



Clean Water Made Easy

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CWS F5 Manual Neutralizer 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 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 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

See more information on our website: www.cleanwaterstore.com/resources

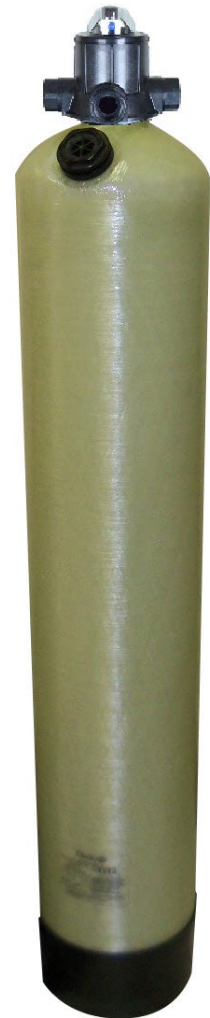


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Packing List

All systems include a manual backwash control valve; media funnel for adding the Calcite media

Calcite Filter 1.0 cubic foot size

9" x 48" filter tank with distributor tube
12 lbs. filter gravel
100 lbs Calcite Media

Calcite Filter (Short) 1.0 cubic foot size

13" x 30" Vortech filter tank with distributor tube
16 lbs. filter gravel
100 lbs Calcite Media

Calcite Filter 1.5 cubic foot size

10" x 54" filter tank with distributor tube
16 lbs. Filter gravel
150 lbs Calcite Media

Calcite Filter 2.0 cubic foot size

12" x 52" filter tank with distributor tube
20 lbs. filter gravel
200 lbs Calcite Media

Calcite Filter 2.5 cubic foot size

13" x 54" filter tank with distributor tube
35 lbs. filter gravel
250 lbs Calcite Media

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 Calcite 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 Calcite 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 Calcite Filter filter. Install a hose bib (a faucet that you can attach a garden hose to) after the Calcite filter. This makes it easy to rinse your new Calcite 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 Calcite 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 Neutralizer Filter Works

See Fig 1. In your Neutralizer Filter, water enters the top of the tank (red arrows) and flows down through the media and up the distributor tube (blue arrows).

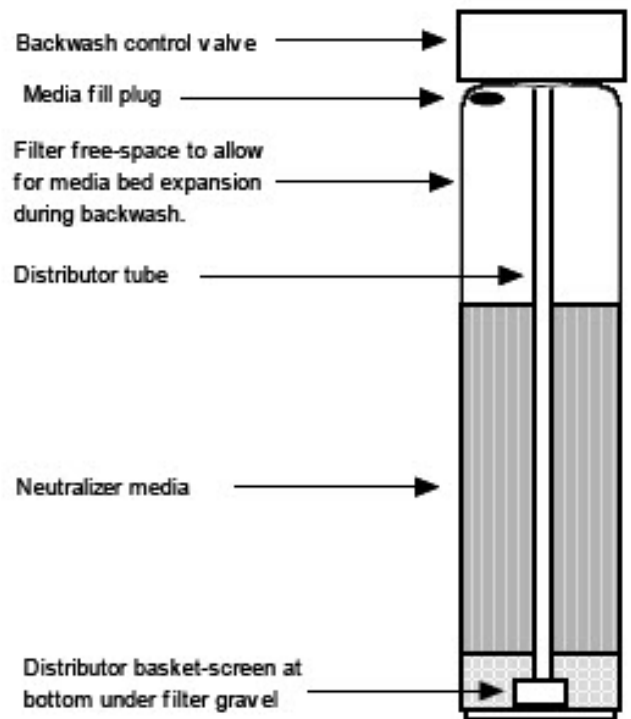
The downflow type Calcite Filter removes sediment and can be backwashed, which cleans and re-classifies the media, preventing channeling.

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

FILTER POSITION: During normal use the water flows down through Calcite media to bottom of tank and up through the distributor and in to the home or business.

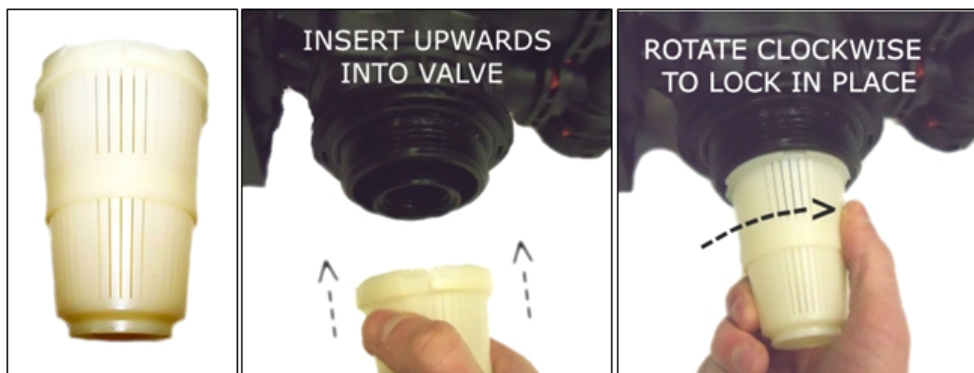
BACKWASH POSITION: When the handle is moved to the backwash position, water flows down distributor tube and lifts up Calcite media and water flows to drain, cleaning the Calcite media.

FAST RINSE: When the handle is advanced to the fast rinse position water flows down through the Calcite media up the distributor tube and out to drain, rinse the Calcite after it has been backwashed.



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 Calcite 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.
2. 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.
3. Add the filter gravel that came with your order. You want the gravel to cover the bottom distributor screen before adding the Calcite media.
4. Next add Calcite 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.
5. If you received Corosex or Flomag (magnesium oxide) in your shipment (used with a pH of 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
6. Remove tape from top of distributor tube. Be careful not to pull up distributor tube when removing tape.
7. At this point, fill tank completely with water. This will allow the Calcite Filter media to settle and reduce the need of purging the air out of the tank later.
8. 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.





9. Now install your water pipes to the CWS F56 valve using the pipe fitting connectors on each valve.

10. Each pipe fitting connector connects to the Manual Backwash Valve with a washer seal. Do not use pipe thread compound or Teflon tape on these connectors between the connector and the valve body.

11. Do use some Teflon tape or Teflon pipe joint compound to connect your piping to the fitting. Do not overtighten or use excess Teflon tape.

12. Make sure inlet is installed to the 'In' pipe connector on the bypass valve and the outlet is on the "Out" connector.

13. Connect the Drain Line Flow Control to the Drain port and then 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.

14. It is OK to run the drain line up and over the CWS F56 Calcite 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 ¾" or 1".

15. 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.

16. Make sure to backwash the Calcite and rinse the media thoroughly before using for at least 20 – 30 minutes.

Backwashing and Rinsing

Your control valve has 3 positions:

1. BACKWASH
2. FAST RINSE
3. FILTER

BACKWASH: Advance the handle to backwash position and allow Calcite media to backwash to drain for 15 to 20 minutes.

NOTE: Calcite media has a lot of white fines and dust. When first installing or adding Calcite to your system, the media must be rinsed by cycling between the backwashing and rinse cycles until the water runs clear through the rinse cycle.

FAST RINSE: Advance the handle to the fast rinse position and rinse the Calcite after it has been backwashed.

FILTER POSITION: When rinsing is complete turn handle to filter position and run water in the home until water is clear.

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 .
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.
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.
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.
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. Do not use Teflon tape or plumbing grease, it is an O-ring seal.
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 Magnesium Oxide (sold as Corosex or FloMag brand) should be used.

Calcite is a calcium media consisting of calcium Calciteate and will raise the pH slowly. Calcite will not raise the pH much over 7.2.

Corosex/FloMag 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.

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 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 are sold and shipped in separate boxes. It does not have to be completely blended to use as it will mix during the backwash and rinse cycles.

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.

WARNING: If you are using a Calcite Blend, do not add all the media that was shipped with your order. This will result in the tank being more than 2/3 full and can cause media to get back up into the control valve during backwashing. This can then result in damage to the control head. If the tank is overfilled, use a shop vacuum to remove media back to the 2/3 fill line

How much Calcite and Flomag (Corosex) Weighs Per Cubic Foot

- 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.

Neutralizers 1.0 Cubic Foot: use 90 lbs. Calcite and 10 lbs. Corosex Your new 1.0 Cubic Foot Neutralizer Blend filter order 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. (4 50 lb. boxes) 2.2 cu ft.
- Corosex 20 lbs. (1 20 lb. boxes) .26 cu ft.

My pH is Too High after Neutralizer

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.

My pH is Too Low after Neutralizer

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. 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 customer.

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 Flomag (also sold under the Brand “Corosex”).

In some cases, it might be that too much Flomag 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:

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

Manual Backwash Neutralizer Water Filters Limited Warranty

We warrant this water filter 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 manufacturer'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 of five (5) years.

-----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 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.

Any product returned to Clean Water Store without a valid return authorization number will be rejected. Any product found to be defective will, at the sole discretion of Clean Water Store be repaired or replaced. Clean Water Store is not responsible for shipping cost to the repair facility.