

## CWS F5 Manual Carbon Filter Installation & Start-Up Guide

Thank you for purchasing a Clean Water System! With proper installation and a little routine maintenance your system will be providing crystal clear chlorine-free 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.

CARBON MEDIA CONTAINS DUST. USE PAPER MASK AND VENTILATE TO AVOID BREATHING DUST. Use spray bottle to wet down media when pouring.



### 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)

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### Packing List

**All systems include** a manual backwash control valve; media funnel for adding the carbon media, t

#### **Carbon Filter 0.5 cubic foot size**

6" x 35" filter tank with distributor tube  
7 lbs. filter gravel  
0.5 cubic foot of activated carbon.

#### **Carbon Filter 0.75 cubic foot size**

8" x 44" filter tank with distributor tube  
8 lbs. filter gravel  
0.75 cubic foot of activated carbon.

#### **Carbon Filter 1.0 cubic foot size**

9" x 48" filter tank with distributor tube  
12 lbs. filter gravel  
1 cubic foot of activated carbon

#### **Carbon Filter 1.5 cubic foot size**

10" x 54" filter tank with distributor tube  
16 lbs. Filter gravel  
1.5 cubic foot of activated carbon

#### **Carbon Filter 2.0 cubic foot size**

12" x 52" filter tank with distributor tube  
20 lbs. filter gravel  
2.0 cubic foot of activated carbon

#### **Carbon Filter 2.5 cubic foot size**

13" x 54" filter tank with distributor tube  
35 lbs. filter gravel  
2.5 cubic foot of activated carbon

#### **Carbon Filter 3.0 cubic foot size**

14" x 65" filter tank with distributor tube  
50 lbs. filter gravel  
3.0 cubic foot of activated carbon

## 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 the 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 20 PSI is required. The maximum pressure is 90 PSI.
4. Get all of your plumbing parts together before beginning installation. Installation typically takes 3 to 5 hours. After installation, the Carbon Filter must be manually backwashed 2-3 times, to remove media fines that would otherwise enter the house piping.
5. After the system is installed and running, your water may be discolored or full of sediment or rust, particularly if this is older or corroded piping. This typically clears up over a day or two.

## Best Practices for Piping & Drain Installation

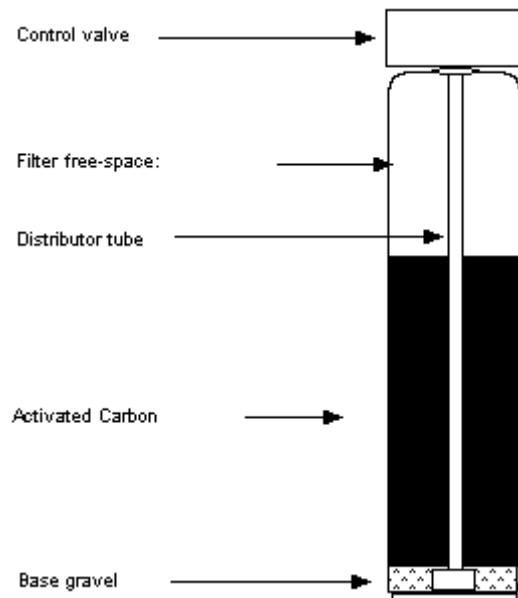
1. If you are on a Well, the Carbon Filter filter is installed after the pressure tank.
2. Make sure to follow to connect the IN pipe to the CWS F56 inlet and the OUT pipe to the outlet.
3. Make sure there is a working gate or ball valve before and after the CWS F56 Carbon Filter filter. Install a hose bib (a faucet that you can attach a garden hose to) after the carbon filter. This makes it easy to rinse your new Carbon Filter filter on start-up and gives you a place to test the water before it enters your household plumbing.
4. If you are using copper piping, do not sweat the copper pipe directly on to the CWS F56 control valve. Avoid heating up the CWS F56 control valve plastic with the torch.
5. Install your new system with stainless steel flex lines OR use pipe unions, so you can easily remove the manual backwash control valve later to replace the carbon filter media.
6. The drain line tubing (not supplied) is connected to a drain from the drain outlet using flexible ½" ID tubing. Note that the drain can run up above the CWS F56 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.

## How Your Carbon Filter Works

See Fig 1. In your Carbon Filter, 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 Carbon Filter removes sediment and can be backwashed, which cleans and re-classifies the carbon, preventing channeling.

During backwash, the water flow is reversed, and water flows down the distributor tube and up through the media, lifting and expanding the Carbon media. During the backwash, the carbon is cleaned by the action of the water flowing through it.

**Fig 1 - Carbon Filter Tank Water Flow**



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# CWS F56 Carbon Filter Installation & Startup Guide

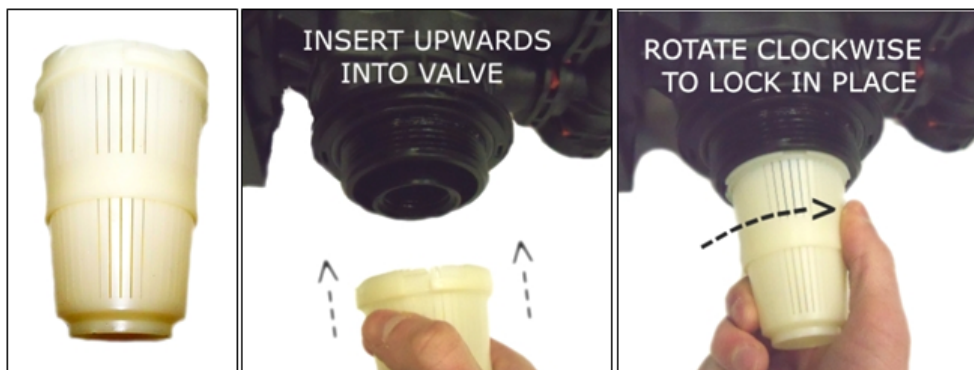
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## Assembly and Installation Instructions

1. Wrap the top of distributor tube with black electrical tape or blue painter's masking tape so that no gravel or Carbon media will go down the distributor tube when adding the media. Also, leaving a folded tab of tape that you will be able to grab onto to gently pull off the tape after filling the tank. 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.



2. Add the filter gravel that came with your order. You want the gravel to cover the bottom distributor screen before adding the Carbon media.
3. Next add Carbon media. The tank will be about 2/3rds full of media. Do not overfill past the two-thirds mark, or the system will not backwash properly.
4. Remove tape from top of distributor tube. Be careful not to pull up distributor tube when removing tape.
5. At this point, fill tank completely with water. This will allow the Carbon Filter media to settle and reduce the need of purging the air out of the tank later.
6. Attach plastic top screen to the under-side of the CWS F56 control valve. It is a funnel-shaped plastic screen that snaps on to the control valve and prevents media from being backwashed out to drain during the regeneration cycles.



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## CWS F56 Carbon Filter Installation & Startup Guide

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7. Now install your water pipes to the CWS F56 valve. Make sure inlet is installed to the 'In' pipe connector on the bypass valve and the outlet is on the "Out" connector.
8. Connect some flexible tubing from the drain connection on the CWS F56 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 CWS F56 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".
9. Note that it is desirable to be able to run the drain line into a bucket in order 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, and you are able to remove the hard PVC drain piping and attach flexible tubing should you ever desire for testing purposes, it is OK to use rigid PVC pipe for the drain. Make sure the drain tubing is firmly clamped to the barbed fitting with a hose clamp to prevent leaks.
10. Make sure to backwash the carbon and rinse the media thoroughly before using for at least 20 – 30 minutes.