7500-M Neutralizer 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.

INSTALL INDOORS. NOT FOR OUTDOOR USE. PROTECT FROM WEATHER.

Note: Your 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 in order to level it.

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

Neutralizer 1.0 cubic foot size

7500 Backwash Control Valve

10” x 44” filter tank with distributor tube

Blue or black funnel for adding media first time

12 lbs. Filter gravel + 1 cubic foot of Calcite media

Neutralizer 1.5 cubic foot size

7500 Backwash Control Valve

10” x 54” filter tank with distributor tube

Blue or black funnel for adding media first time

16 lbs. Filter gravel + 1.5 cubic feet of Calcite media

Neutralizer 2.0 cubic foot size

7500 Backwash Control Valve

12” x 52” filter tank with distributor tube

Blue or black funnel for adding media first time

20 lbs. Filter gravel + 2 cubic feet of Calcite media

Neutralizer 2.5 cubic foot size

7500 Backwash Control Valve

13” x 54” filter tank with distributor tube

16 lbs. Filter gravel + 2.5 cubic foot of Calcite media

Blue or black funnel for adding media first time

*If you ordered the 90/10 Calcite/Corosex blend, you should also have 10 lbs of Corosex, and if you ordered the 80/20 Calcite/Corosex blend then you should have 20 lbs of Corosex, although the weights may not be exact.

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.

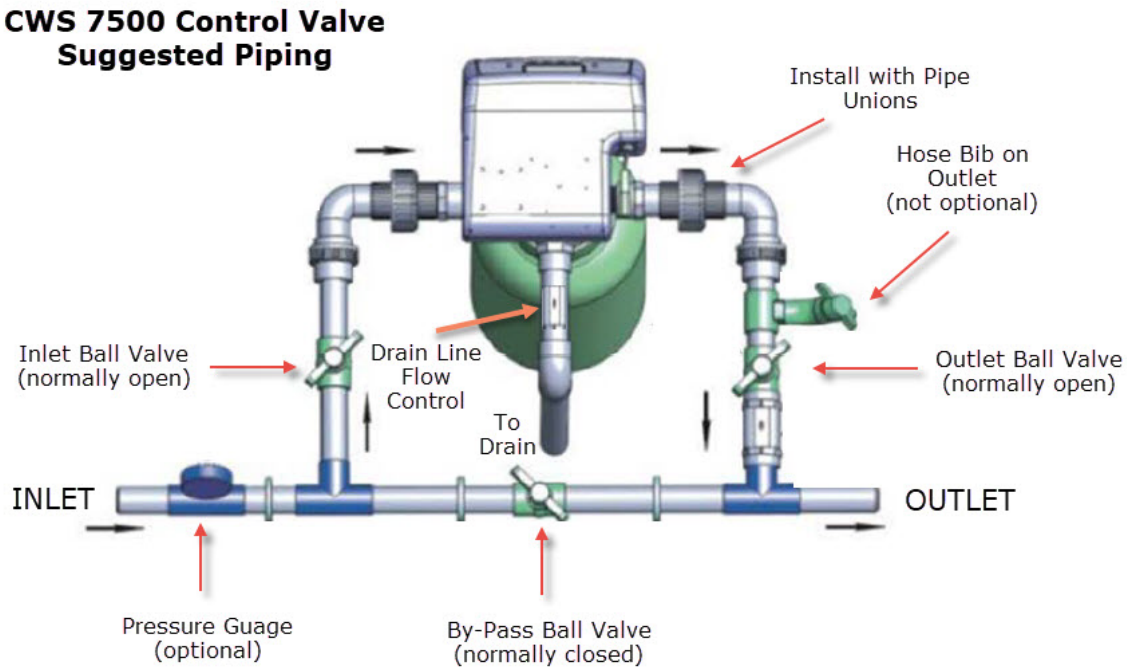
3. Pick a suitable location for your filter system on a dry level spot where it won't be exposed to freezing temperatures. A minimum of 20 PSI is required. Maximum pressure is 90 PSI.

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.

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 Fig 1

1. See typical installation on page 7 (Fig 3). The Neutralizer is installed after the pressure tank.



2. Install a 3 valve bypass using PVC or stainless steel balls vales (not brass)

3. Make sure to connect the IN pipe to the 7500 inlet and the OUT pipe to the outlet. As you face the 7500 control from the front, the water enters on the right and exits on the left.

4. Install the external DLFC (drain line flow) on the drain outlet port. Make sure the flow direction is correct per the flow direction arrow.

5. Pre-make your fittings using thread tape on all threaded fittings EXCEPT the three shipped with your unit going into the valve head. These seal using the blue seal. Make sure not to overtighten these fittings into the valve as you will crack the valve body. CAUTION NO LUBE OR THREAD TAPE IS NEEDED ON THE FITTINGS.

6. Make sure there is a working gate or ball valve before the 7500 Neutralizer and also one after as shown in Fig 2. 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.

7. If you will be using copper piping, do not sweat the copper pipe directly on to the 7500 control valve. Avoid heating up the 7500 control valve plastic with the torch.

8. 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.

9. 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 7500 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.

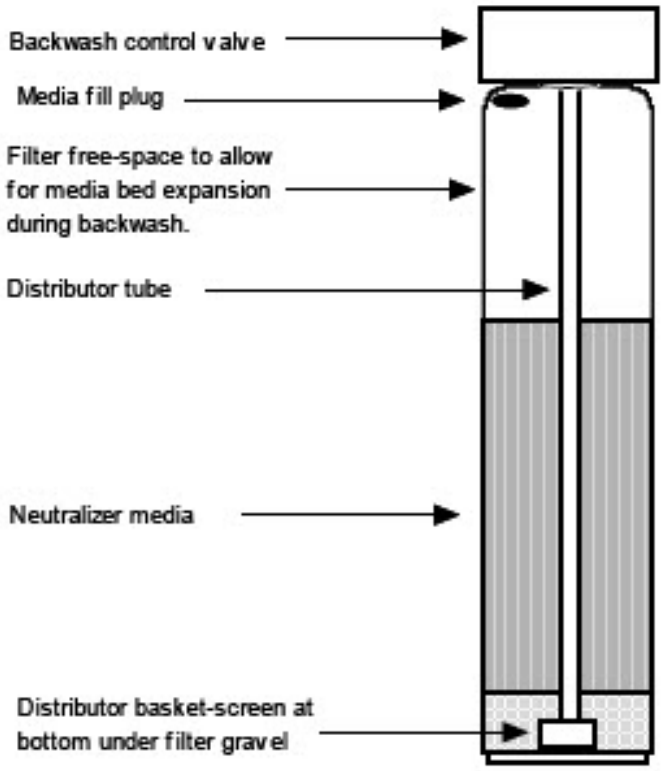
Installation of Your System On Copper or Metal Piping Systems

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

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. Wire clamps and wire can be purchased at any home depot or hardware store.

How Your Neutralizer Works Fig 2



In your Neutralizer, the water enters the top of the tank and flows down through the media and up the distributor tube and out to the home plumbing.

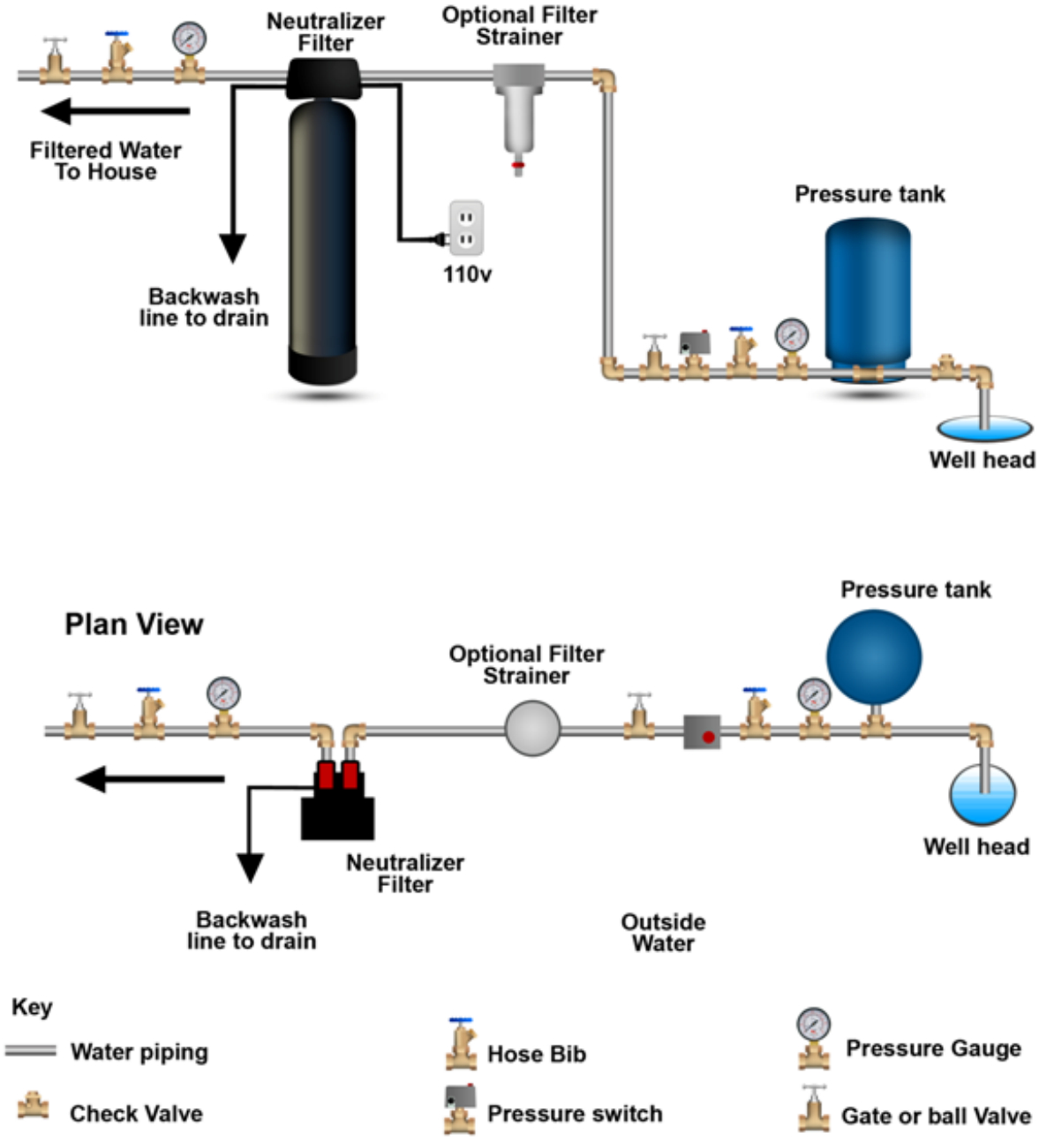
The calcite neutralizer media raises the pH of your water as the water flows through it.

Periodically (once or twice a week) the neutralizer automatically backwashes 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 3. Typical Neutralizer 7500 piping installation on well water



Assembly and Installation Instructions

1. Wrap the top of distributor tube with electrical or duct tape so that no gravel or Calcite will go down the distributor tube when adding the media.

2. Add the filter gravel that came with your order. You will want the gravel to cover the bottom distributor screen before adding the Calcite media.

3. If you received Corosex (also known as Flomag) 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. Mix together in a bucket and add into the tank until it is 2/3rds full, do not fill past 2/3rds.

4. 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 later

5. Remove cap or tape from top of distributor tube. Be careful not to pull up distributor tube

6. If possible, at this point, fill the tank completely with water. This will allow the Neutralizer media to settle and eliminate the need of "purging" the air out of the tank later.

7. Attach plastic top screen to the under-side of the 7500-control valve. It is a funnel-shaped plastic screen that snaps on to the control valve and prevents resin from being backwashed out to drain during the regeneration cycles. It may twist on clockwise or counterclockwise.

8. Add a small amount of silicone grease to the tank threads and screw on 7500 control valve carefully. Do not use pipe-joint compound, vegetable oil, Teflon tape, or Vaseline or other petroleum greases to lubricate tank threads.

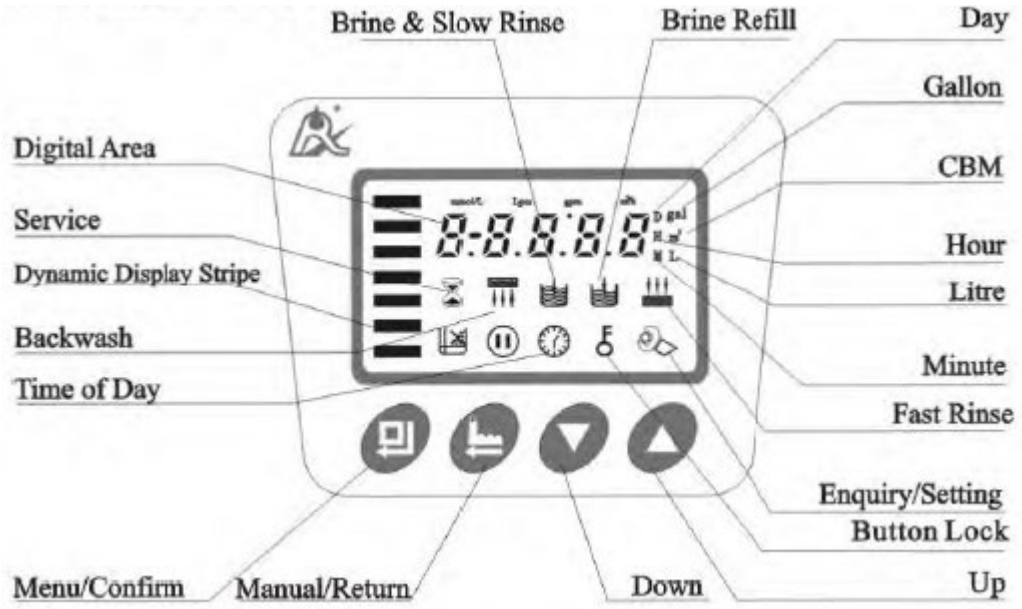
9. DO NOT USE VEGETABLE OIL OR PETROLEUM GREASE ON ANY PART OF THE 7500 CONTROL VALVE. O-rings are OK to lubricate but not the main tank threads.

10. Connect some flexible tubing from the drain connection on the 7500 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 7500 Neutralizer 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".

11. 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.

Programming Your Valve and Setting Time and Days for Backwash

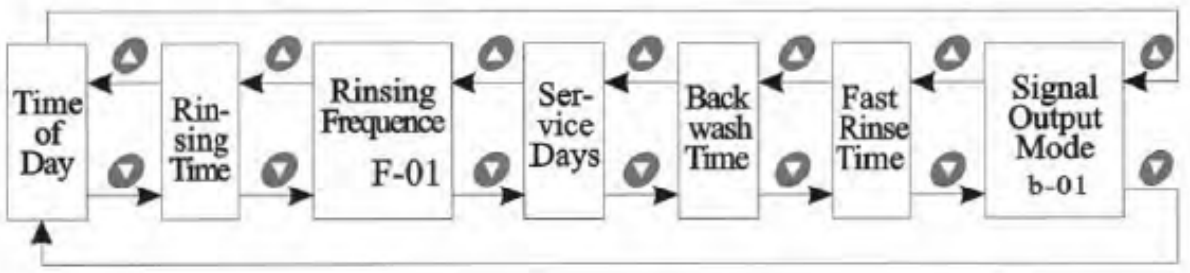
Next, you will need to program the system to work as a Neutralizer Filter. There are a few settings that must be changed before the system can be put into service. Plug in the control valve and begin the programming instructions.



***IMPORTANT*:** Before any operation, the valve menu must be unlocked. If the button lock indicator is displayed, press and hold both the Up and Down buttons for 5 seconds. A sound will indicate the menu is unlocked. The menu will re-lock automatically after 1 minute of inactivity.

1. To begin programming your valve, unlock the menu and press the Menu/Confirm button. This puts the valve into program display mode, indicated by the Enquiry/Setting icon being displayed. The Enquiry/Setting icon is displayed whenever you are changing the parameter of a programming mode.

2. The sequence of programming modes is shown in the diagram below. To switch between modes, press the up or down button according to which direction your mode is. The modes can only be changed when the Enquiry/Setting button is displayed and you are not currently modifying any other parameter.



1) To change the Time of Day:

Change programming mode to Time of Day ([00:00] and time of day icon displayed). The hour and Enquiry/Setting icon will be flashing. Change the hour value with the Up/Down buttons, then press Menu/Confirm to move onto the minute value. Change this value with Up/Down, and press Menu/Confirm again to confirm the time.

2) To change the Rinsing Time:

The rinsing time is the hour of day that the system will turn on to perform its function. **We recommend setting the system to backwash at 2 AM [02:00]**, or any time that it is unlikely any water will be used. Note the valve uses the 24-hour clock.

The default setting is [02:00]. The max setting is [23:59]. To change, set the programming mode to Rinsing Time ([00:00]). Press the Menu/Confirm button and use the Up/Down buttons to change the hour value. Press the Menu/Confirm button again and change the minute value using the Up/Down buttons. Finally, press Menu/Confirm to confirm your rinse time.

3) To change the Rinsing Frequency:

The rinsing frequency is how many times the system will backwash and rinse per service.

This should be left at its **default, [F-00].** This will have the system only backwash and rinse once per service.

4) To change the Service Days:

Service days indicates how often the system will operate and backwash/rinse. **The recommended setting for a neutralizer filter is 7 days.**

To set this, change the programming mode to Service Days ([1-03D]). Press the Menu/Confirm button and use the Up/Down buttons to set it to your desired amount. Press Menu/Confirm to confirm your input.

5) To change the Backwash Time:

The backwash time is the amount of time (in minutes) that the system will backwash for.

For a neutralizer filter, **set the backwash time to 10 minutes [2-10:00].** To change this, set the programming mode to Backwash Time ([2-10:00] and backwash icon displayed). Press the

Menu/Confirm button and use the Up/Down buttons to set it to **[2-10:00].** Press Menu/Confirm to confirm the backwash time.

6) To change the Fast Rinse Time:

The fast rinse time is the amount of time (in minutes) that the system will rinse for.

For a neutralizer filter, **set the fast rinse time to 6 minutes [3-06:00].** To change this, set the programming mode to Fast Rinse Time ([3-10:00] and fast rinse icon displayed). Press the Menu/Confirm button and use the Up/Down buttons to set it to **[3-06:00].** Press Menu/Confirm to confirm the fast rinse time.

7) To change the Signal Output Mode

The signal output mode refers to when the system receives external function.

Leave this at its default, [b-01].

After configuring, press the Manual/Return button to exit programming mode.

Initial Backwash

1 After programming, the system must be run through an initial backwash.

2 Close inlet ball valve and outlet ball valve and open the bypass valve.

3 Press the Manual/Return button to enter the backwashing cycle. When the backwash icon is displayed, slowly open the inlet valve B to a quarter position to make the water flow into the resin tank; you should be able to hear air escaping from the drain pipeline.

4 After all the air is out of the pipeline, open inlet valve B and clean the foreign materials in the tank until the water is clean.

5 If possible 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.

0.75 CF	5 GPM
1.0 CF	5 GPM
1.5 CF	5 GPM
2.0 CF	8 GPM
2.5 CF	10 GPM
3.0 CF	12 GPM

6 After the backwash, the system will automatically go into the fast rinse stage. Both stages will last as long as you have programmed the valve for. The control valve will return to service status (indicated by the up flowing meter on the left) after the backwash and rinse are complete.

7 Repeat the Regeneration (backwash and rapid rinse cycle) step 3-4 more times until you see clear water through the drain line or your hose bib. Once you have tested your PH at the hose bib and it is within range, You Can open up the outlet valve to your house.

Congratulations, you are done setting up your valve!

Maintenance

Check level of neutralizer media in the tank by shining a flashlight from behind. When new or recently serviced the media should be about 2/3rds full in the tank.

When level of media drops to 50% or less add more neutralizer media to bring back up to 2/3rds full and then backwash and rinse 2 -3 times to clean the new media.

Using your pH test kit, check pH before and after the neutralizer.

Troubleshooting the 7500 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 7500 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 10 gallons per minute of backwash.

In some cases, the 7500 may not be programmed correctly. See the 7500 service manual for instructions on how to access the master programming.

What To Do If Your Filter Tank Does Not Sit Level On the Floor

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 in order to level it.

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 neutralizer-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 up the bypass valve slightly, and allow some untreated water to lower the pH by blending in some of the lower pH water. In 6 – 12 months or next service 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 a majority of 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 contribute 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 not hard enough to warrant a water softener, which removes hardness.

It is more common to see some white film or spotting on fixtures if you are using a blend of Calcite and Corosex. 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 up the bypass valves a slight amount in order 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 minerals than is necessary.

Manufacturer Troubleshooting Guide

A.Control Valve Fault

Problem	Cause	Correction
1.Filter fails to rinse	A. Electrical service to unit has been interrupted. B. Rinse time is set incorrect. C. Valve is defective.	A. Assure permanent electrical service (check fuse, plug or switch). B. Reset the time C. Check or replace the valve
2. Filter supply raw water	A. Bypass valve is open B. Riser pipe leak C. Interval valve leak	A. Close the bypass valve B. Make sure riser pipe and O-ring are not cracked. C. Check or change valve body.
3. Water pressure lost	A. Iron is in the water supply pipe. B. Iron mass is in the filter.	A. Clean the water supply pipe. B. Clean valve and add filter materials cleaning chemical, increase frequency of rinsing.
4. Loss of filter materials through drain line	A. Air in the water system. B. The strength of backwash is too high. C. Strainer is broken.	A. Assure that the system is dry and has proper air eliminator control. B. Reduce the strength of backwash. C. Replace the strainer.
5. Control valve cycle continuously.	A.Locating signal wiring break-down. B. Valve is faulty. C. Foreign material stuck the driving gear.	A. Check and connect locating signal wiring. B. Replace valve. C. Take out foreign material.
6. Drain flows continuously.	A. Internal valve leak. B. When electricity fails to supply, the valve is in backwash or fast rinse position.	A. Check and repair valve body or replace it. B. Turn off bypass valve and restart when power on.

B.Controller Fault

Problem	Cause	Correction
1. All indictors display on front panel.	A. Wiring of display board with control board fails to work. B. Control board is faulty. C. Transformer damaged. D. Voltage is not stable.	A. Check and replace the wiring. B. Replace control board. C. Check and replace transformer. D. Check and adjust electrical service.
2. No display on front panel.	A. Wiring of display board with control board fails to work. B. Display board damaged. C. Control board damaged. D. Electricity is interrupted.	A. Check and replace wiring. B. Replace display board. C. Replace control board. D. Check electricity.
3. E1 Flash	A. Wiring of locating board with control board fails to work. B. Locating board damaged. C. Mechanical driver fails. D. Faulty control board. E. Wiring of motor with control board is fault. F. Motor damaged.	A. Replace wiring. B. Replace locating board. C. Check and repair mechanical part. D. Replace control board. E. Replace wiring. F. Replace motor.
4. E2 Flash	A. Hall component on locating board damaged. B. Wiring of locating board with control board fails to work. C. Control board is faulty.	A. Replace locating board. B. Replace wiring. C. Replace control board.
5. E3 or E4 Flash	A. Control board is faulty.	A. Replace control board.