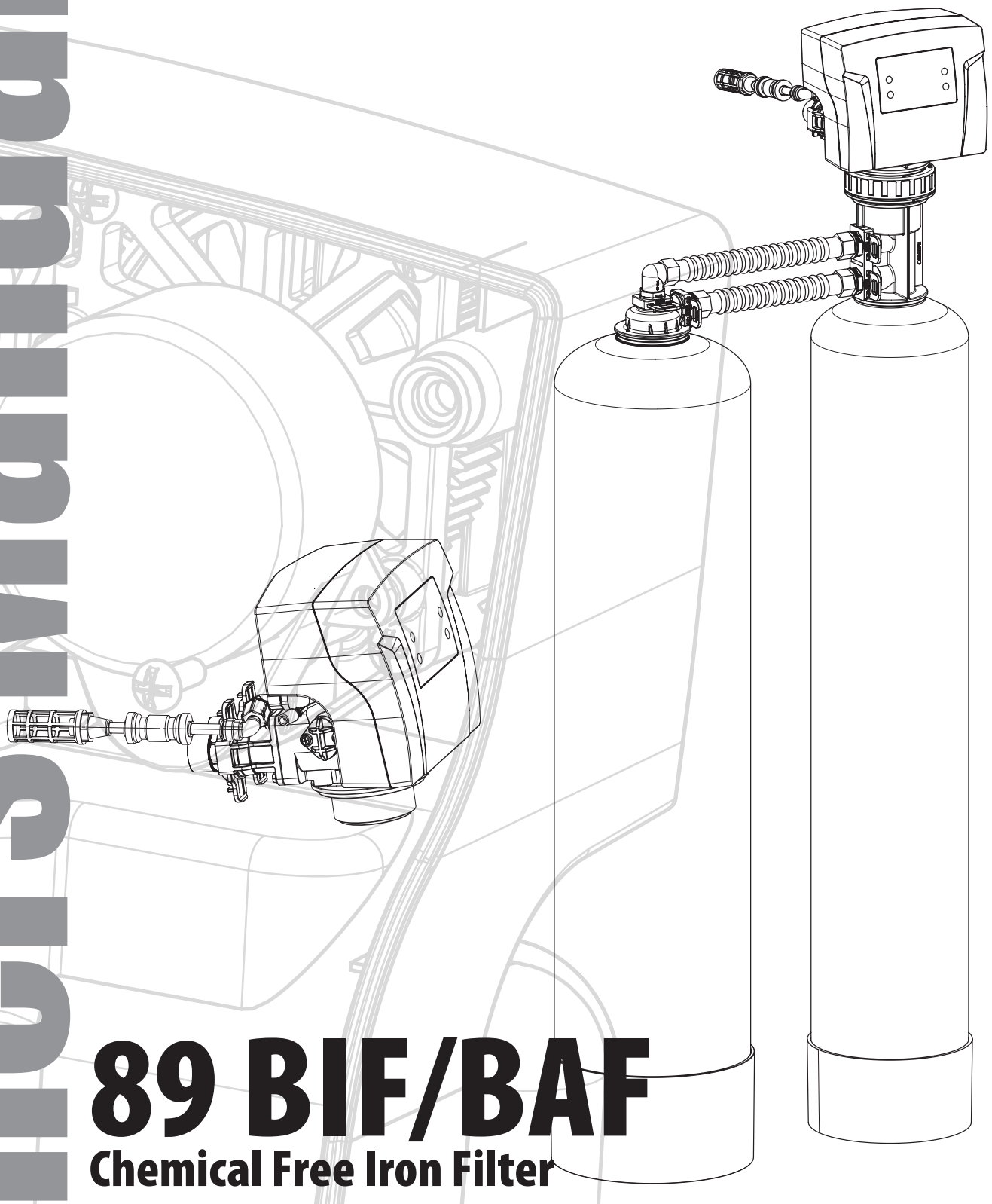
Owners Manual



89 BIF/BAF

Chemical Free Iron Filter

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

Canada West
655 Park St.
Regina, SK S4N 5N1

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

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

U.S.A.
193 Osborne Rd.
Fridley, MN 55432

9760 Mayflower Park Drive,
Suite 110
Carmel, IN 46032

4655 McDowell Rd. W
Phoenix, AZ 85035

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READ THIS MANUAL FIRST

- 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 and its installation must comply with state and 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. For installations in Massachusetts, Massachusetts Plumbing Code 248 CMR shall be adhered to. Consult your licensed plumber for installation of this system.
- This water filter is designed to operate on pressures of 30 psi to 125 psi. If the water pressure is higher than the maximum use a pressure reducing valve in the water supply line to the filter.
- This unit is capable of operating at temperatures between 40°F and 110°F (4°C - 43°C). Do not use this water filter on hot water supplies.
- Do not install this unit where it may be exposed to wet weather, direct sunlight, or temperatures outside of the range specified above.
- Avoid pinched o-rings during installation by applying (provided with install kit) NSF certified lubricant to all seals.
- Filters are commonly exposed to high levels of iron, manganese, sulfur, and sediments. Damage to pistons, seals, and or spacers within the control valve are not covered in this warranty due to the harsh environment.
- It is recommended to regularly inspect and service the control valve on an annual basis. Cleaning and or replacement of piston, seals, and or spacers may be necessary depending on how harsh the conditions are. An Annual Maintenance kit (Part # 60010307) is available for this purpose
- Do not use water that is microbiologically unsafe without adequate disinfection before or after this system.
- This publication is based on information available when approved for printing. Continuing design refinement could cause changes that may not be included in this publication. Canature WaterGroup™ reserves the right to change the specifications referred to in this literature at any time, without prior notice.

Safety Messages

Watch for the following safety messages in this manual:

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

Example: NOTE: Check and comply with you state and local codes. You must follow these guidelines.

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

Example:

CAUTION! Disassembly while under pressure can result in flooding.

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

Example:

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

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

SPECIFICATION

Specifications	BIF-100	BIF-150	BIF-200	BIF-300	BIF-400
	BIFMN-100	BIFMN-150	BIFMN-200	BIFMN-300	BIFMN-400
Typical Service Flow Rate	3.0 gpm	4.0 gpm	5.0 gpm	6.0 gpm	7.0 gpm
Peak Flow Rate	6.0 gpm	10.0 gpm	12.0 gpm	14.0 gpm	16.0 gpm
Backwash Flow Rate	5.0 gpm	5.0 gpm	7.0 gpm	10.0 gpm	14.0 gpm
Filter Media Volume (ft3)	1.0 ft^3	1.5 ft^3	2.0ft^3	3.0 ft^3	4.0 ft^3
Filter Tank Size	10x44	10x54	12x52	14x65	16x65
Air Contact Tank Size	8x44	10x54	12x52	14x65	14x65
Shipping Weight	150 lbs	188 lbs	248 lbs	368 lbs	443 lbs
Media Loaded	Yes	Yes	No	No	No
Maximum Iron	30.0 ppm				
Hydrogen Sulfide	5.0 ppm				
Manganese	BIF Model 0.0 ppm / BIFMN Models up to 1.0 ppm				
Iron Bacteria Removal	Yes				
pH	BIF Models pH 7.0 - 8.5 / BIFMN Models pH 6.0 -6.9				
Plumbing Connections	3/4" 90°NPT Elbows; 1" Straight NPT (89 Valve 1" Straight Only)				
Electrical Requirements	Input 120V 60 Hz - Output 12V 650mA				
Water Temperature	Min 39 - Max. 100° F				
Water Pressure	Min. 20 - Max. 125 psi				

*MN Models for low pH 6.0 - 6.9 & Manganese up to 1.0 ppm

Note: BIF/BIFMN systems using 565 Controls only available on 1.0 and 1.5 cubic foot units

Specifications	BAF-100	BAF-150	BAF-200	BAF-300	BAF-400
Typical Service Flow Rate	3.0 gpm	4.0 gpm	5.0 gpm	6.0 gpm	7.0 gpm
Peak Flow Rate	6.0 gpm	10.0 gpm	12.0 gpm	14.0 gpm	16.0 gpm
Backwash Flow Rate	5.0 gpm	5.0 gpm	7.0 gpm	10.0 gpm	14.0 gpm
Filter Media Volume (ft3)	1.0 ft^3	1.5 ft^3	2.0ft^3	3.0 ft^3	4.0 ft^3
Filter Tank Size	10x44	10x54	12x52	14x65	16x65
Air Contact Tank Size	8x44	10x54	12x52	14x65	14x65
Shipping Weight	115 lbs	143 lbs	172 lbs	268 lbs	329 lbs
Media Loaded	Yes	Yes	No	No	No
Maximum Iron	30.0 ppm				
Hydrogen Sulfide	Trace				
Manganese	0.0 ppm				
Iron Bacteria Removal	No				
pH	7.0 - 8.5				
Plumbing Connections	3/4" 90°NPT Elbows; 1" Straight NPT (89 Valve 1" Straight Only)				
Electrical Requirements	Input 120V 60 Hz - Output 12V 650mA				
Water Temperature	Min 39 - Max. 100° F				
Water Pressure	Min. 20 - Max. 125 psi				

Note: BAF systems using 565 Controls only available on 1.0 and 1.5 cubic foot units

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" and 1"

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

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

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

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

All units come with plastic bypass

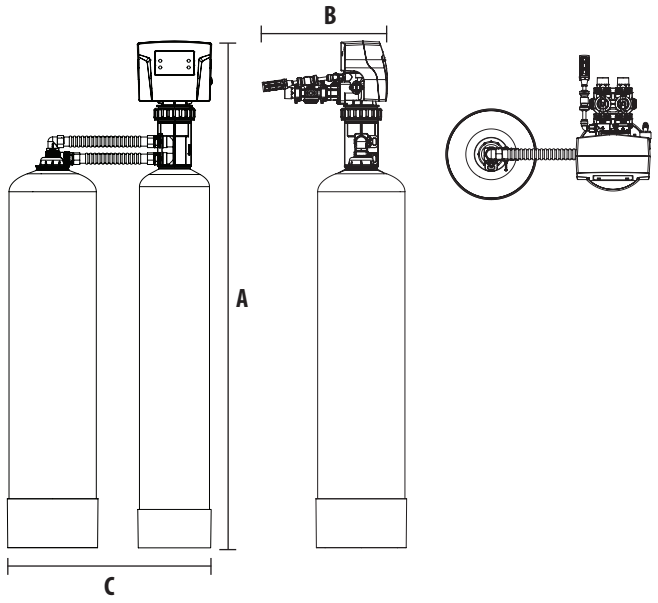
Maximum Iron = 30.0ppm
Hydrogen Sulfide = Trace and 5ppm for BIFC Filters
Manganese = 1.0 ppm
pH = 6.5 to 8.5
Media Loaded in 75,10 and 15 Models Only. Models ending in 'M' are required when raw water has up to 1.0 mg/l of manganese or when pH is below 7.0. Over a period of time, it may become necessary to add more media to the unit. Adding media is necessary only when water has low pH or manganese is present. only

Water and Time Consumed During Regeneration

	Backwash Minutes	Rapid Rinse Minutes	Air Draw Minutes	Total Time of Regeneration	Total Water Consumed During Regeneration (GAL)
75	15	0	45	60	57
100	15	0	45	60	65
150	15	0	45	60	80
200	15	0	45	60	110
300	15	0	45	60	155
400	15	0	45	60	215

SYSTEM DIMENSIONS

Models	A (Inches)	B (Inches)	C (Inches)
BXX-75	57.5"	13"	20"
BXX-100	62.5"	15"	21"
BXX-150	67.5"	16"	22"
BXX-200	65.5"	17"	24"
BXX-300	77.5"	18"	26"
BXX-400	77.5"	19"	28"



HOW DOES THE CHEMICAL FREE BIF IRON FILTER WORK?

This filter works by adding oxygen to the incoming water by passing it through a bubble of compressed air. The water is then passed through a special filter bed.

The special media not only increases the pH of the water to enhance iron removal but also acts as a physical barrier to trap iron precipitate.

As more water passes through this iron filter, the oxygen in the unit is used up, and the media gets loaded with iron. The regeneration process then begins in order to replenish the supply of oxygen, and to backwash the precipitated iron trapped in the media bed.

The iron removal efficiency will be more effective with high pH water.

Optional Media Beds:

• Birm (BAF Models) - Removes iron and manganese from water. Recommended for high pH water.

• nextSand or Multimedia- Traps precipitated iron from the water. Recommended for high pH water.

• Carbon (BIFC Models) -for reduction for Hydrogen Sulfide

Standard Chemfree Filter (BIF and BIFMN Models)

This special media not only increases the pH of the water to enhance iron, manganese and hydrogen sulfide removal but also acts as a physical barrier to trap iron precipitate.

The filter will automatically adjust the pH to neutral or higher on acid water without an acid neutralizer. The ability to raise pH greatly enhances the filter's ability to remove iron efficiently.

Replenishment of this media that raises pH will be required periodically, depending on how low the raw water pH is the amount of manganese (Mn) present in the water and usage rate. Models ending in 'M' are required when raw water has up to 1.0 mg/l of manganese or when pH is below 7.0. Over a period of time, it may become necessary to add more media to the unit. Adding media is necessary only when water has low pH or manganese is present.

nextSand or Multimedia Chemical Free Iron Filter - (BIFMM Models)

This media acts as a catalyst for the removal of iron and manganese from the water but require pre-oxidation. The water is pre-oxidized from the air bubble on the top of the tank and this media removes the iron and manganese from the water. This is not recommended to remove hydrogen sulfide from the water and requires high pH water.

The media is not sacrificial hence no replenishment is required.

Birm Filter (BAF Models)

The air in the tank will precipitate the iron from water and this filter media will trap the iron particles. Recommended for neutral to high pH water.

Carbon Filter (BIFC Models)

Hydrogen sulfide (H2S) is a nuisance to homeowners and water treatment professionals alike. These add objectionable sulfur-like taste and "rotten egg" odor to drinking water. Left untreated, it can lead to corrosion in drainage pipes and concrete sewers.

Groundwater systems are the most common drinking water source for sulfide contamination because of the anaerobic environment in which groundwater exists. Chlorination has been considered the most practical method for POE systems, but is often difficult to implement because continuous chemical addition and ongoing maintenance is required. The formation of THMs is also a concern.

Sulfide problems in surface water sources are much less frequent because of the natural aeration that occurs in most flowing surface water sources. Aeration is the most

Carbon Filter (BIFC Models) Cont...

common treatment method in terms of volume of water treated annually because it's inexpensive, easy to maintain and doesn't produce potentially harmful reaction products such as tri-halo-methanes (THMs).

Another method is the use of catalytic carbon to sulfide reduction through oxidation of sulfides with dissolved oxygen present in the water. Reduction of sulfides with catalytic activated carbon first involves adsorption of the sulfide species and then catalytic oxidation. The dissolved oxygen (minimum required 4 ppm) reacts with sulfides and oxidizing them to elementary sulfur and sulfates.

Our Hydrogen Sulfide reduction filter combines aeration with catalytic carbon technology to effectively reduce sulfur from water. Following is the information on our Filter System for the reduction of sulfides from water.

Life Expectancy for media based on sulfide influent (Days for 1 cu. ft. unit) in BIFC Models

Sulfide (ppm)	25 GPD*	50 GPD*	100 GPD*	125 GPD*	150 GPD*	200 GPD*	250 GPD*	300 GPD*
0.5	31,623	15,811	7,906	6,325	5,270	3,953	3,126	2,635
1	15,811	7,906	3,953	3,126	2,635	1,976	1,581	1,318
1.5	10,541	5,270	2,635	2,108	1,757	1,318	1,054	878
2	7,906	3,953	1,976	1,581	1,318	988	791	659
2.5	6,325	3,162	1,581	1,265	1,054	791	632	527
3	5,270	2,635	1,318	1,054	878	659	527	439
3.5	4,518	2,259	1,129	904	753	565	452	376
4	3,953	1,976	988	791	659	494	395	329
4.5	3,514	1,757	878	703	586	439	351	293
5	3,162	1,581	791	632	527	395	316	264
5.5	2,875	1,437	719	575	479	359	287	240
6	2,635	1,318	659	527	439	329	264	220

* Gallons Per Day

To calculate bed life for carbon volumes other than 1 cu. ft. multiply value in table by actual carbon volume (in cu. Ft.). A minimum of 4 ppm of Dissolved Oxygen is required for efficient removal for all sulfide concentrations listed above.

When removing Iron and Hydrogen Sulfide, dealers must compensate the additional load on the media by increasing bed size and backwash frequency.

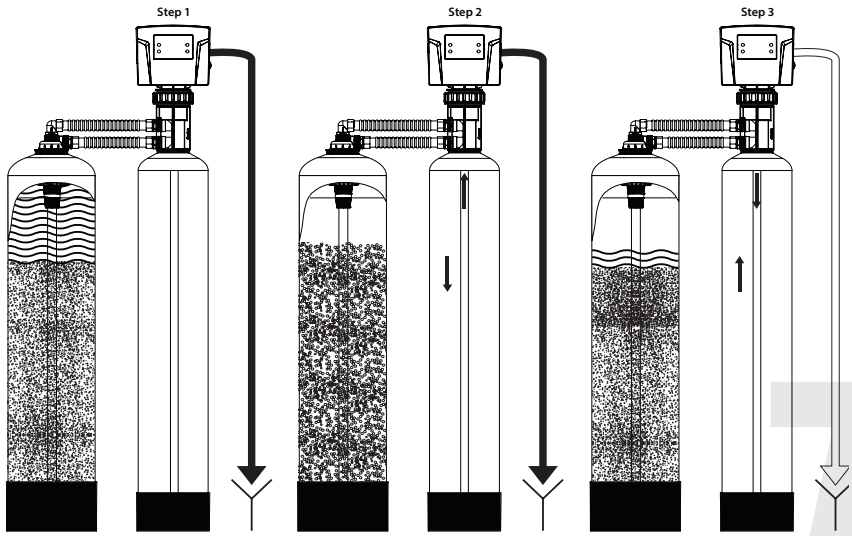
Usage rates are based on a maximum total organic carbon (TOC) loading of 10 percent by weight. For higher loadings, the usage listed in the table will increase and bed life and volume treated will decrease.

The application and system recommendation should be performed by an authorized dealer.

BIF/BAF Control Valve Regeneration Sequence

The regeneration cycle goes through 3 steps.

1. **Backwash (minimum 30 psi inlet pressure required):** During the backwash cycle, water flows upwards through the bed, expanding the media and carrying any precipitated contaminants trapped within it to the drain. The air is evacuated from the tank.
2. **Air Draw:** The air is injected to oxidize the tank. With the new design, the filter pulls the air into the tank to perform the oxidation. The unit is replenished with a new bubble of air. During this step water will run to the drain. There is a delay at the start of the cycle while the pressure of the air within the tank reaches atmospheric pressure. During this time no air is drawn into the tank. Once the pressure has equalized you can usually hear the sound of air being drawn in to the unit.
3. **In-Service Position:** The unit then returns to the In-Service position. While this happens water continues to enter the tank, compressing the air into a bubble in the top of the tank. The actual size of the bubble will vary depending on the on-site conditions.



CONTAMINANTS FOUND IN WATER

IRON (Fe)

Iron concentrations as low as 0.3 ppm will cause staining. The iron concentration, together with the flow rate demand and the consumption rate of the water determines the basic size filter system. The higher these factors are, the larger the required system. The filter system is capable of filtering out the three main types of iron found in water supplies: Soluble iron (also known as "clear water" or ferrous iron), precipitated iron (also known as "red water" or ferric iron) and bacterial iron (also known as iron bacteria). There is no apparent upper limit of iron concentration for the filter, but special care must be taken when selecting a filter model if your water has a combination of high iron, very low pH and/or manganese.

MANGANESE (Mn)

The presence of manganese can be bothersome, even for a chemical free iron filter. As little as 0.05 ppm of manganese can produce a brownish or black stain. The ability of the filter to remove manganese depends on its concentration and the pH of the water.

Manganese tends to "coat" the filter media, rendering it incapable of increasing the pH, and therefore ineffective in removing either the iron or the manganese. Manganese, however, will precipitate in the filter bed when the pH is increased. To accomplish this a special "MN" type media can be provided that contains additional quantities of the pH raising component ("MN adder"). The use of "MN" type media is for applications where the manganese is not more than 1.5 ppm, and the pH is at least 6.5.

pH

The pH of water measures its acidity or its alkalinity. Water with a pH of less than 7.0 is acidic, above 7.0 it is alkaline, and a pH of 7.0 is neutral. The lower the pH value is below 7.0 the greater the acidity, and the higher the pH value is above 7.0 the more alkaline. Acidic water (pH less than 7.0) is corrosive to pipes, appliances, etc. A pH of 7.0 or higher facilitates iron removal — which is why the filter is designed to increase the pH when it is less than 7.0.

TANNINS (Humic Acid)

Tannins (also known as humic acid) which are present in some water supplies, are the result of decaying vegetable matter. If the tannin concentration is above approximately 0.5 ppm, it will form a sticky coating on the media, thus rendering it incapable of filtering the iron. A chemical free iron filter is not recommended under this condition. If the tannin concentration is less than 0.5 ppm, a chemical free iron filter may be installed.

HYDROGEN SULFIDE (H2S)

Hydrogen sulphide (often referred to as "sulphur"), is easily detectable by its objectionable "rotten egg" odour. Sulphur corrodes iron, brass, copper and silver. A chemical free iron filter is capable of removing sulphur in concentrations of up to 3 to 5 ppm. Whenever hydrogen sulphide is present, backwashing must be performed at more frequent intervals.

UNPACKING / INSPECTION

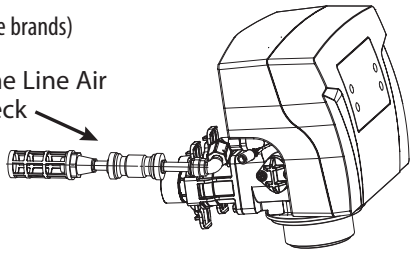
Be sure to check the entire unit for any shipping damage or parts loss. Also note damage to the shipping cartons. Contact the transportation company for all damage and loss claims. The manufacturer is not responsible for damages in transit.

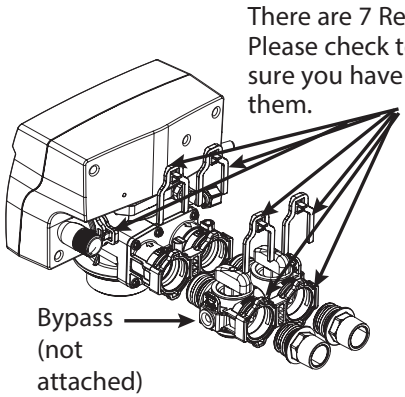
Small parts, needed to install the filter, are in a parts box. To avoid loss of the small parts, keep them in the parts bag until you are ready to use them.

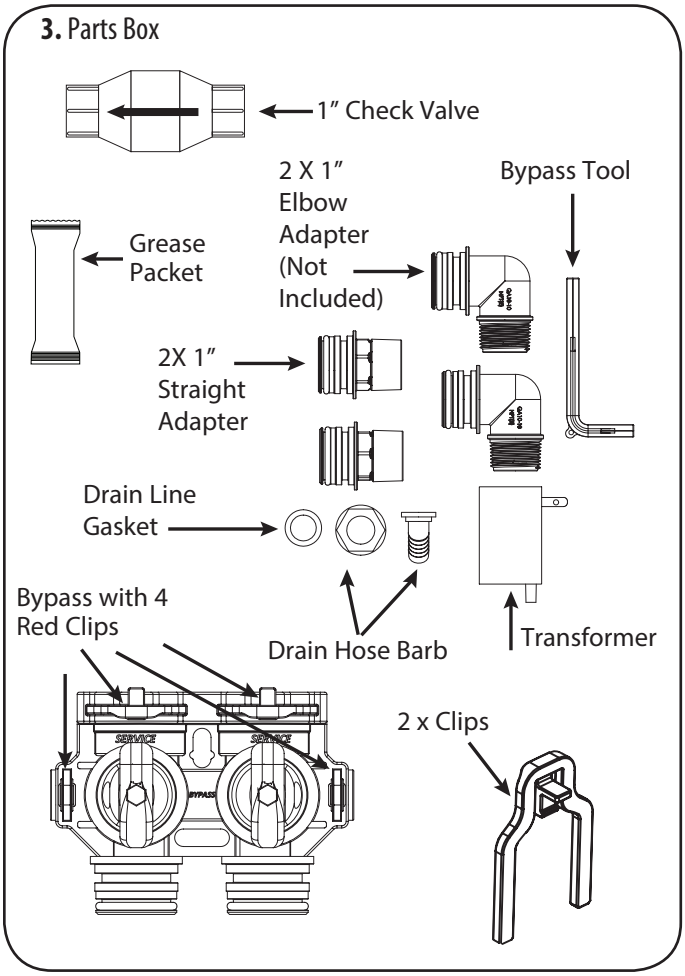
What is included in the box?

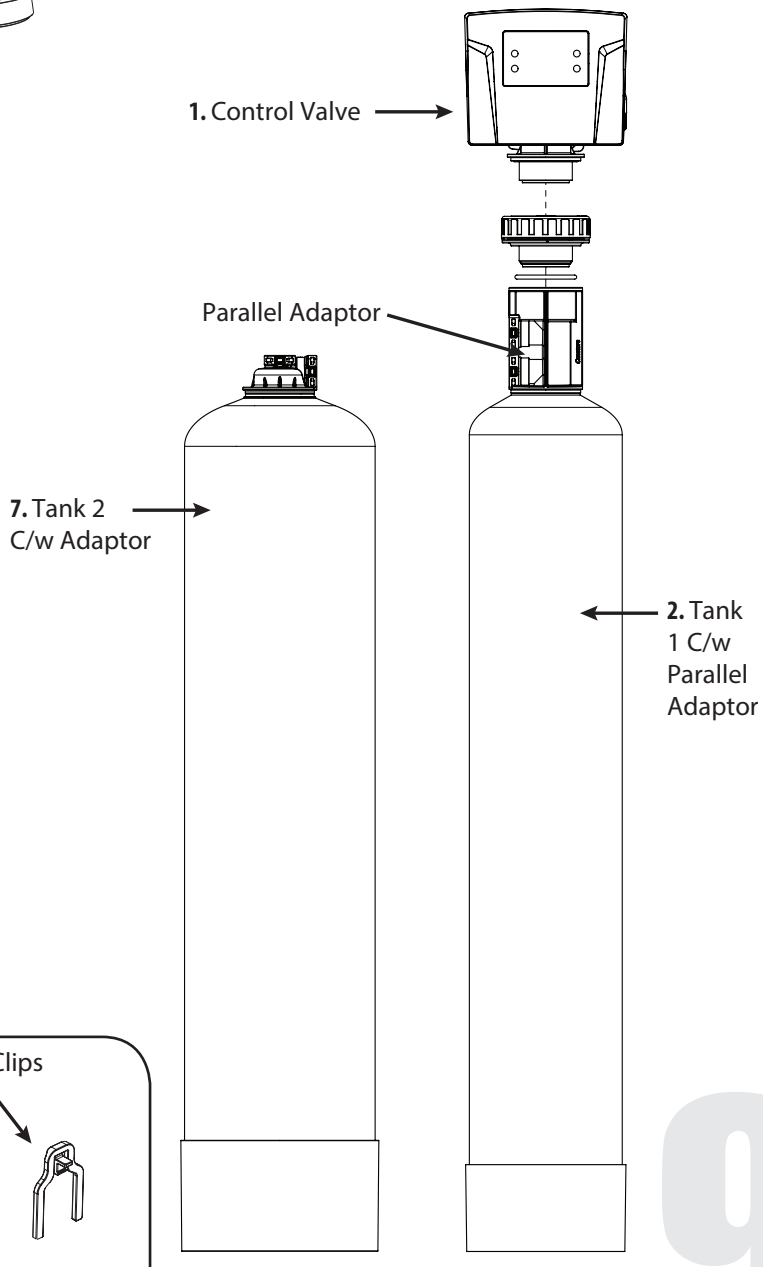
For Models BXX75, BXX100, BXX150, you will expect the following. Shipping Carton Quantity – 2

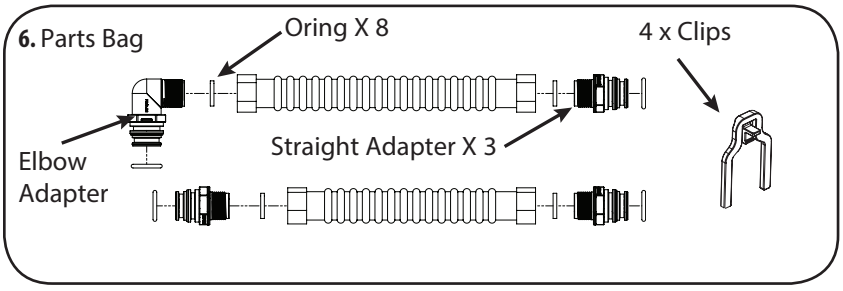
1. Control Valve
2. Tank 1 c/w Parallel Adaptor
3. Parts Box
4. Owners Manual
5. Drain Hose & Clamp (Not included in some brands)
6. Parts Bag
7. Tank 2 c/ Adaptor







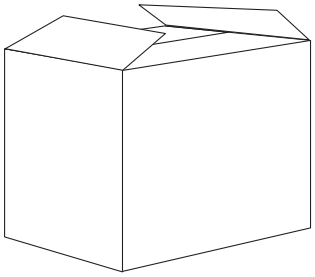




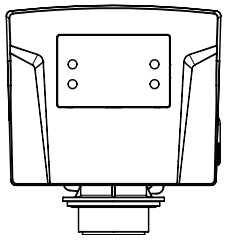
For Models BXX20, BXX30 and BXX40, the media and Control Valve is packaged separately in carton and bags

What is included with BXX, 20, 30 and 40 models?

1. Tank 1 c/w Parallel Adaptor
2. Tank 1 C/w Parallel Adaptor
3. Media Boxes (Qty 2 for BXX20, Qty 3 for BXX30 and Qty 4 for BXX40)
4. Drain Line and Hose Clamp (Not Included with some models)
5. Control Valve with Parts Box
6. Parts Bag

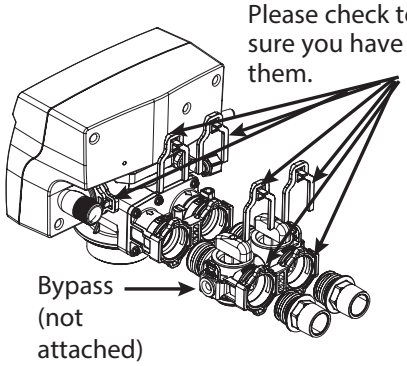


3. Media Box (Qty depends on Models)



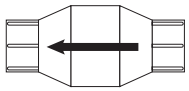
5. Control Valve

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



Bypass (not attached)

5. Parts Box

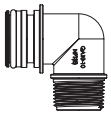


1" Check Valve

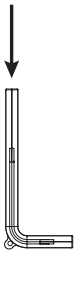


Grease Packet

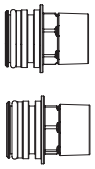
2 X 1" Elbow Adapter (Not Included)



Bypass Tool

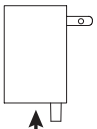


2X 1" Straight Adapter



Drain Line Gasket

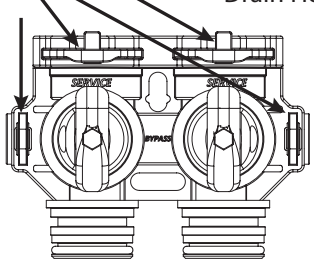


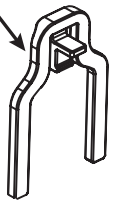


Drain Hose Barb

Transformer

Bypass with 4 Red Clips





2 x Clips

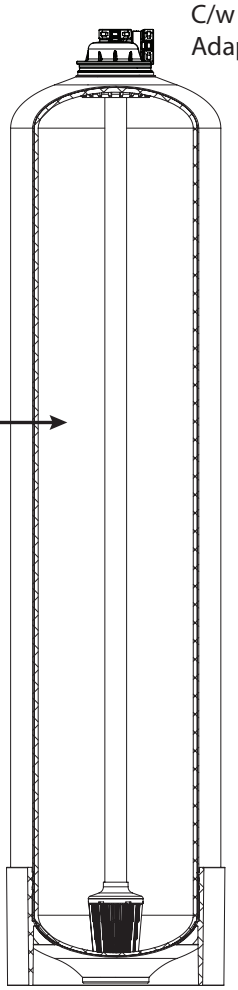
BXX30 and BXX40 will get Adaptor and Oring Shown

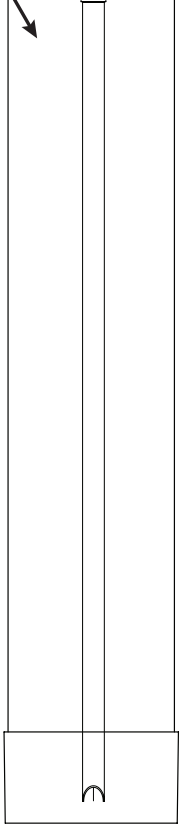




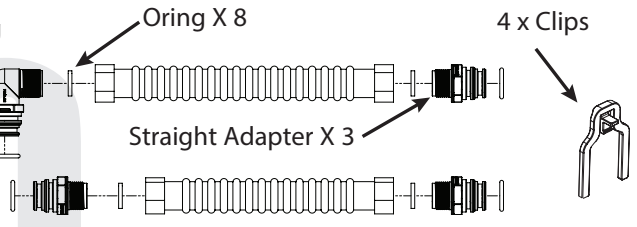
1. Tank 1 C/w Parallel Adaptor

2. Tank 2 C/w Adaptor





6. Parts Bag



Oring X 8

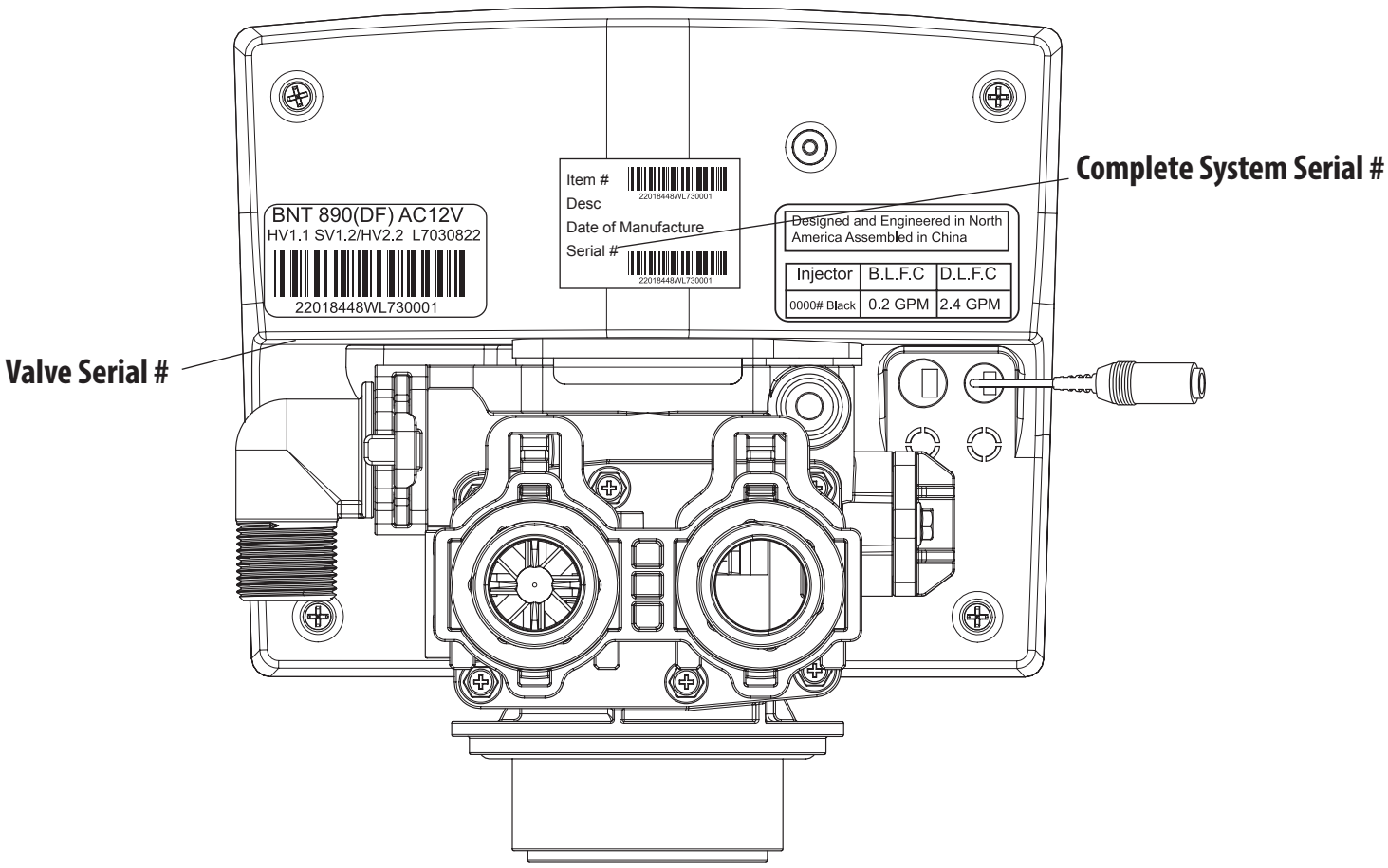
4 x Clips

Elbow Adapter

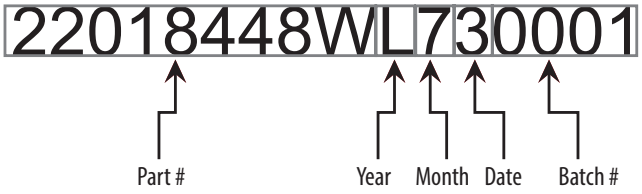
Straight Adapter X 3

Check Valve Type and Valve Serial

Check to make sure Valve Type if Downflow (DF) (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.



Valve Serial #:



(22018448W): Part #

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

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

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

(0001): Batch code

BEFORE INSTALLATION

Contact your local distributor to use Canature WaterGroup™ laboratory for complete water analysis free of cost and no obligation to you.

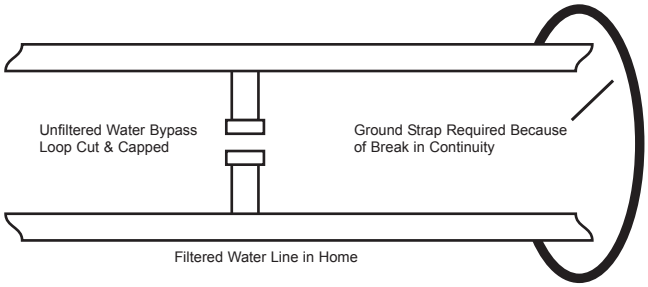
The laboratory addresses can be found on the front page of the manual.

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

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 below.

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.

NOTE: Check your local electrical code for the correct clamp.



Inspecting and Handling Your Chemical Free BIF/BAF Filter

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.

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.

Check Your Water Pressure and Pumping Rate

Two water system conditions must be checked carefully to avoid unsatisfactory operation or equipment damage:

1. Minimum water pressure required at the filter tank inlet is 30 psi.
2. The pumping rate of your well pump must at least equal the required backwash flow rate of your model (see Specifications on Page 5 for backwash flow rates).

To measure the pumping rate of your pump, follow these instructions:

- **a.** Make certain no water is being drawn. Open spigot nearest pressure tank. When pump starts, close spigot and measure time (in seconds) to refill pressure tank (when pump shuts off). This figure represents cycle time.
- **b.** With the pressure tank full, draw water into a container of known volume and measure the number of gallons drawn until the pump starts again. This is draw-down. Divide this figure by cycle time and multiply the result by 60 to arrive at the pumping rate in gallons per minute (gpm).

To aid in your calculation, insert the data in the following formula:

DRAWDOWN_____÷ CYCLE TIME_____x 60
(gals) (seconds)
= PUMPING RATE_____
(gpm)

EXAMPLE: DRAWDOWN is 6 gals; CYCLE TIME is 53 secs; then, PUMPING RATE equals:
6 gals ÷ 53 secs x 60 = 6.8 gpm

See Specifications on page 5 for minimum flow rates.

NOTE: If your pumping rate is inadequate, do not install your filter until the problem is solved.

Tools Required for Installation:

- 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.

Locate Water Conditioning Equipment Correctly

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

1. Locate as close as possible to the water supply source.
2. Locate as close as possible to a floor or laundry tub drain.
3. Locate in correct relationship to other water conditioning equipment (see Fig. 1, 2 or 3, Page 14).
4. Filters and filters should be located in the supply line before the water heater. Temperatures above 120°F damage filters and filters
5. Do not install a filter or filter in a location where freezing temperatures occur. Freezing may cause permanent damage to this type of equipment and will void the factory warranty.
6. Allow sufficient space around the unit for easy servicing.
7. If your water source is a community water supply, a public water supply or you wish to bypass water used for a geothermal heat pump, lawn sprinkling, out-buildings or other high demand applications, refer to Fig. 2 or 3 on Page 14 for additional equipment required.
8. Keep the filter out of direct sunlight. The sun''s heat may soften and distort plastic parts.

Facts to Remember When Planning Your Installation

1. All installation procedures must conform to local and state plumbing codes.
2. If lawn sprinkling, a swimming pool, geothermal heating/cooling or water for other devices/activities is to be treated by the filter, a larger model filter must be selected to accommodate the higher flow rate demands of these items. The pumping rate of the well pump must be sufficient to accommodate these items plus the backwash requirement of the filter. Consult your dealer for alternative instructions if the pumping rate is insufficient.
3. Remember that the filter inlet is attached to the pipe that supplies water (i.e., runs to the pump) and the outlet is the line that runs toward the water heater.
4. Before commencing installation, it is advisable to study the existing piping system and determine the size, number and type of fittings required. Typical system schematics shown in these instructions (Fig. 1, 2, or 3, Page 14), will be of assistance.

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.

INSTALLATION

Proper installation sequence of water conditioning equipment is very important. Refer to the diagrams following for your particular water supply.

NOTE: The Braukman air vent is not approved for use in the State of Wisconsin. An approved air to water tank and/or air vent should be used with this application in the State of Wisconsin.

NOTE: Before starting installation, read page 18, Plumbing System Clean-Up, for instructions on some procedures that may need to be performed first.

Figure 1

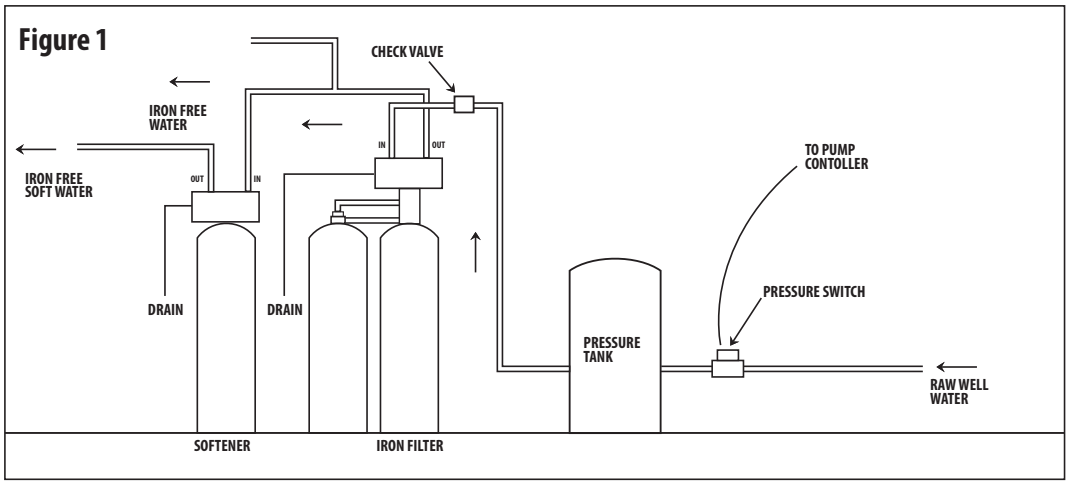


Figure 2

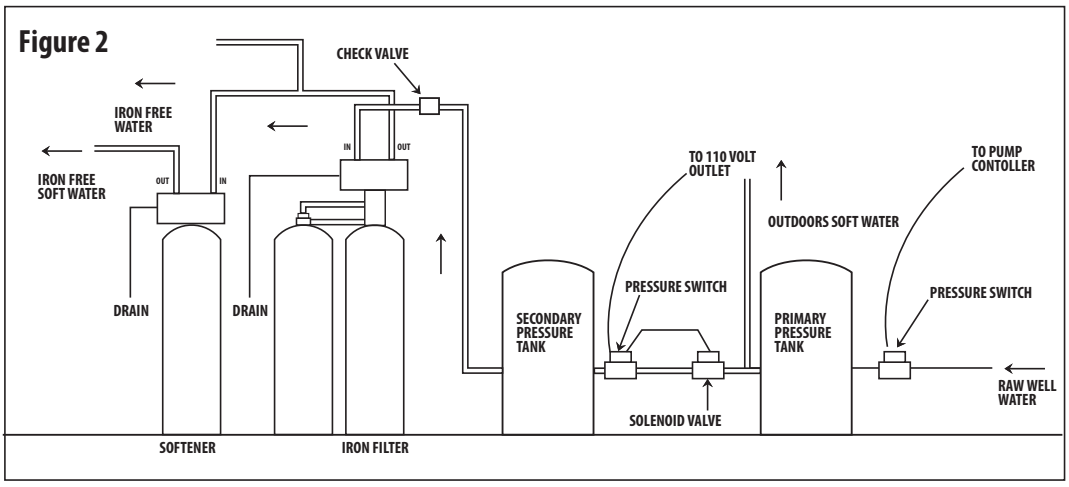
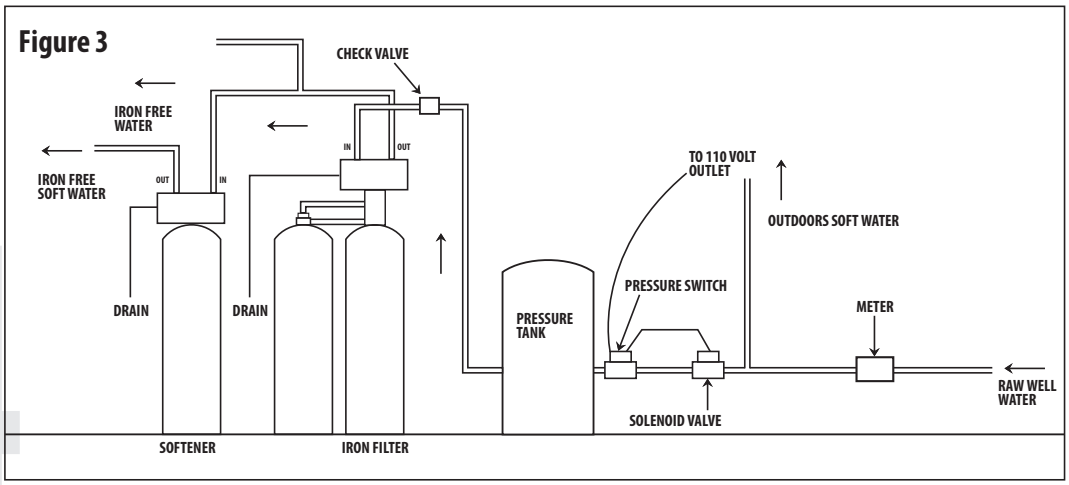


Figure 3



Installation of the Flow Control Switch (Mascontrol) as Power Source

1. Used when pressure switch and air pump are in alternate locations. Also used on constant pressure or variable speed pump systems.
2. Mascontrol acts as a flow control detecting flow.
3. All government codes and regulations governing the installation of these devices must be observed. Check your local electrical codes or contact a qualified electrician.

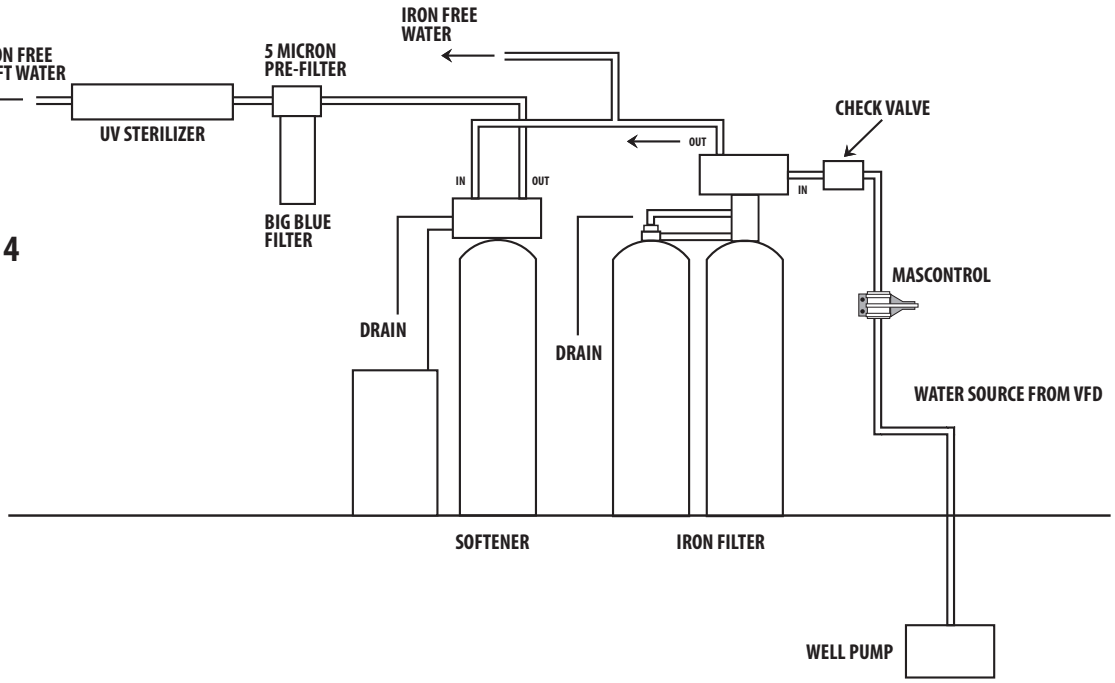
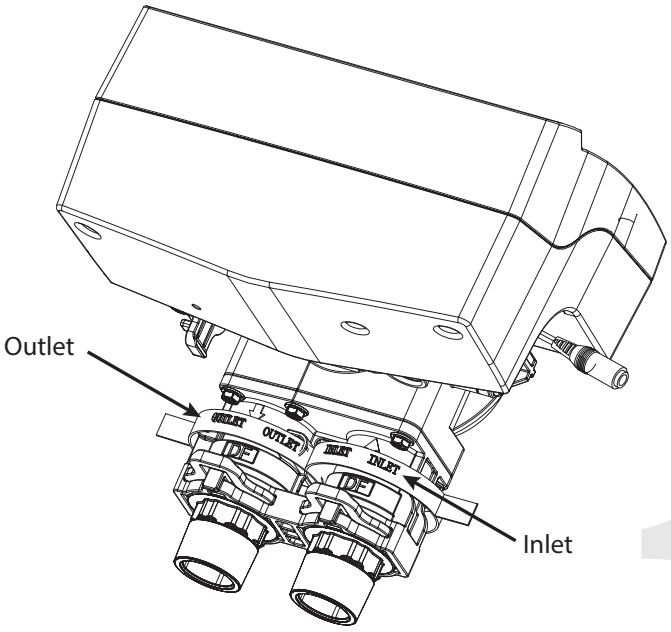


Figure 4

INSTALLATION STEPS

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

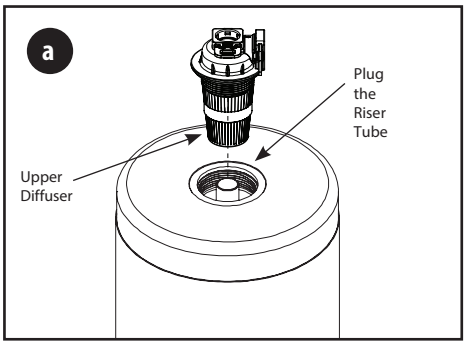
Please notice the inlet and outlet labels on the valve as shown here to determine the position of the equipment:

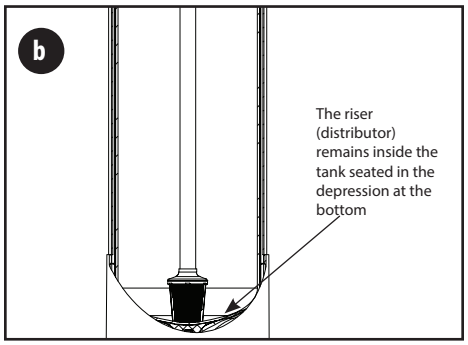


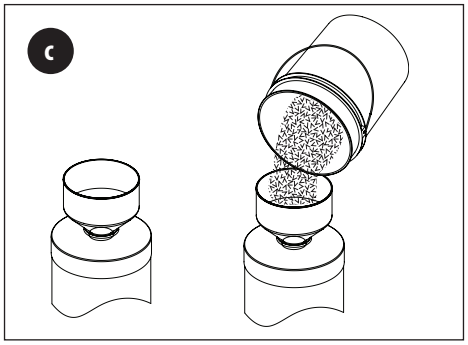
PREPARATIONS

Media Installation (When Necessary). Models including and higher than (BXX20, BXX30, BXX40) of media are shipped with separate media in pails or boxes. Models lower than 1.5 CF of media come loaded with media and this step can be skipped for new installation.

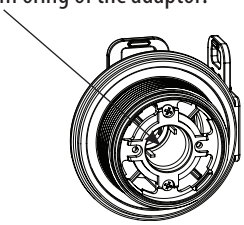
CAUTION! The unit should be de-pressurized before installing or replacing media







a) Remove the adaptor from the mineral tank. Grease the bottom oring of the adaptor.

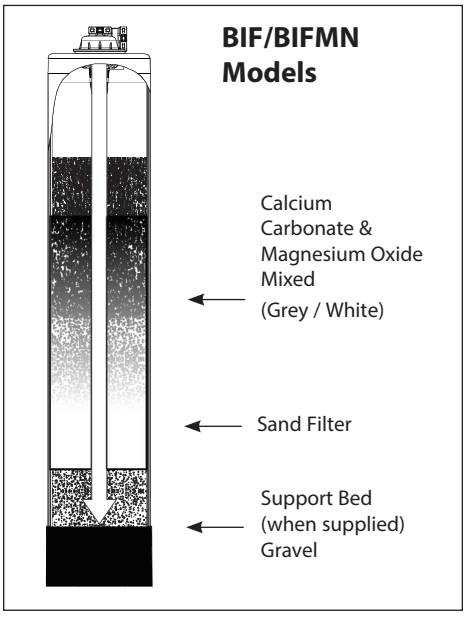


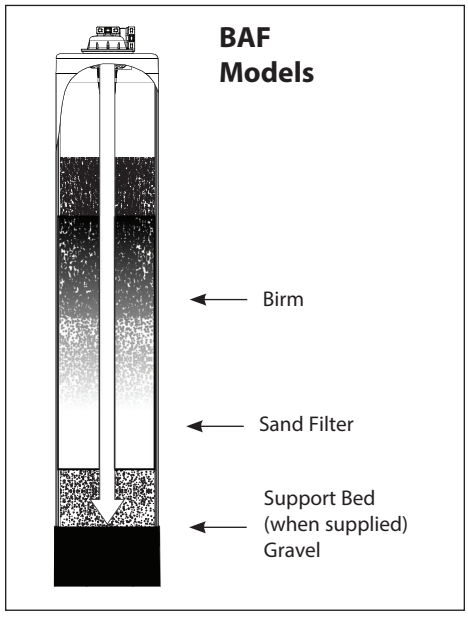
b) Temporarily plug the open end of the riser tube to ensure that no resin or gravel falls down into the distribution. The riser (distributor) remains inside the tank seated in the depression at the bottom.

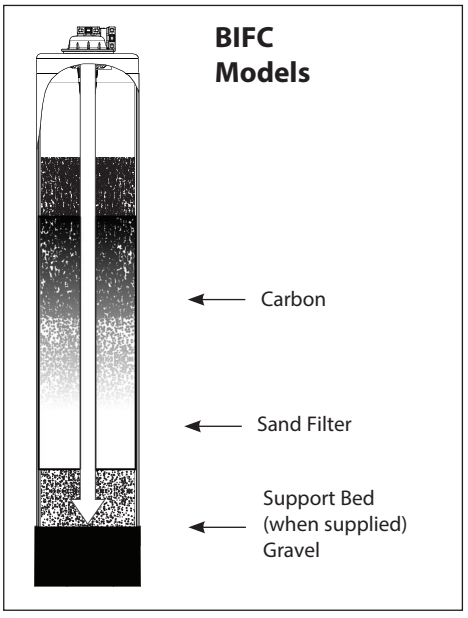
Plug tube with a tape. Remove after media is loaded.

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

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



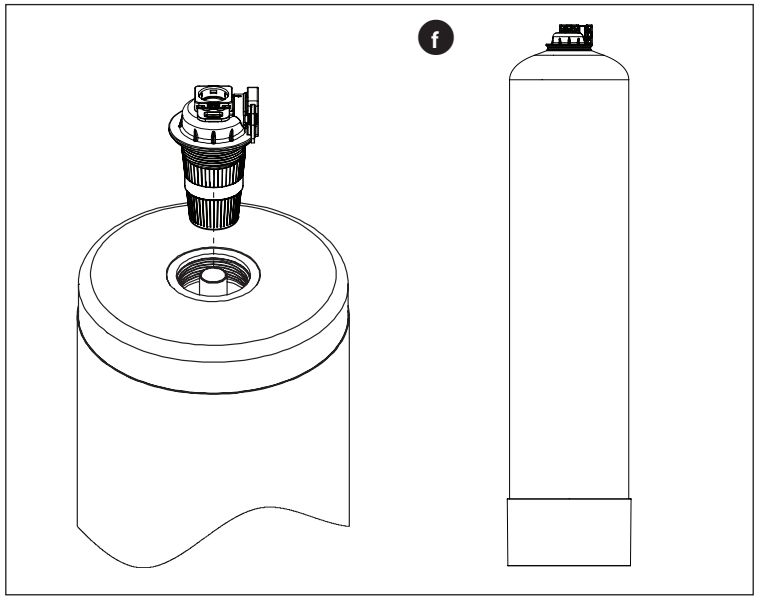




Fill tank one quarter full of water to protect distribution during gravel installation.

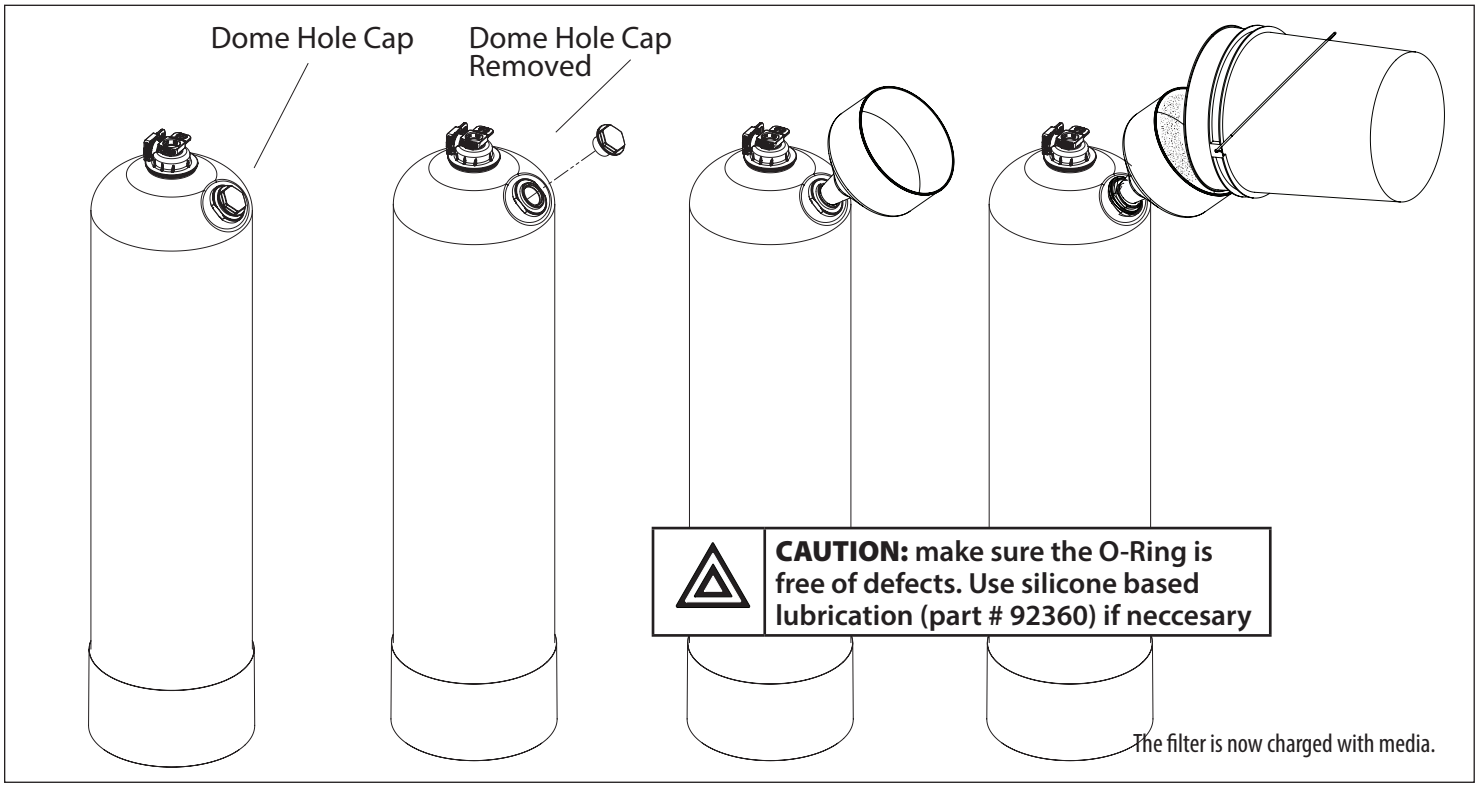
Place the media into the tank in the order indicated above. Slowly and carefully add the gravel support bed and the filtration media leveling each layer as it is placed into the tank.

Fill support bed (if supplied) first. During the filling process, ensure the distributor tube stays on the bottom of the tank, reasonably centered. Remove the tape from the distributor once media is loaded. Whenever possible, fill the tank outdoors to avoid problems with dust. If filling indoors, a dust mask should be worn.



NOTE: Some medias like those used in BIF/BIFMN Models are sacrificial and deplete faster depending on inlet water conditions and usage. The media replenishment is more frequent in high water usage and more acidic water cases. The dome hole models are available and supplied in which the dome hole is available for a quick addition or replenishment of media in the tank

f. 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.

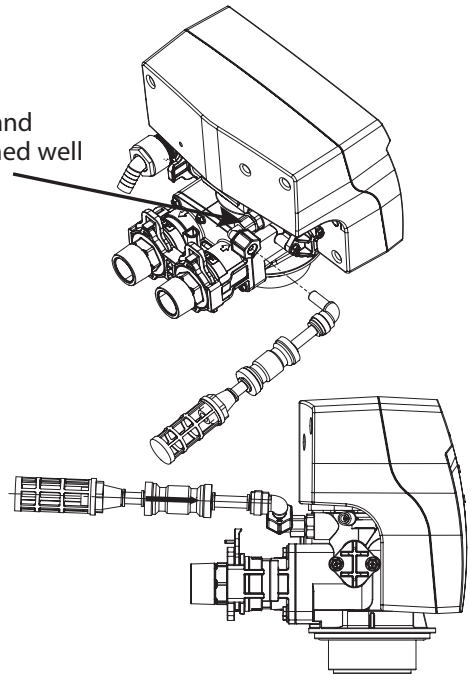
DO NOT use petroleum based lubricants as they will cause swelling of O-ring seals.

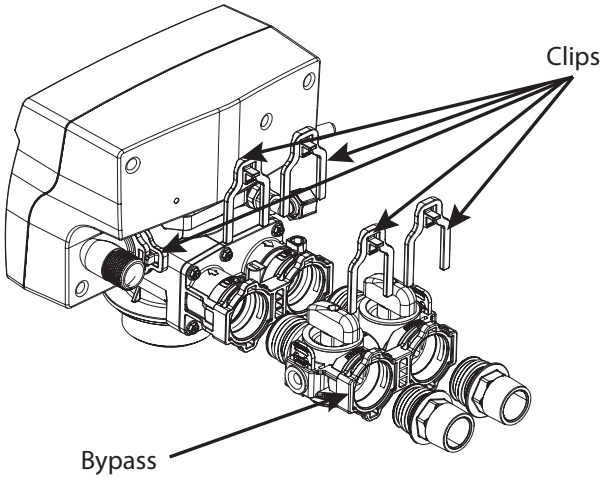
3. Outside faucets used to water lawns and gardens should not supply untreated water. A new water line is often required to be connected to supply untreated water to the inlet of the water filter and to the outside faucets.

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 filter 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 filter and from the elbow to the outlet of the filter. 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 filter 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 treated water.

NOTICE:
Inspect and check that the brine line air check assembly is connected to the valve.

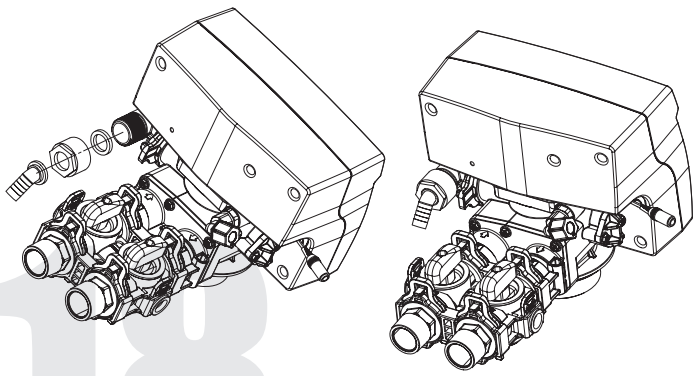
NOTICE:
Ensure that the brass and plastic nut connected to the air check assembly is tight.





4. 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.

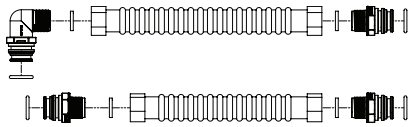
Do not use pipe thread compound as it may attack the material in the valve body.



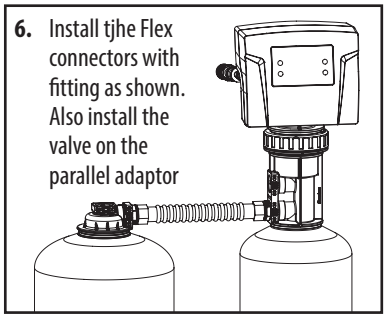
7. Drain Line connection: Using Teflon tape, screw the 1/2" hose barb and attach oring into the drain port in the valve. Attach 1/2" drain hose (Supplied with some models and brands) to the hose barb and tighten securely with a hose clamp (Supplied with some models and brands).

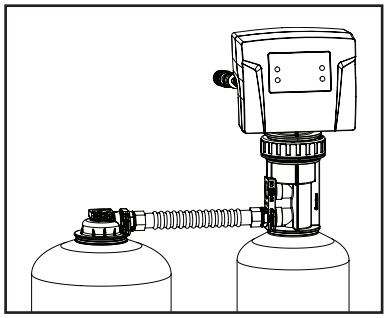
Run the drain line to a floor drain or a laundry drain. Complete any necessary plumbing.

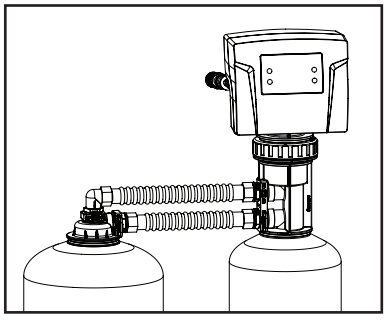
5. Apply Teflon Tape and Orings to the fittings

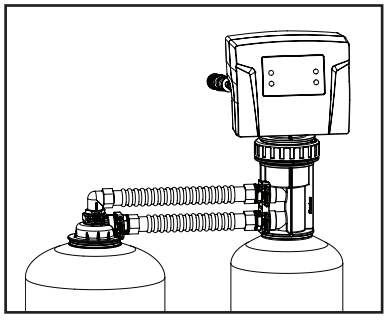


6. Install tjhe Flex connectors with fitting as shown. Also install the valve on the parallel adaptor



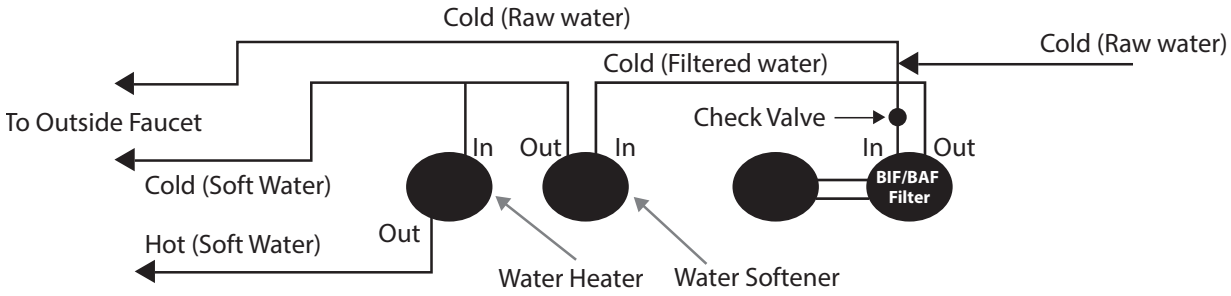


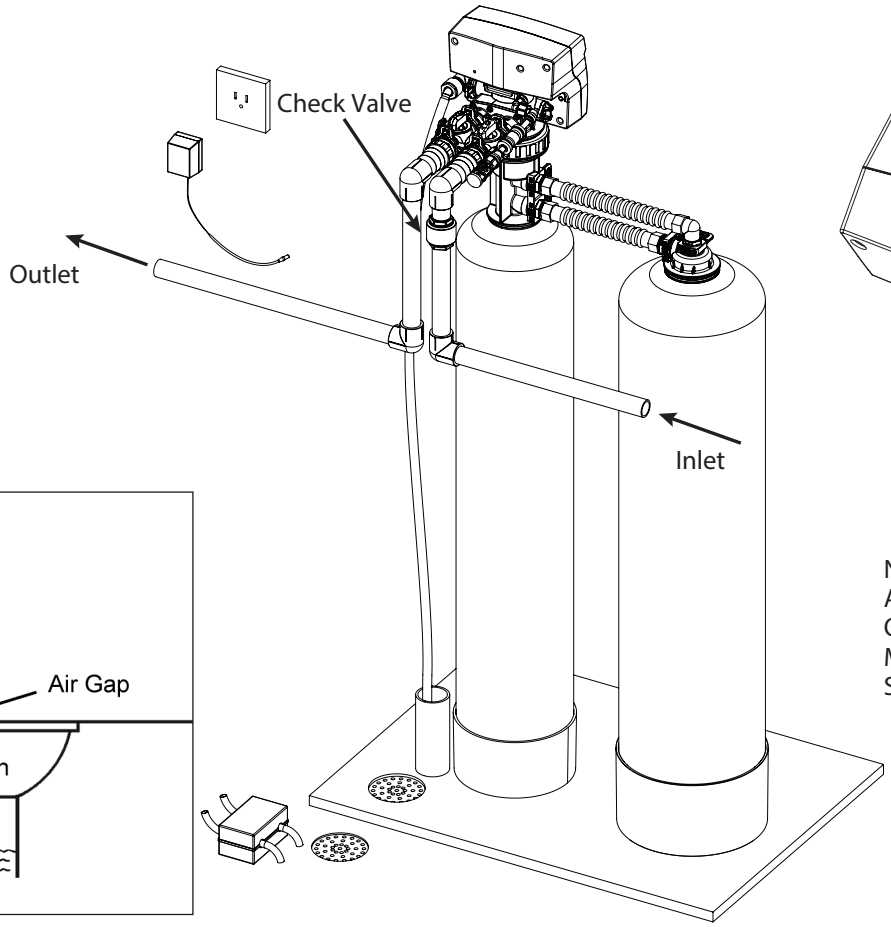


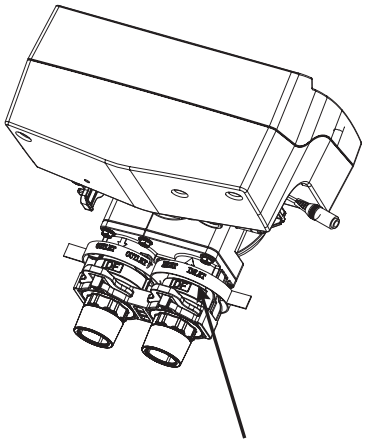


6. Connect Filter to the house plumbing. Any solder joints near the valve must be done before connecting any piping to the valve. Always leave at least 6" (152 mm) between the valve and joints when soldering pipes that are connected to the valve. Failure to do this could cause damage to the valve.

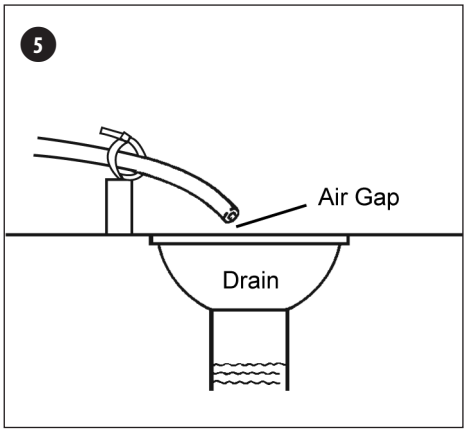
Correct Installation of the Check Valve: Install 1" check valve on inlet of bypass valve. *The check valve needs to be installed at the highest possible level of the plumbing line to avoid air trap. Please see an example below:*







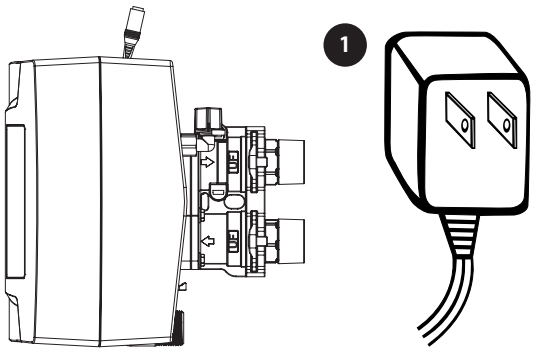
NOTICE - THERE ARE INLET AND OUTLET LABELS ON THE VALVE. PLEASE MAKE SURE TO PLUMB AS SHOWN HERE



!	**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.**

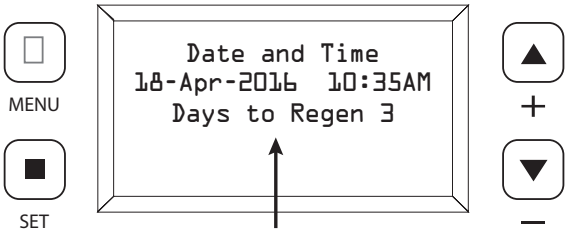
!	**Never insert drain line directly into a drain, sewer line, or trap. Always allow an air gap between the drain line and the wastewater to prevent the possibility of sewage being back-siphoned into the conditioner.**

STARTUP INSTRUCTIONS



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

Familiarize with Button Configuration:



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

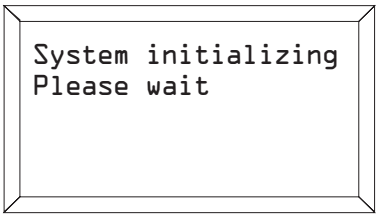
Key Pad Configuration:

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.

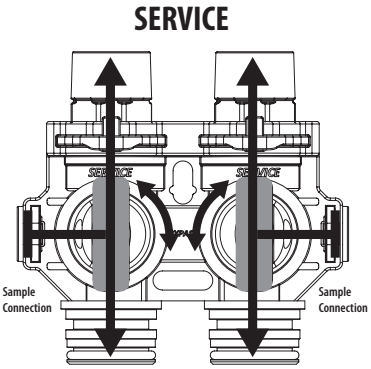
2. When power is supplied to the control, the screen will display "INITIALIZING WAIT PLEASE" while it finds the service position.

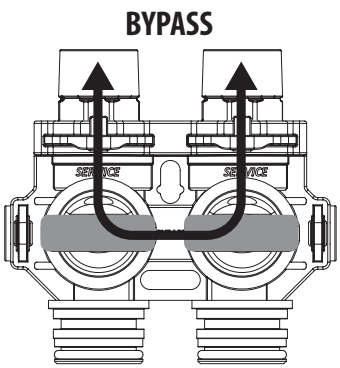


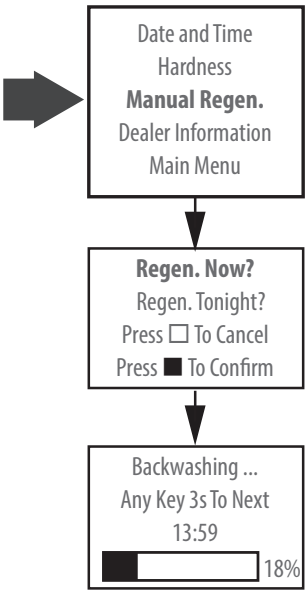
3. Manually step the valve to the BACKWASH position. If screen is locked, press Menu Key for 5 seconds to unlock.

Manual Regeneration

Manually Regenerate the Valve and move it to backwash position. Press Menu Key and Scroll down using Up and Down Arrow buttons to "Manual Regen". Press "SET" Select "Regen Now"







4a. **(CARBON UNITS – Model BIFCXX)** 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 or carbon 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 carbon to soak. Unplug the power cable. After the carbon has soaked for the recommended time continue by plugging the power cable back in.

4b. **(Chemfree and Birm Models (BIFXX/BAF/BAFXX)** 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.

5. Unplug the power cord from the power supply, open inlet. Check the drain line flow. Allow the water to run for 30 minutes.

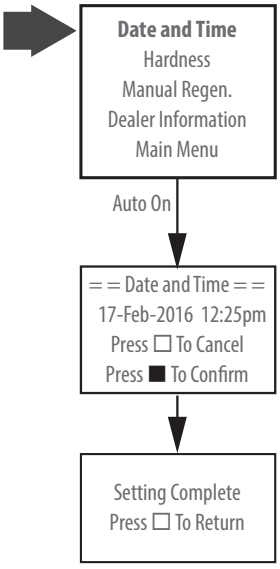
6. Plug in the valve and the valve will automatically advance to the SERVICE position. Open the outlet valve on the bypass, then slowly open the nearest treated water faucet and allow the water to run until clear, close the tap and replace the faucet screen.

7. The Valve is already programmed from factor. Please set up date and time of day as shown on next page.

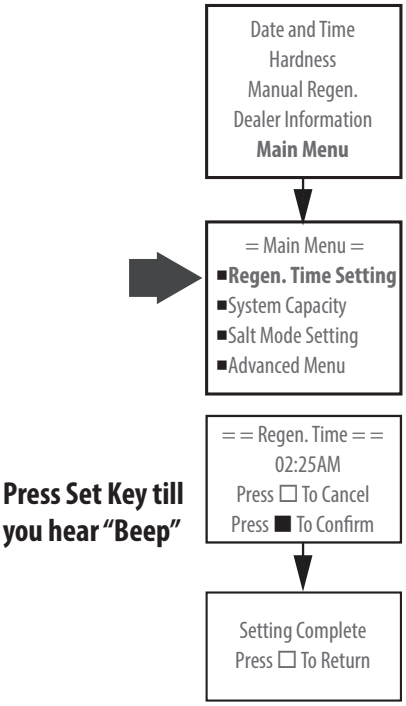
Set Up Current Time of Day and Regeneration Time When Filter Should Regenerate When No one uses Water in House.

Press Menu Key and Select "Date and Time" using "Set" button and set For setting the regeneration time, Press Menu Key and Select Main Menu till you hear a beep and select Regen time

Set up Current Time of the Day:



Set up Regeneration Time:



Press Set Key till you hear "Beep"

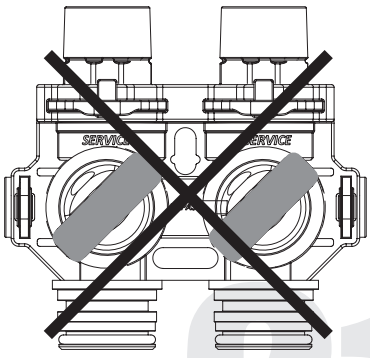
Automatic Raw Water Bypass During Regeneration

The regeneration cycle can last 80 minutes after which filtered water service will be restored. During regeneration, un-filtered water is automatically bypassed for use in the household. Hot water should be used as little as possible during this time to prevent un-filtered water from filling the water heater. This is why automatic regeneration is set for sometime during the night and manual regenerations should be performed when little or no water will be used in the household.

Manual Bypass

In the case of emergency you can isolate your water filter from the water supply using the bypass valve located at the back of the control. In normal operation the bypass is open with the on/off knobs in line with the inlet and outlet pipes.

To isolate the filter, simply rotate the knobs clockwise (as indicated by the word BYPASS and arrow) until they lock. You can use your water related fixtures and appliances as the water supply is bypassing the filter. However, the water you use will be untreated. To resume water service, open bypass valve by rotating the knobs counterclockwise. **Please make sure bypass knobs are completely open otherwise the unfiltered water could bypass through the valve.**



BYPASS

SYSTEM CHECK LIST

More than 90% of problems affecting the efficiency of a chemical iron free filter system can be identified in 9 minutes or less by following this diagnostic schedule. Start with Step 1, then follow each step in sequence to ensure proper diagnostic procedures.

1. Check for Proper Installation

- **a.** Is the pipe from the pressure tank to the filter unit attached to the inlet port of the control valve? Is the pipe from the filter unit to the water heater attached to the outlet port of the control valve?
- **b.** Is the drain line of adequate diameter? Drain line must be sized to prevent back pressure from reducing backwash flow rate below minimum for the model installed.

Typical examples of minimum drain line diameters are:

- **i)** 5/8" ID when drain is up to 15 ft from unit and backwash water discharge point is slightly higher than the control valve
- **ii)** 3/4" ID when drain is 25 ft away and/or drain is installed overhead

- **c.** Has the drain line been "kinked"? A kinked drain line must be replaced.
- **d.** Is the drain line installed in a way that it will freeze in cold weather?
- **e.** If the system incorporates a standard air-to-water pressure tank, does it have the required deep well air volume control (air release valve) and is it functioning? (Proper installation of this type of pressure tank should have inlet from pump higher than outlet to service.)

2. Check pH, Iron and Manganese Content of Treated Water

Is the treated water pH reading less than 6.7 (8.2 when manganese is present)? If yes, replenish the media with MpH adder and check the bed for "channelling".

3. Check Pumping Rate

Do not refer to a pumping rate curve for this data. Follow the instructions found on Page 7. Is the measured pumping rate less than the backwash rate of the filter? If yes, increase the pumping rate by first reducing the system operating pressure. If the pumping rate is still too low, replace the pump.

4. Manually Stage Filter Control to Backwash Cycle

Does a "rush" of air precede the backwash water out of the drain line? (If no, proceed to Step 6). If yes, the system is "air-logged". Disconnect power from the pump and allow the system pressure to drop to zero through the filter drain line. Restore power and rebuild system pressure. Continue backwashing unit until the pump has completed two or three pressure cycles. Stage control valve to the service position and check the hydrocharger draw time. Adjust draw for 1/3 of pump cycle time.

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

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

DURING REGENERATION

Automatic Bypass

The regeneration cycle lasts approximately 60 minutes, 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.

New Sounds

You may notice new sounds as your water softener operates. The regeneration cycle lasts approximately 2-1/2 hours. During this time, you may hear water running intermittently to the drain.

PLUMBING SYSTEM CLEAN-UP

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

The plumbing system and water using appliances that have been exposed, even for a short time, to iron-fouled water need to be cleaned of the precipitated iron that has collected in them or iron bleed (staining) will continue to be a problem.

Depending on the amount of iron in the water and the length of time the water system has been exposed to iron fouling, select from the following procedures those that apply to the type of system and appliances that need to be cleaned to assure iron-free water at the point of use.

Softener

1. Disconnect brine draw line from the brine cabinet and place the loose end into a five gallon plastic pail filled with a solution of warm water and 4 oz. of resin mineral cleaner.
2. Manually advance control timer to brine draw position (refer to instructions provided with your softener). Allow all the warm mineral cleaner solution to be drawn into mineral bed. Then immediately:

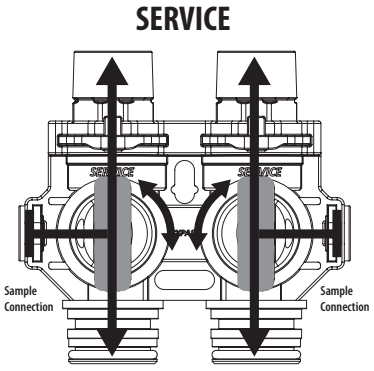
3. Close main water supply valve or turn power off to pump and proceed with filter installation. During time required to install filter system, iron- fouled softener resin will be chemically cleaned.

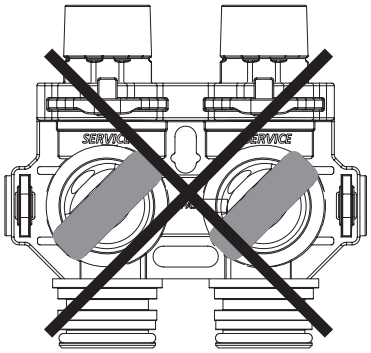
3. After filter installation is completed and final adjustments are made with the water turned on and brine draw tube reconnected, manually reposition timer on softener to backwash position. Allow timer to perform an automatic regeneration cycle. During backwash of softener, all iron cleaned from the resin will be washed down the drain. It is advisable, after chemically cleaning softener, to regenerate system twice to fully restore capacity lost due to iron fouling.

WATER BYPASS

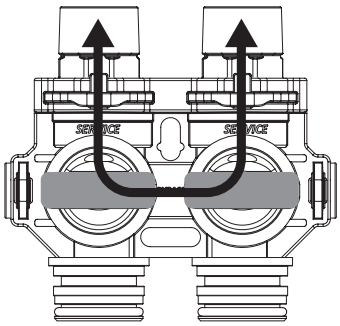
Manual Bypass

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





BYPASS



OPERATING CONDITIONS

Water Heater

If the water heater has been exposed to both iron and hardness for a long period of time, replacement of the heater tank maybe the only practical solution to prevent continued staining originating from this source. After completing the installation of the chemical free iron filter system, 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 again until water is clear at drain. Turn energy supply on.

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

Dishwasher

Consult owners' handbook and follow manufacturer's instructions.

Toilet Flush Tanks

Prior to commencing installation of the filter system, pour 4 to 6 ounces of resin mineral cleaner Pro-Rust Out or inhibited muriatic acid into flush tanks and bowls and let stand. When installation is completed, flush toilets several times with iron-free water. If iron deposits or stains remain, repeat procedure until clear.

MAINTENANCE INSTRUCTIONS

Your chem free iron filter requires some minor maintenance to ensure optimum performance and years of trouble-free clean water. The following steps should be performed once or twice a year (more often under harsh conditions):

1. Verify the pumping rate of the system - do not refer to a pumping curve for this data. Follow the instructions found on page 7. If the measured pumping rate is less than the backwash rate of the filter, see page 39, Trouble Shooting.
2. Have your water tested - for pH, iron and manganese on both the treated and raw water to ensure your water conditions haven't changed.
3. Inspect the Control Valve and the piping between the iron filter and the pressure tank to ensure they are not plugged with raw iron. If the line becomes plugged, the flow of water to the home will be reduced. This will result in a reduction of water available for backwashing the unit which will inhibit operation of the system.
4. Air-to-water pressure tank - periodically drain and flush your tank to prevent a build-up of precipitated iron from forming in the bottom of the tank.
5. Bladder tank - periodically check that the bladder air pressure remains at 2 psi lower than the cut-in pressure of your pump.
6. For applications with low pH, manganese or hydrogen sulfide, consult your local dealer for specific instructions to maintain the efficiency and operation of your filter.
7. Periodic cleaning of the air vent assembly with mild acid or vinegar will ensure that it continues to vent excess air properly.
8. The filter tank can be cleaned with a mild soap solution.
9. Never subject the unit to freezing

Care of Your Filter

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

Servicing Components

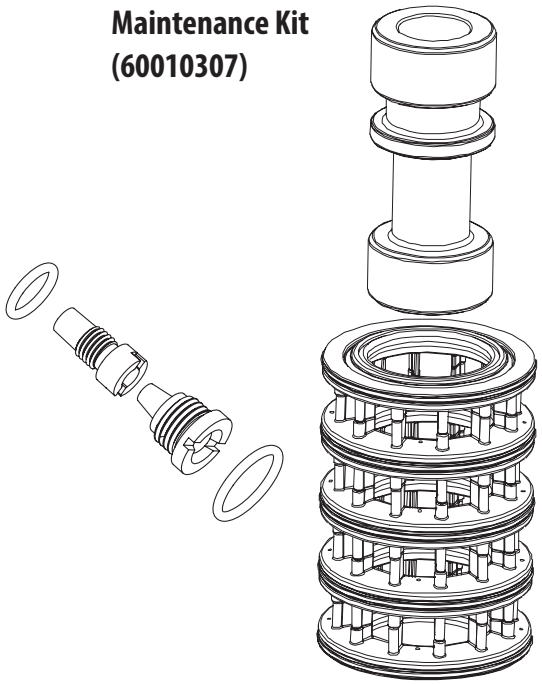
- The seals and cartridge should be inspected/cleaned or replaced every year depending on the inlet water quality and water usage.
- The media should be replenished or replaced depending of inlet water quality and water consumption. Check with your water treatment expert on the media bed change frequency. Below are some guidelines:
- Maintenance Kit (60010307) should be used for servicing control on an annual basis. The maintenance kit consists of piston assembly, seals and spacers, injectors.

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.

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

Maintenance Kit (60010307)



Replacing Media Bed

The media bed in a neutralizing Model BIFXX/BIFMNXX filter is slowly dissolved and has to be replaced. The frequency of replacement varies, depending on water quality - consult your dealer to determine the expected life of your media bed.

BACKWASHING INSTRUCTIONS

To Calculate Backwash Frequency - Normal Applications

Backwash frequency for households with average water use can be determined using the following guide. The guide cannot be used if the filtered water supplies a swimming pool, geothermal pump, outside spigots or other high water demand devices or activities. If your application includes any of the foregoing refer to the paragraph on "Special Applications" below:

PEOPLE IN FAMILY	IRON CONTENT (PPM)									
	2	4	6	8	10	12	14	16	18	20
1	1	1	1	1	1	1	1	1	1	1
2	1	1	1	1	1	2	2	2	2	2
3	1	1	1	2	2	2	3	3	3	3
4	1	1	2	2	2	3	3	4	4	4
5	1	1	2	2	3	3	4	4	6	6
6	1	2	2	3	3	4	6	6	6	6

1. Locate the box intersected by the number of people in your family and the parts per million (ppm) of iron in your water (if your ppm is between two numbers on the guide, use the higher number).
2. The number in the box represents how many times your filter has to backwash in a twelve day schedule.

To Calculate Backwash Frequency - Special Applications

To ensure adequate reserve capacity and prevent loss of water pressure between backwashes the figure of 15,000 (not the full 30,000 ppm capacity) is used to calculate backwash frequency. Determine your backwash frequency as follows:

1. Estimate daily iron removal requirements using the following calculation:
   No. of people in family
   x 75 gallons of water per person
   + No. of gallons of water for special use
   = No. of gallons of water required per day
   x Iron concentration (ppm)
   = Daily iron removal requirements (ppm)

2. Establish backwash frequency using daily iron removal requirements to complete the following calculation:
   15,000 iron removal capacity (ppm)
   ÷ Daily iron removal requirements (ppm)
   = No. of backwashes required in 12 day schedule
   Example: You have four in the family, 8 ppm of iron and a swimming pool requiring 46 gallons of water per day.
   4 People in the family
   x 75 Gallons of water per person
   300 Gallons of water for family
   + 46 Gallons of water for the pool
   346 Gallons of water required per day
   x 8 Iron concentration
   2,768 Daily iron removal requirements (ppm)

1 5,000 Iron removal capacity (ppm)
   ÷ 2,768 Daily iron removal requirements (ppm)
   5.4 Backwash frequency (days)

The calculation indicates the need to backwash every 5.4 days. The control can only be programmed to backwash at intervals of two, three, four, six and twelve days. The control would be programmed to the closest more frequent setting i.e. every four days.

SERVICING 89 VALVE

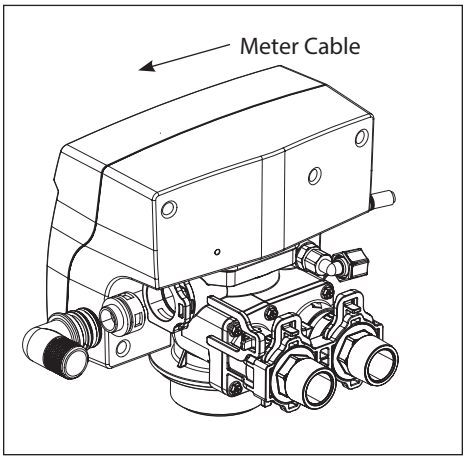
Before Servicing

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.

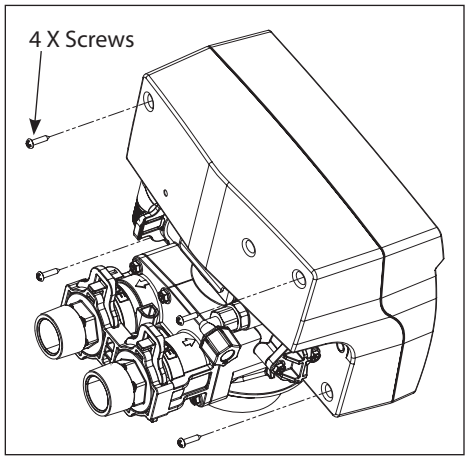
WARNING! ELECTRICAL SHOCK HAZARD! UNPLUG THE UNIT BEFORE REMOVING THE COVER OR ACCESSING ANY INTERNAL CONTROL PARTS.

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

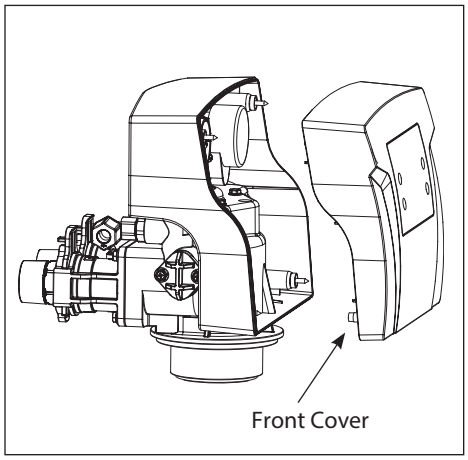
TIMER REPLACEMENT



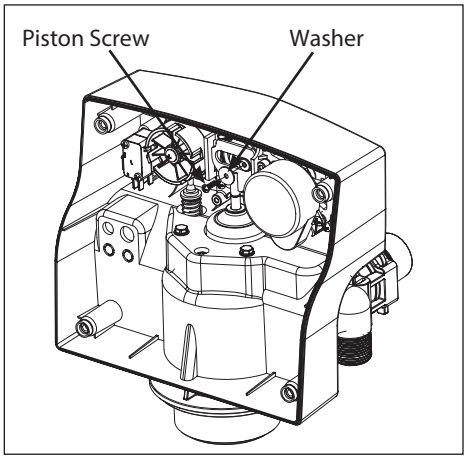
1. Disconnect the meter cable? from the meter. (If flow meter is attached)



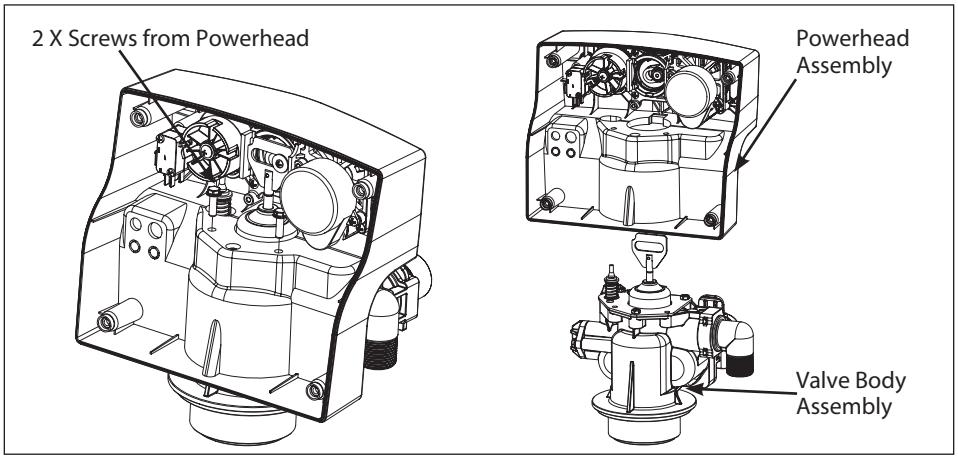
2. Remove four screws from the back of the valve cover



3. Remove the front cover of the valve.

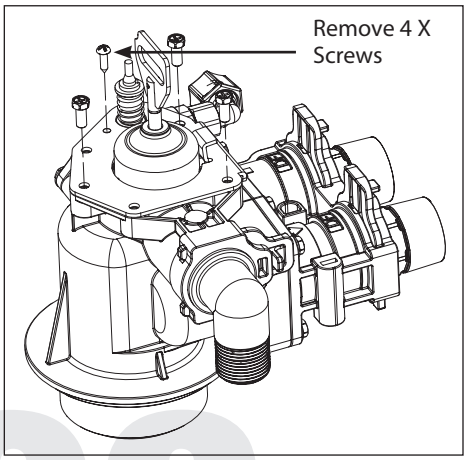


4. Remove the piston screw and washer from the piston rod.

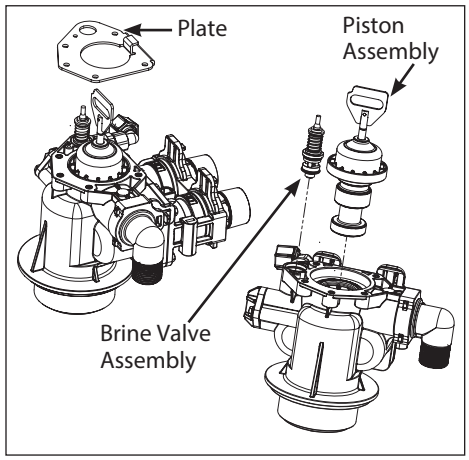


5. Remove the two screws from the powerhead as shown
6. Life the powerhead from the valve body assembly
7. Replace the powerhead by reverse following the steps in this section

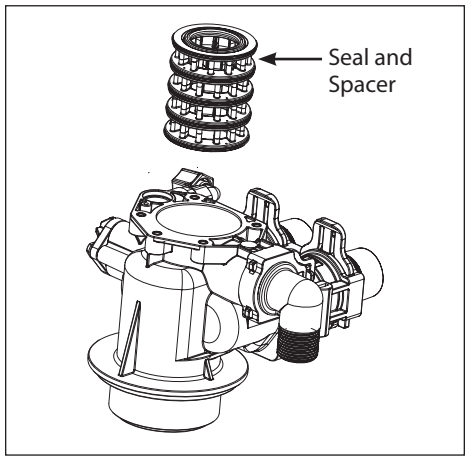
PISTON ASSEMBLY REPLACEMENT



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

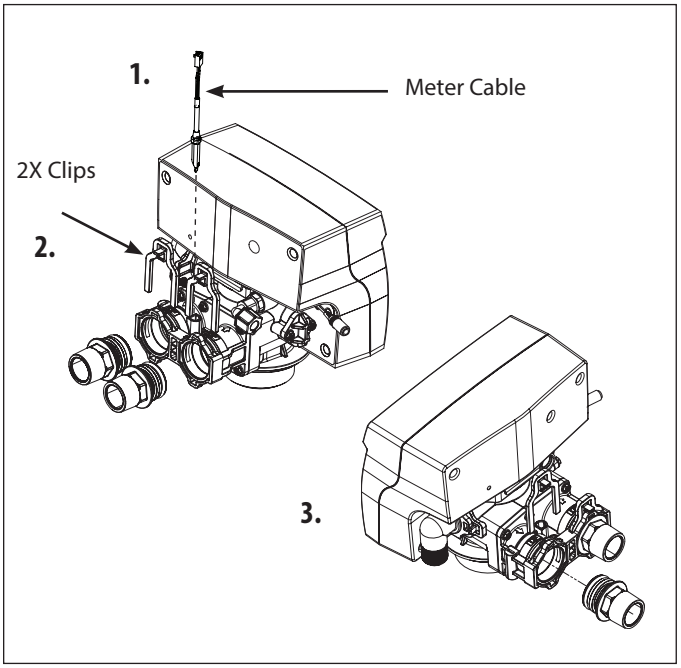


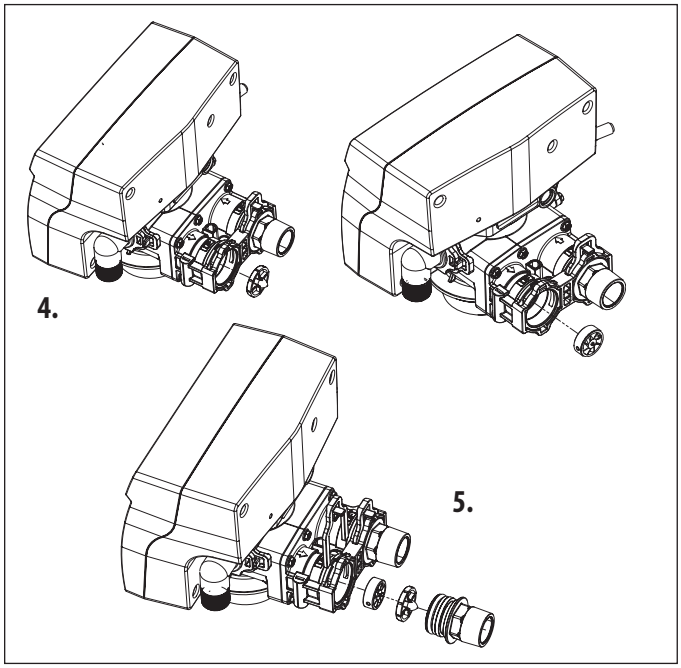
3. Remove the plate from the valve body and pull the Piston Assembly from the valve. The brine valve assembly can also be removed in this stage.
4. Remove the seal spacer assembly, grease it with silicone lubricant and put back in.



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

METER ASSEMBLY REPLACEMENT (For Models Manufactured after Valve Serial # Date of November 2015)

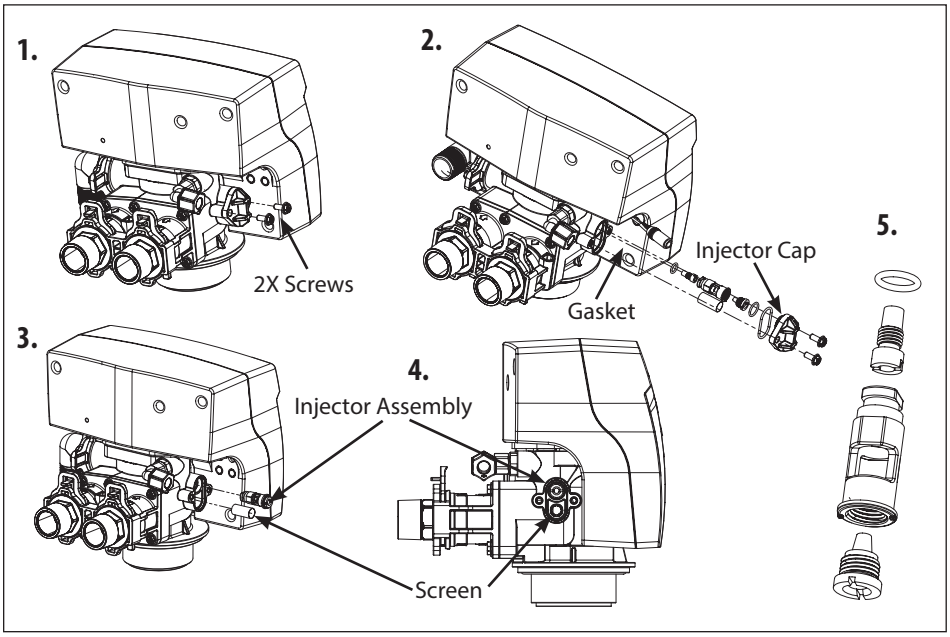




1. Disconnect the meter cable from the meter.
2. Disconnect the valve from bypass by removing clips
3. Remove the coupling adapter from the valve

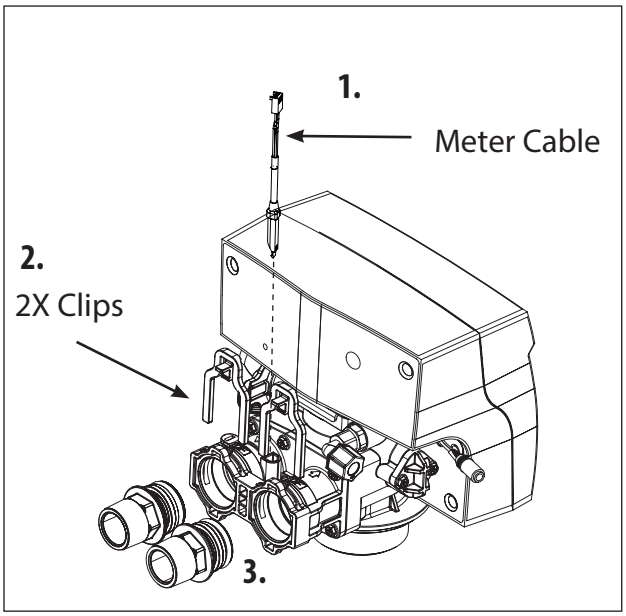
4. Remove the meter support and then the impeller out from the coupling and clean it
5. Replace meter with the help of special tool and re-assemble the removed components back in the section

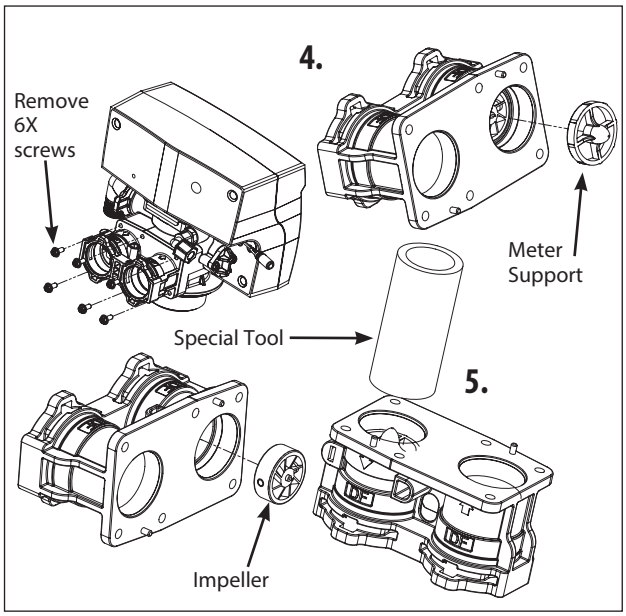
CLEAN INJECTOR ASSEMBLY



1. Remove the two screws from the injector cap
2. Pull the injector cap and gasket
3. Pull the injector assembly and Screen
4. Replace/Clean screen and injector assembly and put it back in the valve in appropriate location as shown
5. Put back the injector cap. Grease the injector assembly orings and injector cap gasket. Care should be taken to put all orings and gaskets in place and grease them so that they dont pinch

METER ASSEMBLY REPLACEMENT (For Models Manufactured before Valve Serial # Date of November 2015)



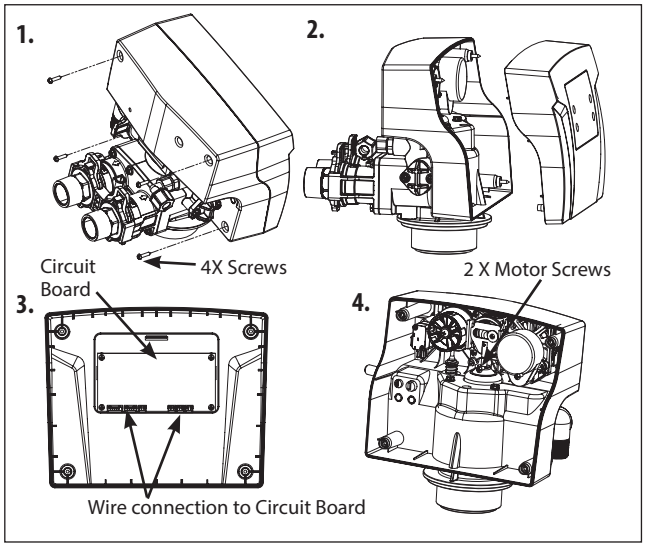


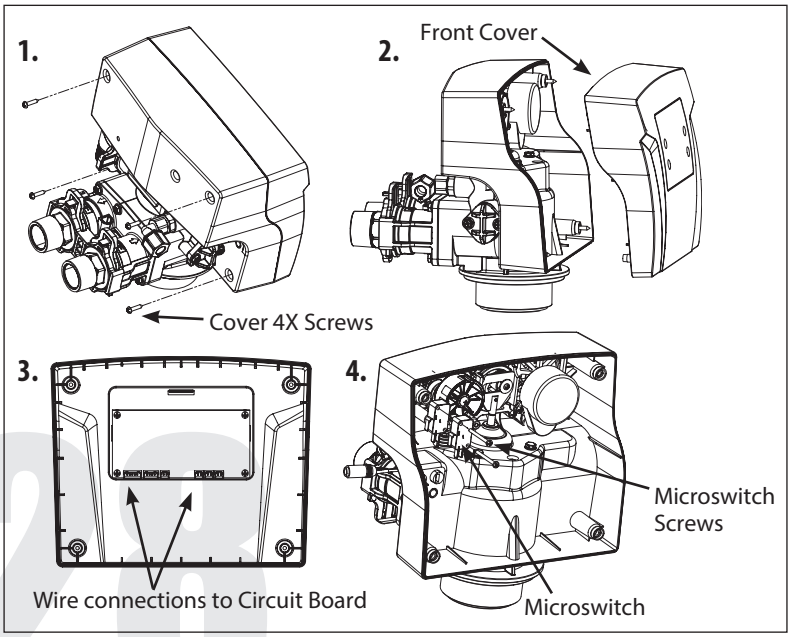
1. Disconnect the meter cable from the meter.
2. Disconnect the valve from bypass by removing clips
3. Remove the coupling adapter from the valve

4. Remove six screws and pull out the meter support and impeller.
5. Replace meter with the help of special tool and re-assemble the removed components back in the section

REPLACE MOTOR

1. Remove Screws from the back of the valve and pull the cover
2. Remove all connections from the circuit board
3. Remove the two screws from the motor. Remove the motor and watch for the pin under the motor.
4. Replace the motor, connections and cover

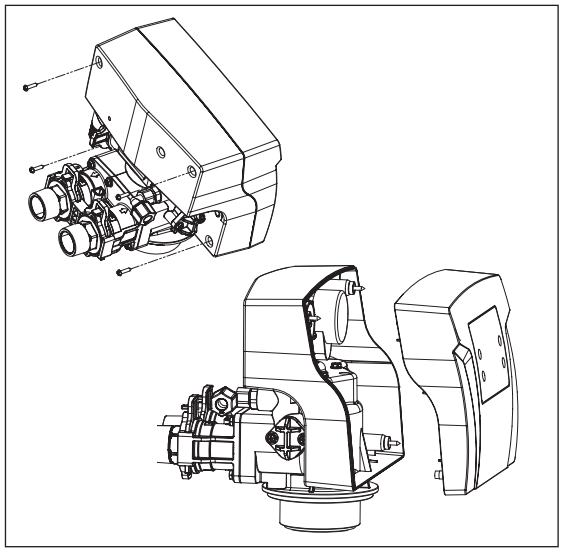




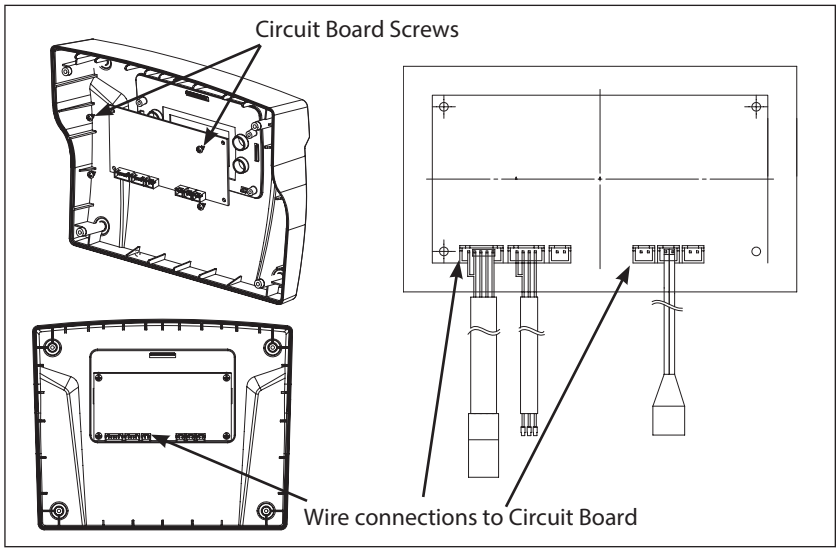
REPLACE MICROSWITCHES

1. Remove Screws from the back of the valve and pull the cover
2. Remove all connections from the circuit board
3. Remove the two screws from the microswitch
4. Replace the microswitch, connections and cover

CIRCUIT BOARD REPLACEMENT



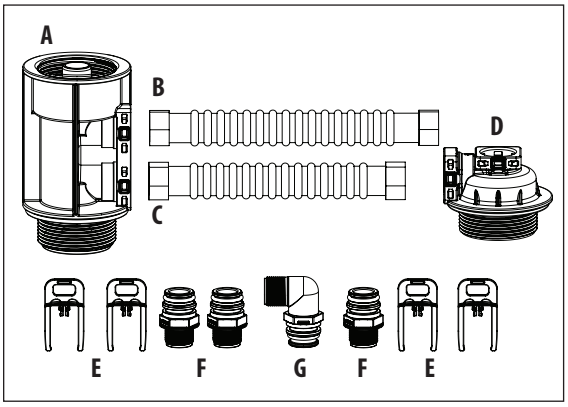
1. Remove the screws from the back of the valve and pull the front cover

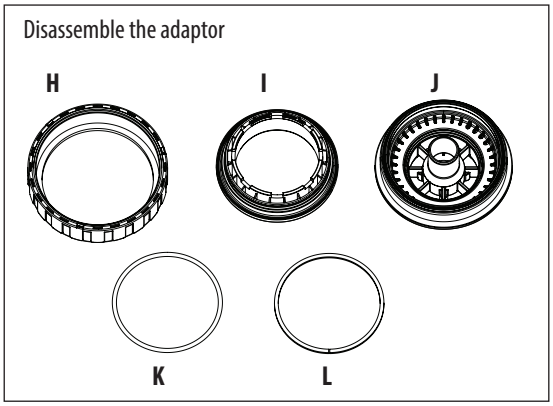


2. Remove all connections from the circuit board
3. Remove the fours screws from the circuit board and pull it out

SERVICING OF PARALLEL ADAPTOR

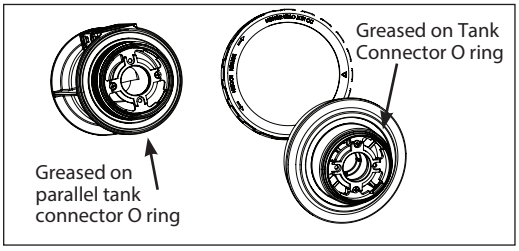
Tank and Valve Connection Parts

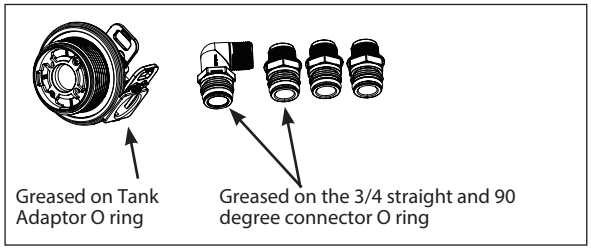




A. Parallel tank connector w/ O ring
B. Top pipe connector
C. Bottom pipe connector
D. Tank adaptor w/ O ring
E. Red Clips (4pcs)
F. 3/4" x 3 Straight , w O ring
G. 3/4" x1 90 degree, w/ Oring
H. Clamp ring
I. Valve base
J. Tank Base
K. O ring
L. Retainer ring

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





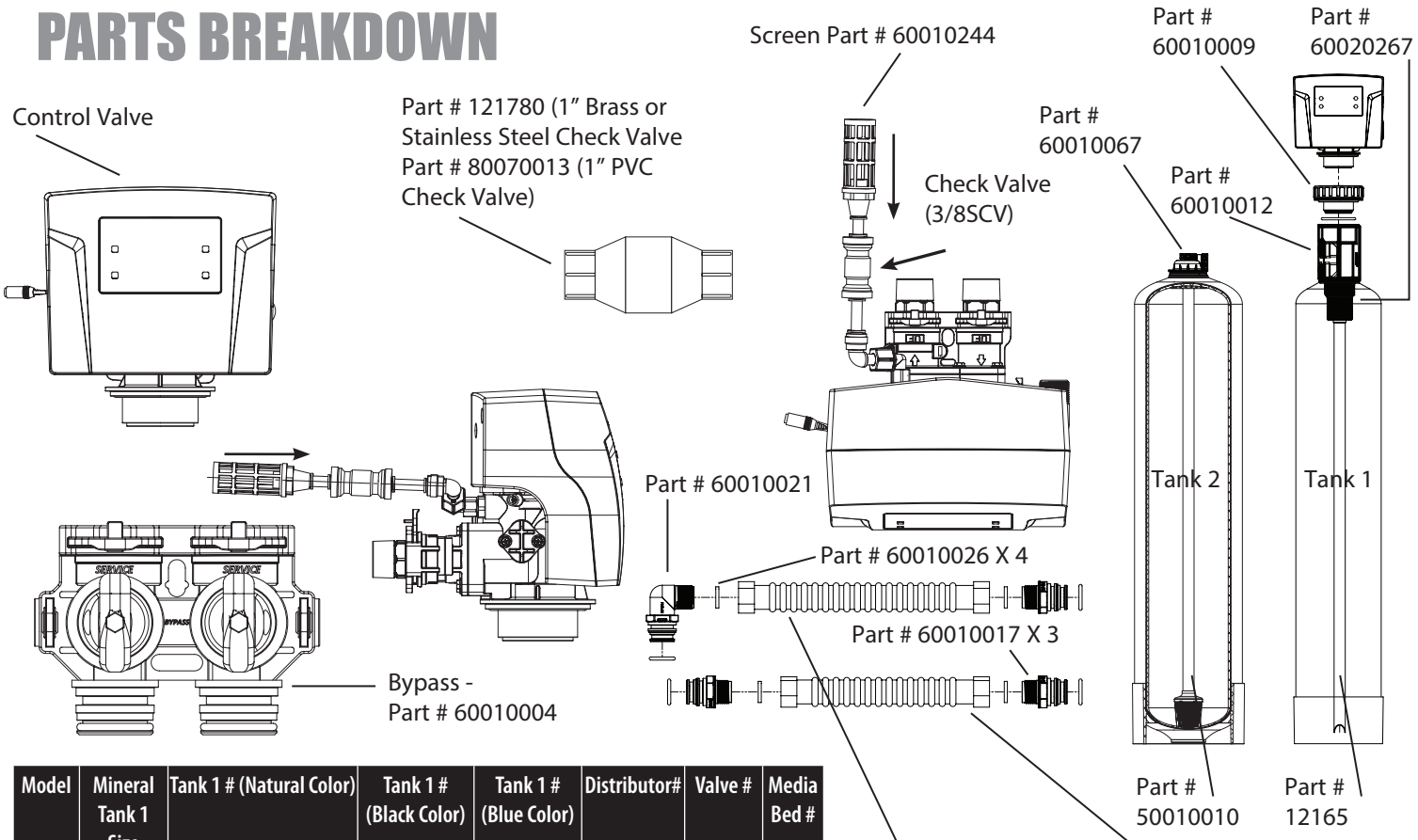
AFTER SERVICING

1. Reconnect drain line
2. Return bypass or inlet valve to normal in service position. Water Pressure will automatically build in the filter

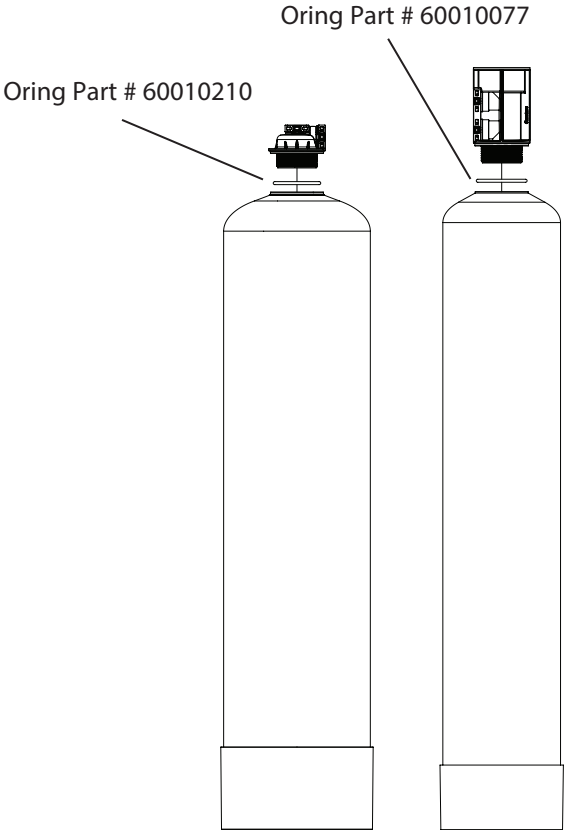
NOTE: Be sure to shut off any bypass line.

3. Check for leaks at all sealed areas. Check Drain seal with the control in the backwash position
4. Plug electrical cord into outlet
5. Set Time of Day and cycle the control valve manually to assure proper function. Make sure control valve is returned to the In Service position

PARTS BREAKDOWN



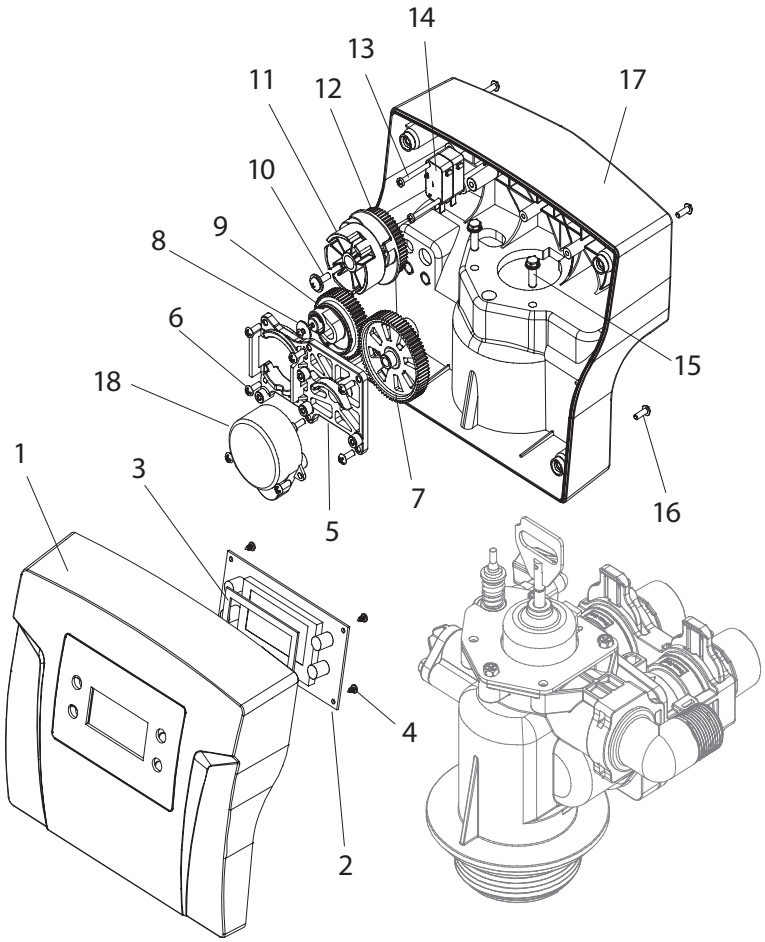
Model	Mineral Tank 1 Size	Tank 1 # (Natural Color)	Tank 1 # (Black Color)	Tank 1 # (Blue Color)	Distributor#	Valve #	Media Bed #
BIF/BIFMN							
BXX75	8 x 44	25010025	25010027	25010026	50010005	10010043	95431
BXX10	10 x 44	25010046	25010072	25010047	50010005	10010043	95425
AI015	10 x 54	25010049	25010051	25010050	50010005	10010043	95551
BXX20	12 x 52	25010058	25010060	25010059	50010005	10010043	95427
BXX30	14 x 65	25030001 and 50040039	Not Available	Not Available	50010010	10010043	
BXX40	16 x 65	25030002 ad 50040039	Not Available	Not Available	50010010	10010043	
BXX75M	8 x 44	25010025	25010027	25010026	50010005	10010043	95432
BXX10M	10 x 44	25010046	25010072	25010047	50010005	10010043	95426
BXX15M	10 x 54	25010049	25010051	25010050	50010005	10010043	95554
BXX20M	12 x 52	25010058	25010060	25010059	50010005	10010043	95428
BXX30M	14 x 65	25030001 and 50040039	Not Available	Not Available	50010010	10010043	
BXX40M	16 x 65	25030002 and 50040039	Not Available	Not Available	50010010	10010043	
BIFC							
BXXC75	8 x 44	25010025	25010027	25010026	50010005	10010043	95568
BXXC10	10 x 44	25010046	25010072	25010047	50010005	10010043	95569
BXXC15	10 x 54	25010049	25010051	25010050	50010005	10010043	95577
BXXC20	12 x 52	25010058	25010060	25010059	50010005	10010043	95578
BXXC30	14 x 65	25030001 and 50040039	Not Available	Not Available	50010010	10010043	
BXXC40	16 x 65	25030002 and 50040039	Not Available	Not Available	50010010	10010043	
BAF							
BXXB75	8 x 44	25010025	25010027	25010026	50010005	10010043	95435
BXXB10	10 x 44	25010046	25010072	25010047	50010005	10010043	95449
BXXB15	10 x 54	25010049	25010051	25010050	50010005	10010043	95436
BXXB20	12 x 52	25010058	25010060	25010059	50010005	10010043	95437
BXXB30	14 x 65	25030001 and 50040039	Not Available	Not Available	50010010	10010043	95438
BXXB40	16 x 65	25030002 and 50040039	Not Available	Not Available	50010010	10010043	

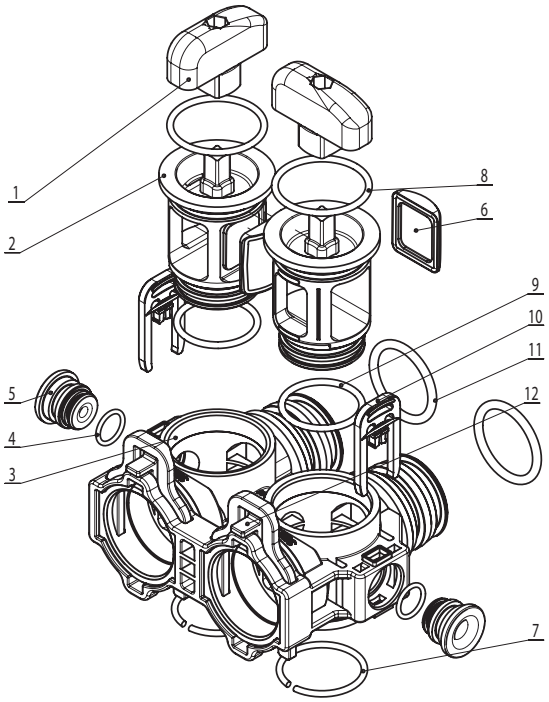


PARTS BREAKDOWN

Controller assembly parts list

No.	Part #	Part Description	Qty
1	60010570	Controller front cover assembly	1
2	92388	89 PCB	1
3	60010571	PCB absorb shock foam	1
4	60010572	PCB fix screws	4
5	60010573	85HE mounting plate	1
6	60010574	Screws	8
7	92389	85 drive gear	1
8	60010099	Connect screw	1
9	92391	85HE main gear	1
10	60010575	Brine gear screw	1
11	60010576 60010577 - Used in BIF/BAF Models 60010578	Locating wheel assembly: three options Down flow wheel Up flow wheel Filter wheel	1
12	92392	85HE brine gear	1
13	60010579	Micro switch screws	2
14	60010580	Micro switch	2
15	60010076	Valve body connect screws	2
16	60010581	Controller screws	4
17	60010582	Controller back cover assembly	1
18	92393	Motor 12VAC 3W	1





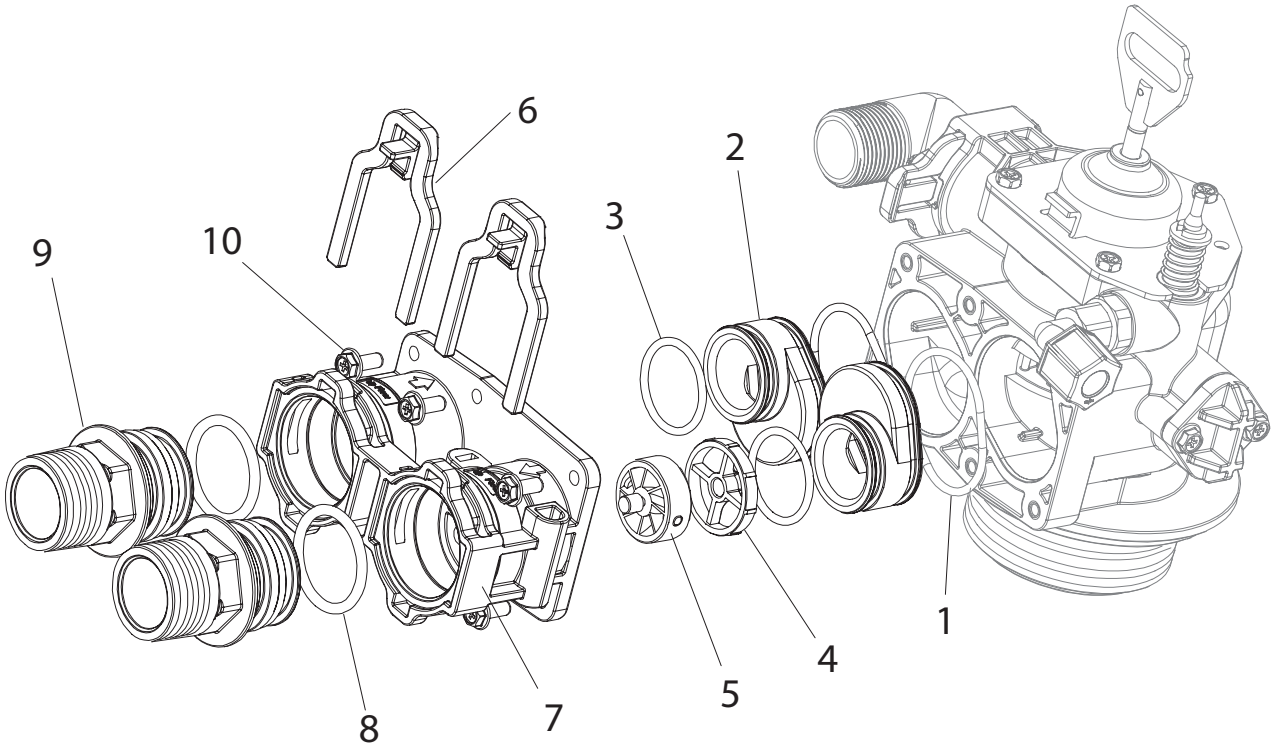
Bypass

No.	Part #	Part Description	Qty
1		89 Shaft Knob	2
2		BNT 89 Bypass Shaft	2
3		BNT 89 Bypass Body	1
4		Plug O-Ring 12.42×1.78	2
5	60010209	Bypass Plug	1
6		BNT 89 Bypass Knob Seal	8
7		Steel Retainer Ring	1
8		O-Ring 35.5×2.65	1
9		O-Ring 30×2.65	1
10	60010069	Plug Clip	1
11		O-Ring 30×3.55	1
12	92387	BNT89 Valve Clip	1

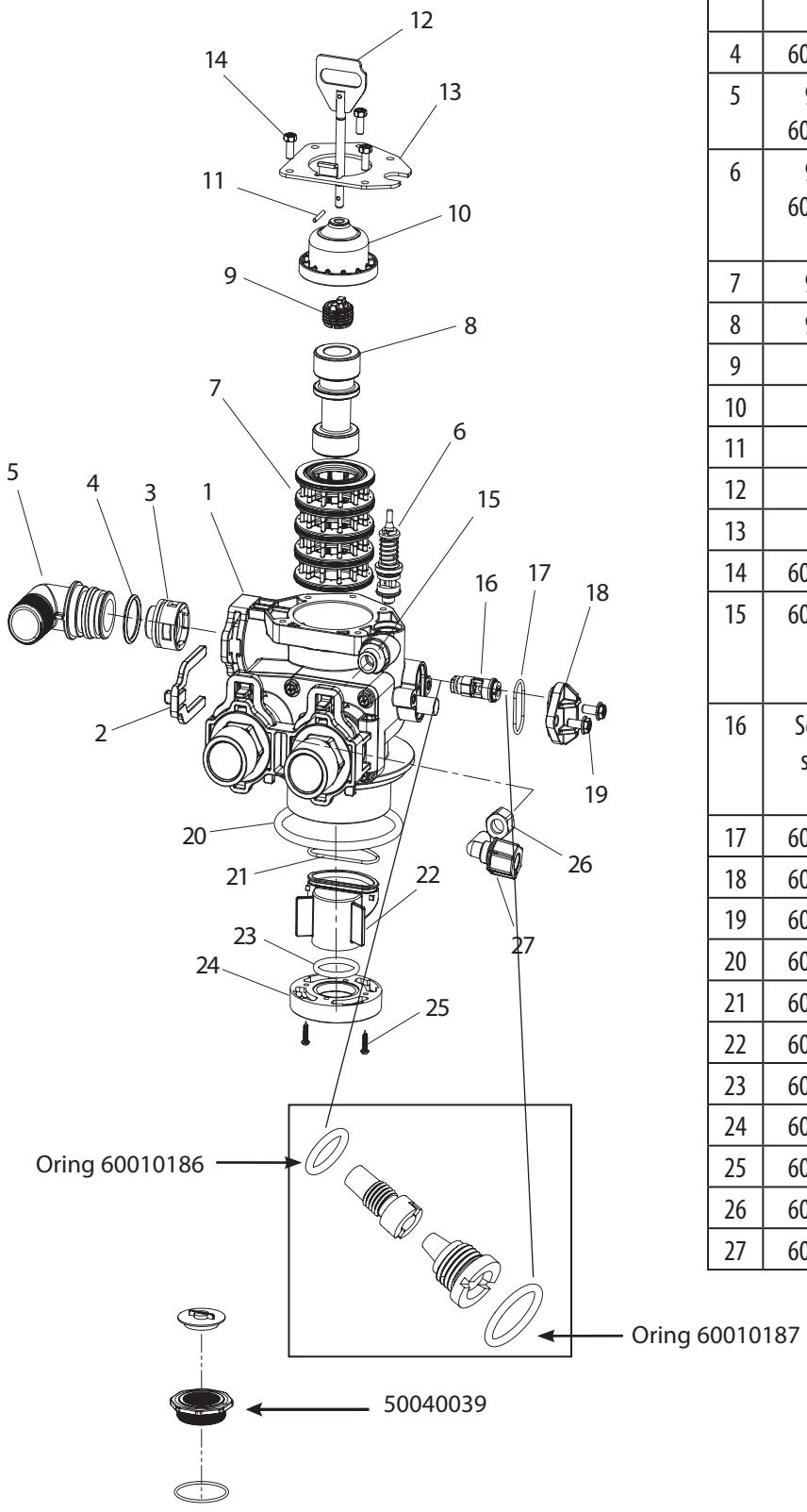
PARTS BREAKDOWN

Parts list of Standard connection assembly

No.	Part #	Part Description	Qty	No.	Part #	Part Description	Qty
1	60010258	Big O-ring of Adaptor coupling	2	6	92387	89 secure clip	2
2	60010585	Adaptor coupling of 89 control valve	2	7	60010589	89 valve connector	1
3	60010586	Small O-ring of adaptor coupling	2	8	60010590	Connector O-ring	2
4	60010587	Impeller holder	1	9	60010591 60010592	1"connector BSPT-Optional 1"connector NPT-Optional	2
5	60010238	Impeller assembly	1	10	60010593	Screws of valve connector	6



PARTS BREAKDOWN



Parts list of control valve body:

No.	Part #	Part Description	Qty
1		89 valve body	1
2	60010227	95 secure clip	1
3	See next section	DLFC assembly: optional 1S, 2S, 3S, 4S, 1#, 3#, 4#, 5#, 6#	1
4	60010211	Drain elbow O-ring	1
5	92397 60010233	Drain elbow: 1/2″ 3/4″	1
6	92381 60010514	Brine valve injector stem assembly Brine line plug assembly	1
7	92382	Spacer and seal assembly	1
8	92393	Downflow Piston Assembly	1
9		Piston retainer	1
10		End plug	1
11		Piston pin	1
12		Piston rod	1
13		End plug retainer	1
14	60010075	End plug retainer screws	3
15	60010082	Brine line adaptor assembly: optional BLFC: 0.7gpm	1
16	See next section	Injector assembly: optional grey, purple, red, white, blue, yellow	1
17	60010091	Injector cover O-ring	1
18	60010595	Injector cover	1
19	60010596	Injector cover screws	2
20	60010077	Tank mouth O-ring	1
21	60010597	Adapter O-ring	1
22	60010598	Center pipe adapter	1
23	60010080	Center pipe O-ring	1
24	60010599	Valve bottom connector	1
25	60010099	Bottom connector screws	2
26	60010088	Brass nuts	1
27	60010600	Brine line elbow assembly	1

PARTS BREAKDOWN

DLFC PART # for 89 VALVE

No.	Part #	Part Description	Qty
1	60095720	BNT95DLFC-0(4.0 GPM)	1
2	60010143	BNT95DLFC-1(7.0GPM)	1
3	60010144	BNT95DLFC-2(11.0GPM)	1
4	60010145	BNT95DLFC-3(14.0GPM)	1
5	60010146	BNT95DLFC-4(17.0GPM)	1
6	60010147	BNT95DLFC-5(21.0GPM)	1
7	60095692	BNT95DLFC-6(24.0GPM)	1
8	60095721	BNT95DLFC-1S(2.4GPM)	1
9	60095722	BNT95DLFC-2S(3.5GPM)	1
10	60095723	BNT95DLFC-3S(4.5GPM)	1
11	60010140	BNT95DLFC-4S(5.0GPM)	1
12	60095724	BNT95DLFC-5S(6.0GPM)	1
13	60095725	BNT95DLFC-6S(6.0GPM)	1
14	60010142	BNT95DLFC-7S(7.0GPM)	1

INJECTOR PART # for 89 VALVE

No.	Part #	Part Description	Qty
1	60010601	INJECTOR THROAT(BLACK 0000#)	1
2	60010602	INJECTOR NOZZLE(BLACK 0000#)	1
3	60010603	INJECTOR THROAT(GREY 000#)	1
4	60010604	INJECTOR NOZZLE(GREY 000#)	1
5	60010605	INJECTOR THROAT(PURPLE 00#)	1
6	60010606	INJECTOR NOZZLE (PURPLE 00#)	1
7	60010607	INJECTOR THROAT(RED 0#)	1
8	60010608	INJECTOR NOZZLE(RED 0#)	1
9	60010609	INJECTOR THROAT (WHITE 1#)	1
10	60010610	INJECTOR NOZZLE (WHITE 1#)	1
11	60010611	INJECTOR THROAT(BLUE 2#)	1
12	60010612	INJECTOR NOZZLE(BLUE 2#)	1
13	60010613	INJECTOR THROAT(YELLOW 3#)	1
14	60010614	INJECTOR NOZZLE(YELLOW 3#)	1

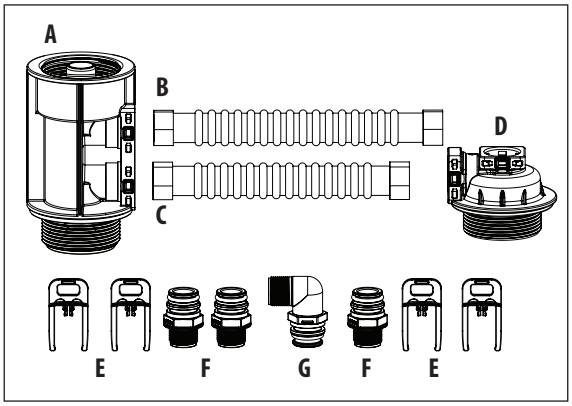
No 10 and 11 Injector Parts Apply to BIF/BAF Models

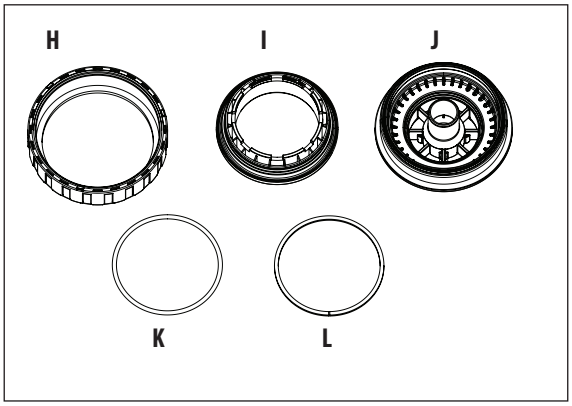
BLFC PART # for 89 VALVE

No.	Part #	Part Description	Qty
1	60010128	BNT95BLFC (0.2 GPM)	1
2	12053	BNT95BLFC-1(2.0 GPM)	1
3	60010162	BNT95 BLFC-7(1.35 GPM)	1

Tank and Valve Connection PART # for 89 VALVE

No.	Part #	Part Description	Qty
A	60010012	PARALLEL TANK CONNECTOR W/ O RING	1
B	80127756	TOP PIPE CONNECTOR	1
C	80127755	BOTTOM PIPE CONNECTOR	1
D	60010067	TANK ADAPTOR W/ O RING	1
E	60010025	RED CLIPS (4PCS)	4
F	60010026	O RING	1
	60010017	3/4" X 3 STRAIGHT	3
G	60010026	O RING	1
	60010021	3/4"X1 90 DEGREE	1
H		CLAMP RING	1
I		VALVE BASE	1
J		TANK BASE	1
K	60010073	O-RING (87.5×3.55)	
L		RETAINER RING	





TROUBLE SHOOTING GUIDE (89 BIF/BAF)

1. **Water is clear when drawn, turns red upon standing (stain producing)**
   - **a)** Insufficient air drawn by the valve- Check Air Draw time
   - **b)** Bypass open or leaking - Close bypass valve and/or repair as necessary
   - **c)** Filter bed backwashed at improper intervals - Refer to backwash frequency chart in operation manual to ensure unit is set correctly
   - **d)** Do not increase the backwash frequency unless required to based on the chart, since the media needsto be some what iron-fouled for best performance (in more severe iron-fouling cases, filter bed may need chemicalcleaning — contact dealer)
   - **e)** Presence of manganese or tannins - Recheck water analysis
   - f) Loss of air pocket in unit - generally caused by the check valve failing - clean and or replace the check valve

2. **Water is red when drawn from tap**
   - **a)** Filter bed overloaded with precipitated iron due to insufficient backwash flow rate - causing channelling a) Recheck well pumping rate and correct as required
   - **b)** Check for obstructions or kink in drain line, or for improper drain line flow controller (see specs). Upon correction of this problem, if manually backwashing does not clear bed of iron, filter bed may need chemical cleaning
   - **c)** Filter bed backwashed at improper intervals - Refer to backwash frequency chart in operation manual to ensure unit is set correctly. Do not increase the backwash frequency unless required to based on the chart, since the media needs to be somewhat iron-fouled for best performance (in more severe iron-fouling cases, filter bed may need chemical cleaning — contact dealer)

3. **Excessive pressure loss through filter**
   - **a)** Filter bed overloaded with precipitated iron - Refer to Section 2 above
   - **b)** Control inlet/outlet valve(s) not fully open - open valves
   - **c)** Sand, silt or mud collecting in filter media - check well for these conditions
   - **d)** Filter bed not properly "classified" - Manually backwash to reclassify
   - **e)** "Cementing" or "channelling" of filter media - Prod (stir) filter bed to break up hardened layer, backwash frequency to prevent recurrence increase
   - **f)** Pipes from pump or pressure tank to filter are clogged or restricted - clean or replace as required then refer to section 2 above

4. **"MILKY" OR "BUBBLY" WATER (APPEARS TO CONTAIN SMALL BUBBLES)**
   - **a)** Excess air-draw - Check adjustment for duration of draw in "Air Draw" cycle
   - **b)** Excess gases in water (carbon dioxide, hydrogen sulfide, methane) - May require cleaning or installation or air-reliefcontrol (contact dealer)
   - **c)** Excessive flow rate through the unit - refer to specifications for the unit do not exceed recommended service flow rates restrict manually with a valve or contact dealer for a flow controller.

5. **Valve not drawing air**
   - **a)** Check direction of brine line check valve. The arrow on the check valve should be towards the valve
   - **b)** Check Programming
   - **c)** Check Valve Inlet and Outlet direction. Looking at the control valve from the front, the water should enter the valve from left hand side
   - **d)** Check the brass nut of the brine line assembly is not loose

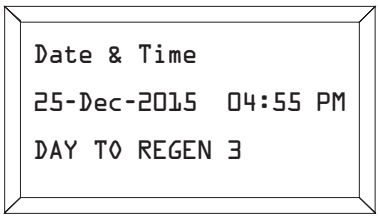
MASTER PROGRAMMING GUIDE (89BIF/BAF)

Below is how the settings are set at factory:

PRESS '+' AND '-' FOR 8 SECONDS																PRESS MENU KEY AND SCROLL TO 'MAIN MENU'. THEN PRESS 'SET' TILL IT BEEPS		VALVE SETTINGS				
MODELS	LANGUAGE	REGION	VALVE	METER RATIO	SALT VS EFFICIENCY	AUTO CALCULATION	REGEN. MODE	BACKWASH OVERRIDE	EMERGENCY REGEN.	REGEN CYCLES	BACK WASH DURATION	BRINE DRAW DURATION	RINSE DURA-TION	REFILL DURATION		REGEN TIME SETTING	REGEN DAY SETTING	Injector	Injector Color	BLFC Washer	DLFC Washer	DLFC Washer Code
BXX-75	ENGLISH	US GALLONS	DOWNFLOW	1.364	DONT TOUCH	OFF	DAYS	OFF	OFF		15	45	0	0		12:AM	3 DAYS	#2	Blue	0	3.5	2S
BXX-100	ENGLISH	US GALLONS	DOWNFLOW	1.364	DONT TOUCH	OFF	DAYS	OFF	OFF		15	45	0	0		12:AM	3 DAYS	#2	Blue	0	4.0	3S
BXX-150	ENGLISH	US GALLONS	DOWNFLOW	1.364	DONT TOUCH	OFF	DAYS	OFF	OFF		15	45	0	0		12:AM	3 DAYS	#2	Blue	0	5.0	4S
BXX-200	ENGLISH	US GALLONS	DOWNFLOW	1.364	DONT TOUCH	OFF	DAYS	OFF	OFF		15	45	0	0		12:AM	3 DAYS	#2	Blue	0	7.0	1
BXX-300	ENGLISH	US GALLONS	DOWNFLOW	1.364	DONT TOUCH	OFF	DAYS	OFF	OFF		15	45	0	0		12:AM	3 DAYS	#2	Blue	0	10.0	2
BXX-400	ENGLISH	US GALLONS	DOWNFLOW	1.364	DONT TOUCH	OFF	DAYS	OFF	OFF		15	45	0	0		12:AM	3 DAYS	#2	Blue	0	14.0	3

MASTER PROGRAMMING GUIDE (89BIF/BAF)

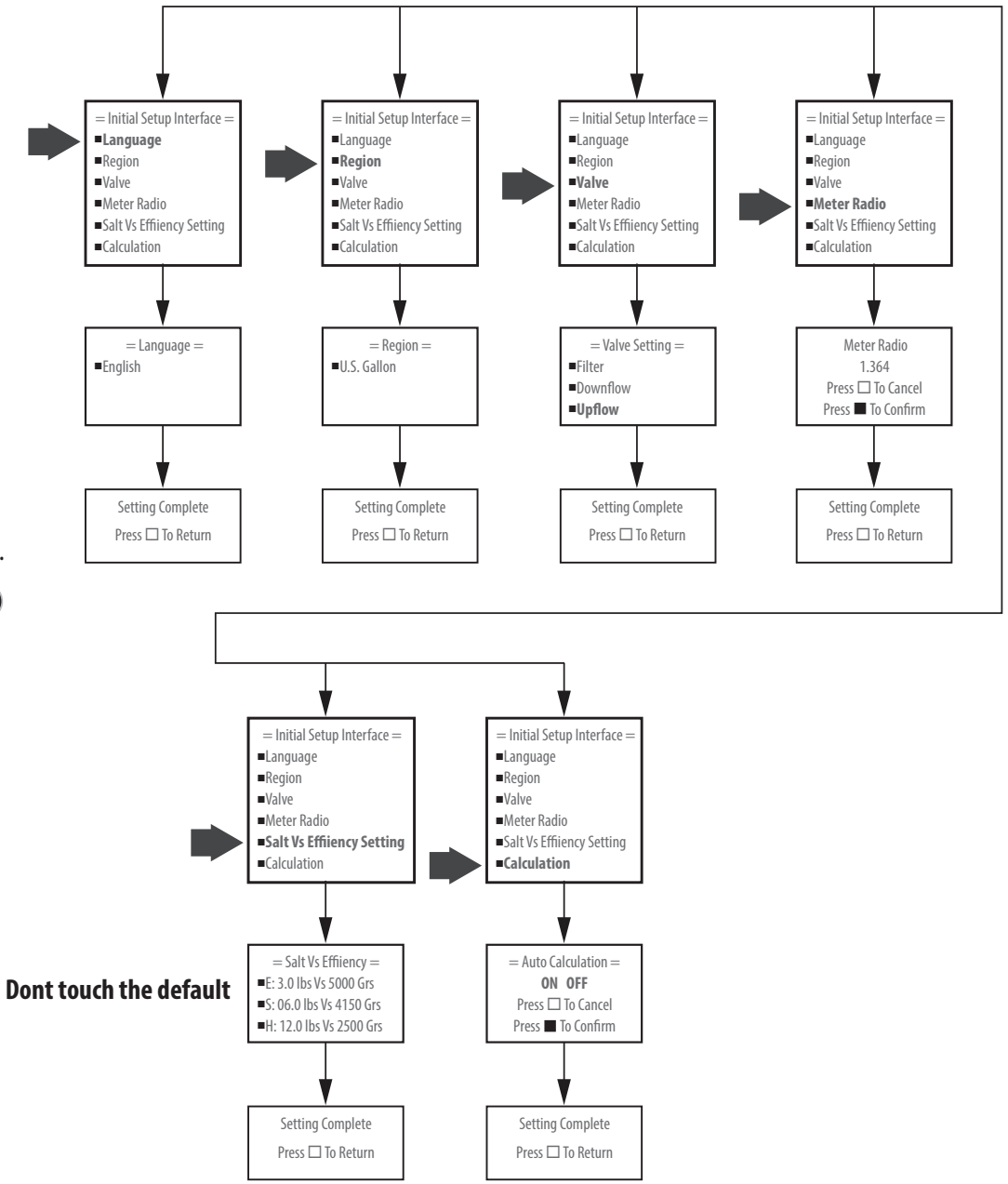
The controller will show the following on the screen - Time, Date and number of Days Remaining for Regeneration:



How to set Master Programming (Authorized Dealer Only)

Press "+" ▲ and "-" ▼ for 8 seconds.

Press "SET" ■ to select and "MENU" ⧉ to go back

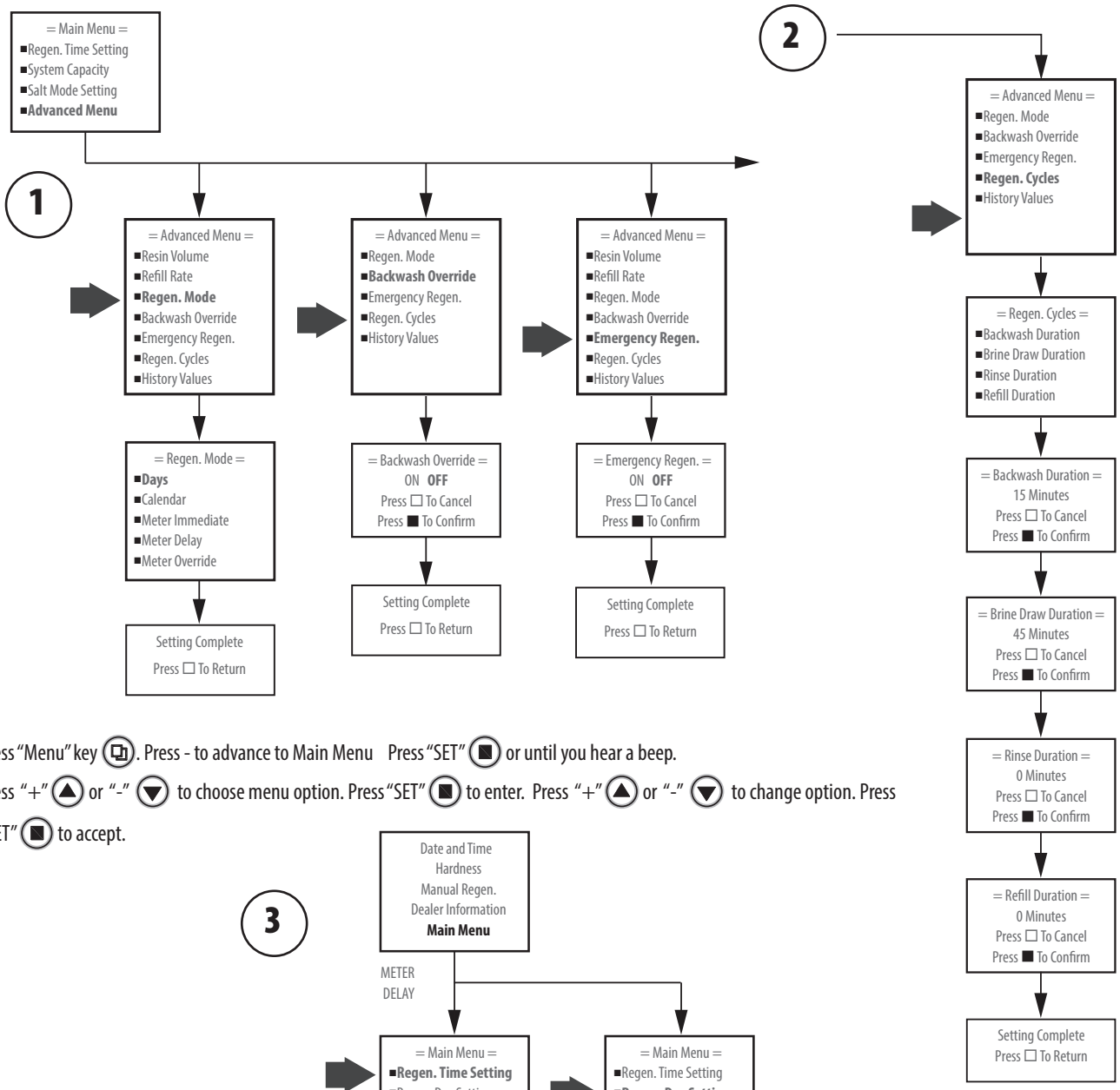


Dont touch the default

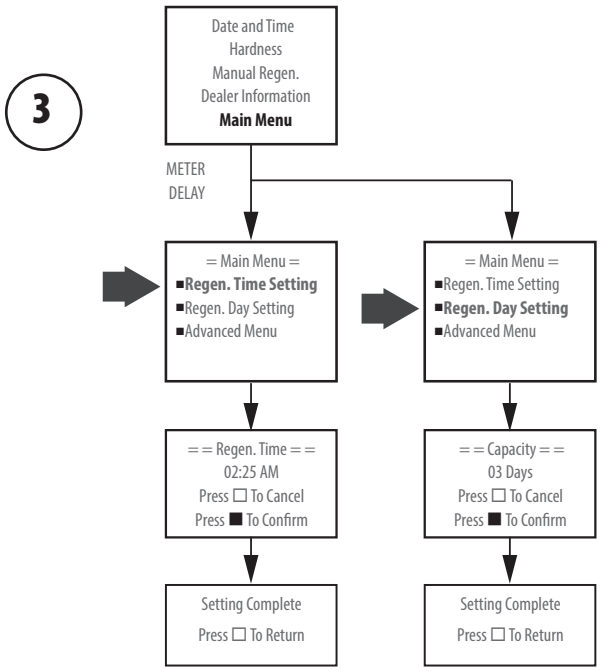
MASTER PROGRAMMING GUIDE (89BIF/BAF)

PRESS "MENU" KEY ⧉ AND SCROLL TO "MAIN MENU". THEN PRESS "SET" ■ TILL IT BEEPS. SCROLL TO ADVANCED MENU

Press "Menu" key ⧉. Press - to advance to Advanced Menu Press and hold "SET" ■ 5 seconds or until you hear a beep. Press "+" ▲ or "-" ▼ to choosemenu option. Press "SET" ■ to enter. Press "+" ▲ or "-" ▼ to change option. Press "SET" ■ to accept. Press and hold "SET" ■ 5 seconds or until you hear a beep. Press "+" ▲ or "-" ▼ to choose menu option. Press SET to enter. Press "+" ▲ or "-" ▼ to change option. Press "SET" ■ to accept.



Press "Menu" key ⧉. Press - to advance to Main Menu Press "SET" ■ or until you hear a beep.
Press "+" ▲ or "-" ▼ to choose menu option. Press "SET" ■ to enter. Press "+" ▲ or "-" ▼ to change option. Press "SET" ■ to accept.



DIAGNOSTIC SCREEN

PRESS "MENU" KEY ⧉ AND SCROLL TO "MAIN MENU". THEN PRESS "SET" ■ TILL IT BEEPS. SCROLL TO ADVANCED MENU

Press "Menu" key ⧉. Press - to advance to Main Menu

Press "SET" ■ or until you hear a beep.

Press - to advance to Advanced Menu

Press and hold "SET" ■ 5 seconds or until you hear a beep.

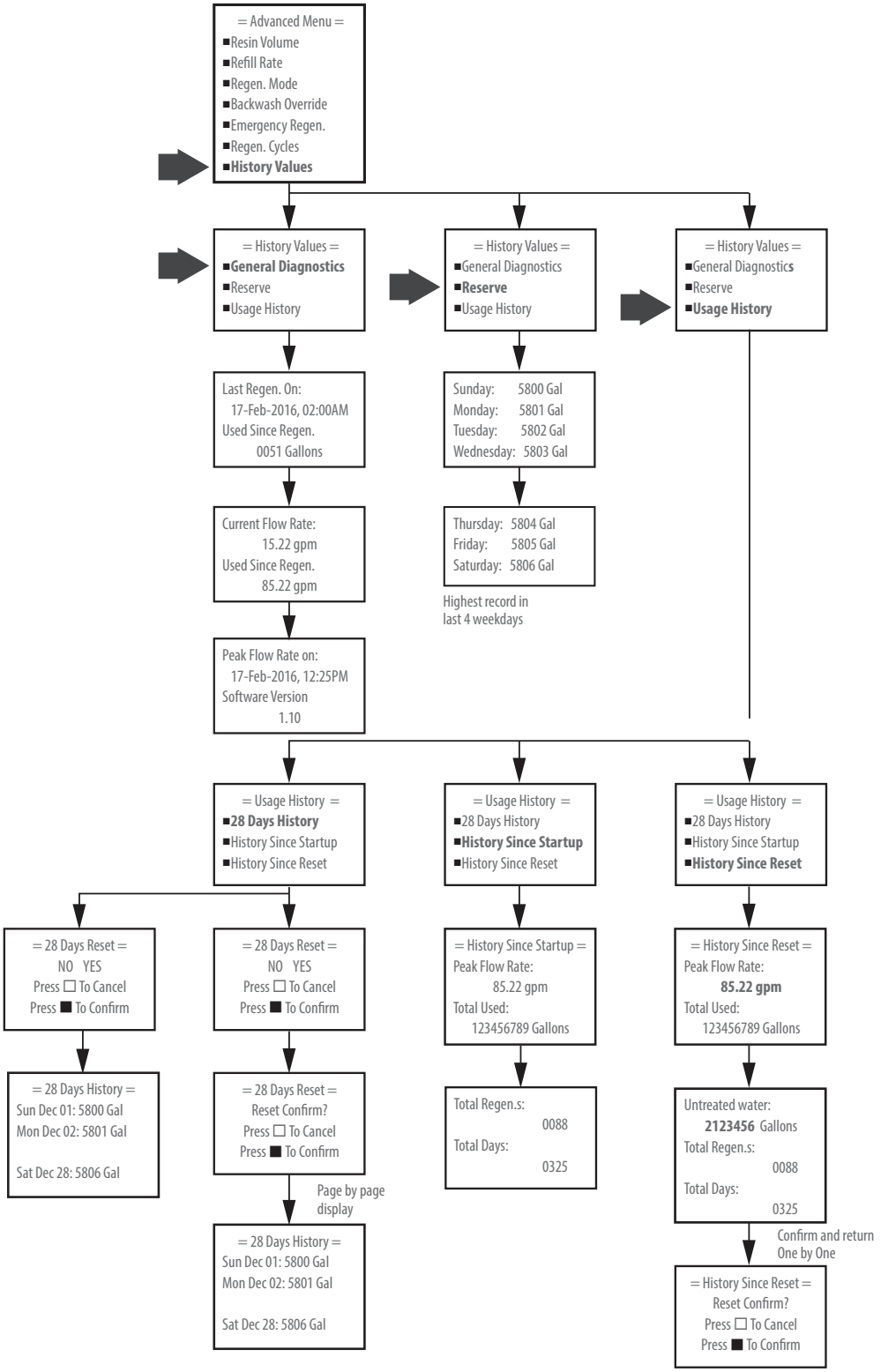
Press - to advance to History Values

Press"SET" ■ or until you hear a beep.

Press "+" ▲ or "-" ▼ to choose menu option. Press "SET" ■ to enter.

Press "+" ▲ or "-" ▼ to change option. Press "SET" ■ to accept.

PARAMETER	DESCRIPTION
LAST REGEN ON	Date of last system regeneration.
USED SINCE REGEN	Volume used since last regeneration.
CURRENT FLOW RATE	The current system flow rate.
PEAK FLOW RATE	The peak or highest flow rate since last regeneration.
SOFTWARE VERSION	The software version programmed on the PCB.
RESERVE	The calculated reserve for each day based on the highest days usage over the past 4 weeks.
28 DAYS HISTORY	The volume used for each of the last 28 days.
USAGE HISTORY	The usage since system start up and from the last reset.
TOTAL USED	The total volume used.
TOTAL REGENS	The total quantity of regenerations.
TOTAL DAYS	The total days in operation.



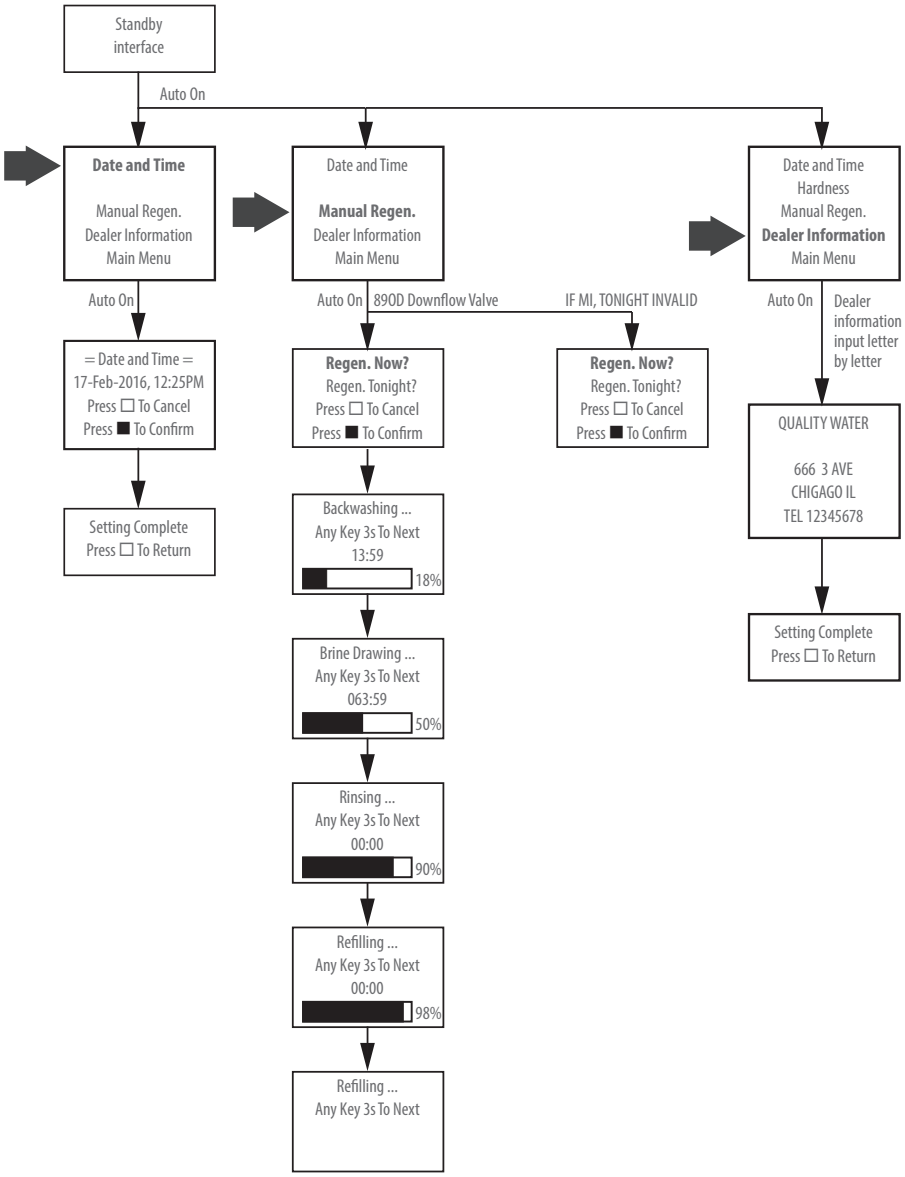
HOW TO SET DATE AND TIME, MANUAL REGENERATION AND DEALER INFORMATION

PRESS "MENU" KEY ⧉ AND SCROLL TO "MAIN MENU". THEN PRESS "SET" ■ TILL IT BEEPS.

Press "Menu" key ⧉

Press "+" ▲ or "-" ▼ to change menu option. Press "SET" ■ to enter.

Press "+" ▲ or "-" ▼ to change value. Press "SET" ■ to accept.



DATE AND TIME

Time of day is for normal operation of system and the scheduling of the regeneration time. The date is used in a diagnostic function to track the last time the system regenerated.

HARDNESS

This value is the maximum compensated water hardness in grains per gallon of the raw water supply. It is used to calculate the system capacity. If Ferrous Iron is present add 4 gpg for every 1 ppm of Ferrous Iron.

MANUAL REGENERATION

To start an immediate regeneration select the Manual Regen option. This setting determines the time of day to perform a scheduled regeneration.

DEALER INFORMATION

This is optional. Dealer information can be added.

Canature WaterGroup™ guarantees that your new water conditioner is built of quality material and workmanship. When properly installed and maintained, it will give years of trouble free service.

Seven Year Warranty on 89 Control Valve

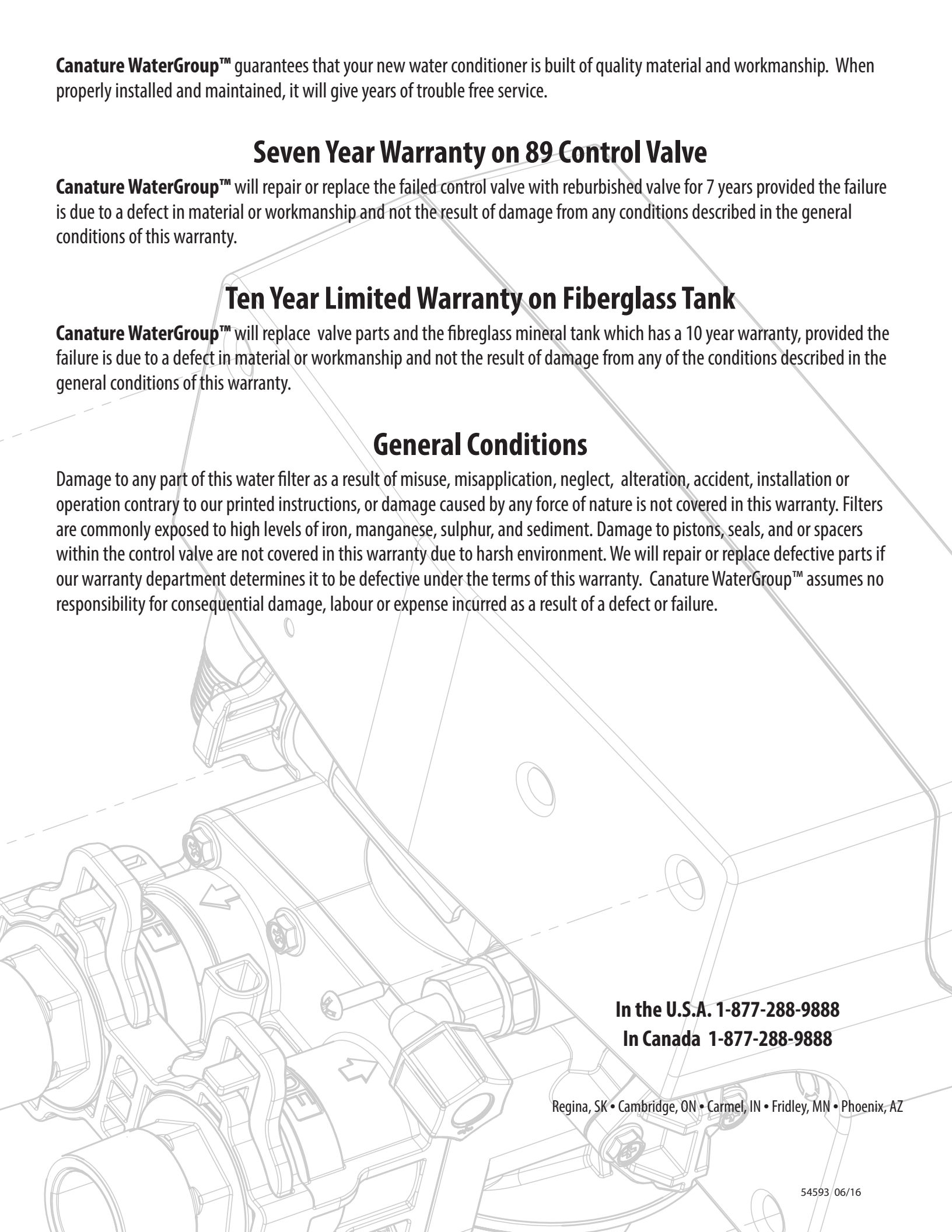
Canature WaterGroup™ will repair or replace the failed control valve with reburbished valve for 7 years provided the failure is due to a defect in material or workmanship and not the result of damage from any conditions described in the general conditions of this warranty.

Ten Year Limited Warranty on Fiberglass Tank

Canature WaterGroup™ will replace valve parts and the fibreglass mineral tank which has a 10 year warranty, provided the failure is due to a defect in material or workmanship and not the result of damage from any of the conditions described in the general conditions of this warranty.

General Conditions

Damage to any part of this water filter as a result of misuse, misapplication, neglect, alteration, accident, installation or operation contrary to our printed instructions, or damage caused by any force of nature is not covered in this warranty. Filters are commonly exposed to high levels of iron, manganese, sulphur, and sediment. Damage to pistons, seals, and or spacers within the control valve are not covered in this warranty due to harsh environment. We will repair or replace defective parts if our warranty department determines it to be defective under the terms of this warranty. Canature WaterGroup™ assumes no responsibility for consequential damage, labour or expense incurred as a result of a defect or failure.



In the U.S.A. 1-877-288-9888
In Canada 1-877-288-9888

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