



**Clean Water Made Easy**

[www.cleanwaterstore.com](http://www.cleanwaterstore.com)

# 5900S Neutralizer

## Operation & Maintenance

### Manual

Thank you for purchasing a Clean Water System! With proper installation and a little routine maintenance your system will be providing neutral pH water for many years.

Please review this start-up guide entirely before beginning to install your system, and follow the steps outlined for best results.

CALCITE MEDIA CONTAINS DUST. USE PAPER MASK AND VENTILATE TO AVOID BREATHING DUST (Use a spray bottle to wet the media down).

#### Helpful Videos:

<https://www.youtube.com/channel/UC415QpvIRz-YAntxIMiel2w/videos>

#### Questions?

Call us toll-free: 1-888-600-5426 or 1-831-462-8500

Email us: [support@cleanwaterstore.com](mailto:support@cleanwaterstore.com)

See more information on our website: [www.cleanwaterstore.com/resources](http://www.cleanwaterstore.com/resources)





# Clean Water Made Easy

[www.cleanwaterstore.com](http://www.cleanwaterstore.com)

## Table of Contents:

Table of Contents:	2
Font used in paper guide is small, to save paper. PDF version available on our website.	3
Packing List:	3
Neutralizer Filter 1.0 cubic foot size	3
Neutralizer Filter 1.0 cubic foot size Short Tank	3
Neutralizer Filter 1.5 cubic foot size	3
Neutralizer Filter 2.0 cubic foot size	3
Neutralizer Filter 2.5 cubic foot size	3
How Your neutralizer Works:	4
Fig. 1: Typical Neutralizer 5900S piping installation:	5
Pre-Installation:	6
Best Practices for Piping & Drain Installation:	6
Fig 3. 5900S Bypass/Service Mode Knob Positions:	8
Assembly and Installation Instructions:	8
Figure 4: Bypass Assembly:	10
Programming Your Valve:	11
Master Programming Mode:	12
Programming with Flow Sensor Option:	13
Initial Backwash:	14
Maintaining Your Neutralizer:	15
How to Add Calcite Media	15
When to Use Calcite Blends:	15
Normal Operation:	17
Battery back-up:	17
How to Start an Extra Regeneration Cycle:	17
Troubleshooting the 5900S Neutralizer Filter:	18
Backwash Flow Rate:	18
Error Codes:	18
pH is Too High!	18
pH is Too Low!	18
White Spots on Fixtures and Glasses:	19
Installation of Your System into Copper or Metal Piping Systems:	7
Drain Line Flow Control Housing:	<b>Error! Bookmark not defined.</b>
Powerhead Assembly:	21
Valve Body Assembly:	22
Water Filters/ Softeners/ Conditioners Limited Warranty:	23

Font used in paper guide is small, to save paper. PDF version available on our website.

## **Packing List:**

All systems include: 5900S control valve, bypass assembly with 1" connector yoke, power supply and top screen.

### **Neutralizer Filter 1.0 cubic foot size**

9" x 48" filter tank with distributor tube

Blue media funnel for adding the Neutralizer media

9 lbs. Filter gravel and 0.75 cubic foot of Neutralizer media

### **Neutralizer Filter 1.0 cubic foot size Short Tank**

13" x 30" filter tank with distributor tube

Blue media funnel for adding the Neutralizer media

12 lbs. Filter gravel and 1 cubic foot of Neutralizer media

### **Neutralizer Filter 1.5 cubic foot size**

10" x 54" filter tank with distributor tube

Blue media funnel for adding the Neutralizer media

16 lbs. Filter gravel and 1.5 cubic foot of Neutralizer media

### **Neutralizer Filter 2.0 cubic foot size**

12" x 52" filter tank with distributor tube

Blue media funnel for adding the Neutralizer media

20 lbs. Filter gravel and 2.0 cubic foot of Neutralizer media

### **Neutralizer Filter 2.5 cubic foot size**

13" x 54" filter tank with distributor tube

Blue media funnel for adding the Neutralizer media

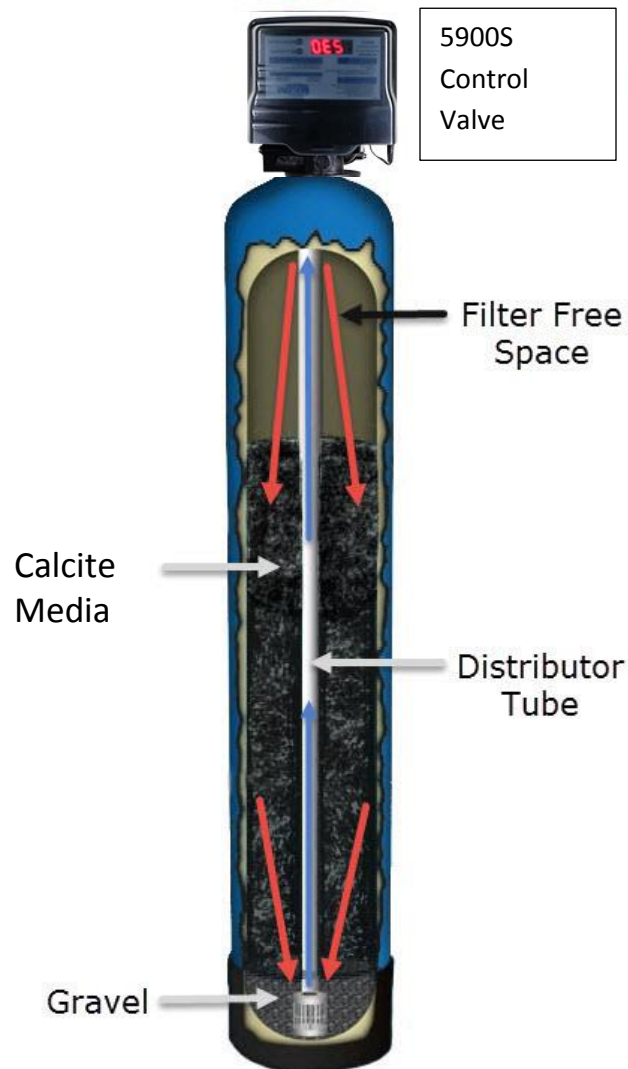
35 lbs. Filter gravel and 2.0 cubic foot of Neutralizer media

## **What to Do if Your Tank is Not Level:**

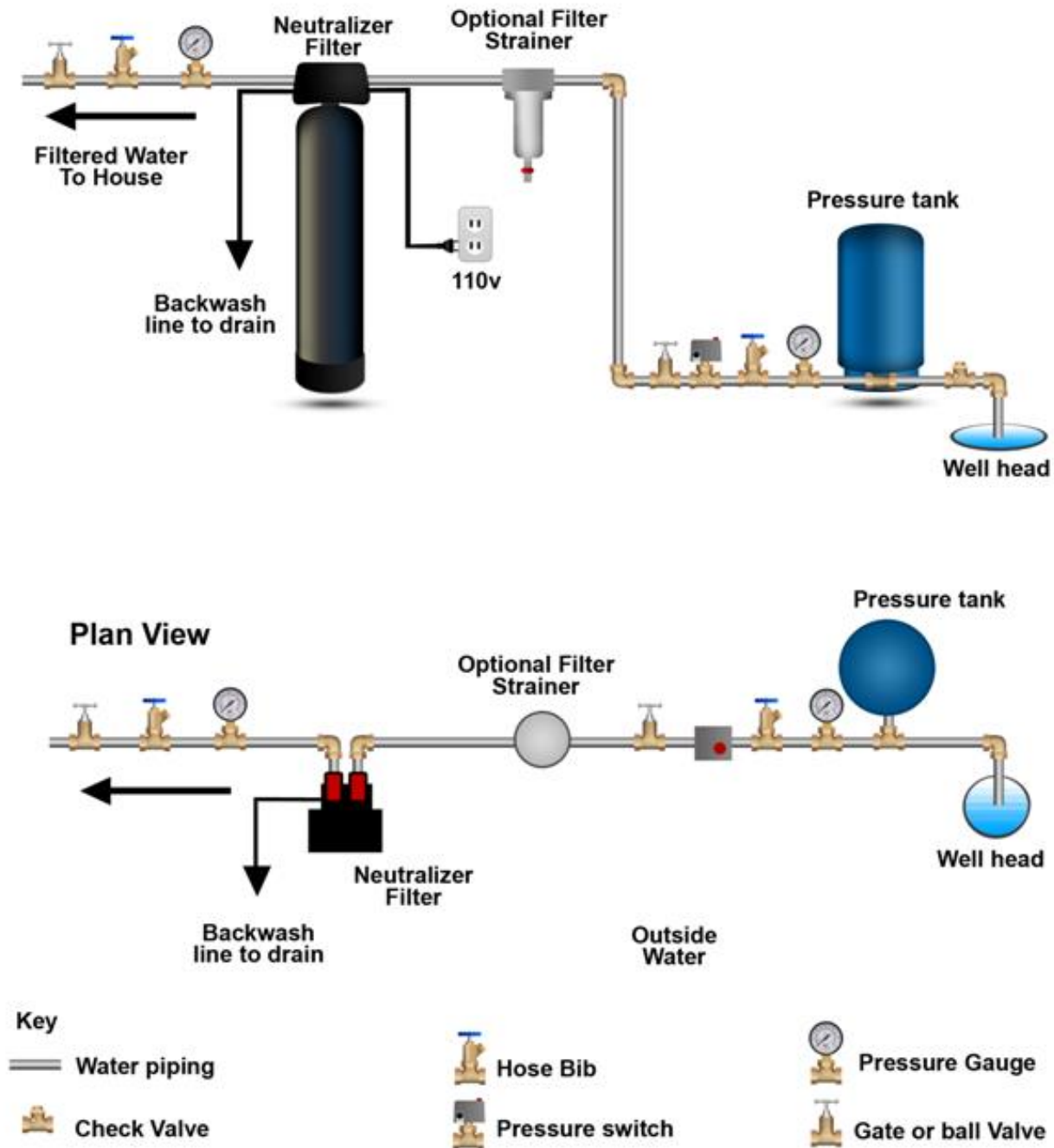
Your black filter tank base is not glued to the bottom of your tank. Occasionally tank bases will become crooked during shipment. If you find that that your tank does not sit level on the floor, you can easily adjust it by holding the empty tank and rapping it on a concrete or solid floor once or twice to level it.

### How Your neutralizer Works:

See Fig 1 on the right. In your Neutralizer, the water enters the top of the tank (red arrows) and flows down through the media and up the distributor tube (blue arrows). The downflow type Neutralizer raises the pH of your water and can be backwashed, which cleans and re-classifies the Calcite, preventing channeling. During backwash the flow of water is reversed and water flows down the distributor tube and up through the media, lifting and expanding the Calcite media. During the backwash the Calcite is cleaned by the action of the water flowing through it.



**Fig. 1: Typical Neutralizer 5900S piping installation:**



## **Pre-Installation:**

1. Review your packing list and make sure you have received all the parts before beginning installation.
2. If you are going to be turning off the water to the house and you have an electric water heater, shut off the power to the water heater before beginning installation in case water heater is accidentally drained.
3. Pick a suitable location for your filter system on a dry level spot where it won't be exposed to freezing temperatures. A minimum of 30 PSI is required. Maximum pressure is 90 PSI.
4. Get all of your plumbing parts together before beginning installation. Installation typically takes 3 to 5 hours. However, after installation the Neutralizer must be allowed to run through a complete backwash and rinse cycle.

## **Best Practices for Piping & Drain Installation:**

1. See typical installation. The Neutralizer is installed after the pressure tank.
2. Make sure to connect the IN pipe to the 5900S inlet and the OUT pipe to the outlet (see Fig 2). As you face the 5900S control from the front, the water enters on the right and exits on the left. From the back the water enters on the left. The inlet and outlet are attached to the bypass valve, which is marked with arrows as well.
3. Make sure there is a working gate or ball valve before the 5900S Neutralizer and also one after as shown in Fig 1. The pressure gauges are optional, but a hose bib (which is a faucet that you can attach a garden hose to) is strongly recommended after the Neutralizer and before the second ball valve. This makes it easy to rinse your new Neutralizer on start-up and gives you a place to test the water before it enters your household plumbing.
4. If you will be using copper piping, do not sweat the copper pipe directly on to the 5900S control valve. Avoid heating up the 5900S control valve plastic with the torch.
5. If you have copper pipe before the Neutralizer and it is too difficult to change out, you may still experience some copper staining of fixtures and have a copper residual in the water because this section of pipe will still have acidic water flowing through it. We recommend PEX or PVC pipe up to the Neutralizer and then copper after it, if you have copper plumbing.
6. The drain line tubing (not supplied) is connected to a drain from the drain outlet using flexible 5/8" ID tubing. Note that the drain can run up above the 5900S control and into a drain, it does not have to drain down, as the filter backwashes under line pressure from your well pump. Most plumbing codes require an air-gap connection, so that if your sewer or septic tank backs up, it cannot cross connect with the drain tubing.

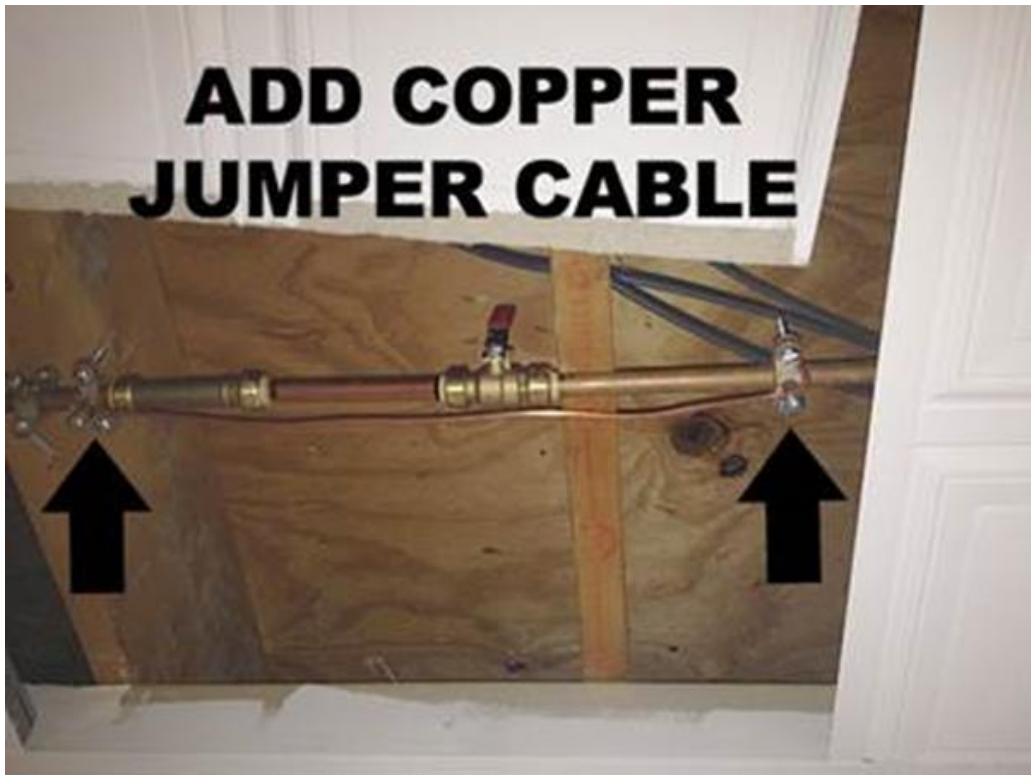
### Installation of Your System into Copper or Metal Piping Systems:

If your new filter system is to be installed in a metal (conductive) plumbing system, i.e. copper or galvanized steel pipe, the plastic components of the system will interrupt the electrical continuity of the plumbing system.

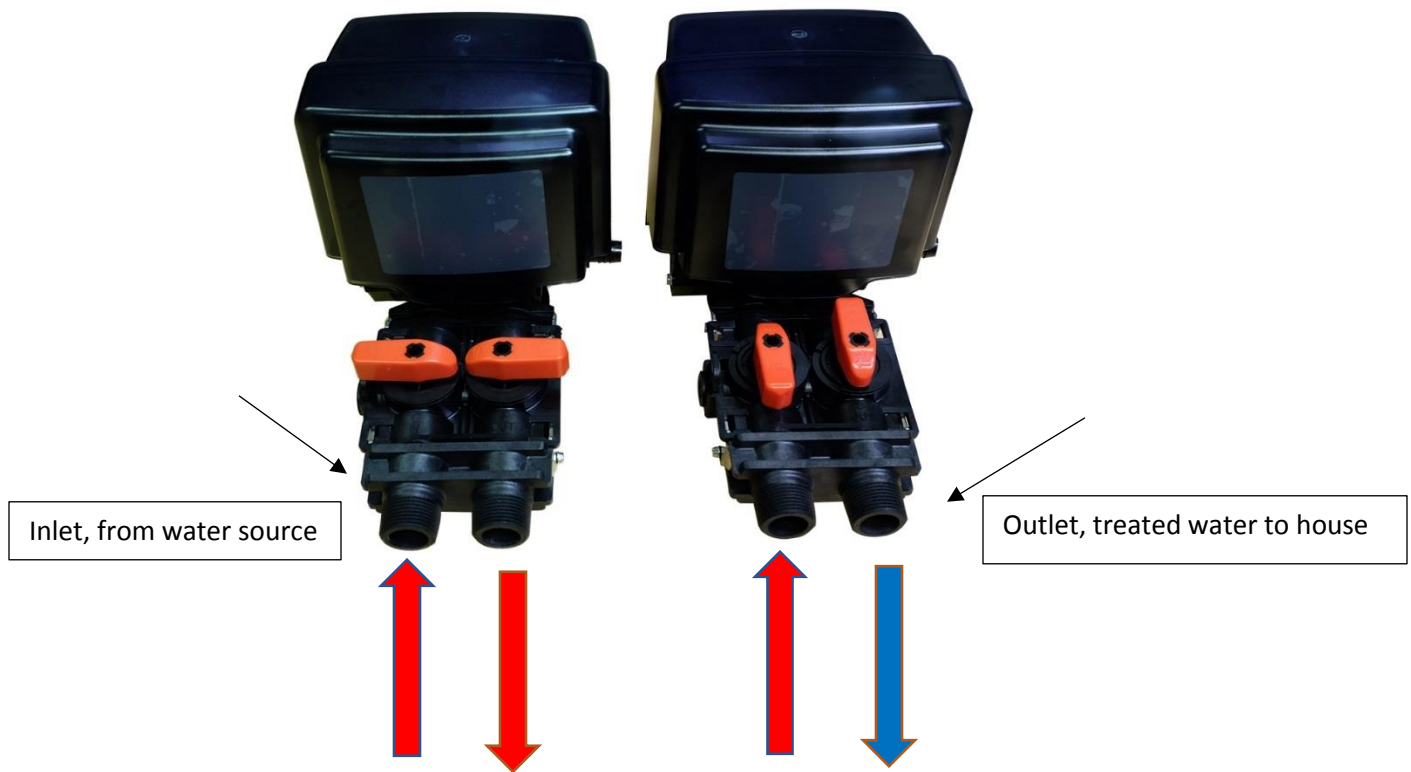
As a result, any stray currents from improperly grounded appliances downstream or potential galvanic activity in the plumbing system can no longer ground through the contiguous metal plumbing.

Some homes may have been built in accordance with building codes, which encouraged the grounding of electrical appliances through the plumbing system.

Consequently, the installation of a bypass consisting of the same material as the existing plumbing, or a grounded "jumper wire" bridging the equipment and reestablishing the contiguous conductive nature of the plumbing system must be installed prior to your systems use. This is simple and easy step to take if you are installing your water treatment system into copper piping. A simple ground jumper wire with a pipe clamp can be purchased at any Home Center, or hardware store etc. for a few dollars.



**Fig 3. 5900S Bypass/Service Mode Knob Positions:**



***ON THE LEFT: FILTER IS BYPASSED!***

***ON THE RIGHT, FILTER IS IN SERVICE!***

**Assembly and Installation Instructions:**



---

## 5900S Neutralizer Operation & Maintenance Manual

---

Wrap the top of distributor tube with electrical or blue painter's tape so that no gravel or Calcite will go down the distributor tube when adding the media. Also, leave a folded tab of tape that you can grab onto to and gently pull off the tape after filling the tank. Test fit the distributor tube; there is a divot on the tank bottom that it seats into. Make sure it is correctly seated, and that the distributor tube is flush with the tank threads. When you are ready to screw the valve head on, apply silicone lubricant to the outside of the distribution tube, and the O-ring on the control valve where the tube goes in.



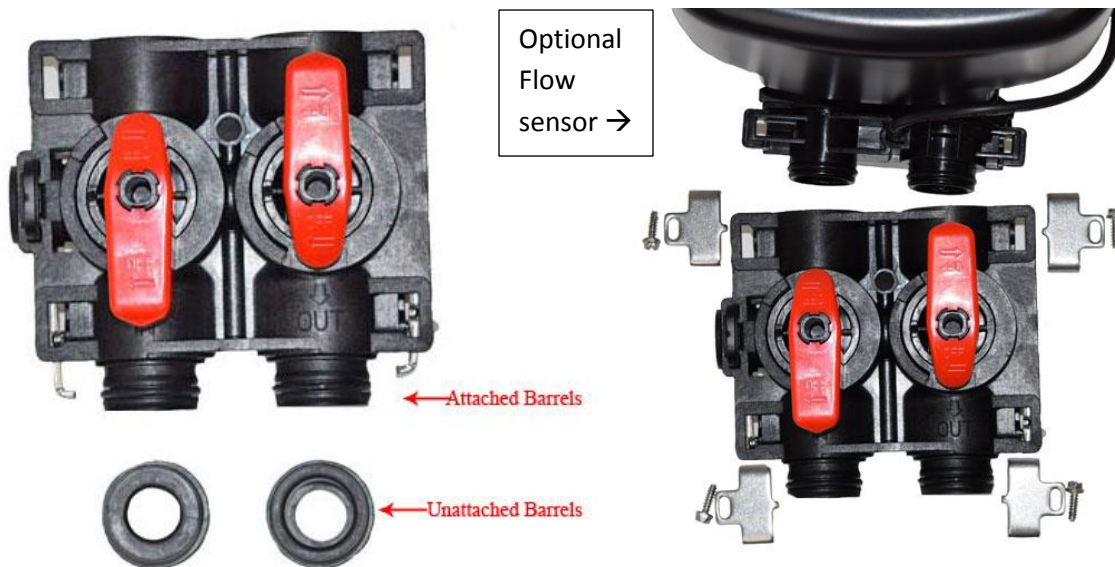
Note: There are two style/types of funnels that get shipped. One looks like this picture, and you need to follow the instructions shown. If you receive a **black** funnel, you will see that it fits over the top of the distribution tube when you are filling the tank with media; it is not necessary to use tape.

1. Add the filter gravel that came with your order. The gravel covers the Bottom Basket distributor screen before adding the Calcite media.
2. If you received Corosex in your shipment (used with pH's below 6), you can now mix it together with the Calcite before adding the blend into the tank. It does not have to be exact, but we recommend mixing them together in a bucket, and adding into the tank until it is 2/3rds full, do not fill past 2/3rds.
3. Next add the Calcite media or Calcite/Corosex blend. The tank will be about 2/3rds full of media. Do not fill more than 2/3rds full, even if there is some left over. You can save that for when it is time to refill the tank with more Calcite.
4. Remove tape from top of distributor tube. Be careful not to pull up distributor tube when removing tape.
5. Fill tank up with water, just below the threads, add an ounce of bleach to sanitize.
6. Attach plastic top screen to the under-side of the 5900S control valve. It may twist on clockwise or counter-clockwise.



Add a small amount of silicone grease to the large O-ring on the bottom of the control valve and screw on 5900S control valve carefully. Do not use pipe-joint compound, vegetable oil, Teflon tape, or Vaseline or other petroleum greases to lubricate tank threads.

**Figure 4: Bypass Assembly:**



The “yoke end” of the bypass comes pre-assembled; you do not need to take it off. If you plumb with hard pipe (PVC, Copper) and it leaks at this point, then it is likely caused by Pipe Deflection- this is why the use of flex lines is strongly encouraged.

1. Assemble the Bypass Valve When you remove the bypass valve from the box, the valves are in the open position. Holding the bypass so that you are reading the In and Out (so that the words are not upside down to you when holding the bypass), note the following:
2. The red handles are slightly arrow-shaped; the pointed end is pointing in the direction of flow when open. The Inlet valve (on the left) turns clockwise, from full open at “12:00 o’clock”, to fully closed at “3:00 o’clock”. The Outlet valve turns clockwise from “6:00 o’clock” full open to

---

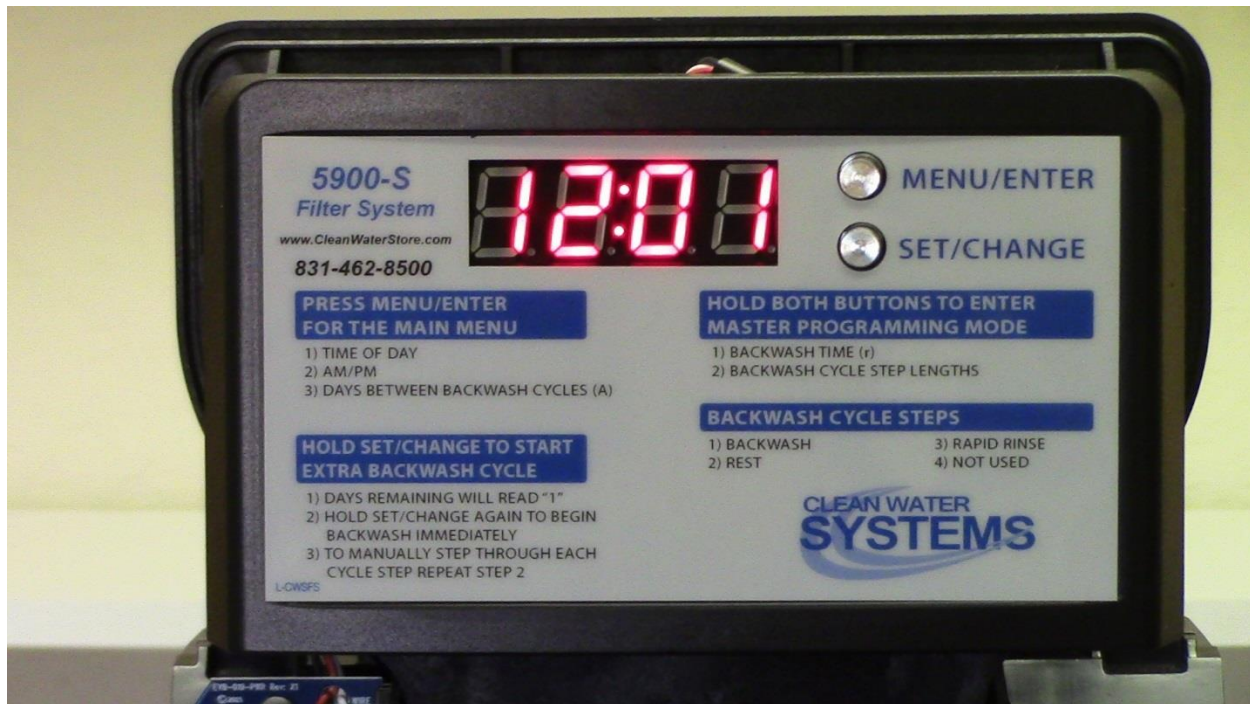
## 5900S Neutralizer Operation & Maintenance Manual

---

"9:00 o'clock" full closed. The valves are stiff when new, so open and close them a few times. Leave them closed for now.

3. Now install your water pipes to the 5900S bypass end connectors. Make sure inlet is installed to the 'In' pipe connector on the bypass valve and outlet is on the "Out" connector.
4. Assemble the Drain Line Flow Control (DLFC) Fitting: This is already assembled, the correct internal DLFC button is already in the DLFC Housing. If your unit backwashes at 10 or 12 GPM's, then that separate fitting is installed in the drain line tubing run.
5. Connect some flexible tubing from the drain connection on the 5900S control valve to a suitable drain such as a septic tank or drain to a sewer. It is OK to run the drain line up and over the 5900S Carbon Filter up to 4 feet above the top of the tank. If the drain line will be more than 20 feet, use larger diameter tubing such as  $\frac{3}{4}$ " or 1". Note that it is desirable to be able to run the drain line into a bucket to test the backwash flow rate in the future. This is why hard piping the drain line is discouraged, however, if you do use hard PVC piping for the drain line, you must be able to remove the hard PVC drain piping and attach flexible tubing for testing purposes. Make sure the drain tubing is firmly clamped to the barbed fitting with a hose clamp to prevent leaks.
6. Next, you will need to program the system to work as a Neutralizer Filter. There are a few settings that must be changed before the system can be put into service.

### Programming Your Valve:



\*While scrolling through numbers, it only increases the value. To decrease the value, you must "go all the way around" to get back to a lower value.

1. To enter main menu press the Menu/Enter button (Time of day will flash)
2. To set time of day press the Set/Change button (First digit will begin to flash)
  - To change digit value press the Set/Change button
  - To accept the digit press the Menu/Enter button (Next digit will flash)
  - Once the hour is entered, all digits will flash
3. With all digits flashing press the Menu Button to set A.M. or P.M.
  - (Once A.M./P.M. is accepted the next menu item will flash)
4. To Set the Backwash Frequency Press the Set/Change Button
  - **The recommended setting for a Neutralizer filter is every 6-7 days**
  - Once the last digit is accepted all digits will flash
  - If value is set to 0, automatic regeneration will never occur

Pressing and holding the Menu/Enter button will also access some options: **Flo**- this is the flow rate, if water is running, it will display the volume, in gallons per minute. **Gt r**- This the total # of gallons that has gone through the filter. **g tot**- this is the same as the previous. **rC r**- number of regeneration done. **rC**- the same. **gPdL**- shows how many gallons used each day. **Gbrl**- is the gallons used between regenerations. **PfDL**- This shows the peak, or highest flow rate that has passed through the filter in the last 24 hours. Note that these options only work with a flow sensor.

5. To exit menu press the Menu/Enter button

Note: If no buttons are pressed for 60 seconds or longer the menu will automatically be exited.

### Master Programming Mode:

#### Entering Master Programming Mode

-To enter Master Programming Mode press and hold both buttons for 5 seconds.

#### 1. Regeneration Time (r)

Press the Menu/Enter Button. The next display viewed is the option setting for Regeneration Time. It is identified by the letter 'r' in the left digit. Set the desired time of day that a regeneration may occur, if required. **We recommend setting the system to backwash at 2 AM**, or at any time that it is unlikely that any water will be used. The first digit(s) indicates the Hour and the other digit indicates A.M. or P.M..

Example: 2 A.M. regeneration time - [ r 2A ] (factory setting)

#### 2. Regeneration Cycle Step Programming (1)(2)(3)

The next 3 displays viewed are part of a series of option settings used to program the Regeneration Cycle. Each display is used to set the duration time in minutes for that specific step in a regeneration cycle. Regeneration steps are *skipped* by setting the display to 0 as shown below:

---

## 5900S Neutralizer Operation & Maintenance Manual

---

Set each step to the values below, appropriate for a neutralizer filter:

- 1 10 minutes. This is the Backwash cycle. [ 1 - 10 ]
- 2 5 minutes. This is the Rest cycle. [ 2 - 5 ]
- 3 6 minutes. This is the Rapid Rinse cycle. [ 3 - 6 ]

**3. Blue Tooth:** If you wish to, you can use your iPhone or iPad, and download the Legacy App from your device's App Store, and be able to monitor the digital display values remotely. This app works best if your valve has a flow sensor.

After Cycle Step Three above, when you press the menu/enter button, the display will show bE 1 ; press the menu/enter button again, the display shows: bTPP and then changes to 1234. Press the menu/enter button, and now you are back to the home service screen (displaying the clock time and the number of days until backwash).

### Programming with Flow Sensor Option:

Setting the time is the same as above. The next menu option is "H". Set this at 10.

Go into the Master Programming. Set the backwash time (default is 2 am).

The next menu option is "A". For a neutralizer, it should be every 6-7 days- the number of days between backwashes. The next four menu options are cycle steps. Program these as follows:

1) 10 minutes. This is the Backwash. 2) 5 minutes, this is a Rest Cycle. 3) 6 minutes. This is the Rapid Rinse. 4) 00 minutes (not used). The next menu option is "c". Set this to 10. The next menu option is "P". Set this to 00. Whatever number you entered in c, is divided by the number you set for H, remembering that c is in 1000's.  $c \ 010$  means 10,000.  $10,000/10 = 1,000$ . So, by changing those values, you can increase or decrease the gallons amount. The next two options are for the Bluetooth feature, skip past them and the valve will exit the programming mode. The service display screen will now flash between the clock time and the 1000 gallons. It will then count down as water runs through the filter. The unit will now backwash (at the time you set it to do so) when the number of gallons remaining reaches 0000 or the number of days (6-7) between backwashes, whichever comes first. Whether or not you enable the Bluetooth option to access the values from a device (phone, I pad, etc.) you will now be able to utilize all the history values, track usage, see the flow rate any time water is moving through the filter and see the peak flow rate value.

### Exiting the Master Programming Mode:

Press the Menu/Enter Button until all steps have been viewed. The Program Mode will be exited and normal operation resumed. If no buttons are pressed for 60 seconds or longer in Master Programming Mode, it will be exited automatically.



### Initial Backwash:

- 1 If days remaining is not already at 1 press and hold the Set/Change button. Now, press and hold the set change button again, until the valve begins the backwash cycle and the display reads 1 – 10. Now, proceed to step two.
- 2 Start to put the valve into the service position by turning inlet the bypass knobs counter-clockwise about a quarter inch, until you can hear water passing through the bypass into the filter. Stop and wait until you see water coming out of the drain line. It will often be mixed with air bubbles. When you do not see bubbles anymore, keep opening the valve, a little bit at a time, stopping for a minute or two each time. You want to see a corresponding increase in flow out of the drain line as you increase the flow of water into the filter. After several minutes, you should have the valve fully open, and with no media coming out. The water may appear milky white.
- 3 Verify that the backwash flow corresponds with the size of your system below. You can easily run the drain hose to a bucket and using a watch verify the flow rate in gallons per minute. An adequate backwash is critical to properly clean the Calcite media and prevent it from cementing together.

<b>1.0 CF</b>	5 GPM
<b>1.5 CF</b>	5 GPM
<b>2.0 CF</b>	7 GPM
<b>2.5 CF</b>	7 GPM

- 4 Once the water is mostly clear (water will never be clear in backwash), press and hold the Set/Change button, and after several seconds the valve will start to advance to the “Rinse” position. Allow the valve to finish the six minute rinse cycle.
- 5 Open the outlet on the bypass valve and then open the nearest treated water faucet to the unit and allow the water to run until it is clear. We advise using a bathtub, laundry sink, or other fixture that does not have an aerator screen as any remaining residue may get caught in the screen.

**Congratulations, you are done setting up your valve!**

### Maintaining Your Neutralizer

1. Check the pH before and after the neutralizer. You want to have a pH of at least 7.0 after the neutralizer filter.
2. If the pH drops below 7, check the depth of the Calcite media by shining a bright light through the tank. Your tank should be about 2/3rds full of media. When the media level drops to ½ full, it is time to add more Calcite or Calcite blend media if you are using a blend.
3. For most residential applications, adding Calcite media once or twice a year is adequate. Do not fill more than 2/3rds full.

### How to Add Calcite Media

CALCITE MEDIA CONTAINS DUST. USE PAPER MASK OR VENTILATE TO AVOID BREATHING DUST.

1. Begin by putting the neutralizer filter on bypass, or turning the water pressure off before the neutralizer.
2. Initiate a manual backwash cycle. Since it is on bypass, this will relieve the pressure inside the control valve so you safely unscrew the Media Fill Plug located on top of the neutralizer tank.
3. Unplug the control valve cord from the wall outlet.
4. Unscrew the media fill plug with channel locks or pliers, and using a tube or hose siphon 2 to 3 gallons of water out of the filter tank. If you don't siphon water out before adding filter media, water will flow out the fill plug hole and onto the floor. If water on the floor is OK, then you do not have to siphon water out first before pouring Calcite media into the fill plug hole.
5. Add neutralizer filter media until the tank is 2/3rds full. Do not over-fill; be sure to leave at least 12" of free space above the media to allow room for it to expand during a backwash.
6. Put the top fill plug back in. You can lubricate the threads with some vegetable oil or silicone grease, but do not use Teflon tape or plumbing grease.
7. Plug the control valve back in. The control valve is in the backwash cycle.
8. Turn on the bypass valve - slowly at first - back to full open.
9. Allow the system to go through a complete backwash and rinse cycle. Repeat this backwash and rinse cycle by starting another manual cycle, so the neutralizer is thoroughly backwashed and rinsed before going back into service.

### When to Use Calcite Blends:

If the water pH is less than 6.0, Calcite alone may not be enough to bring the pH up to the desired range of 7.0 to 7.8. In this case, a blend of Calcite and Corosex should be used. Calcite is a calcium media consisting of calcium carbonate and will raise the pH slowly. Calcite will not raise the pH much over 7.2. Corosex is a natural mineral media consisting of magnesium oxide. It reacts much faster and raises the pH much higher than Calcite alone.

Corosex is almost never used alone as it will raise the pH too high and in some cases, will over-correct and create a highly basic (high pH) condition. It can also cement together like concrete in the neutralizer tank if you add too much and there is not sufficient backwash.

---

## 5900S Neutralizer Operation & Maintenance Manual

---

For most residential well applications, a 90% Calcite and 10% Corosex is best. However, in some cases an 80%/20% mix or even a 70%/30% is used. It is always better to start with a 90%/10% mix at first as this solves most of low pH problems in the range of 4.5 to 5.9.

For a pH of 6.0 to 6.9 use Calcite alone.

For a pH of 5.0 to 6.0 use a blend of Calcite and Corosex usually 90% Calcite and 10% Corosex, or more Corosex as needed if the pH is less than 5.0.

### How to Mix and Use Calcite Blends

The Calcite and Corosex media is sold and shipped in separate boxes. It does not have to be completely blended together to use as it will mix during the backwash and rinse cycles.

Still, when you are adding the Calcite and Corosex it is better to blend it lightly in a 5-gallon bucket and then add it. You can also add some Calcite and then add some Corosex as you are filling the tank. Do not fill tank more than about 2/3rds full.

Note the following:

- Calcite is shipped in 50 lb. boxes and one box of Calcite is equal to 0.55 cu ft.
- Corosex is shipped in 10 lb. boxes and 1 box is equal to 0.13 cu ft.
- 50 lbs. of Calcite = 0.55 cubic foot of media
- 50 lbs. of Corosex = 0.66 cubic foot of media
- 

**Neutralizers 1.0 Cubic Foot:** use 90 lbs. Calcite and 10 lbs. Corosex

Your new 1.0 CF neutralizer includes:

- Calcite 100 lbs. (2 50-lb. boxes) 1.1 cu ft.
- Corosex 10 lbs. (1 10 lb. boxes) .13 cu ft.

**Neutralizers 1.5 Cubic Foot:** use 150 lbs. Calcite and 10 lbs. Corosex

Your new 1.5 Cubic Foot Neutralizer Blend filter order includes:

- Calcite 150 lbs. (3 50-lb. boxes) 1.65 cu ft.
- Corosex 10 lbs. (1 10 lb. boxes) .13 cu ft.

**Neutralizers 2.0 Cubic Foot:** use 150 lbs. Calcite and 15 lbs. Corosex

Your new 2.0 Cubic foot Neutralizer Blend filter order includes:

- Calcite 150 lbs. (3 50 lb. boxes) 1.65 cu ft.
- Corosex 20 lbs. (2 10 lb. boxes) .20 cu ft.

**Neutralizers 2.5 Cubic Foot:** use 200 lbs. Calcite and 20 lbs. Corosex

Your new 2.5 Cubic Foot Neutralizer Blend filter order includes:

- Calcite 200 lbs. (4 50 lb. boxes) 2.2 cu ft.
- Corosex 20 lbs. (2 10 lb. boxes) .26 cu ft.

**Neutralizers 3.0 Cubic Foot:** use 250 lbs. Calcite and 20 lbs. Corosex

Your new 2.5 Cubic Foot Neutralizer Blend filter order includes:

- Calcite 250 lbs. (5 50 lb. boxes) 2.75 cu ft.
- Corosex 20 lbs. (2 10 lb. boxes) .26 cu ft.



## Normal Operation:

- Normal display alternates between time of day and days until regeneration.
- Days remaining until the next regeneration will count down from the regeneration day override value to 1 day remaining.
- Once the count reaches 1, a regeneration cycle will be initiated at the next designated regeneration time.

## Battery back-up:

**Battery Back-Up** (Uses a standard 9-volt alkaline battery.)

### Features of Battery Back-Up:

- During power failures, the battery will maintain the time of day as long as the battery has power. The display is turned off to conserve battery power during this time. To confirm that the battery is working, press either button and the display will turn on for five (5) seconds.
- If power failure occurs while system is regenerating, the 5900S will motor to a shut off position to prevent constant flow to drain. Depending upon system pressure and other factors, it is possible to observe a reduced flow to drain during this step. After power is restored, the Signature 2 will return and finish the cycle where it left off prior to the power interruption.
- When used without battery back-up, during a power failure, the unit stops at its current point in the regeneration position and then restarts at that point when the power is restored. The time will be offset by the increment of time the unit was without power, so it is necessary to reset the time of day on the unit. No other system will be affected.

## How to Start an Extra Regeneration Cycle:

### 1. Starting delayed extra cycle

- If days remaining is not already at 1 press and hold the Set/Change button.
- After 3 seconds the days remaining display will read 1.
- Regeneration cycle will be initiated at the next designated regeneration time

### 2. Starting Immediate Extra Cycle - First, complete above delayed cycle steps

- With days remaining at 1 press and hold the Set/Change button
- After 3 seconds the regeneration cycle will begin.

### 3. Fast Cycling Through Regeneration

- First complete above immediate cycle steps
- Press and hold the Set/Change button
- After 3 seconds the valve will start to advance to the next step

### **Troubleshooting the 5900S Neutralizer Filter:**

#### **Backwash Flow Rate:**

One problem that may occur is if you do not have enough backwash flow rate to properly clean the Neutralizer filter. You can verify the backwash flow rate by running the drain line into a bucket and timing it when the 5900S is in Cycle 1 or backwash. A 1.0 or 1.5 cubic foot system should have 5 gallons per minute and a 2.5 cubic foot system should have 7 gallons per minute of backwash.

In some cases, the 5900S may not be programmed correctly. See this manual for instructions on how to access the master programming.

#### **Error Codes:**

**There are five (5) error codes that could indicate a possible problem with the control valve:**

**Error 2** - Homing slot expected. Valve will start looking for home. (Normal operation continues)

**Error 3** - Encoder is not sending a signal (Check that cable is attached)

**Error 4** - Unable to find homing slot (Valve requires service to continue)

**Error 5** - Motor overload (stalled position or shorted motor valve requires service to continue)

#### **pH is Too High!**

If the pH after your neutralizer is greater than 8.5, your pH kit may turn the color of the reagent, a purple color. This is nothing to be alarmed about. In some cases, too much Corosex added to the Calcite-Corosex blend can cause this problem; it almost never happens with Calcite only systems. If this happens, set the backwash cycle frequency to every night for a couple of weeks, which will cause the media to be washed more thoroughly and use up the excess Corosex. Alternatively, you can manually backwash it several times on a given day, etc. Secondly, you can open the bypass valves slightly, and allow some untreated water to lower the pH by blending in some of the lower pH water. When you go to add more media in 6 to 12 months, just add less Corosex.

#### **pH is Too Low!**

This can happen if the water entering the neutralizer has a pH less than 6.0. Generally, the water after your neutralizer should have a pH of 7.0, and the pH reagent in your pH test kit should turn a light green to darker green depending on the pH. Give your neutralizer some

time, and after several weeks, if the pH is still coming out less than 7 and the test reagent is yellowish in color, you may need to add some Corosex to the neutralizer tank to raise the pH. Contact our office if you don't have any Corosex on hand and/or you ordered a Calcite-only system. The Calcite-only systems work best if your water's pH is between 6 and 6.9 and are desirable as they add fewer minerals to the water, so it is best to start out with a Calcite only system if your pH is 6.0 to 6.9. This works for most our customers.

### **White Spots on Fixtures and Glasses:**

Calcite neutralizers work by adding natural calcium minerals to the water. Many natural well or spring waters that are acidic (with a pH of less than 7.0) are low in minerals and are considered "soft" water. This lack of natural buffering calcium minerals contributes to the corrosive nature of these waters. After the water has passed through the neutralizer, the water will be higher in calcium and "harder" but typically not hard enough to warrant a water softener, which removes calcium hardness.

It is more common to see some white film or spotting on fixtures if you are using a blend of Calcite and Corosex. In some cases, it might be that too much Corosex was used originally in the mix of media.

If you are starting to see white spots and films on surfaces after the neutralizer has been installed, you might want to take these steps:

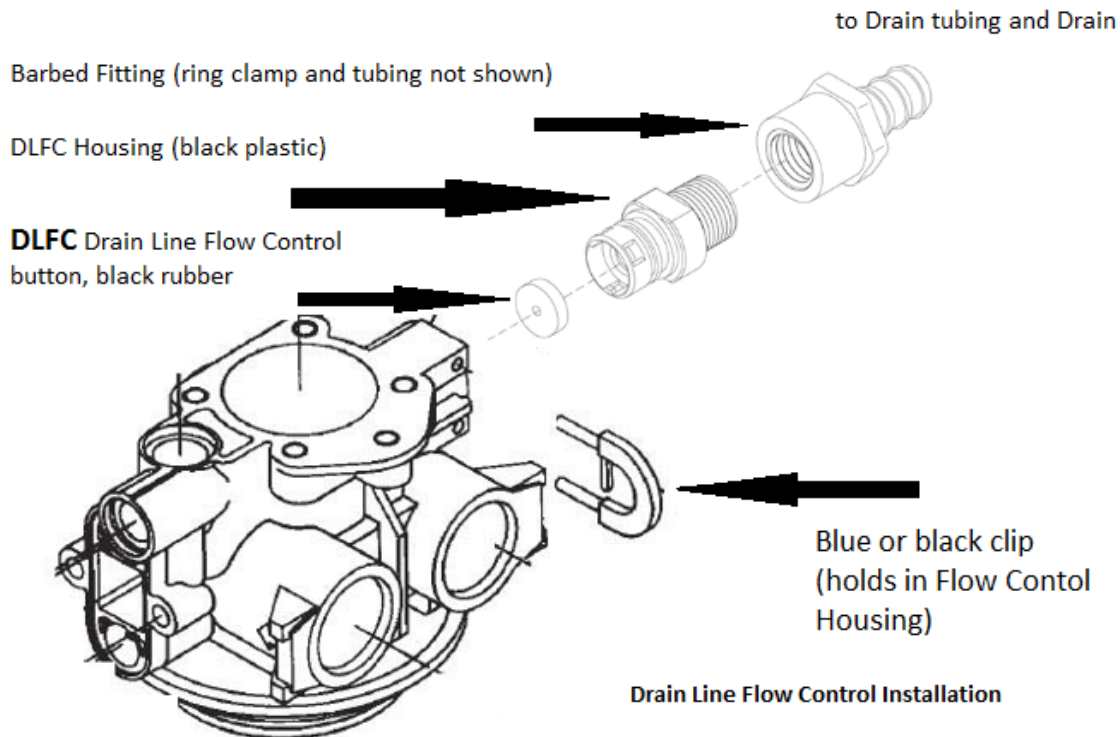
Set the backwash frequency for every 3 days for a couple of months.

Check the hardness level before and after. If your hardness is higher than 5 grains per gallon after the neutralizer, your neutralizer may be adding more minerals than is needed, and you can open the bypass valves a slight amount to blend in some untreated water.

Check the pH before and after. You only need the pH to be in the 7.0 to 7.5 range. If the pH is higher than that, you may be adding more Corosex than is necessary.

## Drain Line Flow Control:

This has already been installed, you need only attach your tubing and secure it with a ring clamp. If it leaks where the clip inserts, remove the clip and re-insert the fitting. **You must do this with the cover off** and you must be looking at where you are inserting it. The hex nut part of the barb hits the bottom plate and you must push against that, while you push and twist the DLFC housing, to get it to seat.



Control valve body  
(cutaway view)

Questions? Call us at 1-888-600-5426 or email  
support@cleanwaterstore.com

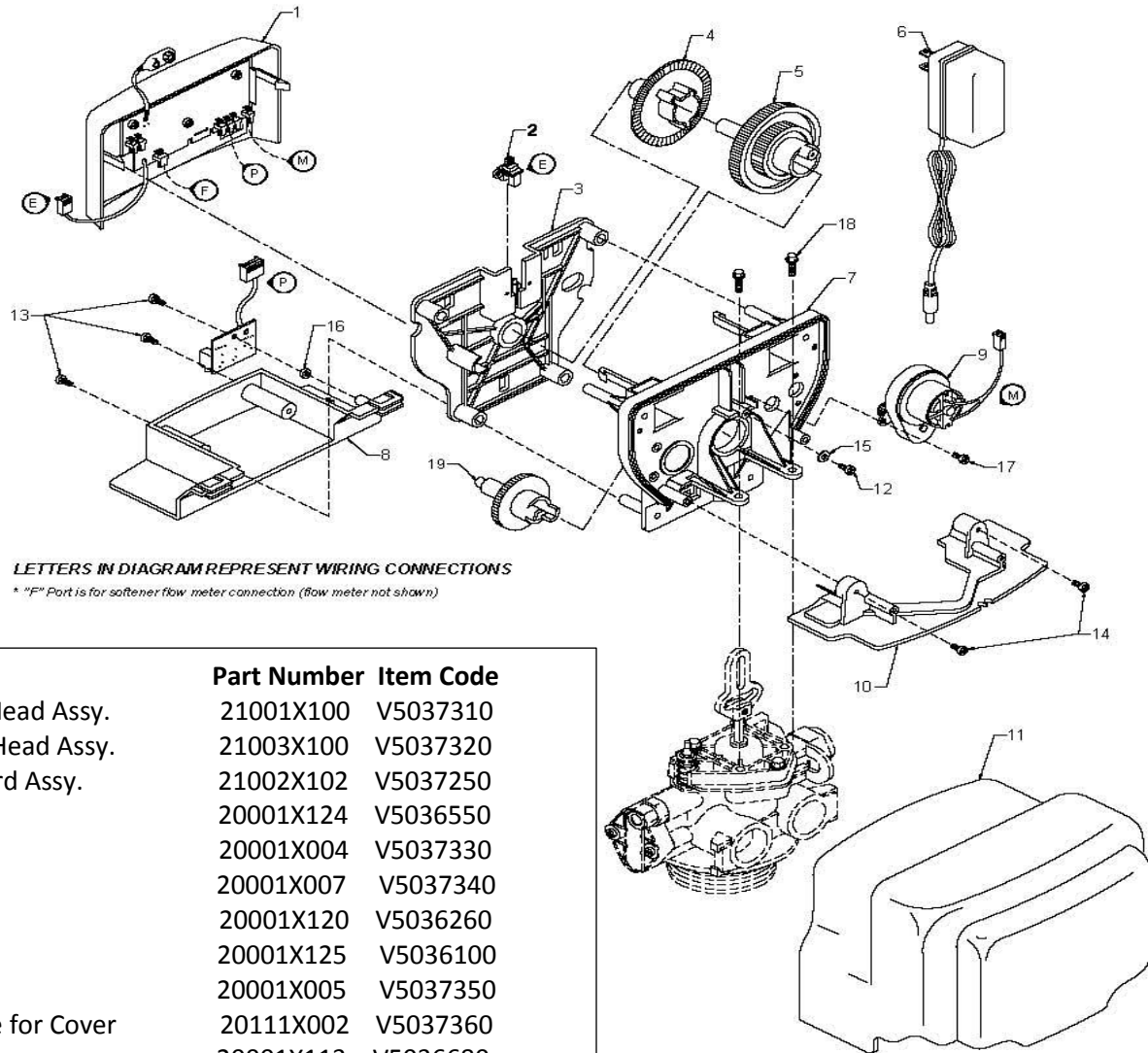
Remove the black plastic Flow Control Housing from the control valve (remove blue or black clip first).

Install the DLFC button. Make sure the beveled edge is facing the flow coming out of the valve.

Use 2-3 wraps of teflon tape and use paste on the male thread of the housing, then screw on the female x barb adaptor. Push on the tubing and secure with a ring clamp.

Lube the O-ring on the Housing and make sure you are pushing the whole assembly back into the valve **STRAIGHT**, or you will roll or tear the O-ring on the housing. Insert, and twist and push at the same time, and it will seat properly. Replace the blue or black clip.

## Powerhead Assembly:



Description	Part Number	Item Code
0 Timered Power Head Assy.	21001X100	V5037310
0 Metered Power Head Assy.	21003X100	V5037320
1 Filter Circuit Board Assy.	21002X102	V5037250
2 Encoder	20001X124	V5036550
3 Front Plate	20001X004	V5037330
4 Encoder Wheel	20001X007	V5037340
5 Main Gear	20001X120	V5036260
6 Power Supply	20001X125	V5036100
7 Back Plate	20001X005	V5037350
8 Lower Front Base for Cover	20111X002	V5037360
9 Motor	20001X113	V5036680
10 Lower Back Base for Cover	20111X003	V5037370
11 Valve Cover	20111X000	V5037380
12 Piston Screw	20001X003	V5033050
13 Screw	SC10	V5037390
14 Screw	SC9	V5037400
15 Piston Washer	20001X002	V3003040
16 Washer Circuit Board	20111X014	V3003070
17 Screw Motor	SC2	V5037410
18 Valve Hex Screw	20001X001	V5037420
P Power Supply Circuit Board	EVB-019-PWR-BT	V5037430

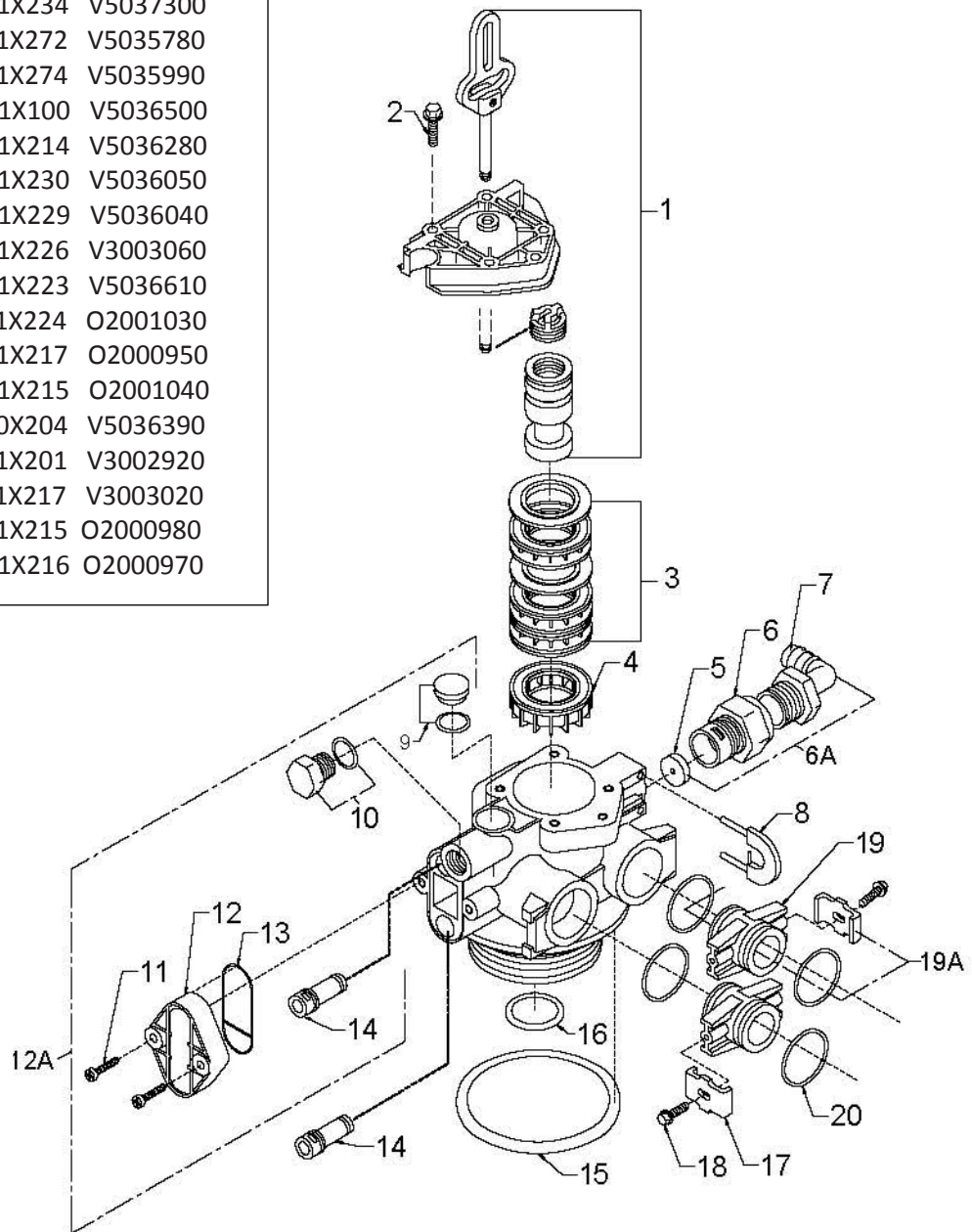
## Valve Body Assembly:

### Description

### Part#

### Item Code

1 Piston Assembly	20001X231	V5036380
2 10-24 X 13/16" Screw	20001X226	V3003030
3 Seal and Spacer Kit	20561X253	V5036410
4 End Spacer	20001X234	V5037300
5 Flow Control Button 5.0 GPM	20251X272	V5035780
5 Flow Control Button 7.0 GPM	20251X274	V5035990
6 Plastic Flow Control Housing	20251X100	V5036500
8 Drain Retainer	20001X214	V5036280
9 O Ring & Brine Valve Cap Assembly	20001X230	V5036050
10 O Ring & Filter Plug Assembly	20001X229	V5036040
11 10-24 X 1 Screw	20001X226	V3003060
12 Injector Cap	20001X223	V5036610
13 Injector Seal	20001X224	O2001030
14 Injector Plug & O Ring Assembly	20001X217	O2000950
15 O Ring	20561X215	O2001040
16 O Ring	2000X204	V5036390
17 Mounting Clip	20561X201	V3002920
18 8-18 X 5/8" Screw	20561X217	V3003020
19 Adapter Coupling w/O-ring	20561X215	O2000980
20 O Ring	20561X216	O2000970





## Water Filters/ Softeners/ Conditioners Limited Warranty:

We warrant this water filter/ softener/ conditioner, when installed according to factory recommendations, to be free from defects in materials and workmanship as follows:

### -----Limited Warranty-----

This water conditioner unit is comprised of the finest industry components available. Each individual component used in the assembly of our equipment is covered by the original equipment manufacturer's warranty. All components, except those specifically listed below, are warranted for a period of one (1) year from date of installation to the original purchaser to be free of defects in materials and workmanship subject to the manufacturer's conditions and/or the conditions shown below.

### -----Mineral Tanks-----

The fiberglass, polyglass or composite mineral tanks used in the assembly of this unit are warranted to be free of defects in materials and workmanship for a period of ten (10) years on 6" – 13" size tanks, and five (5) years on 14" and larger size tanks used for softener/filtration applications, subject to the manufacture's conditions and/or the conditions shown below. Warranty does not cover exposure to weather, freezing, fractures caused by external impact, or exposure to vacuum.

### -----Control Valves-----

The CWS control valve is warranted to be free of defects in materials and workmanship for a period or seven (7) years, subject to the manufacturer's conditions and/or the conditions shown below. Fleck & other brand control valves have 5-year warranty.

### -----Conditions-----

1. This warranty only covers water conditioners installed for residential use. Water conditioners installed for commercial or industrial applications are guaranteed for one (1) year from the date of installation.
2. Installation must be made in accordance with legal or local codes and manufacturer's recommendations.
3. Failure must not result from exposure to weather, rodents, misuse, alteration, fire, lightning, power surges or neglect.
4. Water pressure must not exceed 100 PSI and water temperature must not exceed 100 degrees.
5. Subject to the above terms and conditions we will replace and/or repair, at our option, any parts of the water conditioner found defective in materials and workmanship. Defective parts must be returned, freight pre-paid for repair or replacement.
6. This warranty does not cover labor, shipping charges, damages caused by delays of consequential damages or other causes beyond our control. Warranty does not cover pipes, fixtures or appliances. Warranty extends to the actual water conditioner components only.
7. This warranty is to the original purchaser and is not transferable after the third year to any subsequent owner(s).
8. No other guarantees or warranty, expressed or implied, is applicable to our product. No repair or replacement made under the terms of the warranty shall extend this warranty.