



## Commercial

Control Valve Manual CS125 & CS150 Series









CS125-FMM-N, CS125-SMM-N, CS125-Bypass, CS150-FMM-N, & CS150-SMM-N are certified by IAPMO R&T against NSF/ ANSI/CAN 61 for material safety requirements only

### INTRODUCTION

### Thank You for Purchasing a DROP System

We know you'll love your improved water quality, leak detection ability and water conservation benefits of your new DROP Water Management System from Chandler Systems. You'll soon wonder how you ever lived without it. Improving your water and protecting your home are just a few of the ways that the DROP Water Management System can improve your water system.

Be sure to check out the <u>dropconnect.com</u> website periodically for more information about additional DROP products as they are released.





To further help you operate your new DROP system, we have provided you with many other resources for you to learn more. Feel free to call Chandler Systems when you need additional help. We also have many resources located on our website including instructional videos, and images.

DROP Connect is also active on various social media pages! Feel free to follow us for the most up to date information and news!







@ dropconnect

#### **Privacy Statement**

For more information about privacy, visit our <u>privacy policy</u> online. (https://dropconnect.com/sites/default/files/DROP-Privacy-Statement.pdf) online.

#### **DROP** Patents

For the most up-to-date list of patents, visit our patents on our website: <a href="https://dropconnect.com/patents">https://dropconnect.com/patents</a>.

#### FCC Compliance Statement:

https://dropconnect.com/sites/default/files/FCC Compliance Statement.pdf

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## **DROP VALVES**



DROP CS150 Commercial Softener Valve



DROP CS125 Commercial Filter Valve



## **OPERATIONS**

### **DROP Models**

| Model Number | Description   | Piston Type  | Injector / Plugs                             | Valve Body |
|--------------|---|--|--|------------|
| 20125X500    | Softener Valve,<br>Rear Inlet/Outlet, for<br>Single Tank<br>Operation with<br>Manual Bypass | Hard water<br>bypass during<br>regeneration with<br>integrated water<br>shutoff    | Injector                                     | CS125      |
| 20125X600    | Filter Valve, Rear<br>Inlet/Outlet, for<br>Single Tank<br>Operation with<br>Manual Bypass   | Hard water<br>bypass during<br>regeneration with<br>integrated water<br>shutoff    | Plugs in Injector<br>Port and Refill<br>Port | CS125      |
| 20125X550    | Softener Valve,<br>Rear Inlet/Outlet, for<br>Multi-Tank<br>Operation with<br>Manual Bypass  | No Hard water<br>bypass during<br>regeneration with<br>integrated water<br>shutoff | Injector                                     | CS125      |
| 20125X650    | Filter Valve, Rear<br>Inlet/Outlet, for<br>Single Tank<br>Operation with<br>Manual Bypass   | No Hard water<br>bypass during<br>regeneration with<br>integrated water<br>shutoff | Plugs in Injector<br>Port and Refill<br>Port | CS125      |
| 20150X500    | Softener Valve, Side<br>Inlet/Outlet, for<br>Single Tank<br>Operation                       | Hard water<br>bypass during<br>regeneration with<br>integrated water<br>shutoff    | Injector                                     | CS150      |
| 20150X600    | Filter Valve, Side<br>Inlet/Outlet, for<br>Single Tank<br>Operation                         | Hard water<br>bypass during<br>regeneration with<br>integrated water<br>shutoff    | Plugs in Injector<br>Port and Refill<br>Port | CS150      |
| 20150X550    | Softener Valve,<br>Side Inlet/Outlet, for<br>Multi-Tank<br>Operation                        | No Hard water<br>bypass during<br>regeneration with<br>integrated water<br>shutoff | Injector                                     | CS150      |
| 20150X650    | Filter Valve, Side<br>Inlet/Outlet, for<br>Single Tank<br>Operation                         | No Hard water bypass during regeneration with integrated water shutoff             | Plugs in Injector<br>Port and Refill<br>Port | CS150      |

### **OPERATIONS**

### **Detailed Valve Description**

The DROP 1.25" and 1.5" valves are fully automatic control mechanisms to 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 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), which can be used by a DROP system to protect properties from the risk of water damage from leaks and water breaks. When combined with the non-hardwater bypass piston type, this feature allows the commercial DROP valves to be used in parallel without the need of external shut-off valves. When used in this way, the DROP system can provide continuous treatment of water. The DROP hub 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. For more detailed information about multiplexing DROP valves, see our "Multiplexing Filters and Softeners" Application Manual. The control valves / pistons are only available in downflow regeneration.

The DROP 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 DROP 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 is calibrated in Chandler Systems lab and has excellent accuracy at all flows above 0.75 gallons per minute. The meter allows the DROP system to properly protect a property and to notify the end user of usage and potential problems.

There is also a combination turbine flow meter and pressure sensor that is optionally available. The combination meter can directly replace the standard flow meter as it plugs directly into the same wire connection. Once installed, the DROP system can then monitor the system water pressure at the outlet of the valve. The water pressure can then also be viewed by the user in the DROP App.

Combining these control valves with a DROP control system creates a water treatment system that is the easiest in the industry to install, setup and maintain. The DROP system gives the end user easy control, information, and history of the water treatment system. DROP is a unique water management system. Using the DROP Hub, DROP monitors water usage and manages the water-related devices throughout the entire installation. DROP can operate locally without an internet connection or has the added ability to send mobile alerts when connected to a WiFi network. This advanced system can allow remote monitoring and adjustments—all from your mobile device.

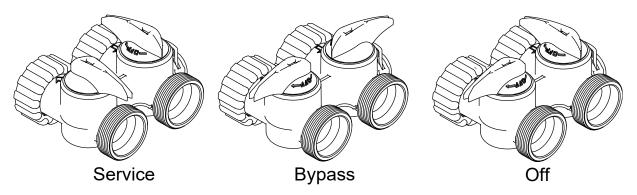


### **OPERATIONS**

### **Valve Operation**

The DROP Users Guide (https://dropconnect.com/knowledgebase-resources) gives general information and help with connecting your DROP system to a WiFi network and connecting devices to your DROP Hub. It also gives some general information about making settings and navigating the user interface in your DROP app. It is also helpful to know that throughout the app's user interface there are small info icons to help explain all the features in the app. The settings that are relevant for a DROP system with the 1.25" and 1.5" valves installed are found on the **System > Settings** page and the **Devices > Softener** or **Devices > Filter** pages in the DROP app.

### **CS125 Bypass Operation**



### **DROP Lights - During Regeneration**

When a treatment valve is in regeneration the lights will change color for each step in the regeneration process. While the valve is sitting in a step of the regeneration process the lights will be slowly fading from side to side (wobble). If the valve is moving to a position the lights will rotate according to the direction of the motor movement to get to that position. The colors for each position are as follows:



### Softener

| Position                   | Color        |
|----------------------------|--------------|
| Service                    | Green        |
| Backwash                   | Purple       |
| Brine Draw                 | Light Pink   |
| 2nd Backwash<br>(Optional) | Purple       |
| Rapid Rinse                | Light Blue   |
| Brine Fill                 | Spring Green |



### **Backwashing Filter**

| Position    | Color        |
|-------------|--------------|
| Service     | Blue         |
| Backwash    | Purple       |
| Rest        | Light Yellow |
| Rapid Rinse | Light Blue   |

### **Aeration Filter**

|   | Position             | Color        |
|---|----------------------|--------------|
|   | Service              | Blue         |
|   | Decompress           | Pink         |
|   | Air Release          | Lime         |
| ľ | Backwash             | Purple       |
|   | Rest                 | Light Yellow |
| 1 | Air/Chlorine<br>Draw | Light Pink   |
|   | Rapid Rinse          | Light Blue   |



### OPERATIONS ADVANCED CONFIGURATIONS

### **Advanced Configuration of Valve Device Components**

The DROP 1" valve board is used on several configurations of DROP products. These products will come with the board already setup, ready to use for most installations.

Valves from the factory are preset as follows:

- Softeners are set to device #1
- Backwashing filters are set to device #2
- Aeration valves are set to device #3

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 three settings available on the commercial valve board configuration.

- 1. **The valve type**. The options are: Softener, Backwashing filter, Aeration filter.
- 2. **The device number**, which can be set from 1-4. Every stage of water treatment that you have needs to have a unique device number. (Note: The physical water treatment order of the devices in the system is unrelated to the device number.)
- 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, 300k and 450k. 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 **Devices > Softener > Advanced** page in the App.

There are two main situations that might cause you to need to change the device configuration on a DROP valve control board. The first situation that may cause the need to change the device configuration is in the case of replacing a board in the system. If a generic DROP valve board is used, it may need configured to match the system that it is being installed into.

A less common reason to change this setting is as follows. A simple system will typically have 1 to 2 treatment stages each with only one tank. For example, a softener and a Sidekick filter. These will come from the factory already set up with a unique device number. Also, if you want to use two of the same type of treatment device in parallel to treat your water, the DROP system will automatically know to set up two softeners (which would have the same device number from the factory) as parallel units. However, the factory default value will not work properly when you have a system that needs two treatment steps using the same type of treatment device. For example, a backwashing carbon filter and a backwashing neutralizer filter that are used in series with each other. In this case the device number of one of the backwashing filters will need to change and it cannot be the same as any other valve device number already on the DROP system. Only DROP Softener and Filter devices have device numbers. This does not apply to other types of DROP devices.

### OPERATIONS ADVANCED CONFIGURATIONS

#### Steps for advanced configuring of valve device components

Follow the steps below to change the device configuration of a board, or these steps can be followed to find out what the current configuration of a board is set to.

- 1. If the valve is powered up, unplug it (and remove the battery if installed).
- 2. Depress the pushbutton on the valve board while plugging in the valve. The board will begin throbbing the LEDs white. Release the pushbutton.
- 3. The valve will display a light code to identify its configuration. Repeatedly give a short press on the button to select the correct device type according to this list:
  - a. 1 green LED: Softener
  - b. 1 blue LED: Backwashing filter
  - c. 2 blue LEDs: Backwashing filter with Aeration
  - d. 3 blue LEDs: Sidekick filter e. 1 cyan LED: Cartridge filter
- 4. With the correct device type code displayed, hold the button down for 2 seconds and the LEDs will all turn green to indicate the selection is accepted.
- 5. Next, you will see 1 to 4 white LEDs. Repeatedly give a short press on the button to select the valve device number for the board with 1 to 4 lit LEDs. All the device components in the same logical device must use the same device number. (Example: a softener with multiple tanks). Device components of different types must use different device numbers. (Example: a softener and a filter). Hold the button for two seconds to accept the selection.
- 6. If the device type was selected to be a Softener in step 3, then one or more LEDs will be lit yellow. Repeatedly give a short press on the button to select the correct resin capacity according to this list:
  - a. 1 yellow LED: 40,000 grains capacity (1 ½ cu. ft. of softener resin is in media tank).
  - b. 2 yellow LEDs: 60,000 grains capacity (2 cu. ft. of softener resin is in media tank).
  - c. 3 yellow LEDs: 75,000 grains capacity (2 ½ cu. ft. of softener resin is in media tank).
  - d. 4 yellow LEDs: 90,000 grains capacity (3 cu. ft. of softener resin is in media tank).
  - e. 1 red LED: 120,000 grains capacity (4 cu. ft. of softener resin is in media tank).
  - f. 2 red LEDs: 150,000 grains capacity (5 cu. ft. of softener resin is in media tank).
  - g. 3 red LEDs: 210,000 grains capacity (7 cu. ft. of softener resin is in media tank).
  - h. 4 red LEDs: 300,000 grains capacity (10 cu. ft. of softener resin is in media tank).
  - i. 1 purple LED: 450,000 grains capacity (15 cu. ft. of softener resin is in media tank).
- 7. With the correct capacity LED code displayed, hold the button down for 2 seconds and the LEDs will all turn green to indicate the selection is accepted. When the button is released, the valve will restart and is ready for use.



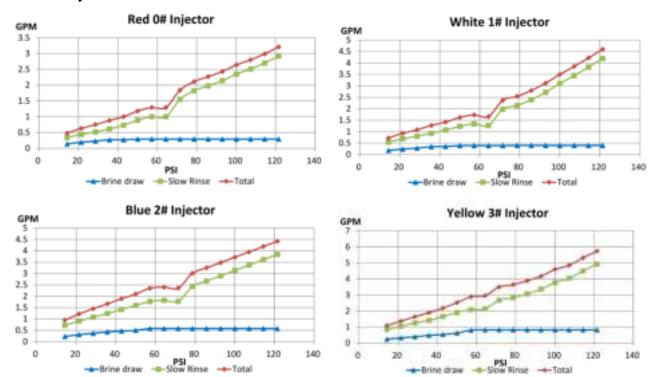
## OPERATIONS QUICK REFERENCE TABLE

### **Valve specifications, Quick Reference Table**

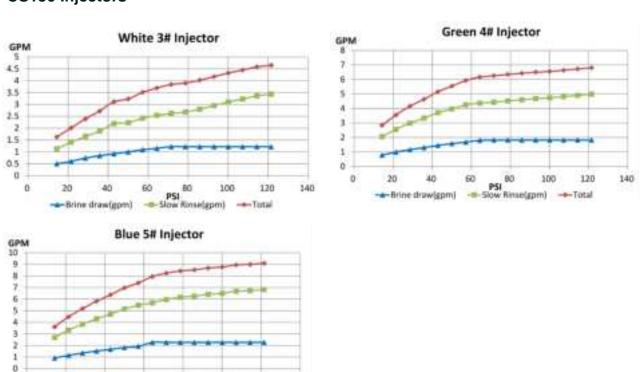
| Valve Series - Piston Type<br>Tank Opening                              | CS125 - NHWB<br>- 2.5" with<br>Bypass Valve  | CS125 - HWB -<br>2.5" with Bypass<br>Valve | CS150 - NHWB<br>- 4" | CS150 – HWB<br>– 4" |
|---|--|--|----------------------|---------------------|
| Service Flow Rate @ 15 psig (with 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 – 1                                     | 25 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<br>(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 Blue #5 (p/n: CS150-5#) – 2.0 gpm |  |                      | 150-4#) – 1.7 gpm   |
| Distributor Tube Opening  | 1.32" O.D  | . (1" NPS)                                 | 1.90" O.D.           | (1 ½" NPS)          |
| Tank Thread   | 2 ½" – 8   | 8 NPSM                                     | 4" - 8               | NPSM                |
| Drain Line Connection   |  | 1" NP                                      | T Male               |                     |
| Brine Line Connection   | ½" Push-Lock   |  |                      |                     |
| Default Inlet / Outlet Connections                                      | 1 1/4" NPT Male, 1 1/2" NPT Male   |  |                      |                     |
| DROP Commercial Control Board   | EVB-029  |  |                      |                     |
| Power Adapter   | 12 VDC, 2.5mm x 5.5mm Barrel, Center Positive, 1000 mA Min.  |  |                      |                     |

### OPERATIONS INJECTORS

### **CS125 Injectors**



### **CS150 Injectors**



140

120

- Slow Rinse(gpm)

-- Brine draw(gpm)



### **OPERATIONS** CONNECTIONS

#### **Valve Control Board Connections**

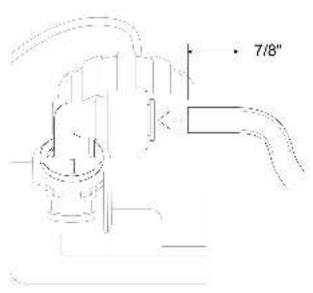


The valve board wiring connections are labeled clearly according to their function. "Ext. Input" and "Ext. Mtr." are normally unused. For specific installations, the Ext. Mtr. output can be used to run an external valve.

#### **Brine Line Push-Lock Connection**

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

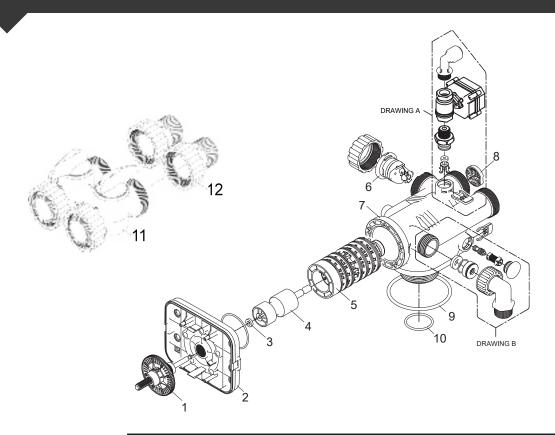
- 1. Make sure the 3/8" brine tubing is cut squarely on the end.
- 2. Push the tubing into the fitting 7/8" to be sure it is past the O-ring seal.



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.

### CS125 VALVE PARTS - VALVE BREAKDOWN

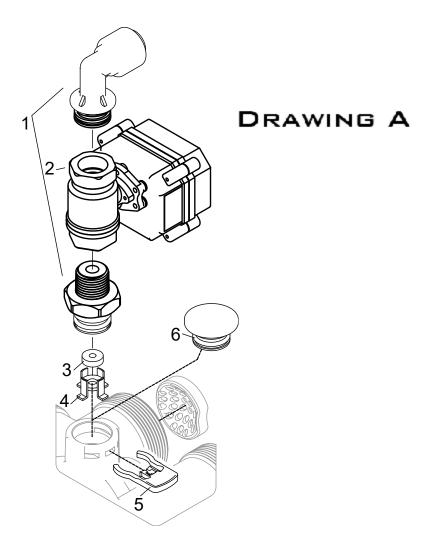


| No. | Part No.    | Description                                    | Qty. |
|-----|-------------|--|------|
| 1   | 20125X001   | Encoder Wheel and Piston Rod Assy.             | 1    |
| 2   | 20125X002   | Valve Body Seal Plate with O-Ring              | 1    |
| 3   | 20125X003   | Piston Spacer / Stall Ring                     | 1    |
|     | 20125X004   | Softener Piston (Hardwater Bypass)             |      |
| 4   | 20125X005   | Softener Piston (No Hardwater Bypass)          | 1    |
|     | 20125X023   | Filter Piston (Hardwater Bypass)               | -    |
|     | 20125X024   | Filter Piston (No Hardwater Bypass)            |      |
| 5   | 20125X006   | Seal & Spacer Stack                            | 1    |
|     | 20125X007   | Water Meter                                    |      |
| 6   | 20125X007-P | Water Meter / Pressure Sensor Combo (Optional) | 1    |
|     | 20125X008   | CS125 Valve Body (HW)                          | ,    |
| 7   | 20125X013   | CS125 Valve Body (NHW)                         | 1    |
| 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    |



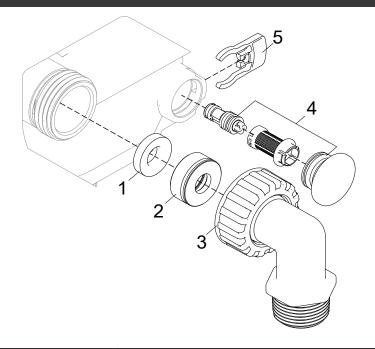
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- BRINE CONNECTION



| No. | Part No.  | Description                            | Qty. |
|-----|-----------|--|------|
| 1   | CS-BVA    | ½" NPT Ball Valve Adapter w/ 90° Elbow | 1    |
| 2   | CS-BV5    | 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    |

## CS125 VALVE PARTS - INJECTOR ASSY.

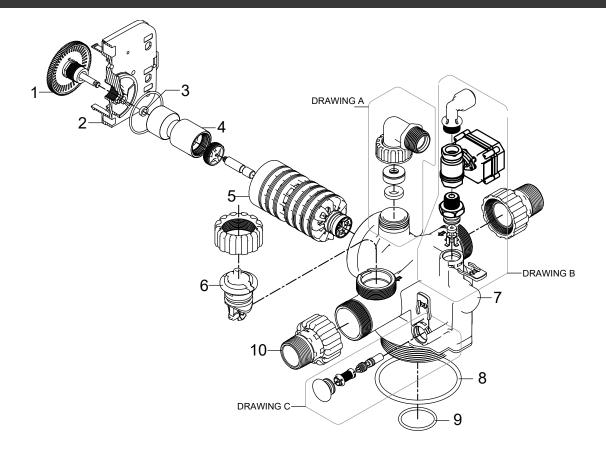


| No. | Part No.    | Description  | Qty. |
|-----|-------------|--|------|
|     | CS-DLFC-2.4 | Drain Line Flow Control, 2.4 gpm                     |      |
|     | CS-DLFC-3   | Drain Line Flow Control, 3 gpm                       |      |
|     | CS-DLFC-3.5 | Drain Line Flow Control, 3.5 gpm                     |      |
|     | CS-DLFC-4   | Drain Line Flow Control, 4 gpm                       |      |
|     | CS-DLFC-5   | Drain Line Flow Control, 5gpm                        |      |
| 1   | CS-DLFC-8   | Drain Line Flow Control, 8 gpm                       | 1    |
|     | 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                      |      |
| 2   | 20125X016   | DLFC Retainer  | 1    |
| 3   | 20017X284-1 | 1" NPT Drain Line Elbow                              | 1    |
|     | CS125-0#    | Red #0 Injector, with screen and cap, CS125          |      |
| 4   | CS125-1#    | White #1 Injector, with screen and cap, CS125        | 1    |
|     | 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    |

### CS150 VALVE PARTS



### -VALVE BREAKDOWN

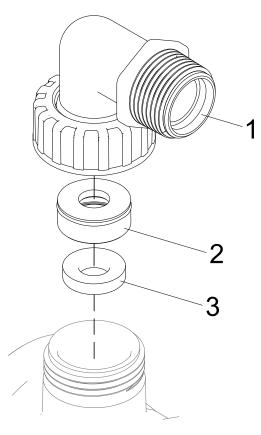


| No. | Part No.    | Description                                   | Qty. |
|-----|-------------|---|------|
| 1   | 20125X001   | Encoder Wheel and Piston Rod Assy.            | 1    |
| 2   | 20125X002   | Valve Body Seal Plate                         | 1    |
| 3   | 20125X003   | Piston Spacer /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

## CS150 VALVE PARTS

### - DRAIN CONNECTION

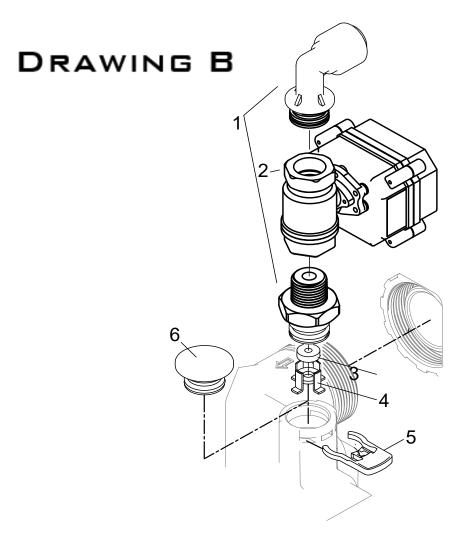
### DRAWING A



| No. | Part No.    | Description                      | Qty. |
|-----|-------------|----------------------------------|------|
| 1   | 20017X284-1 | 1" NPT Drain Line Elbow          | 1    |
| 2   | 20125X016   | Drain Line Flow Control Retainer | 1    |
|     | CS-DLFC-2.4 | Drain Line Flow Control, 2.4 gpm |      |
|     | CS-DLFC-3   | Drain Line Flow Control, 3 gpm   |      |
|     | 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    |      |
| 3   | CS-DLFC-8   | Drain Line Flow Control, 8 gpm   | 1    |
|     | 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  |      |

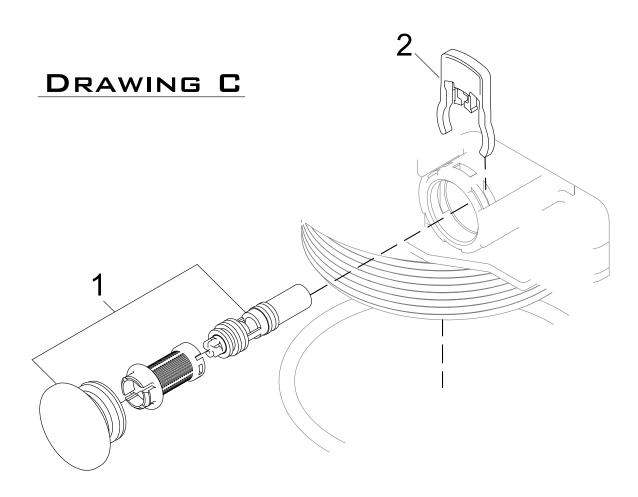


- BRINE CONNECTION



| 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    |

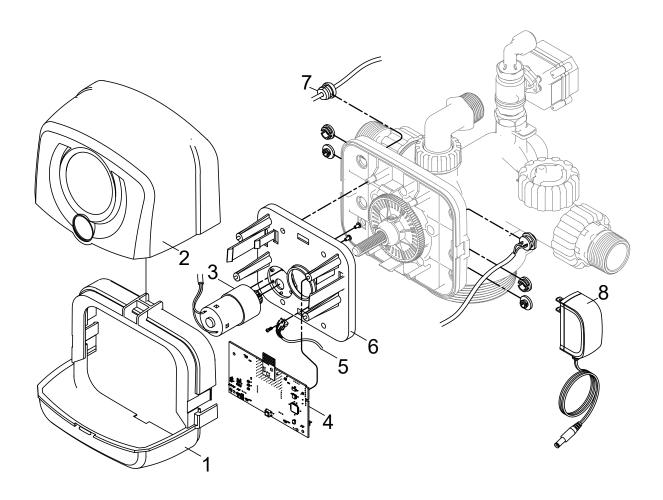
### CS150 VALVE PARTS - INJECTION ASSY.



| No. | Part No.  | Description  |   |
|-----|-----------|--|---|
|     | CS150-3#  | White #3 Injector, with screen cap, CS150            |   |
| 1   | CS150-4#  | 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 |

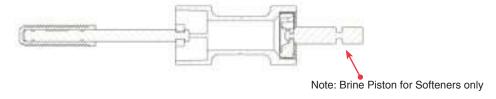


## CS125 & CS150 POWERHEAD

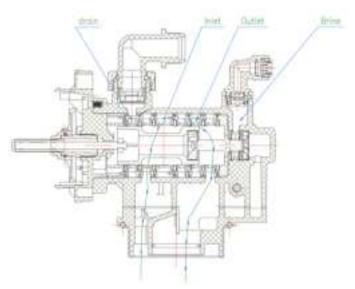


| No. | Part No.  | Description   | Qty. |
|-----|-----------|---|------|
| 1   | 20125X017 | Commercial Slide Cover Bracket  | 1    |
| 2   | 20125X018 | Commercial Slide Cover  | 1    |
| 3   | 20125X019 | Geared Piston Motor   | 1    |
| 4   | EVB-029   | Commercial DROP control board   | 1    |
| 5   | 20125X020 | Optical Position Endocer  | 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<br>Barrel, Center Positive, 2,000mA | 1    |

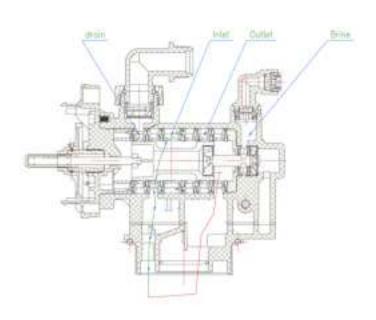
### Untreated water bypassing during regeneration piston



### Service

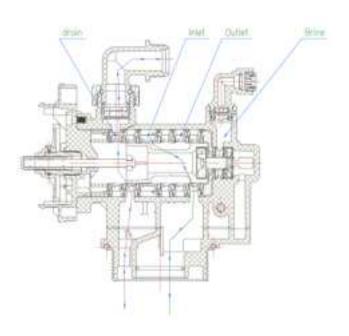


### **Outlet Shutoff**

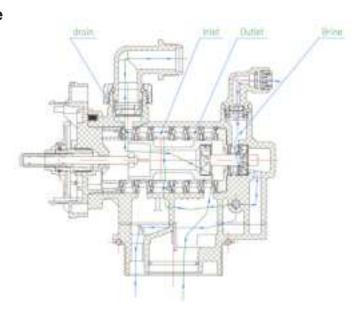




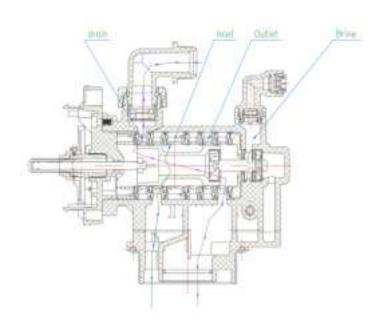
### **Backwash**



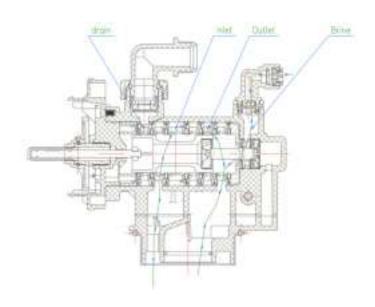
### **Downflow Brine**



### Rinse

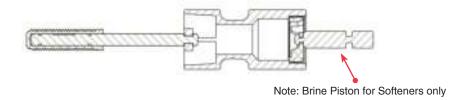


### **Brine Fill**

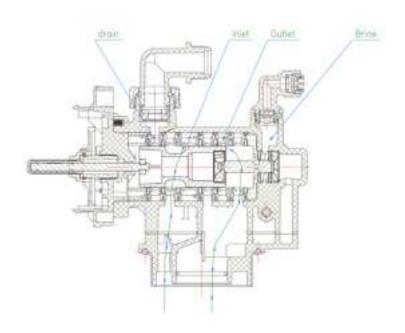




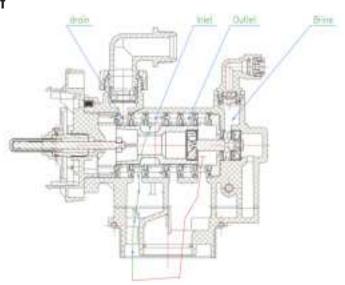
### Outlet water shutoff during regeneration piston



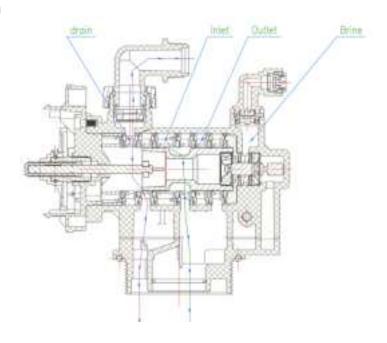
### **Service**



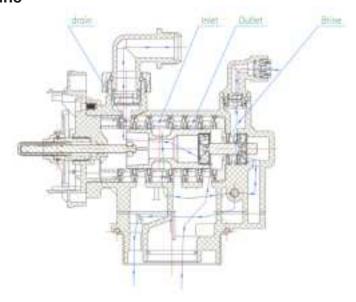
### **Outlet Shutoff**



### **Backwash**

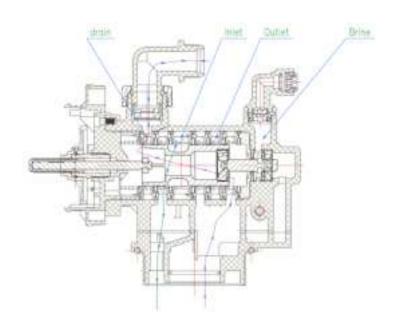


### **Downflow Brine**

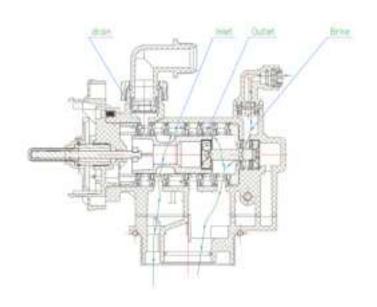




### Rinse



### **Brine Fill**





### WATER MANAGEMENT SYSTEMS

This warranty cannot be transferred - it is extended only to the original purchaser or first user of the product. By accepting and keeping this product, you agree to all of the warranty terms and limitations of liability described below.

Important Warning: Read carefully the DROP Water Management Systems Equipment Installation, Operating and Maintenance Instructions Manual to avoid serious personal injury and property HAZARDS and to ensure safe and proper care of this product.

\*FOR AS LONG AS YOU OWN AND LIVE IN YOUR SINGLE FAMILY HOME, this warranty covers your water treatment equipment, if you are the first user of this DROP Water Treatment Systems equipment and purchased it for single family home use - subject to all of the conditions, limitations and exclusions listed below. Purchasers who buy the DROP equipment for other purposes, and other component parts are subject to more limited warranties and you should read all of the terms included in this form to make sure you understand your warranty.

#### What is covered by this warranty?

Chandler Systems, Inc. warrants that at the time of manufacture, the DROP equipment shall be free from defects in material and workmanship as follows:

| Product                      | Warranty |  |  |
|------------------------------|----------|--|--|
| Residential Mineral Tank     | 10 Years |  |  |
| DROP Control Valves          | 5 Years  |  |  |
| DROP Pump Controllers        | 5 Years  |  |  |
| DROP Home Protection Valve   | 5 Years  |  |  |
| Brine Tank                   | 5 Years  |  |  |
| DROP Hub and Remote          | 1 Year   |  |  |
| DROP Wireless Low Salt Alarm | 1 Year   |  |  |
| Other Accessories and Parts  | 1 Year   |  |  |
| Brine Tank Components        | 1 Year   |  |  |

<sup>\*</sup> This warranty does not include media and/or cartridge filter elements.

#### Additional Terms & Conditions

What Chandler Systems Inc will do if you have a covered warranty claim; Chandler Systems Inc will at its discretion either make repairs to correct any defect in material or workmanship or supply and ship either new or used replacement parts or products. Chandler Systems, Inc. will not accept any claims for labor or other costs.

#### Additional Exclusions and Limitations

This warranty is non-transferable and does not cover any failure or problem unless it was caused solely by a defect in material or workmanship. In addition, this warranty shall not apply:

- If the equipment is not correctly installed, operated, repaired and maintained as described in the Installation, Operating & Maintenance Instructions Manual provided with the product.
- Defects caused as a direct result of the incoming water quality
- If the DROP equipment is not sized appropriately for the intended job.

- To any failure or malfunction resulting from abuse (including freezing), improper or negligent; handling, shipping (by anyone other than DROP)
- If the unit has not always been operated within the factory recommended temperature limits, and at a water pressure not exceeding 125 psi, during storage, use, operation, accident; or alteration, lightning, flooding or other environmental conditions.
- To any failure or malfunction resulting from failure to operate the system with potable water, free to circulate at all times; and free of damaging water sediment or scale.
- This warranty does not cover labor costs, shipping charges, service charges, delivery expenses, property damage, administrative fees or any costs incurred by the purchaser in removing or reinstalling the water management equipment.
- The warranty does not cover any claims submitted more than 30 days
  after expiration of the applicable warranty, and does not apply unless
  prompt notice of any claim is given to an authorized DROP Dealer or
  to DROP or a designated contractor is provided access to the installation and to the water treatment equipment.

THESE WARRANTIES ARE GIVEN IN LIEU OF ALL OTHER EXPRESS WARRANTIES. NO DROP REPRESENTATIVE OR ANY OTHER PARTY IS AUTHORIZED TO MAKE ANY WARRANTY OTHER THAN THOSE EXPRESSLY CONTAINED IN THIS WARRANTY AGREEMENT.

#### Additional Warranty Limitations

ANY IMPLIED WARRANTIES THE PURCHASER MAY HAVE, IN-CLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, SHALL NOT EXTEND BE-YOND THE APPLICABLE TIME PERIODS SPECIFIED ABOVE. Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you.

#### Limitations of Remedies

The remedies contained in this warranty are the purchaser's exclusive remedies. In no circumstances will Chandler Systems, Inc. or the seller of the product be liable for more than, and purchaser-user's remedies shall not exceed, the price paid for the product. In no case shall Chandler Systems, Inc. or seller be liable for any special, incidental, contingent or consequential damages. Special, incidental, contingent and consequential damages for which Chandler Systems, Inc. is not liable include, but are not limited to, inconvenience, loss or damage to property, consequential mold damage, loss of profits, loss of savings or revenue, loss of use of the products or any associated equipment, facilities, buildings or services, downtime, and the claims of third parties including customers. Some states do not allow the exclusion or the limitation of incidental or consequential damages, so the above limitations or exclusion may not apply to you.

What to do if you have a problem covered by this warranty Any warranty coverage must be authorized by Chandler Systems, Inc.. Contact the person from whom you purchased the product, who must receive authorization from a DROP Dealer.

If your product is new and not used and you wish to return it, contact your DROP Dealer.



