



Owner and Operational Manual

Model: _____

Serial Number: _____

Install Date: _____

Installed By: _____

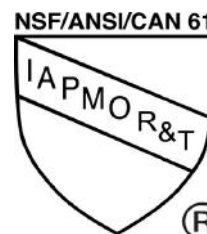
Service Phone: _____

Sold By: _____



Please read this manual carefully before proceeding with installation. Your failure to follow any of these instructions or operating parameters may lead to personal injury or damage to the equipment and/or personal property. Do not use this water treatment system with water that is microbiologically unsafe or of unknown quality, without adequate disinfection before or after the system. This water treatment system contains replaceable treatment components critical for effective performance. It is the user's responsibility to periodically test the product water to verify the system is performing satisfactorily. Failure to properly maintain this water treatment system may cause a health risk.

Save this manual for future reference



Aqua Magic CS 125 & 150 Series
4.17.2024

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Register your product online at

www.chandlersystemsinc.com

WARNING

Lubricants

Do NOT use Vaseline, oils, hydrocarbon lubricants or spray silicone anywhere! Petroleum base lubricants will cause swelling of o-rings and seals. The use of other lubricants may attack plastic Noryl®. It is recommended that Dow Corning® silicone grease be used as a lubricant for all control valves. Dow Corning® 7 Release Compound is used in the manufacture of Chandler Systems control valves. (Part # LT-150)

Sealants

Pipe dope and liquid thread sealers may contain a carrier that attacks some plastic materials. It is recommended that only Teflon® tape be used to seal plastic Noryl® threaded fittings.

FCC Compliance Statement:

http://www.chandlersystemsinc.com/files/FCC_Compliance_Statement.pdf

Industry Canada Compliance Statement:

http://www.chandlersystemsinc.com/files/Industry_Canada_Compliance_Statement.pdf

One or more features of this product are covered by U.S. patents, visit <http://csih2o.com/patents.php> for more information.

LEGACY VIEW

SETUP
CONTROL
VIEW HISTORY
MODIFY SETTINGS
MONITOR WATER USAGE



BLUETOOTH VALVES



CSB150 Commercial Bluetooth 1.5" Valve



CSB125 Commercial Bluetooth 1.25" Valve

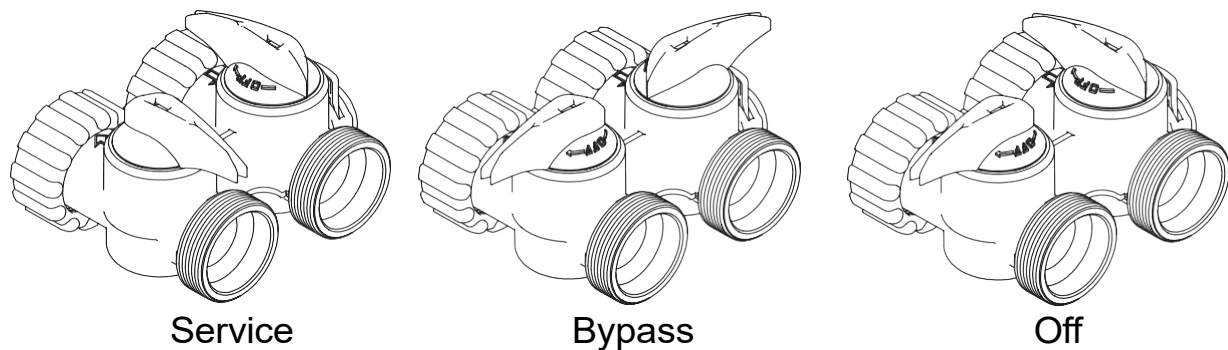
Detailed Valve Description

The Commercial Bluetooth 1.25" and 1.5" valves are fully automatic control mechanisms that direct and regulate all cycles of the water treatment unit. The control valve has been designed to make it easily serviceable. The inlet, outlet, drain and access to the water meter are all hand only tighten nuts making them quick and convenient to service. Accessing the injector or the brine port plug is quick access plug-in style with a clip, possibly only needing a flat head screwdriver to open the plug. Accessing the piston and seals only requires removing 5 Philips head screws and separating a few plastic clips by hand. All of this means that the valve is quick and simple to service and you do not need any specialized tools to work on the valve.

The control valve has two piston options. The first is a hardwater bypass piston, which allows hard water to be bypassed from inlet to outlet during the valve regeneration cycle. This is typical on a single tank softening or filtering system. The other option is a non-hardwater bypass piston option, which does not bypass hardwater from the inlet to the outlet during the valve regeneration cycle. All pistons have a patented water shutoff position (U.S. Patents 9714715 & 10012319). The Commercial Bluetooth can command valves to be in service, providing treated water, or in stand-by with outlet water shut off waiting for when it is needed. During the regeneration process, inlet water is used to perform the steps of the regeneration of the softener tank and the outlet water port is shut off. The control valves / pistons are only available in downflow regeneration.

The Commercial Bluetooth valves include a turbine flow meter that is integral to the valve body. The meter is quick to access without having to separate any plumbing in case of needing to service the meter. Simply turn the bypass valve to bypass or turn the water off in the Legacy View App and loosen the nut securing the water meter, if necessary, use a flathead screwdriver under the edge to remove the flow meter from the outlet port of the valve. The meter uses set pulses per gallon over the entire flow range and has excellent accuracy at all flows above 0.75 gallons per minute. The meter allows the Bluetooth system to properly protect a property and to notify the end user of usage and potential problems.

CSB125 Bypass Operation



Advanced Configuration of Valve Device Components


These products will come with the board already setup, ready to use for most installations.

Valves from the factory are preset as follows:

- Softeners
- Backwashing Filters

These factory presets allow for simple setup without the need for Advanced programming in a majority of installations. Some situations, however, may cause you to need to change the configuration of the board. There are up to 5 settings available on the commercial valve board configuration.

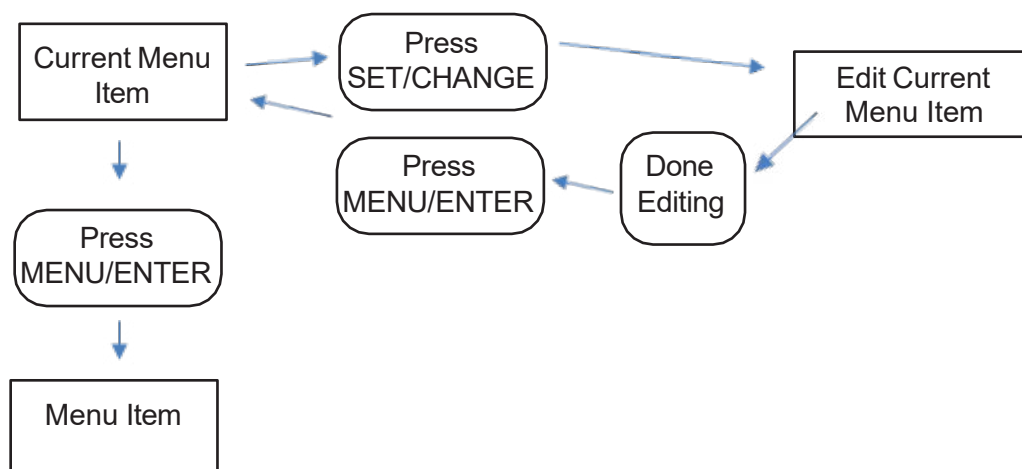
1. **Regeneration Day Override.** Up to 14 days.
2. **Reserve Capacity.** Metered systems count the gallons of water used to determine when the resin capacity will be depleted. The reserve percentage will ensure the tank can provide treated water until the scheduled regeneration time.
3. **The softener resin capacity.** This is available if the first option is set to Softener. The capacity can be set to 45k, 60k, 75k, 90k, 120k, 150k, 210k and 300k. These are quick common settings, that should be set according to the amount of resin in the media tank. Full control of the resin capacity setting is available in the Advanced Settings page in the App.
4. **Optional Display ON/OFF.** Toggle the display on/off to preserve the LED screen when not actively working in the menus.
5. **Brine Pre-Fill.** Set system to fill the brine tank right before a regen cycle.

 Tap this icon in the Legacy View app to view information for each configuration setting.

Manual Configuration of Valve Device Components

To enter the Main Menu Press the MENU/ENTER button, time of day will begin to flash.

To edit a menu item:




Main Menu Items	Example	Notes
Set Time of Day	12:00	
AM/PM Setting	A or P	
Water Hardness setting	H 25	Tested water hardness of the water this softener is treating. Measured in grains per gallon. This will only appear for metered softener type valves. If value is set to 0, Automatic Regeneration from water usage will be disabled. Maximum setting is 99.
Backwash Day	A 06	Number of Days between Backwash cycles. This will only appear in this menu for filter type valves. If value is set to 0, Automatic Backwash cycle will be disabled. Maximum setting is 29.

To enter the Advanced Menu simultaneously press and hold both buttons for 5 seconds. Once Regeneration Time of Day appears and is flashing release the buttons.

Note: Advanced Programming functions can affect the efficiencies and the ability to properly treat the incoming water. Use caution when adjusting these settings.

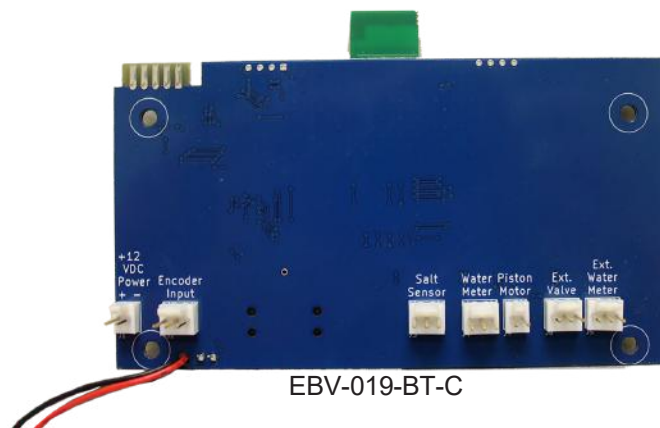
Advanced Menu Items	Example	Notes
Regeneration Time of Day	r 2A	When regeneration or backwash will occur, this example is 2 am.
Regeneration Day Override	A 14	Number of Days between Regeneration cycles. This will only appear in this menu for softener type valves. If value is set to 0, Automatic Regeneration cycle by day override will be disabled. Maximum setting is 29.
Regeneration Step Times	1 08	<p>Indicates adjustable time in minutes for each step of the regeneration or backwash cycle. If value is set to 0, that step will be skipped in the cycle sequence. The following are the steps for Softeners and Filters.</p> <p><u>Softener Cycle Steps:</u> 1: 1st Backwash Step 2: Brine Draw / Slow Rinse Step 3: 2nd Backwash Step 4: Rapid Rinse Step <i>Note: The 5th cycle step is Brine Fill, but it is adjusted using the "SALT" setting.</i></p> <p><u>Backwash Cycle Steps:</u> 1: Backwash Step 2: Rest Step 3: Rapid Rinse Step</p>

Advanced Menu Items	Example	Notes
Salt Dose	SALT 0 15	This setting is the amount of salt that will be used per regeneration cycle to regenerate the softener resin. This will only appear for softener type valves. Maximum setting is 199.
System Capacity in Grains	c050	The physical capacity in treatable grains of hardness that the softener can treat before needing to regenerate. This will only appear for softener type valves. Maximum setting 399.
Reserve Capacity	P 25	The treatable tank capacity percentage that is reserved for the last day before regenerating so hard water break through does not occur. This will only appear for softener type valves. Maximum setting is 49.
Bluetooth Enable	bE 1	This enables or disables the ability for the valve to be connected to via a Bluetooth connection using the Legacy View app. 1 enables Bluetooth, 0 disables Bluetooth.
Bluetooth Password	btPP  1234	The 4 digit password that is required for a user to be able to use the Legacy View app to connect to a Bluetooth valve. This value is set to 1234 by default. Legacy View will attempt to use 1234 for any valve that it has not connected to before. If the password was changed by a user Legacy View will prompt asking for the password. The password can always be viewed through the menus, so the valve should be in a secure location if limiting access is required.
Brine Prefill Enable	PE 0	This enables or disables brine prefill. When enabled the valve will wait to fill the brine tank with water until just prior to a regeneration cycle. When disabled the valve will fill the brine tank as the last step of the regeneration process. This will only appear for softener type valves. 1 enables the prefill, 0 disables the prefill.
Prefill Brine Soak Duration	Pd 3	This setting determines the length of time in hours to allow the water to absorb the salt and make the brine solution in the brine tank. This will only appear when Brine Prefill is enabled. Maximum setting is 4.
Display Off	do 0	This setting when enabled turns the LED display off. 1 turns the display off, 0 turns the display on.

Valve specifications, Quick Reference Table

Valve Series - Piston Type Tank Opening	CSB125 – NHWB – 2.5" with Bypass Valve	CSB125 – HWB – 2.5" with Bypass Valve	CSB150 – NHWB – 4"	CSB150 – HWB – 4"
Service Flow Rate @ 15 psig (with meter)	25.5	27.7	34.5	37.8
Service Flow Rate @ 25 psig (with meter)	32.2	35.6	44.6	48.7
Backwash Flow Rate @ 25 psig	27.2	24.4	30.5	26.6
Min./Max. Operating Pressure	20 – 125 psig			
Min./Max. Operating Temperature	40°F – 120°F			
Outlet water state during regeneration	Shut-off	Inlet Bypassed	Shut-off	Inlet Bypassed
Brine Refill Rate	3.0 gpm Brine Line Flow Control			
Drain Line Flow Controls	2.4 / 3.2 / 4 / 5 / 8 / 9 / 10 / 12 / 15 / 20 / 25 / 32 gpm			
Brine Draw Injector Rates @ 60 psi (see injector charts for details)	Red #0 (p/n: CS125-0#) – 0.25 gpm White #1 (p/n: CS125-1#) – 0.35 gpm Blue #2 (p/n: CS125-2#) – 0.5 gpm Yellow #3 (p/n: CS125-3#) – 0.63 gpm		White #3 (p/n: CS150-3#) – 1.0 gpm Green #4 (p/n: CS150-4#) – 1.7 gpm Blue #5 (p/n: CS150-5#) – 2.0 gpm	
Distributor Tube Opening	1.32" O.D. (1" NPS)		1.90" O.D. (1 ½" NPS)	
Tank Thread	2 ½" – 8 NPSM		4" – 8 NPSM	
Drain Line Connection	1" NPT Male			
Brine Line Connection	½" Push-Lock			
Default Inlet / Outlet Connections	1 1/4" NPT Male		1 1/2" NPT Male	
Commercial Control Board	EVB-019-BT-C			
Power Adapter	12 VDC, 2.5mm x 5.5mm Barrel, Center Positive, 1000 mA Min.			

Valve Control Board Connections

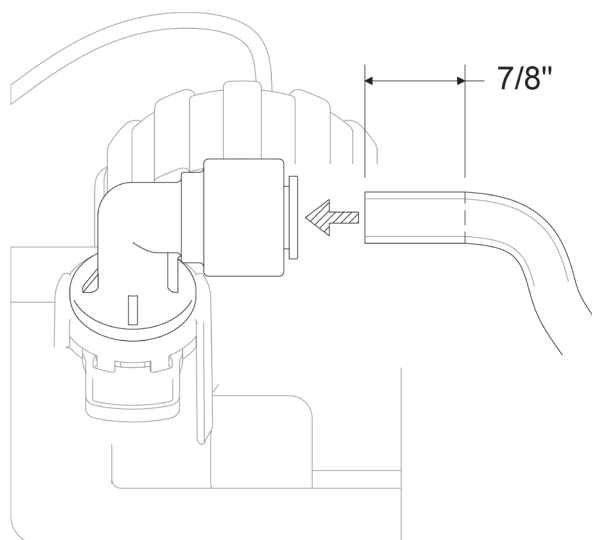


The valve board wiring connections are labeled clearly according to their function. “Salt Sensor”, “Ext. Valve” and “Ext Water Meter” are for future use and for now should not be connected to.

Brine Line Push-Lock Connection

To connect the brine tubing to the brine port on the valve:

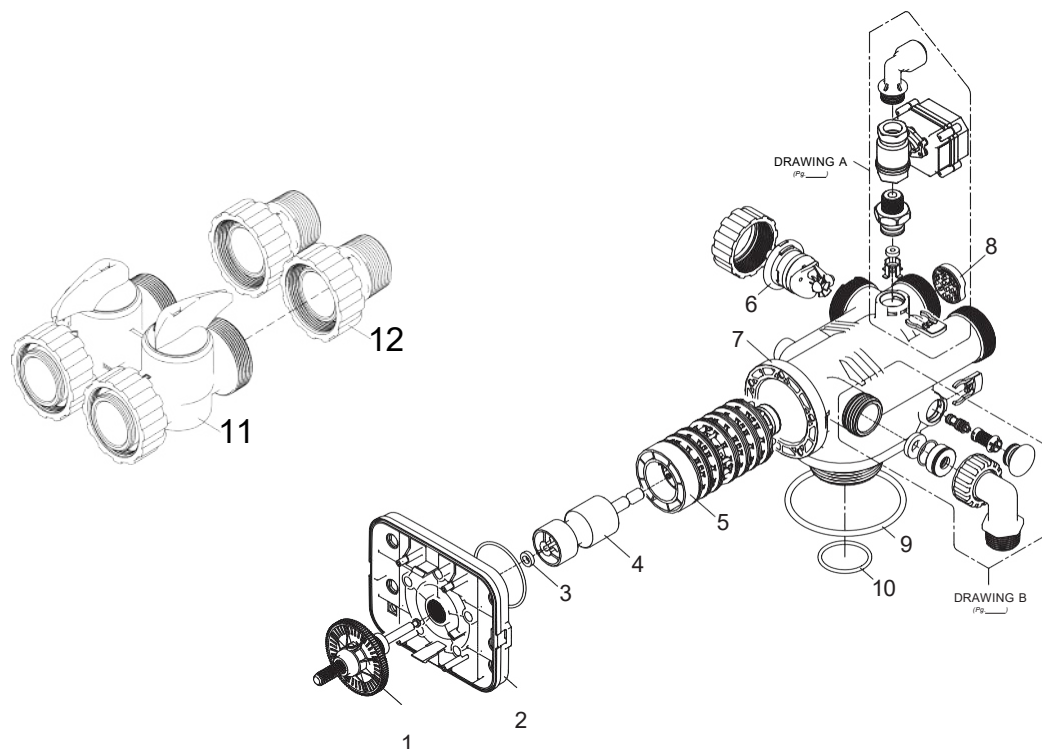
1. Make sure the 1/2" brine tubing is cut squarely on the end.
2. Push the tubing into the fitting 7/8" to be sure it is past the O-ring seal.



To release the brine tubing from the brine port on the valve:

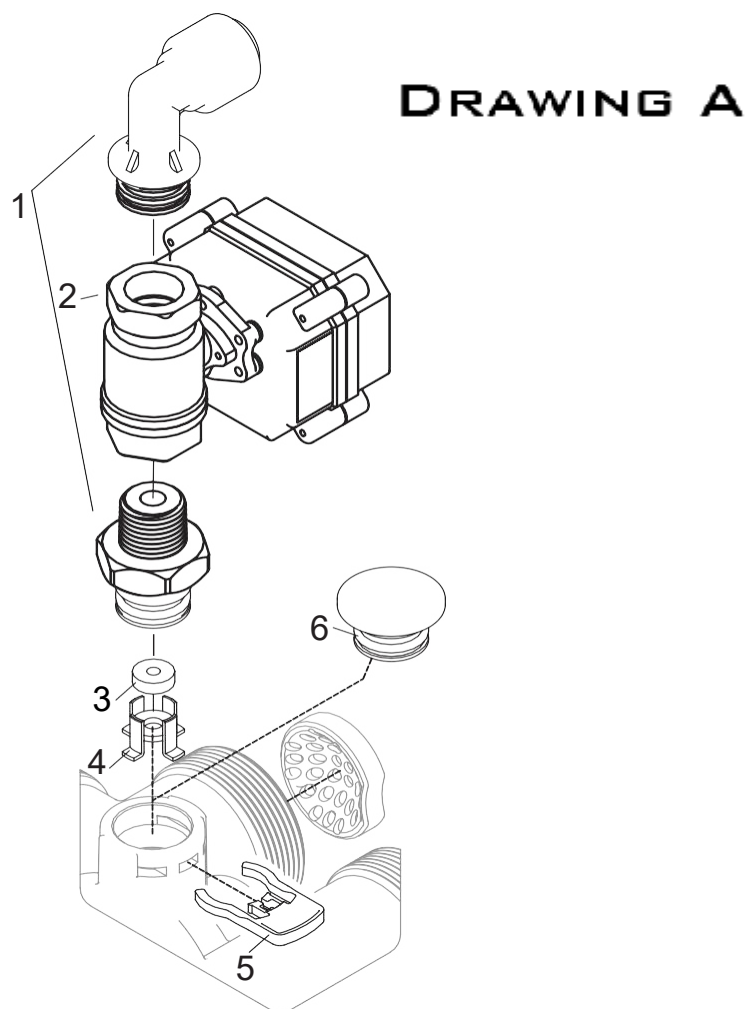
1. Remove the orange locking clip from the brine port fitting.
2. Push in on the gray ring surrounding the brine tube, at the same time pull out on the brine tube.

CSB125 VALVE PARTS - VALVE BREAKDOWN



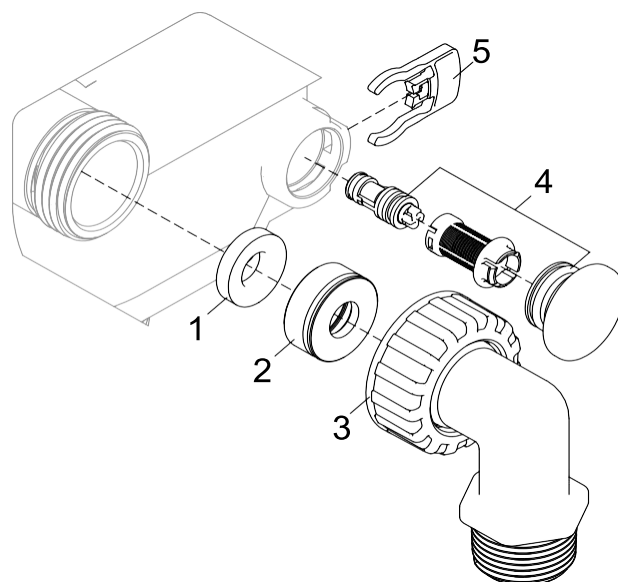
No.	Part No.	Description	Qty.
1	20125X001	Encoder Wheel and Piston Rod Assy.	1
2	20125X002	Valve Body Seal Plate with O-Ring	1
3	20125X003	Piston Spacer / Stall Ring	1
4	20125X004	Softener Piston (Hardwater Bypass)	1
	20125X005	Softener Piston (No Hardwater Bypass)	
	20125X023	Filter Piston (Hardwater Bypass)	
	20125X024	Filter Piston (No Hardwater Bypass)	
5	20125X006	Seal & Spacer Stack	1
6	20125X007	Water Meter	1
	20125X007-P	Water Meter / Pressure Sensor Combo (Optional)	
7	20125X008	CS125 Valve Body (HW)	1
	20125X013	CS125 Valve Body (NHW)	
8	20125X009	Flow Straightener	1
9	20125X010	Tank Seal O-ring	1
10	20125X011	Riser Tube O-ring	1
11	CS125-BP	1.25" CS Bypass (Optional)	1
12	20125X022	1.25" NPT Yoke for Inlet / Outlet	1

CSB125 VALVE PARTS - BRINE CONNECTION



No.	Part No.	Description	Qty.
1	CS-BVA	½" NPT Ball Valve Adapter w/ 90° Elbow	1
2	CS-BV-.5	½" Actuating Ball Valve	1
3	CS-BLFC-3	Brine Line Flow Control, 3.0 gpm	1
4	20125X014	Brine Line Flow Control Retainer	1
5	20125X015	Red Locking Clip	1
6	20125X025	Optional Brine Plug for Filter Valves	1

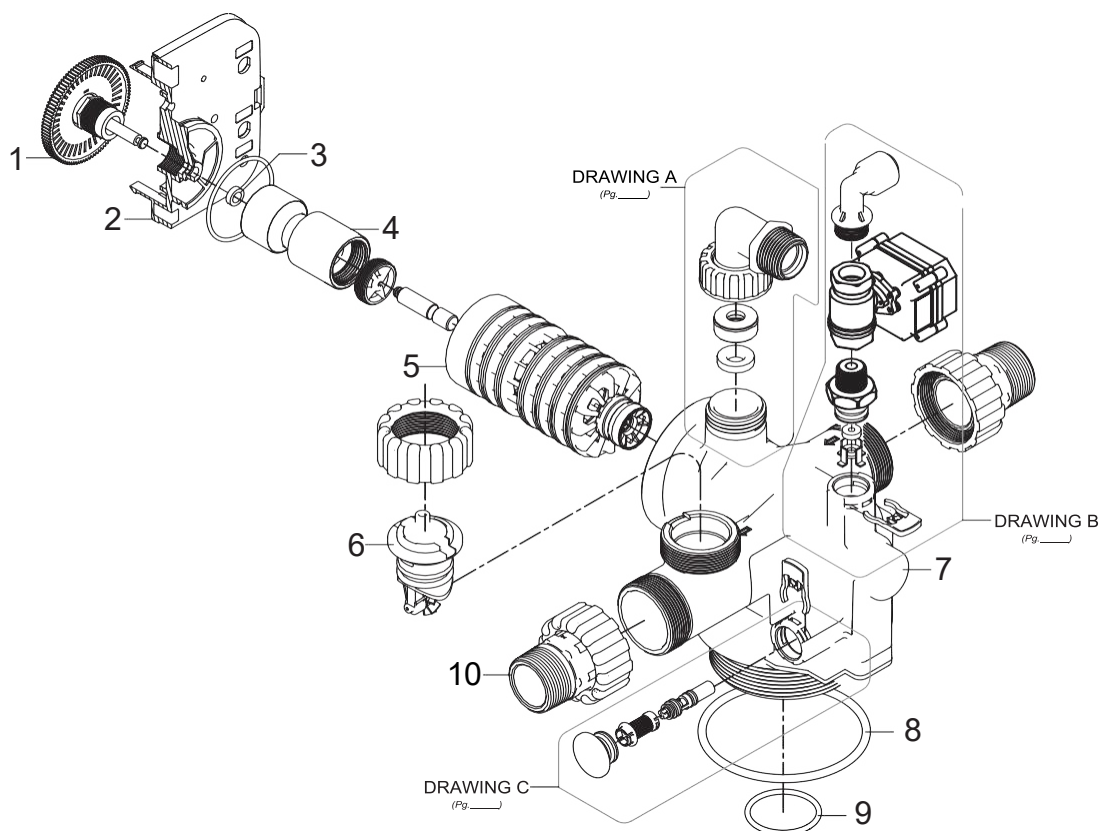
CSB125 VALVE PARTS - INJECTOR ASSY.



DRAWING B

No.	Part No.	Description	Qty.
1	CS-DLFC-2.4	Drain Line Flow Control, 2.4 gpm	1
	CS-DLFC-3.5	Drain Line Flow Control, 3.5 gpm	
	CS-DLFC-4	Drain Line Flow Control, 4 gpm	
	CS-DLFC-5	Drain Line Flow Control, 5gpm	
	CS-DLFC-8	Drain Line Flow Control, 8 gpm	
	CS-DLFC-9	Drain Line Flow Control, 9 gpm	
	CS-DLFC-10	Drain Line Flow Control, 10 gpm	
	CS-DLFC-12	Drain Line Flow Control, 12 gpm	
	CS-DLFC-15	Drain Line Flow Control, 15 gpm	
	CS-DLFC-20	Drain Line Flow Control, 20 gpm	
	CS-DLFC-25	Drain Line Flow Control, 25 gpm	
	CS-DLFC-32	Drain Line Flow Control, 32 gpm	
2	20125X016	DLFC Retainer	1
3	20017X284-1	1" NPT Drain Line Elbow	1
4	CS125-0#	Red #0 Injector, with screen and cap, CS125	1
	CS125-1#	White #1 Injector, with screen and cap, CS125	
	CS125-2#	Blue #2 Injector, with screen and cap, CS125	
	CS125-3#	Yellow #3 Injector, with screen and cap, CS125	
	20125X026	Brine Injector Plug for Filters, with screen and cap	
5	20125X015	Red Locking Clip	1

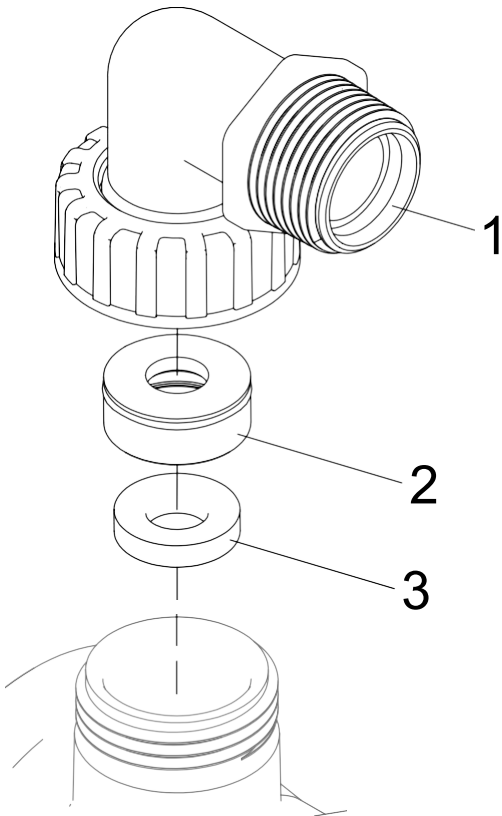
CSB150 VALVE BREAKDOWN



No.	Part No.	Description	Qty.
1	20125X001	Encoder Wheel and Piston Rod Assy.	1
2	20125X002	Valve Body Seal Plate	1
3	20125X003	Piston Spacer / Stall Ring	1
4	20125X004	Softener Piston (Hardwater Bypass)	1
	20125X005	Softener Piston (No Hardwater Bypass)	
	20125X023	Filter Piston (Hardwater Bypass)	
	20125X024	Filter Piston (No Hardwater Bypass)	
5	20125X006	Seal & Spacer Stack	1
6	20125X007	Water Meter	1
	20125X007-P	Water Meter/ Pressure Sensor Combo (Optional)	
7	20150X001	CS150 Valve Body (HW)	1
	20150X003	CS150 Valve Body (NHW)	
8	20125X010	Tank Seal O-ring	1
9	20150X002	Riser Tube O-ring	1
10	20150X004	1.5" NPT threaded couplers	1

CSB150 - DRAIN CONNECTION

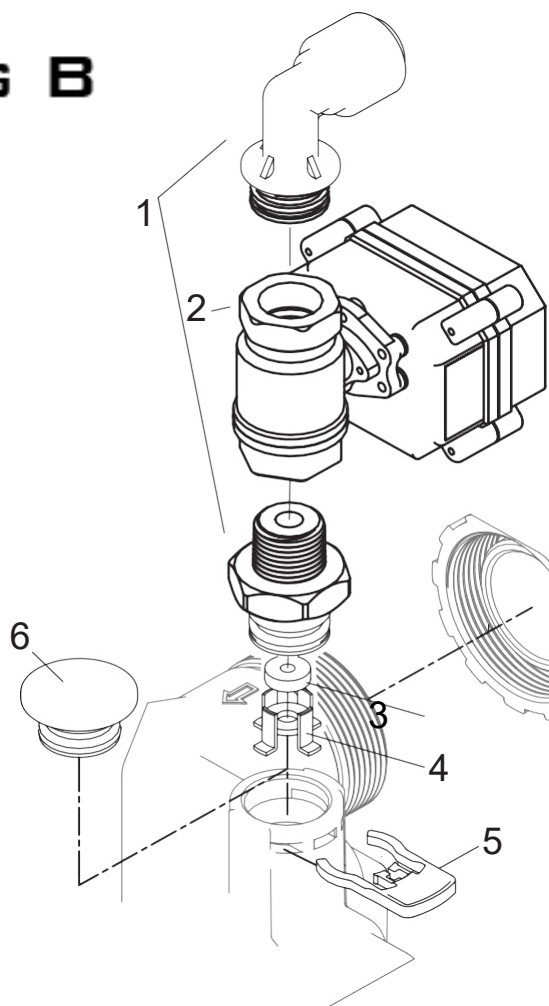
Drawing A



No.	Part No.	Description	Qty.
1	20017X284-1	1" NPT Drain Line Elbow	1
2	20125X016	Drain Line Flow Control Retainer	1
3	CS-DLFC-2.4	Drain Line Flow Control, 2.4 gpm	1
	CS-DLFC-3.5	Drain Line Flow Control, 3.5 gpm	
	CS-DLFC-4	Drain Line Flow Control, 4 gpm	
	CS-DLFC-5	Drain Line Flow Control, 5gpm	
	CS-DLFC-8	Drain Line Flow Control, 8 gpm	
	CS-DLFC-9	Drain Line Flow Control, 9 gpm	
	CS-DLFC-10	Drain Line Flow Control, 10 gpm	
	CS-DLFC-12	Drain Line Flow Control, 12 gpm	
	CS-DLFC-15	Drain Line Flow Control, 15 gpm	
	CS-DLFC-20	Drain Line Flow Control, 20 gpm	
	CS-DLFC-25	Drain Line Flow Control, 25 gpm	
	CS-DLFC-32	Drain Line Flow Control, 32 gpm	

CSB150 VALVE PARTS- BRINE CONNECTION

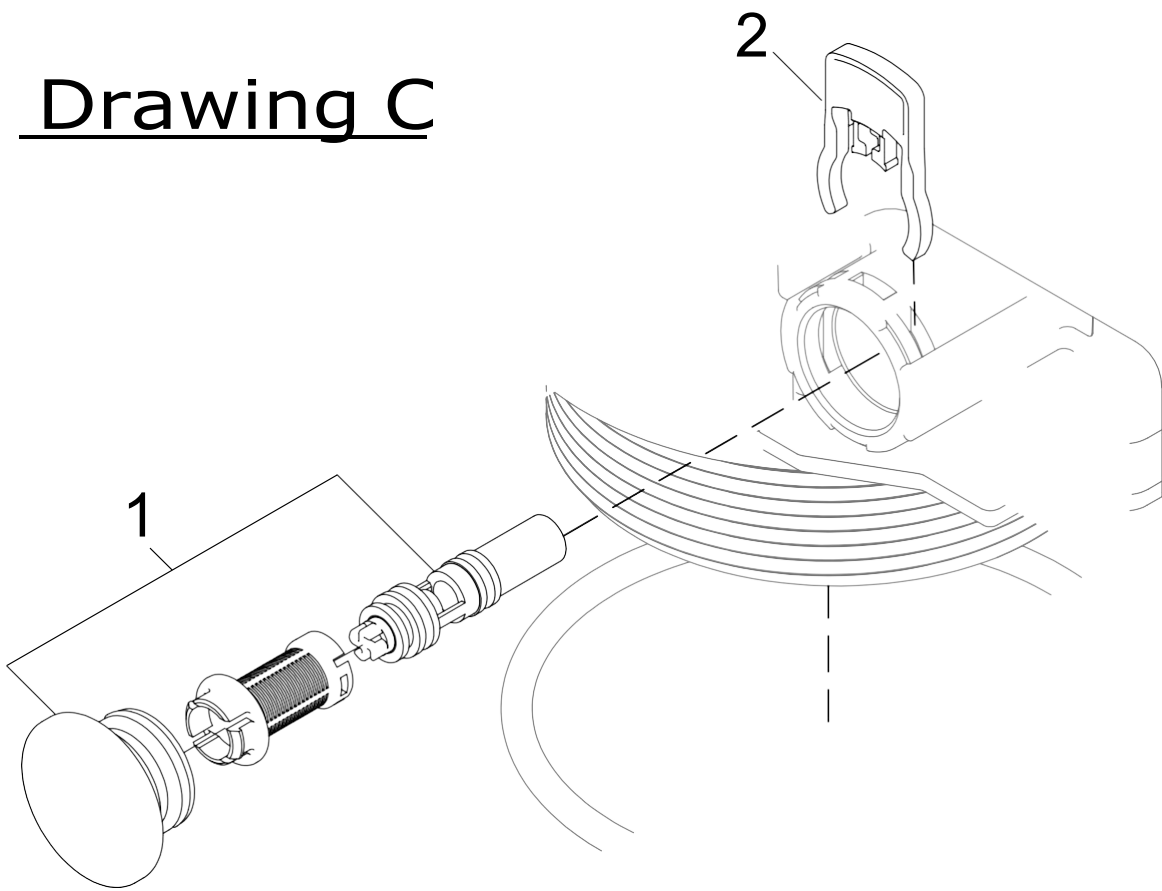
DRAWING B



No.	Part No.	Description	Qty.
1	20125X012	½" Push-Lock Brine Line fitting	1
2	CS-BLFC-3	Brine Line Flow Control, 3.0 gpm	1
3	20125X014	Brine Line Flow Control Retainer	1
4	20125X015	Red Locking Clip	1
5	20125X025	Optional Brine Plug for Filter Valves	1

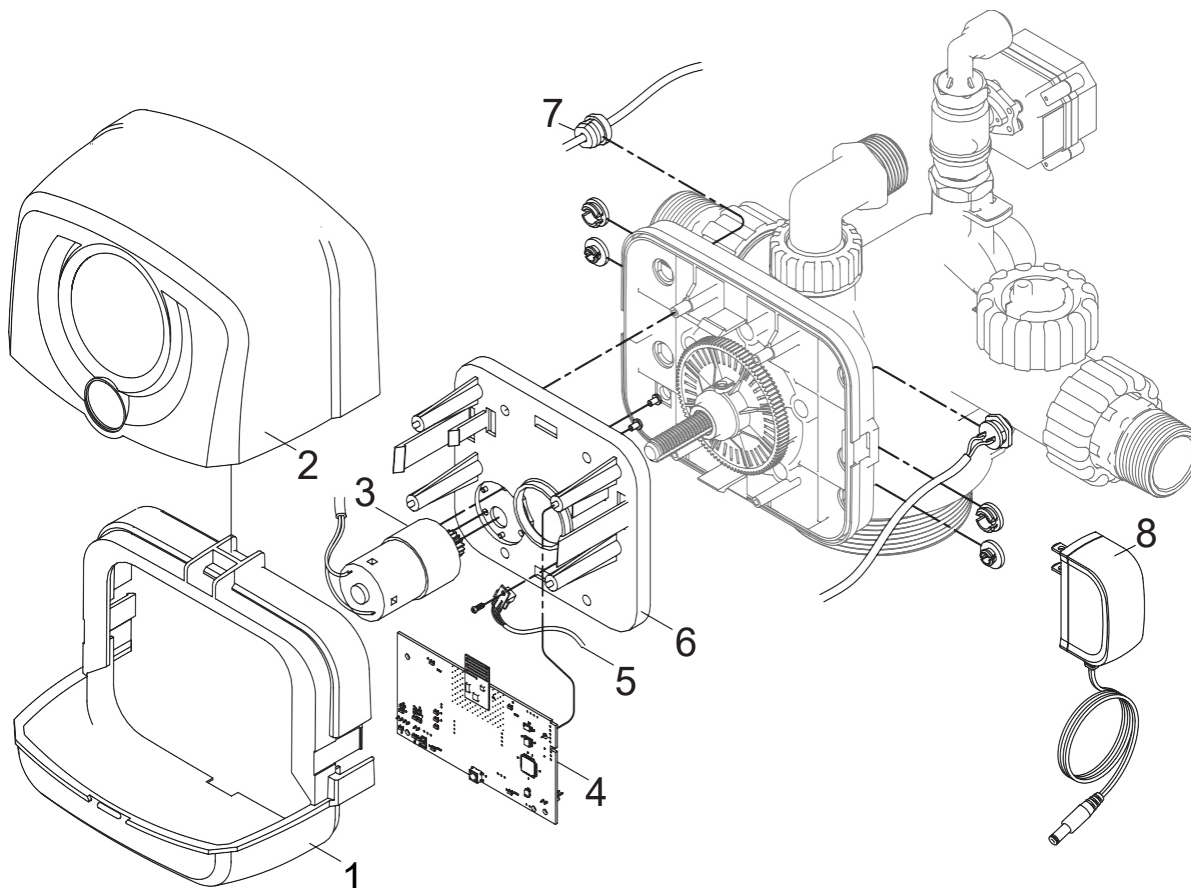
CSB150 VALVE PARTS - INJECTION ASSY.

Drawing C



No.	Part No.	Description	Qty.
1	CS150-3#	White #3 Injector, with screen cap, CS150	1
	CS150-4#	Green #4 Injector, with screen cap, CS150	
	CS150-5#	Blue #5 Injector, with screen cap, CS150	
	20150X005	Brine Injector Plug for Filters, with screen and cap	
2	20125X015	Red Locking Clip	1

CSB125 & CSB150 POWERHEAD



No.	Part No.	Description	Qty.
1	20125X017	Commercial Slide Cover Bracket	1
2	20125X018	Commercial Slide Cover	1
3	20125X019	Geared Piston Motor	1
4	EVB-019-BT-C	Commercial Control Board	1
5	20125X020	Optical Position Encoder	1
6	20125X021	Commercial Power Head Backplate	1
7	20125X027	1/2" Hole Cord Grip	1
8	20018X125	12VDC Power Supply, 2.5mm x 5.5mm Barrel, Center Positive, 2,000mA	1

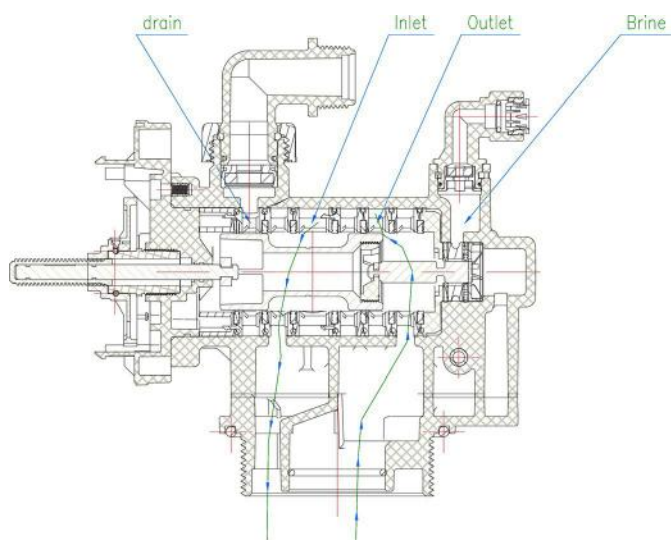
VALVE BODY FLOW DIAGRAMS

Untreated water bypassing during regeneration piston

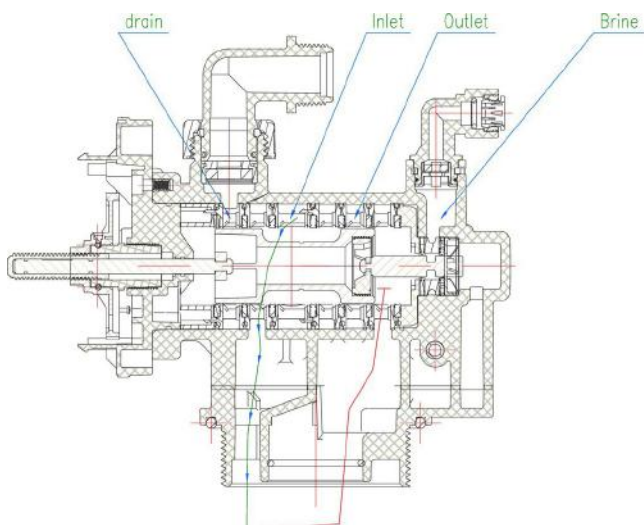


Note: Brine Piston for Softeners only

Service

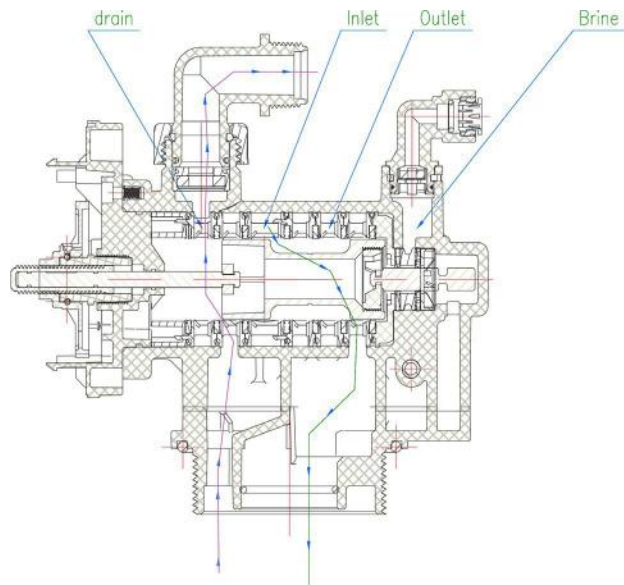


Outlet Shutoff

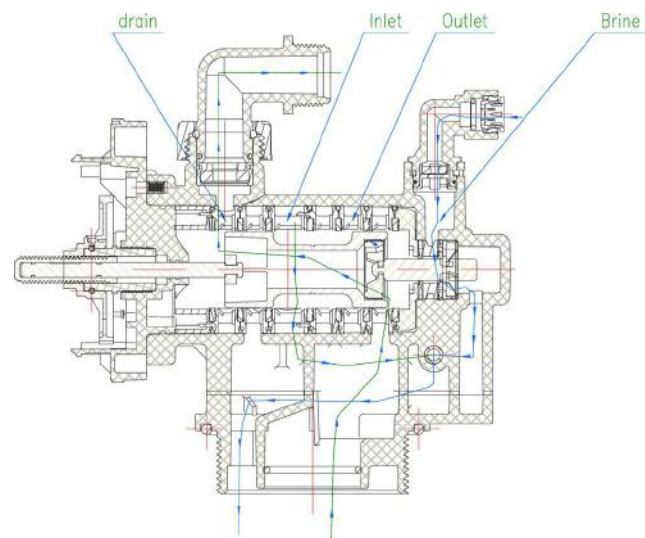


VALVE BODY FLOW DIAGRAMS

Backwash

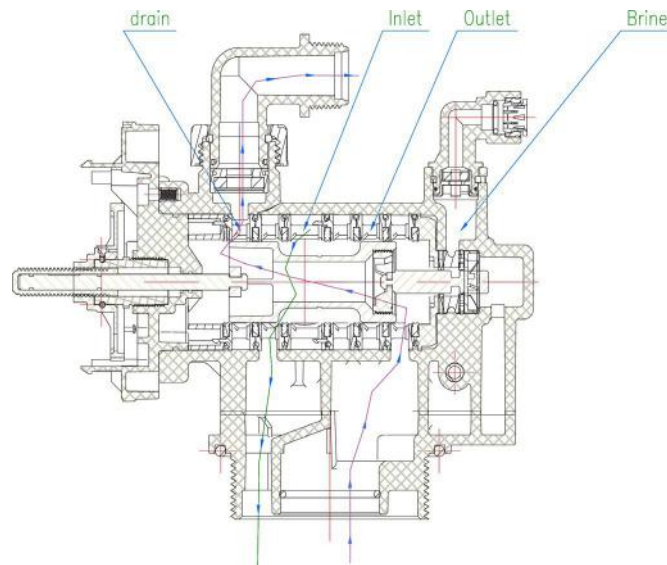


Downflow Brine

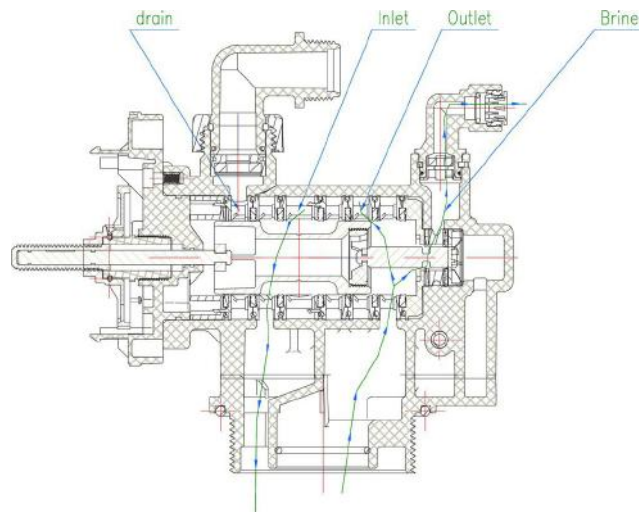


VALVE BODY FLOW DIAGRAMS

Rinse

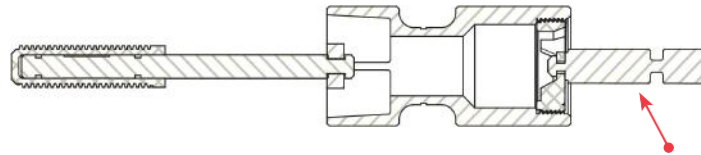


Brine Fill



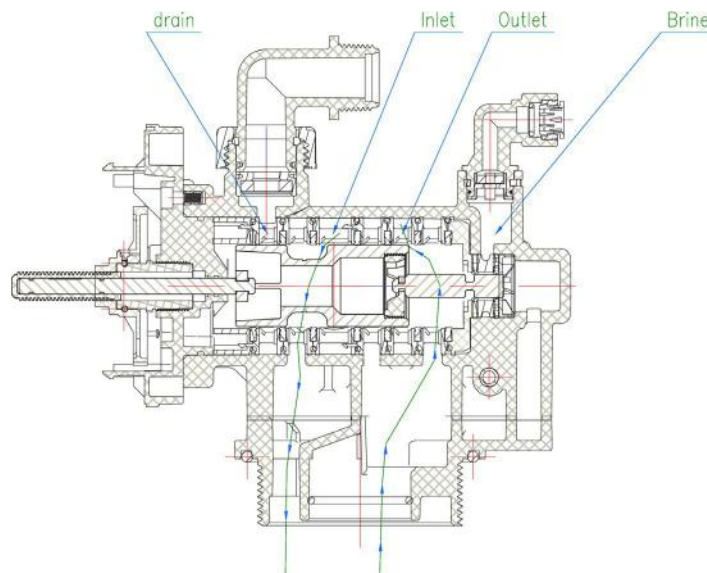
VALVE BODY FLOW DIAGRAMS

Outlet water shutoff during regeneration piston

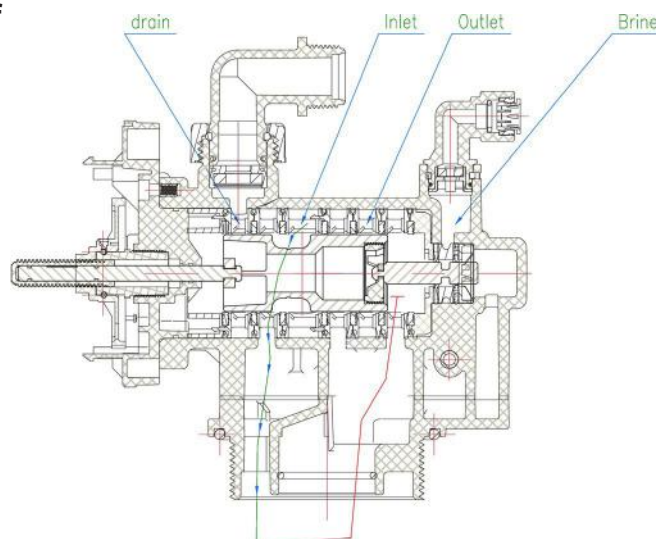


Note: Brine Piston for Softeners only

Service

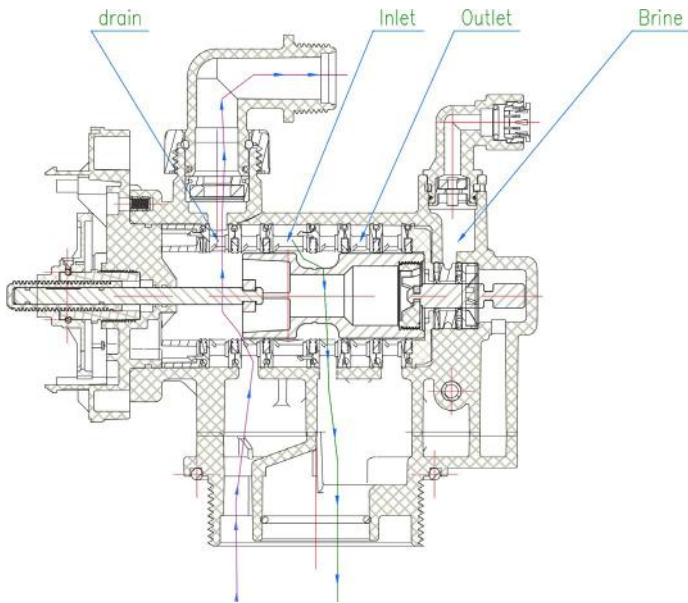


Outlet Shutoff

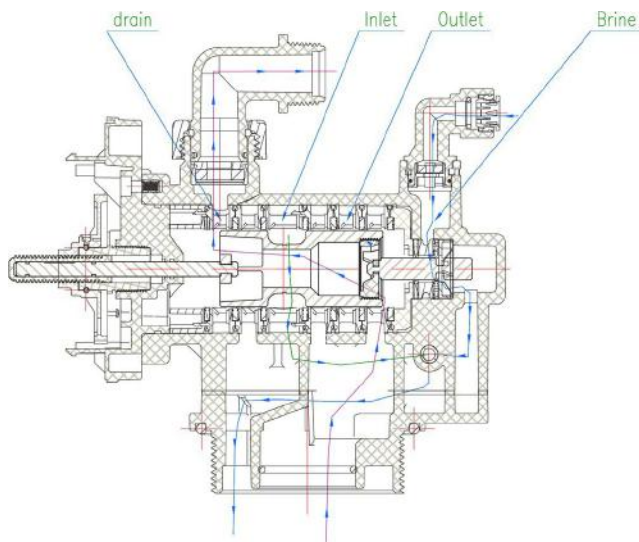


VALVE BODY FLOW DIAGRAMS

Backwash

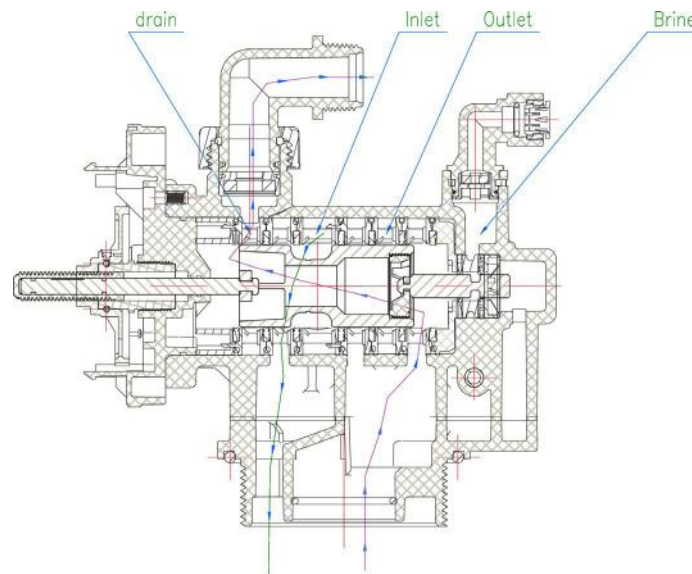


Downflow Brine

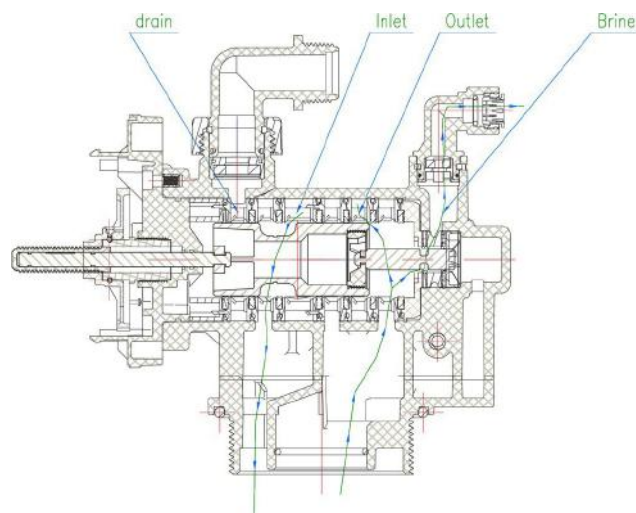


VALVE BODY FLOW DIAGRAMS

Rinse



Brine Fill



Water Treatment System Warranty

This quality FRAKCO water softener is designed and built to provide many years of satisfactory performance under normal use. FRAKCO, INC. pledges to the original owner that for sixty months, all non-wearable items of the above-described water treatment system proven to be defective due to workmanship and/or materials will be replaced or repaired. FRAKCO also pledges that the fiberglass media tank is covered under this warranty for ten years if owned by the original purchaser. Our pledge does not apply if the damage is caused by defective installation; water pressure in excess of eighty pounds per square inch; water temperature in excess of 110° F.; misuse; unauthorized alterations; freezing; accident; fire; neglect; or damage caused by shipping.

To obtain service under this warranty, notify FRAKCO, INC in writing of any defects in workmanship within thirty days of the appearance of such defects. Such written notice must include the date of purchase, the part number, and a description of the defect. Upon receiving such notice and determining that the defect is covered by this warranty, FRAKCO, INC. will replace or repair the defective item.

Replacement of a defective item will be at FRAKCO'S factory in Luverne, MN, and the purchaser must ship the defective item at its own expense to FRAKCO'S factory. Replacement items will be shipped by FRAKCO F.O.B. Luverne, Minnesota, with a shipping carton furnished. In the event certain models or colors of the replacement item are out of stock, FRAKCO, INC. may, after notifying the purchaser, furnish another model or color of the replacement item. The factory will not pay for service charges and will not perform any repair or service functions other than at its home office.

Please follow the enclosed instructions and local codes in installing your water treatment system. Failure to do so will void this warranty. Nothing in the warranty may be construed as involving the factory in the relationship between Dealer and Owner.

This warranty gives the purchaser specific legal rights. The purchase may also have implied warranty rights. In the event of a problem with warranty service or performance, the purchaser may be able to go to a Small Claims Court, a State Court, or a Federal District Court. This warranty complies with the 1975 Federal Warranty Law.

Model No. _____ Serial No. _____

Date Installed _____ Dealer _____

Address _____

*MANUFACTURED BY: FRAKCO, INC.
500 N BLUE MOUND AVE
LUVERNE, MINNESOTA 56156
WWW.FRAKCO.COM*