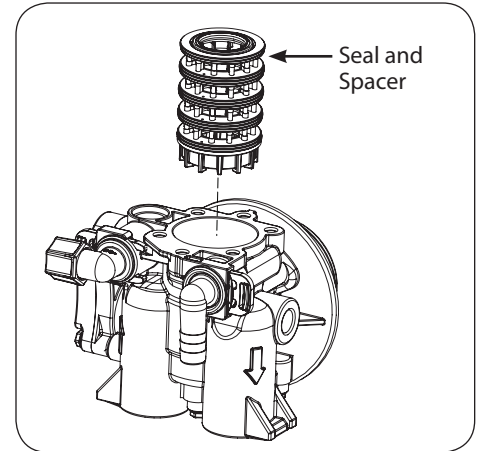
Remove 3 X
Screws



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



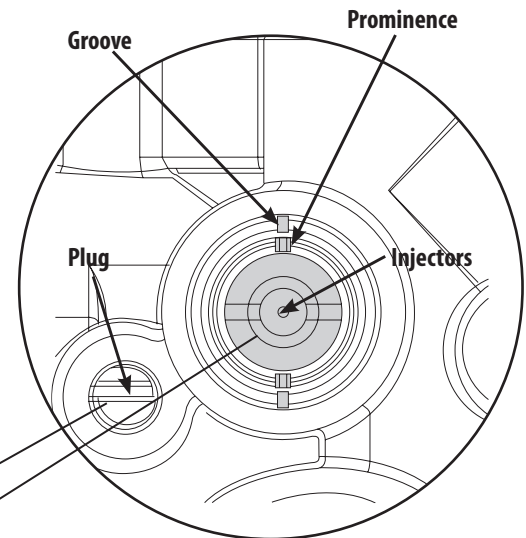
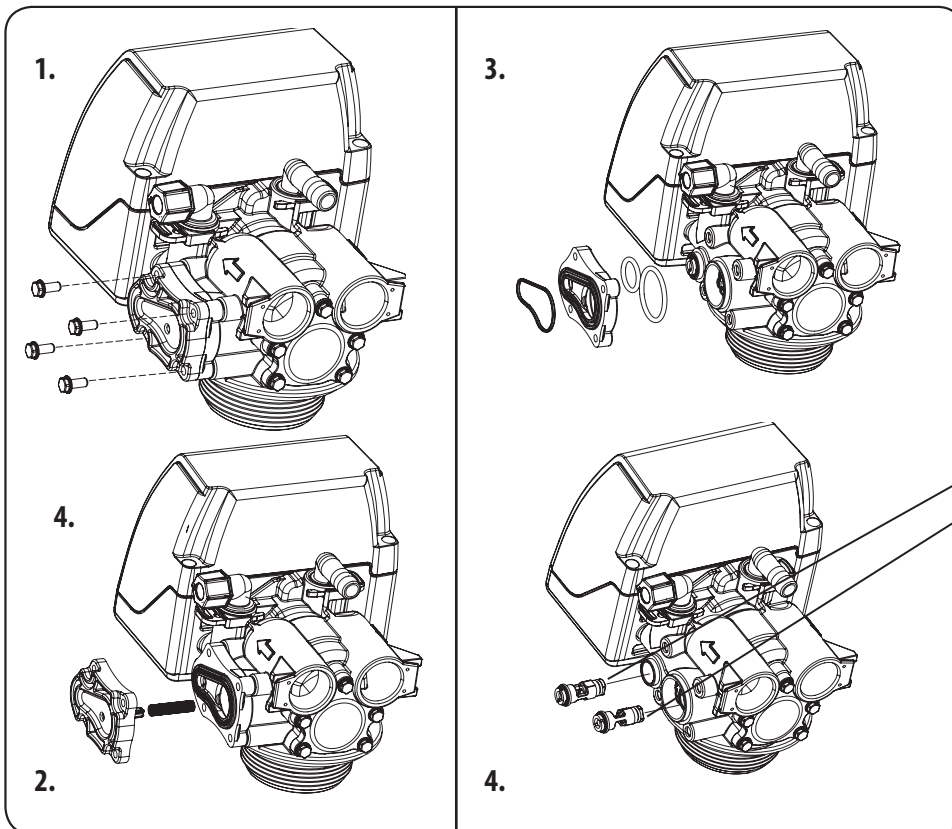
3. Remove the plate from the valve body and pull the Piston Assembly from the valve. The brine valve assembly can also be removed in this stage.
4. Remove the seal spacer assembly, grease it with silicone lubricant (# 92360) and put back in.



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

CAUTION!
DO NOT use petroleum based grease products.

CLEAN INJECTOR ASSEMBLY

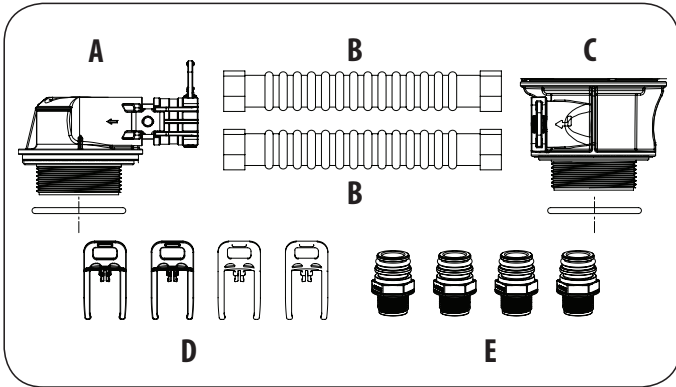


PLEASE NOTE: Make sure the two prominences on the injector are aligned to the grooves on the valve body.

1. Remove four 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

SERVICING OF PARALLEL ADAPTOR

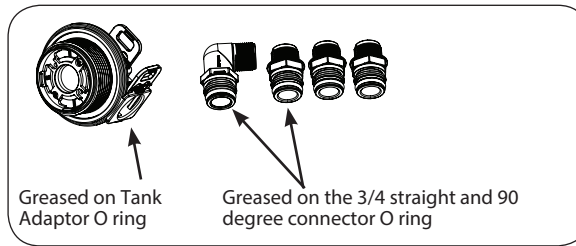
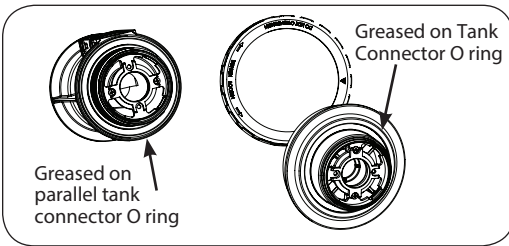
Tank and Valve Connection Parts



- A. Tank adaptor w/ O ring
- B. Pipe connector - 8" - 12" Tanks
Pipe connector - 14" - 18" Tanks
- C. Parallel tank connector w/ O ring
- D. Red Clips (4pcs)
- E. 1" x 4 Straight , w O ring

NOTE

Full disassembly requires specialty wrenches item's 60010116 and 60010117 and should only be attempted by a qualified service technician. If there is no indication of leaking or fouling of the inlets due to harsh water conditions then there should be no need to disassemble.



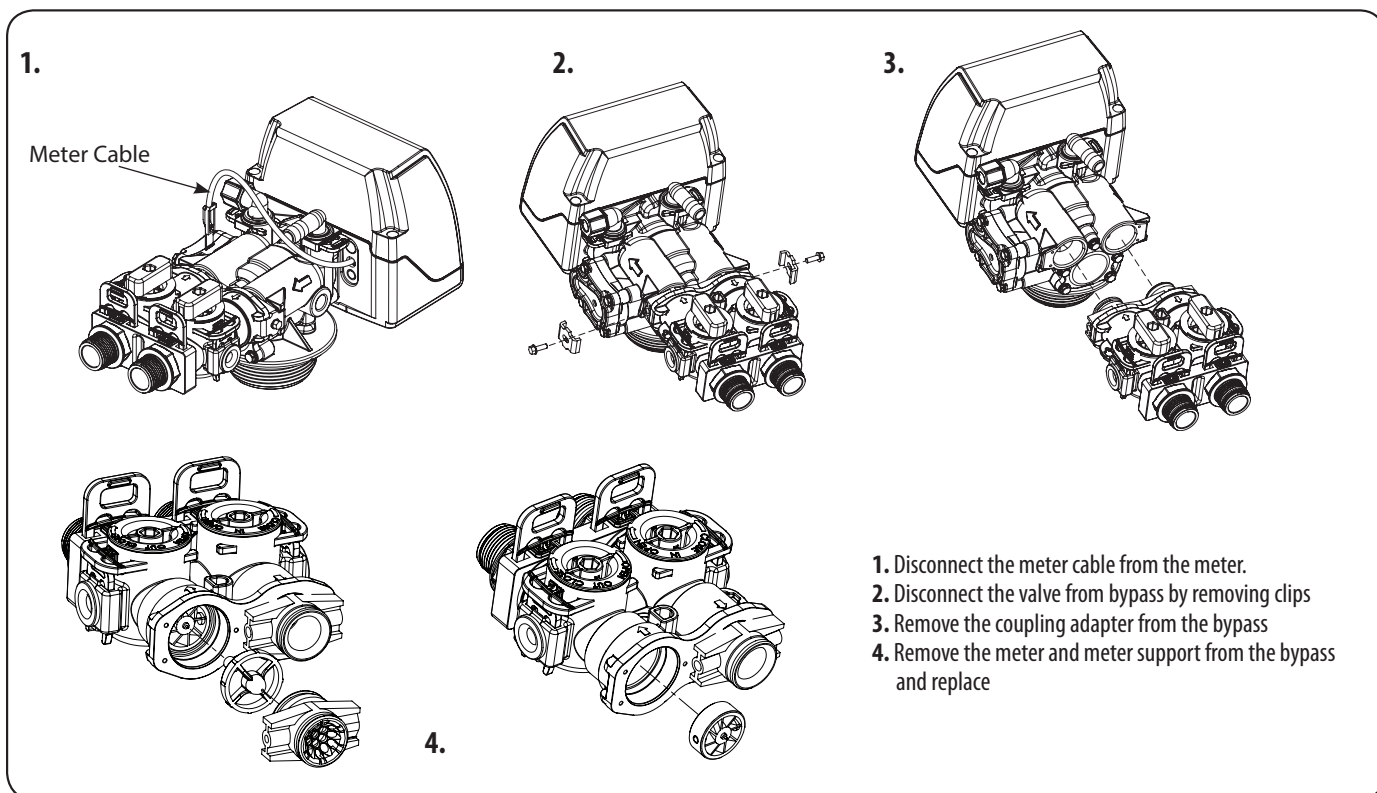
Ensure all Oring on both tank connectors are properly dissembled and apply a good amount of approved grease .

CAUTION!

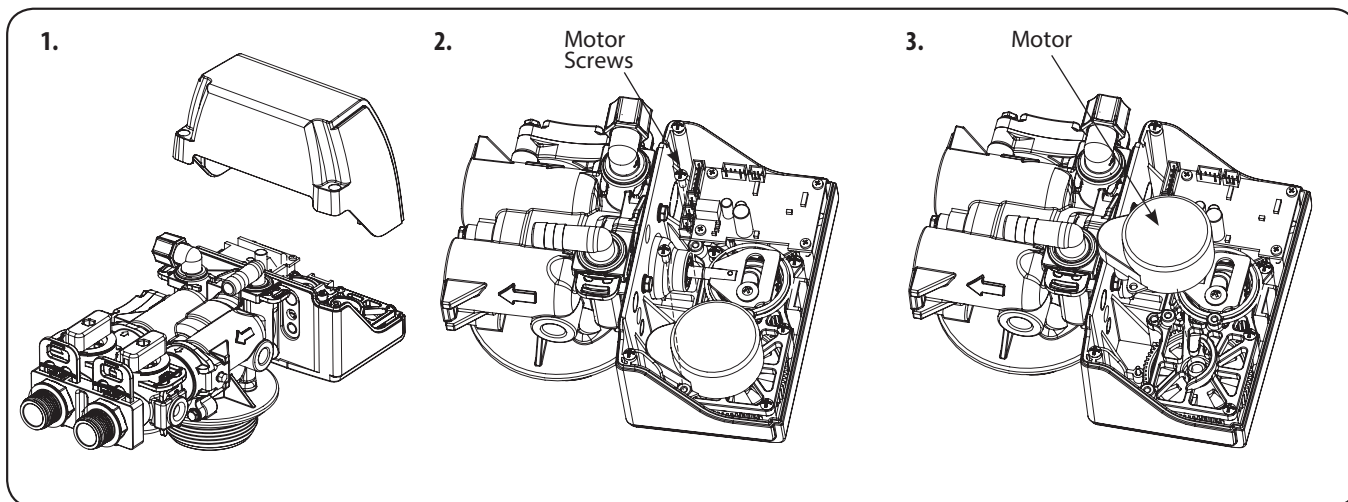
DO NOT use petroleum based grease products.

THE FOLLOWING 'REPLACEMENT SECTION', PAGES 26 TO 29 CONTAIN CONTENT THAT SHOULD ONLY BE USED BY A QUALIFIED SERVICE TECHNICIAN:

REPLACE METER ASSEMBLY



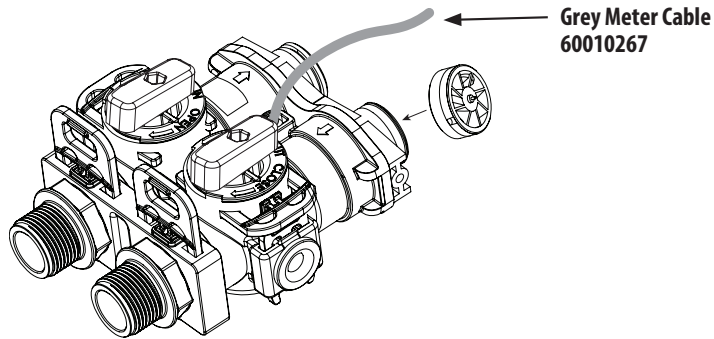
REPLACE MOTOR



REPLACING THE BYPASS AND METER CABLE

If valve is manufactured before March 20th, 2018, and customer wishes to replace or service impeller on bypass. Customer can order 60010238. If customer wishes to replace to new design, then follow the steps below.

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.

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

Disconnect the meter cable from the bypass.

Step 3
Remove Cover.

Step 4
Disconnect the cables from the front PCB display.

Step 5
Disconnect the cables from the rear PCB display.

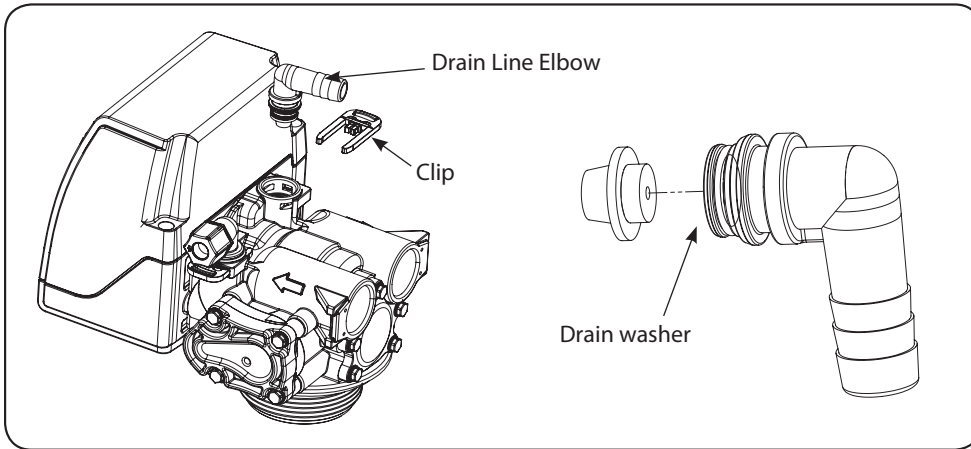
Remove the meter cable attached on Main PCB.

Cut the tie that fastens the wires

Step 6
Remove strain relief with pliers.

Step 7
Replace the old cable with the new Cable.

REPLACE DRAIN LINE FLOW CONTROL

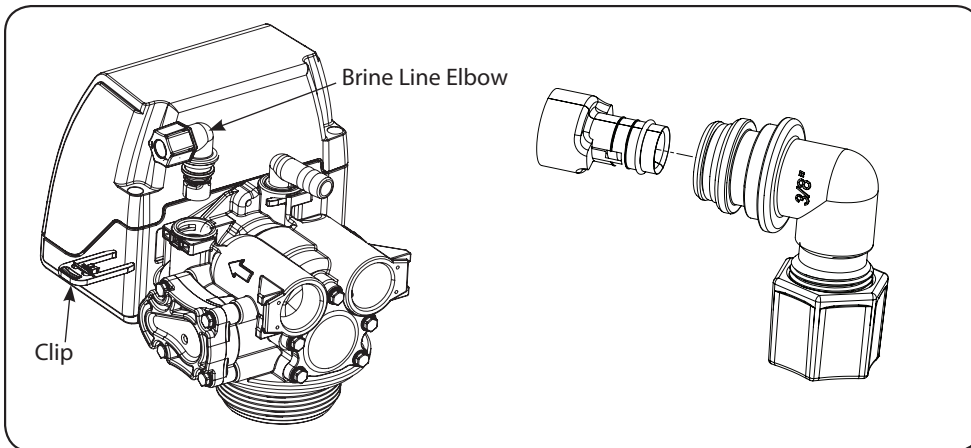


1. Pull the drain line clip and remove the drain line elbow and washer
2. Clean/replace drain line washer

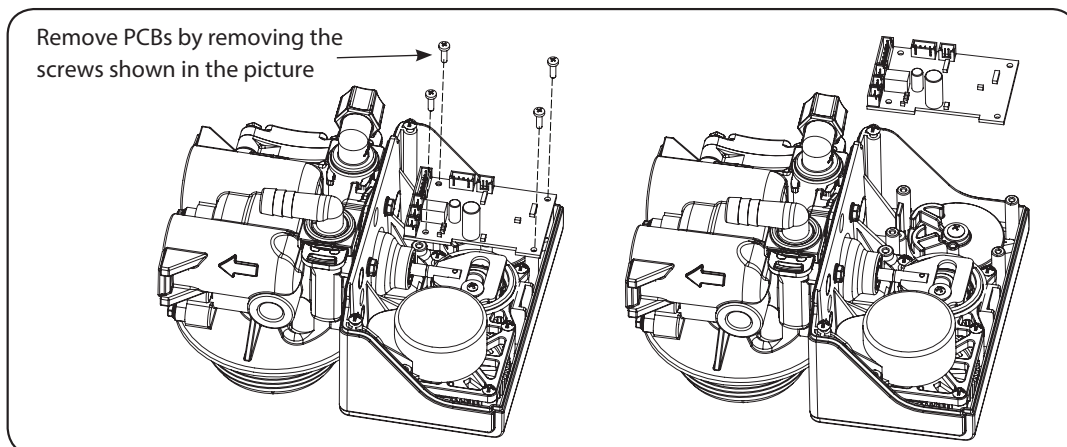
NOTE

Be sure to shut off any bypass line.

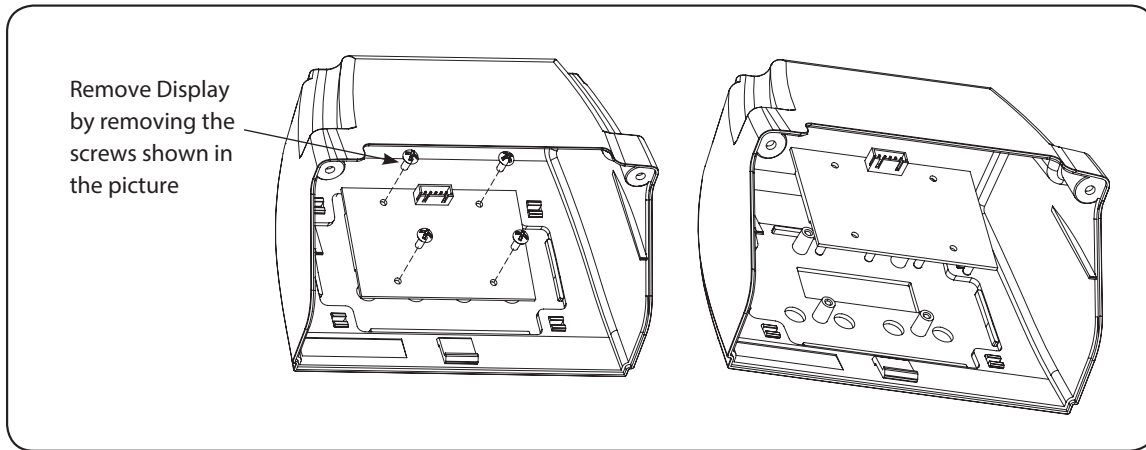
REPLACE BRINE LINE FLOW CONTROL



REPLACING PCBs



DISPLAY REPLACEMENT

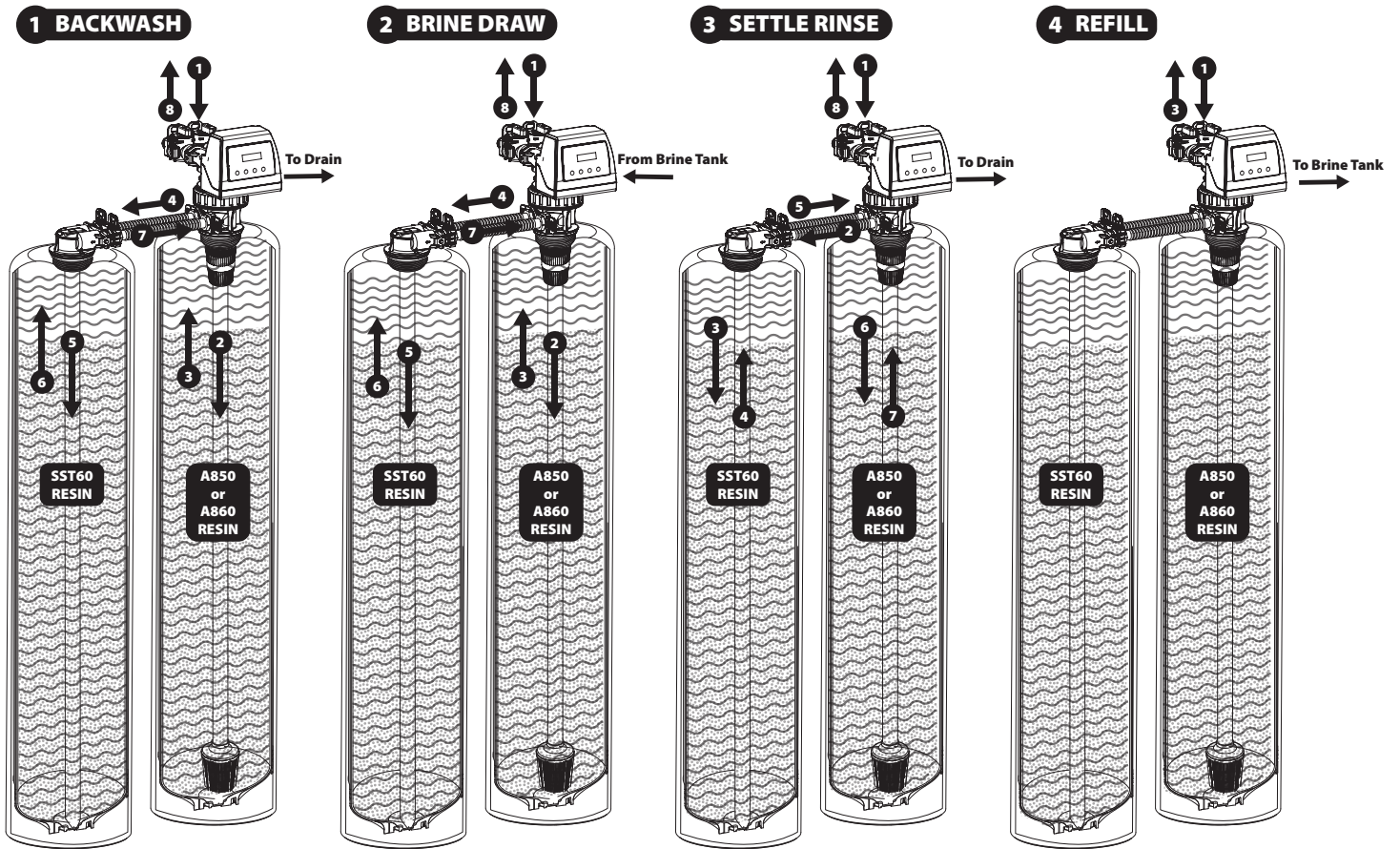


AFTER SERVICING

1. Reconnect drain line
2. Return bypass or inlet valve to normal in service position. Water Pressure will automatically build in the conditioner
3. Check for leaks at all sealed areas. Check Drain seal with the control in the backwash position
4. Plug electrical cord into outlet
5. Set Time of Day and cycle the control valve manually to assure proper function. Make sure control valve is returned to the In Service position

REGENERATION PROCESS EXPLAINED

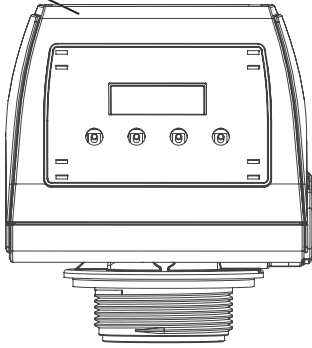
- 1. Backwash:** During the backwash cycle, water enters **A850/A860 RESIN** tank through the center of the distribution tube and flows upwards in **A850/A860 RESIN** tank expanding the media bed and carrying any precipitated contaminants trapped within the bed. It then travels to **SST60 RESIN** tank through the center of the distribution tube and flows upwards in **SST60 RESIN** tank and then out to the drain.
- 2. Brine Draw:** During the brine draw cycle, brine water enters **A850/A860 RESIN** tank through the center of the distribution tube and flows upwards through **A850/A860 RESIN** tank regenerating the media bed. It then travels to **SST60 RESIN** tank through the center of the distribution tube and flows upwards in **SST60 RESIN** tank and then out to the drain.
- 3. Settle Rinse:** During the settle rinse cycle, water enters **SST60 RESIN** down through the bed and up the through the center of the distribution tube. It then travels to **A850/A860 RESIN** tank down through the bed and up the through the center of the distribution tube and out to the drain.
- 4. Refill:** During refill the control valve will put water into the brine tank for the next regeneration cycle.



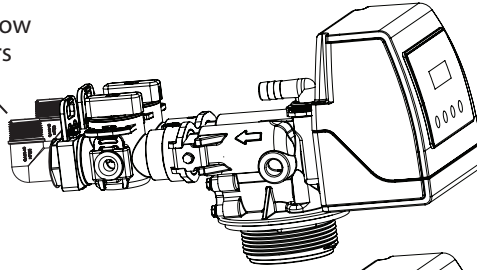
Water  Media 

PARTS BREAKDOWN

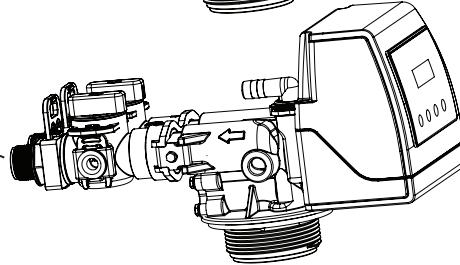
Control Valve



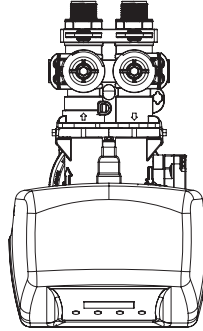
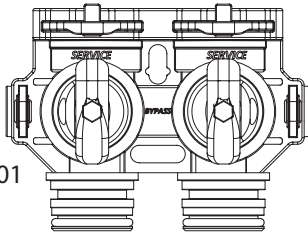
3/4" Elbow Adapters



1" Straight Adapters

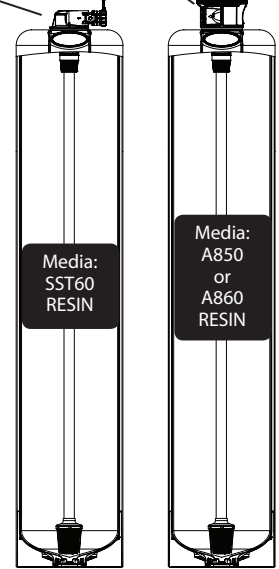


Bypass -
Part # 60095101



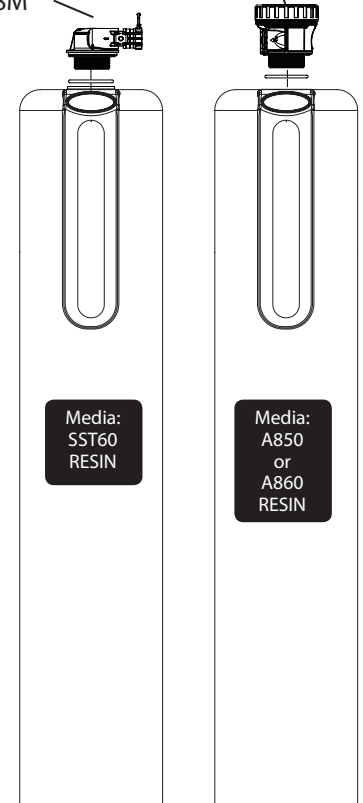
Part #
60010068M

Part #
60010012S



Parallel Tank Adaptor W/
Oring Part #60010012S

Tank Adaptor
W/Oring Part #
60010068M



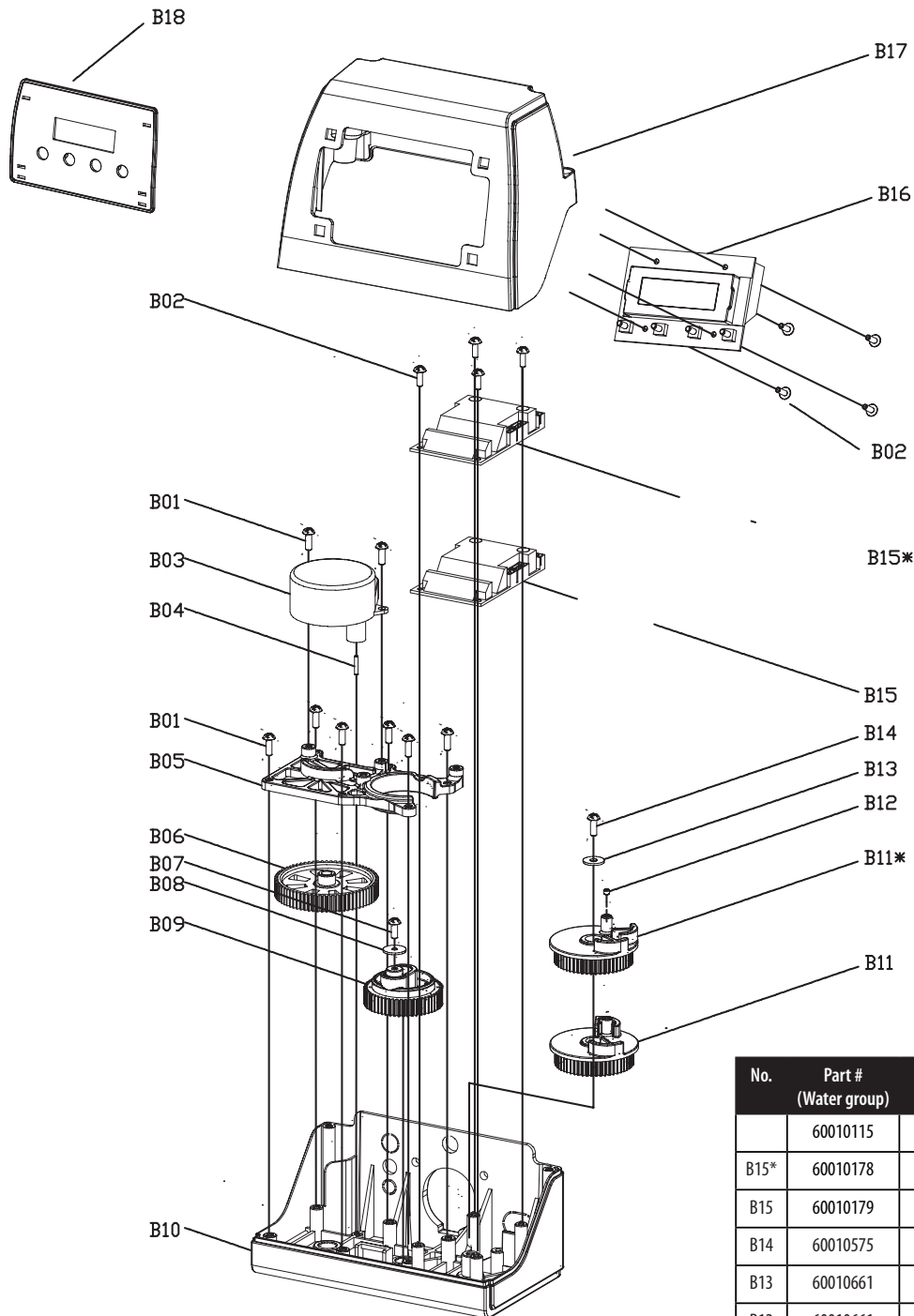
SST60 RESIN TANK

Model	Mineral Tank Size	Tank # (Natural Color)	Tank # (Black Color)	Tank # (Blue Color)	Distributor#	Valve #	Media Bed #
Conditioner Downflow (Single Tank)							
75	8 x 44	25010025	25010027	25010026	50010005	10010060	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

A850 OR A860 RESIN TANK

Model	Mineral Tank Size	Tank # (Natural Color)	Tank # (Black Color)	Tank # (Blue Color)	Distributor#	Valve #	Media Bed #
Conditioner Downflow (Single Tank)							
75	8 x 44	25010025	25010027	25010026	50010005	10010060	95401
100	9 x 48	25010034	25010036	25010035	50010005		95401
150	10 x 54	25010049	25010051	25010050	50010005		95402
200	12 x 52	25010058	25010060	25010059	50010005		95403
250	13 x 54	25010064	25010066	25010065	50010010		95403
300	14 x 65	25030001 and 50040039	Not Available	Not Available	50010010		95404

PARTS BREAKDOWN

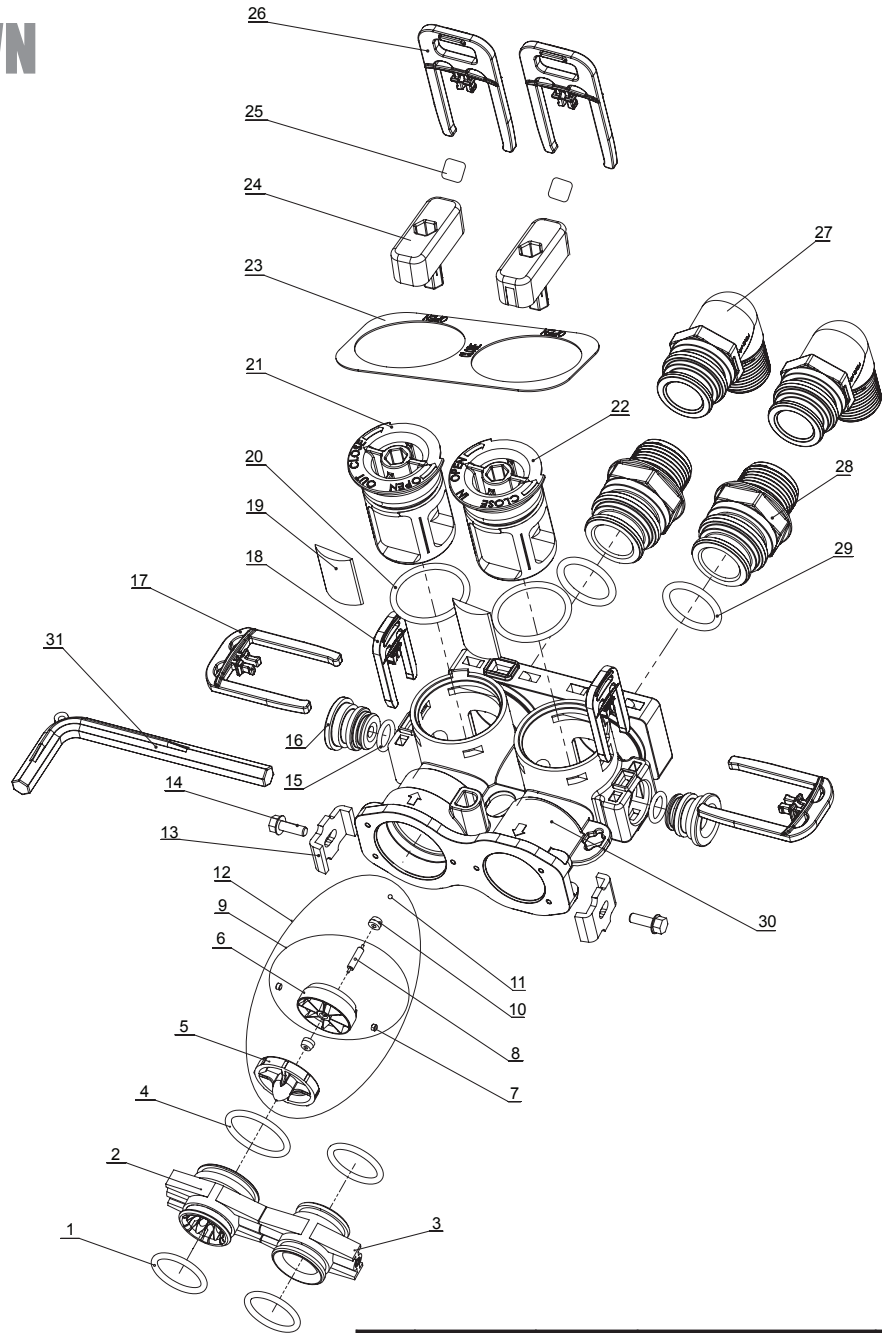


Powerhead Parts List

No.	Part # (Water group)	Description	Qty
B18	60095098	485 Display Plate(Novo)	1
B17	60010141	485 Cover(Novo)	1
	60010240	BNT85 Wiring Harness	1
B16	60010180	BNT85HE PCB (Upflow)	1
	60095099	Wire Rope-3x100	1
	60095091	Power Strain Relief	1
	60010124	Power Cable	1
	60095092	Meter Strain Relief	1

No.	Part # (Water group)	Description	Qty
	60010115	Meter Assembly	1
B15*	60010178	485HE Main Pcb(Upflow)	1
B15	60010179	485HE Main Pcb(Downflow)	1
B14	60010575	Screw-4.2x12	1
B13	60010661	Washer-4x12	1
B12	60010661	Magnet(3x2.7)	1
B11*	60095095	BNT85HE Brine Gear(Upflow)	1
B11	92392	BNT85HE Brine Gear(Downflow)	1
B10	60095077	BNT85 Mounting	1
B09	92391	BNT85HE Main Gear	1
B08	60010100	Washer-3x13	1
B07	60010099	Screw-ST2.9X13(Large Washer)	1
B06	00092389	BNT85 Drive Gear	1
B05	60010573	BNT85HE Mounting Plate	1
B04	60010660	Motor Pin	1
B03	92393	Motor	1
B02	60010673	Screw-ST2.9X10	8
B01	60010574	Screw-ST3.5X13	10

PARTS BREAKDOWN



Bypass Parts List

No.	Part # (Water Group)	Part # (Canature)	Description	Qty
C28	60010006	70020007	Bypass Tool	1
C27		05056212	063 Bypass Body	1
C26	60010026	26010143	O-ring on Inlet and Outlet	2
C25	60010019	21319011N	Straight 1" NPT Inlet and Outlet	2
C24	60010023	21319036N	Elbow 3/4" NPT Inlet and Outlet	2
C23	60010025	21709003N	Secure Clip Inlet and Outlet	2
C22	60010740	50040086	Direction Indication Label	2
C21	60010741	05056220	Bypass Knob	2
C20	60010742	61045012	Bypass Indication Plate	1
C19	60095088	05056214	Bypass Shaft(Outlet)	1
C18	60095089	05056213	Bypass Shaft(Inlet)	1
C17	60095614	05030013	O-ring on Shaft	2
C16	60095051	05056149B	Shaft Seal	2

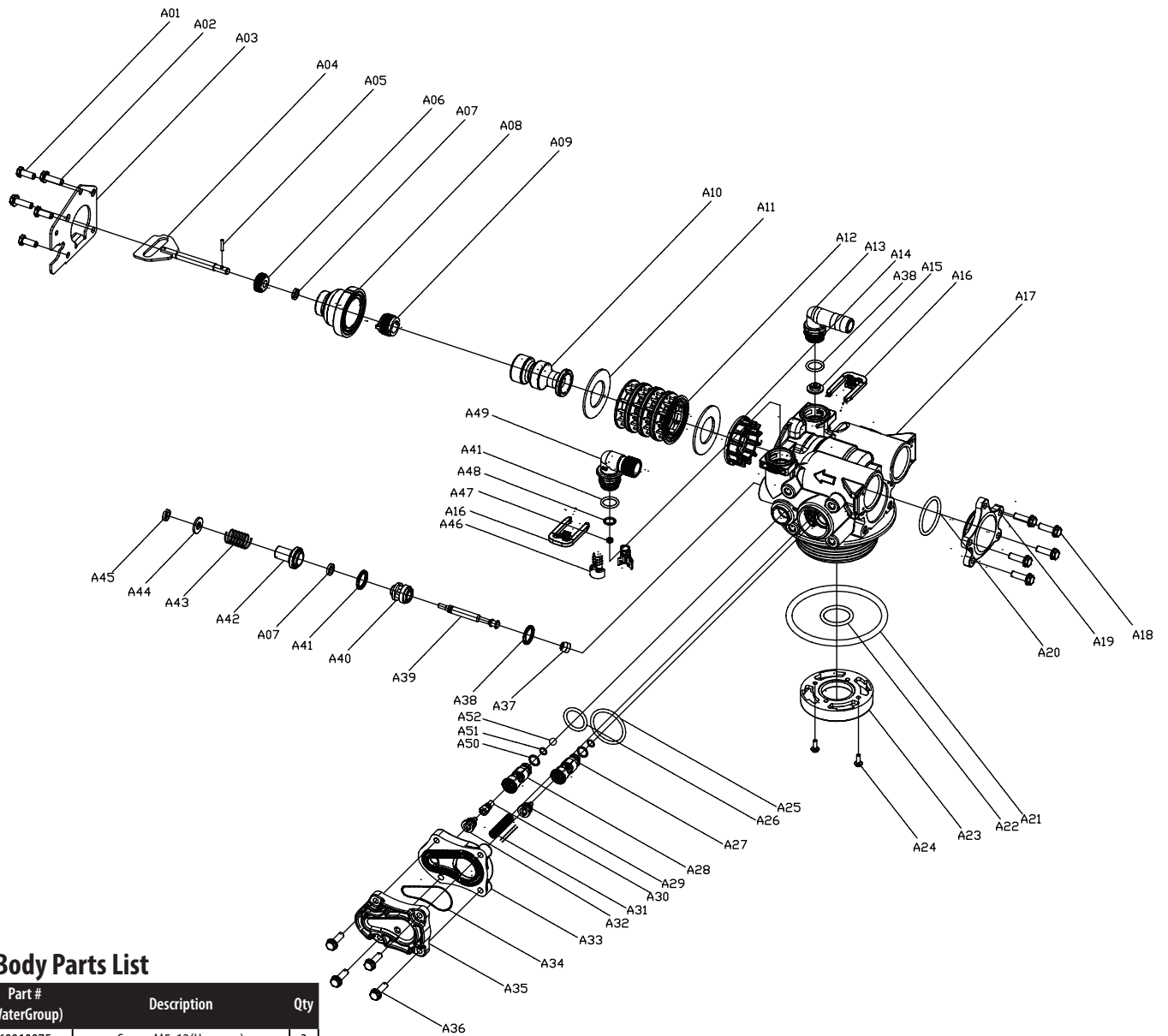
No.	Part # (Water Group)	Part # (Canature)	Description	Qty
C15	92846	05056155N	Plug Clip	2
C14	60095090	21709004B	Shaft Clip	2
C13	60010209	05056146	Bypass Plug	2
C12	60010044	05056134	O-ring on Plug	2
C11	60010701	13000327	Screw on SS Clip	2
C10	60010046	05056044B	SS Clip	2
C9		05010019	Bush	2
C8		05010079	Impeller Pin	1
C7	60010238	05010078	Magnet	2
C6		05010014	Impeller	1
C5	60010102	26010046	Big O-ring on Connector(Outlet)	1
C4	60010587	05010077	Impeller Support	1
C3	60010079	05056025M	Valve-Bypass Connector(Inlet)	1
C2	60010101	05010083N	Valve-Bypass Connector(Outlet)	1
C1	60010562	05056129	Small O-ring on Connector(Outlet)	3

Straight 1" NPT with Oring
Elbow 3/4" NPT with Oring

60095010 60095003

34

PARTS BREAKDOWN



Valve Body Parts List

No.	Part # (WaterGroup)	Description	Qty
A01	60010075	Screw-M5x12(Hexagon)	3
A02	60010076	Screw-M5x16(Hexagon With Washer)	2
A03		End Plug Retainer	1
A04		BNT85HE Rod	1
A05		Piston Pin	1
A06	13446	BNT85HE Quad Ring Plug Cover	1
A07		Quad Ring	2
A08		BNT85HE End Plug	1
A09		BNT85HE Piston Retainer	1
A10		BNT85HE Piston(Down flow)	1
A11	13242-02	Seal	5
A12	14241	Spacer	8
A13	60010229	Drain Fitting-B	1
A14		BNT85HE Spacer	1
A15		DLFC(optional)	1
A16	60010069	Secure Clip-s	2
A17		BNT85HE Valve Body	1
A18		Screw-M5x12(Hexagon With Washer)	5
A19		BNT85 End Cover	1
A20		O-Ring-c30x2.65	1
A21	60010077	O-Ring-c78.74x5.33	1
A22	60010080	O-Ring-c25x3.55	1
A23		Valve Bottom Connector	1
A24	60010099	Screw-ST2.9X13(Large Washer)	2

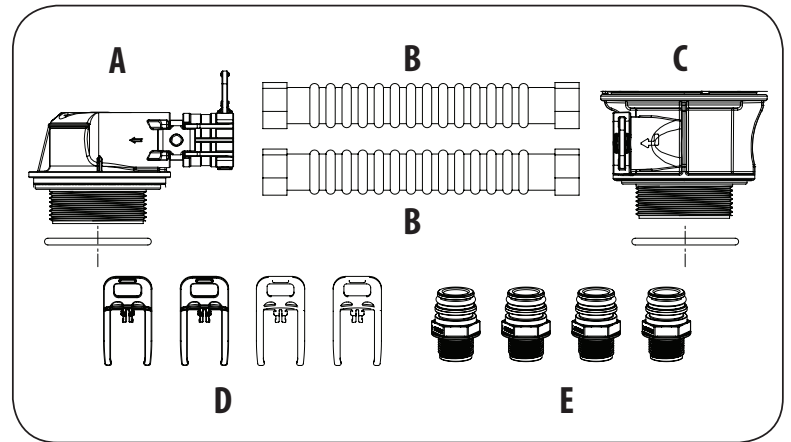
No.	Part # (WaterGroup)	Description	Qty
A25	60010190	O-Ring-c32x3	1
A26	60010189	O-Ring-c18x3	1
A27	60010174	Injector Plug Body	1
A28		BNT85HE Injector Fixed Sleeve	1
A29	60010175	Injector Plug	1
A30		Injector Throat(optional)	1
A31	10227	Injector Screen	1
A32		Injector Nozzle(optional)	1
A33	60010193	BNT85HE Injector Cover Body	1
A34	60010195	O-Ring-c40x2.65	1
A35	60010194	BNT85HE Injector Cover Cap	1
A36	60010196	Screw-M5x25(Hexagon with Washer)	4
A37		Seal Mat	1
A38		O-Ring-c12x2	3
A39		Injector Stem	1
A40		Injector Spacer	1
A41	92381	O-Ring-c12.5x1.8	1
A42		Injector Cap	1
A43		Injector Screen	1
A44		Spacer Washer	1
A45		Retaining Ring	1
A46	60010173	BNT85HE BLFC Fixed Sleeve	2

No.	Part # (WaterGroup)	Description	Qty
A47		BLFC(optional)	1
A48	60010188	O-Ring-c8x1	1
A49	60010172	BNT85HE Brine Line Elbow	1
A50	60010186	O-Ring-c12.5x1.5	2
A51	60010187	O-Ring-c8x1.5	2
A52		Seal Ball	1

PARTS BREAKDOWN

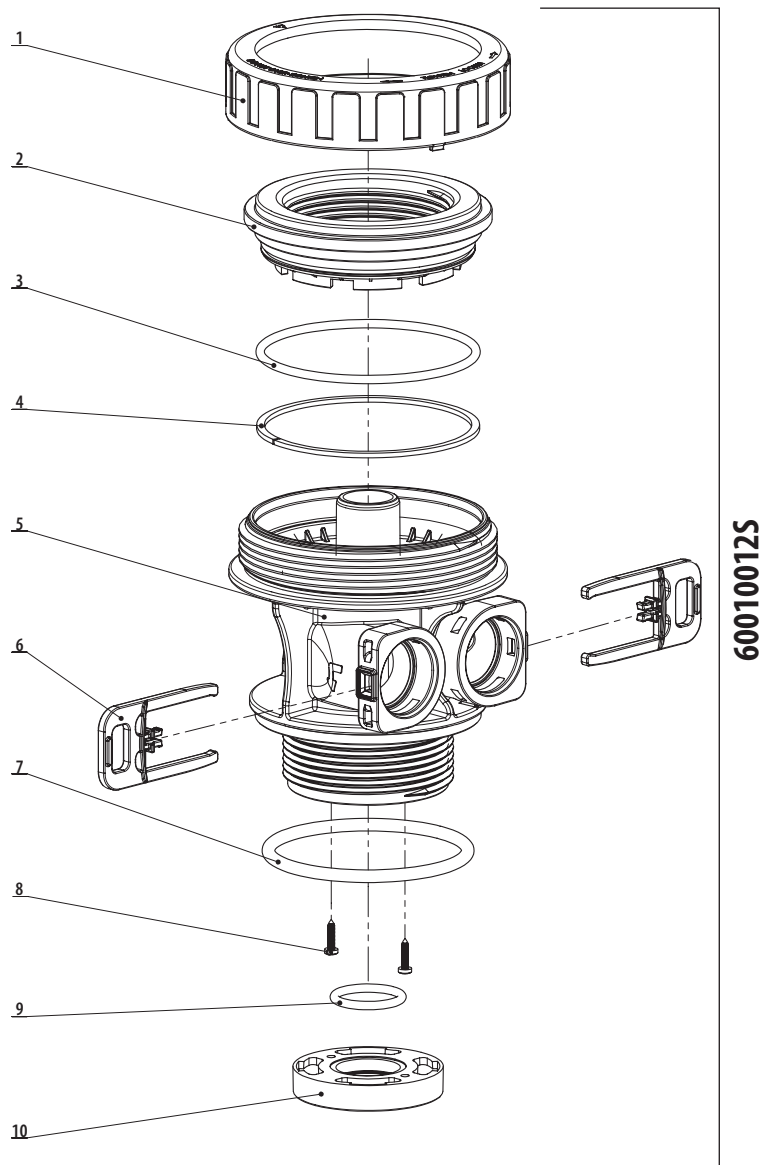
Tank and Valve Connection Part #s

No.	Part #	Part Description	Qty
A	60010068M	TANK ADAPTOR W/ O RING	1
B	80127819	PIPE CONNECTOR - 8" - 12" TANKS	1
	80127817	PIPE CONNECTOR - 14" - 18" TANKS	1
C	60010012S	PARALLEL TANK CONNECTOR W/ O RING	1
D	60010025	RED CLIPS (4PCS)	4
E	60010016	O RING	4
	60010026	1" BSP STRAIGHT	4



60010012S - Parallel Tank Connector Part #s

No.	Part #	Part Description	Qty
10	60010599	TOP CONE CONNECTOR	1
9	60010080	O-RING $\Phi 25 \times 3.55$	1
8	60010099	SCREW 2.9 \times 13	2
7	60010077	O-RING $\Phi 78.74 \times 5.33$	1
6	60010025	RED CLIPS	2
5	DNR	CONNECTOR BODY	1
4	60010313	RETAINER RING	1
3	60010073	O-ring $\phi 87.5 \times 3.55$	1
2	DNR	Valve Base	1
1	DNR	Clamp Ring	1



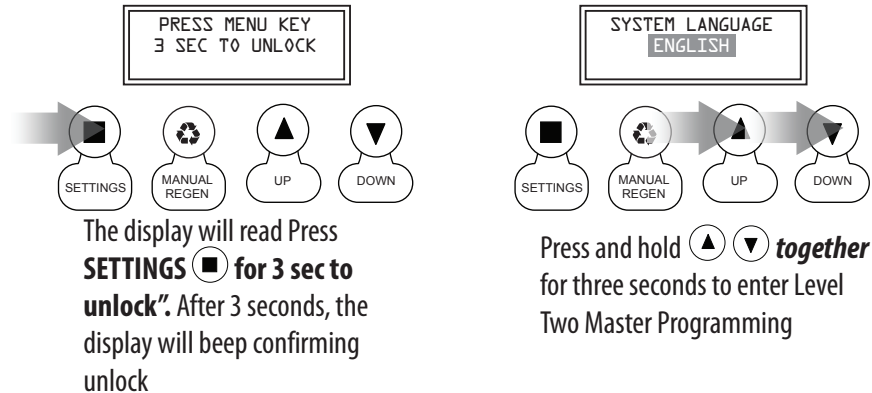
LEVEL 2 PROGRAMMING (OPTIONAL SETTINGS):

CAUTION: DO NOT CHANGE LEVEL 2 SETTINGS WITHOUT CONSULTING A CANATURE WATERGROUP TECHNICIAN (1-877-288-9888). Wrongly changing the settings can result in malfunction of the unit.

When the Level 2 Master Programming Mode is entered, all available option setting displays may be viewed and set as needed. Depending on current option settings, some parameters cannot be viewed or set.

NOTE

Under normal use there is no need to change the settings under level 2 programming. You can, however, change the default settings if required.



To change any setting under level 2 programming:

- Press the **MANUAL REGEN** (recycling symbol) key button and the value flashes
- Press the **UP** (up triangle) or **DOWN** (down triangle) keys to change the value
- Press the **MANUAL REGEN** (recycling symbol) again to accept value
- Press the **DOWN** (down triangle) key to advance to the next value

MASTER PROGRAMMING GUIDE

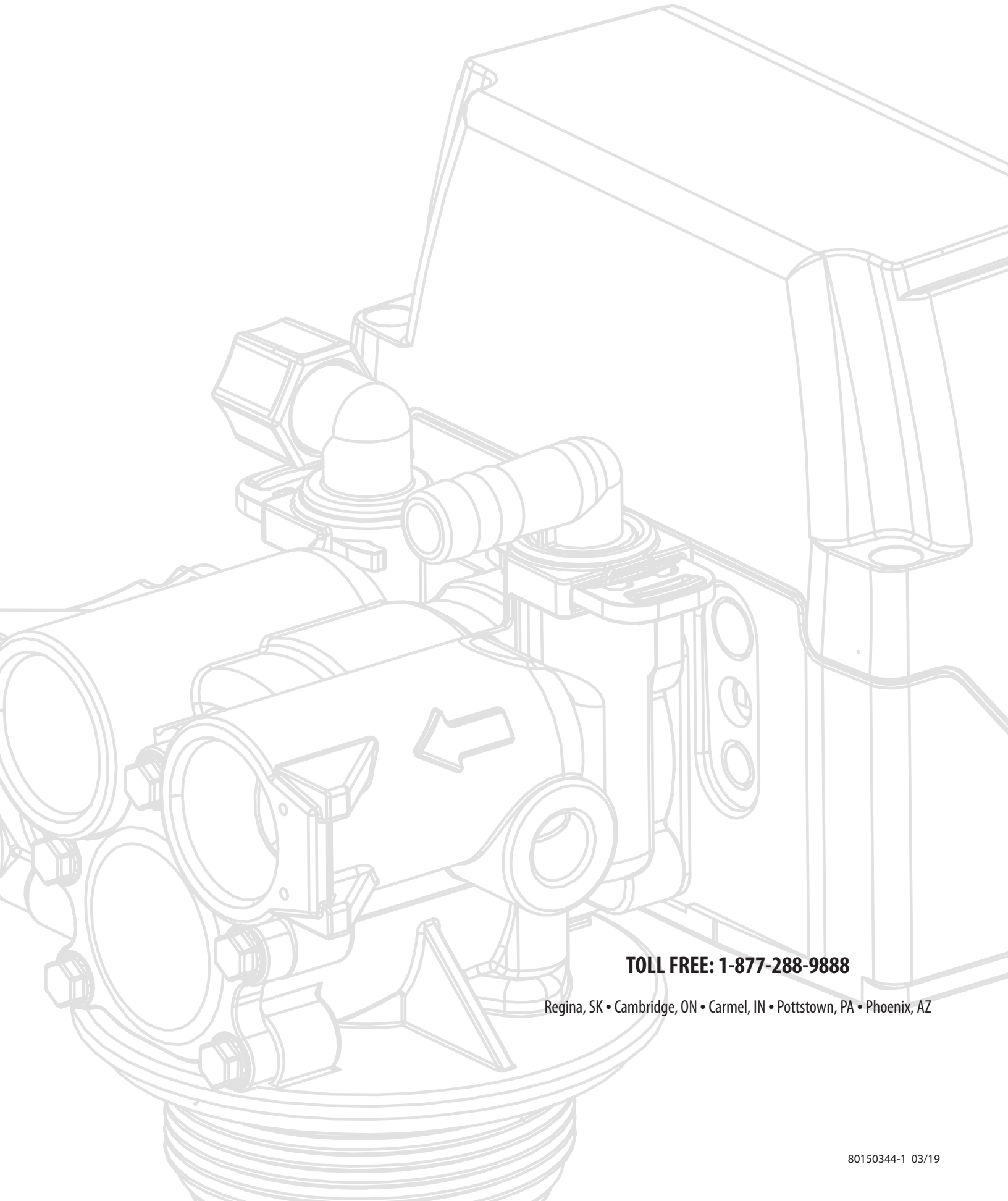
85HE UPFLOW HIMTLC - SIMTAN Programming				
MASTER SETTINGS	PRESS & HOLD	♻️ ▲ ▼		
UNIT SIZE	100	150	200	300
VALVE TYPE	UF FLOW	UF FLOW	UF FLOW	UF FLOW
SOFTWARE VER.	S1.4 or higher	S1.4 or higher	S1.4 or higher	S1.4 or higher
METER RATIO AFTER MAR 20,2018	5.68	5.68	5.68	5.68
METER RATIO BEFORE MAR 20,2018	8.00	8.00	8.00	8.00
Service Delay	3.0	3.0	3.0	3.0
Backwash Delay	7.0	7.0	7.0	7.0
Brine Delay	4.0	4.0	4.0	4.0
Rinse Delay	5.0	5.0	5.0	5.0
Refill Delay	4.0	4.0	4.0	4.0
MASTER SETTINGS	PRESS & HOLD	■ ♻️		
LANGUAGE = ENGLISH	ENGLISH	ENGLISH	ENGLISH	ENGLISH
UNITS = GALLONS	GALLONS	GALLONS	GALLONS	GALLONS
HIGH EFFICIENCY = 3 LBS	3 LBS	3 LBS	3 LBS	3 LBS
HIGH EFFICIENCY = 4500 GRAINS	4500 GRAINS	4500 GRAINS	4500 GRAINS	4500 GRAINS
STD CAPACITY = 6 LBS	6 LBS	6 LBS	6 LBS	6 LBS
STD CAPACITY = 3600 GRAINS	3600 GRAINS	3600 GRAINS	3600 GRAINS	3600 GRAINS
IRON & MN = 12 LBS	12 LBS	12 LBS	12 LBS	12 LBS
HIGH CAPACITY = 1500 GRAINS	1500 GRAINS	1500 GRAINS	1500 GRAINS	1500 GRAINS
REFILL = 0.2 GPM	0.2 GPM	0.2 GPM	0.2 GPM	0.2 GPM
BRINE MAKE TIME = 30 MIN	30 MIN	30 MIN	30 MIN	30 MIN
BRINE PREFILL % *	100%	100%	100%	100%
DAILY RESERVE	75 GAL	75 GAL	75 GAL	75 GAL
BW OVERRIDE	OFF	OFF	OFF	OFF
FORCED REGEN	OFF	OFF	OFF	OFF
VACATION MODE	OFF	OFF	OFF	OFF
SETTINGS	PRESS & HOLD	■		
TIME OF DAY	SET	SET	SET	SET
YEAR	SET	SET	SET	SET
MONTH	SET	SET	SET	SET
DAY	SET	SET	SET	SET
SET HARDNESS	25	25	25	25
SET PEOPLE	4	4	4	4
SALT SETTING	IRON & MN	IRON & MN	IRON & MN	IRON & MN
WATER TYPE	WELL / OTHER	WELL / OTHER	WELL / OTHER	WELL / OTHER
REGEN TIME	2:00 AM	2:00 AM	2:00 AM	2:00 AM
ADVANCED SETTINGS	PRESS & HOLD	▲ ▼		
VALVE MODE	SOFTEN R UF	SOFTEN R UF	SOFTEN R UF	SOFTEN R UF
UNIT SIZE	1.0 ^l	1.5 ^l	2.0 ^l	3.0 ^l
SALT SETTING	IRON & MN	IRON & MN	IRON & MN	IRON & MN
BACKWASH	4	4	4	4
BRINE	120	155	126	161
RINSE	20	20	20	20
LOCK VALVE	LOCK	LOCK	LOCK	LOCK
REFILL	PRESS MANUAL REGEN BUTTON TO "PROGRAMING COMPLETE" AND ONCE MORE TO LOCK			
VALVE SETUP				
Injector	#00 PURPLE	#00 PURPLE	#1 WHITE	#2 BLUE
BLFC Washer	0.2 GPM	0.2 GPM	0.2 GPM	0.2 GPM
DLFC Washer	#2 2.0 GPM	#3 2.4 GPM	#5 3.5 GPM	#A 5 GPM
Upper Cone	1	1	1	1

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:



TOLL FREE: 1-877-288-9888

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