



Clean Water Made Easy

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7500-REV4 Nitrate Filter Installation Guide



7500-Rev4 Nitrate Filter Installation & Startup Guide

Thank you for purchasing a Clean Water System!

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

Minimum pressure of 30 PSI recommended.

Maximum pressure recommended 80 PSI.


For indoor installation only.

Protect from sunlight, rain, and freezing.

Nitrate levels can change in well water. It is important to check for nitrate levels before and after you system on a regular basis.

We recommend you have a home nitrate test kit and then have the water tested at a lab annually.

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/resource

7500-Rev4 Nitrate Filter Installation & Startup Guide

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Packing List

All systems include: 7500-REV4 control valve, small tube of silicone grease, bypass valve, 1" pipe connectors, power supply, funnel for adding nitrate media, top screen, start-up guide, and items included in one of the following options:

Find Your Size System to See What is Included:

Nitrate Filter 1.0 cubic foot size

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

Nitrate Filter 1.5 cubic foot size

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

Nitrate Filter 2.0 cubic foot size

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

Nitrate Filter 2.5 cubic foot size

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

Nitrate Filter 3.0 cubic foot size

14" x 65" filter tank with distributor tube
40 lbs. filter gravel
3.0 cubic foot of Nitrate Resin

What to Do if Your Tank is Not Level Out of the Box:

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 knocking it on a concrete or solid floor once or twice to level it.

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Pre-Installation

1. Review your packing list and make sure you have received all the parts before 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, and make sure you have received all of your packages before beginning or scheduling an installation. Installation typically takes 3 to 5 hours. However, after installation the Nitrate Filter must be allowed to run through a complete regeneration (backwash and rinse cycle) which can 2 hours to the time.
5. After the system is installed and running, your water may be discolored particularly if you have older or corroded piping. This typically clears up over a day or two.

Best Practices for Piping & Drain Installation

1. Make sure to connect the Inlet **from** your water source and outlet, following arrows on control valve. Connect the External Flow Control fitting onto the Drain line.
2. Make sure there is a working gate or ball valve before the system and also one after as well as a bypass valve.
3. A hose bib (which is a faucet to which you can attach a garden hose) is **strongly recommended** after the Nitrate Filter and before the second ball valve. This makes it easy to rinse your new Nitrate Filter on start-up and gives you a place to test the water.
4. If you will be using copper piping, do not sweat the copper pipe directly on to the 7500-REV4 control valve.
5. To connect drain line to drain, use an air-gap connection, so that if your sewer or septic tank backs up, it cannot cross connect with the drain tubing.
6. The pipe connectors are 1' male pipe thread but you can add a reducer to reduce to ¾" pipe with common pipe fittings if needed.
7. Make sure bypass valves are closed (system is in bypass) when you first start installing and keep on bypass until you are ready to start it up with the first backwash.



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How the Bypass Valve Works

Turn knob so the valve is bypassed when installing.

When you go to start up system turn the bypass SLOWLY to let water in and put in service.



Installation of Your System in 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.

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How Your Nitrate Filter Works

In the Nitrate filter, water enters the top of the tank and flows down through the media and up the distributor tube. Nitrates are attracted to the resin beads.

During backwash, the water flow is reversed and water flows down the distributor tube and up through the media, expanding the Nitrate media, and removing sediment.

After the backwash stage, salt brine is automatically drawn in from the brine tank which then slowly rinses through the Nitrate resin for 1 hour, allowing the Nitrates to be swapped out with harmless chloride ions.

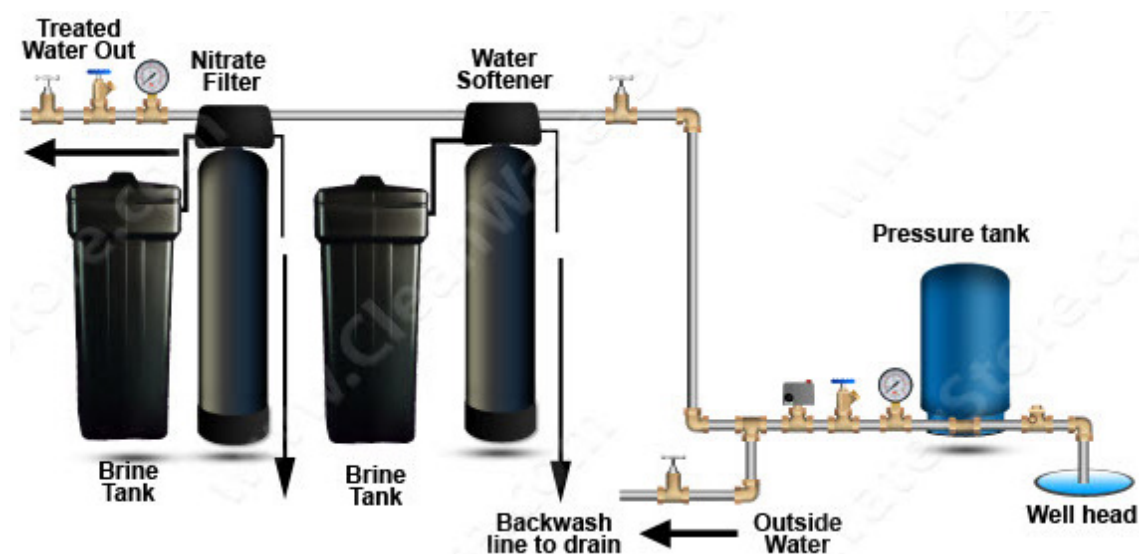
This entire automatic process, called 'regeneration' takes about 90 minutes.

The 7500-Rev4 Control Valve tracks the amount of water that is used and will backwash based on gallons OR every 7 days, whichever comes first.



Diagram of Typical Installation Well Water

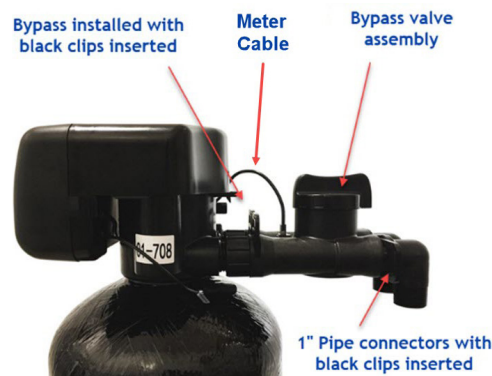
(Optional water softener shown for hard water)



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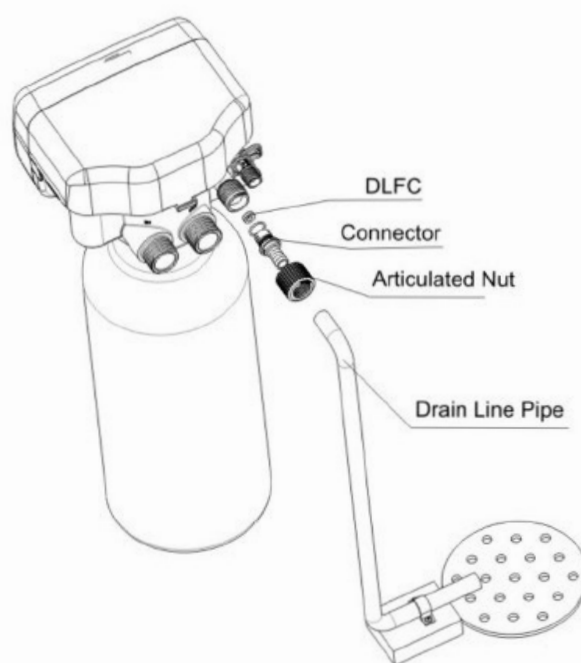
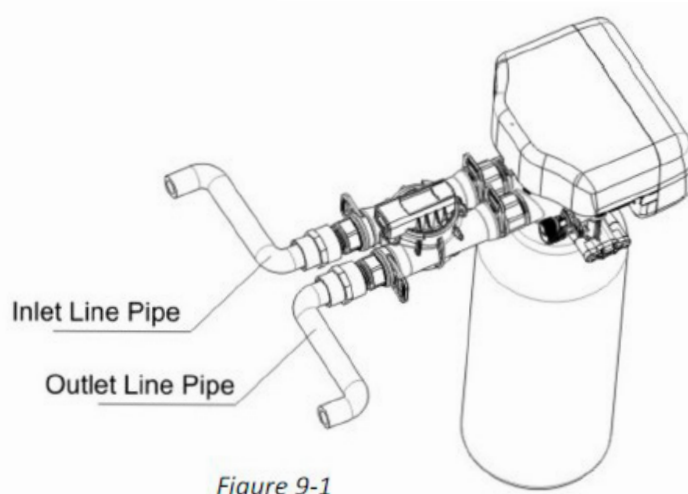
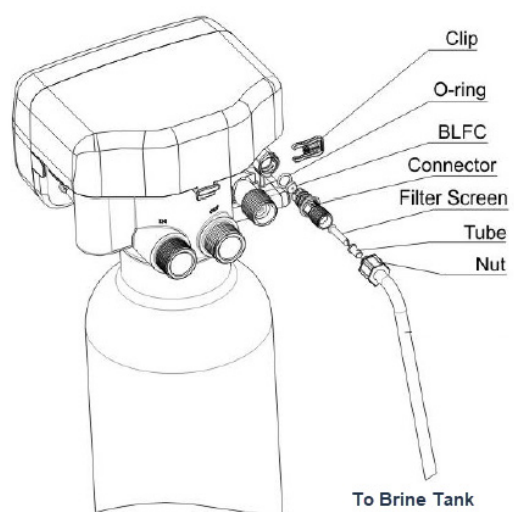
Filter Tank Assembly and Installation Instructions

1. Wrap the top of distributor tube with electrical or duct tape so that no gravel or Nitrate media will go down the distributor tube when adding the media.
2. Add the filter gravel that came with your order. You want the gravel to cover the bottom distributor screen before adding the Nitrate media.
3. Next add Nitrate media. The tank should be about 2/3rds full of media, do not fill more than 2/3rds, even if there is some media left over.
4. Remove cap or tape from top of distributor tube. Be careful not to pull up distributor tube when removing cap or tape.
5. A 1 cup of Clorox or other chlorine bleach and fill tank completely with water. This will allow the Nitrate Backwash Filter media to settle and reduce the need of purging the air out of the tank later. Allow nitrate to soak for at least 1 hour but 24 hours or more is OK.
6. Add a small amount of silicone grease to the inner O-ring, where the distribution tube goes.
7. Next, install the top screen by inserting upwards and rotating to lock in place. (This is a funnel-shaped plastic screen that locks into the bottom side of control valve.
8. Lubricate the main tank O-ring with silicone grease and screw on the 7500-Rev4 control valve carefully. Do not use pipe-joint compound, vegetable oil, Teflon tape, or Vaseline or other grease.
9. Connect bypass assembly with 1" pipe connectors to control valve install black clips and make sure valve is in bypass position.
10. Insert meter cable into meter cable port on bypass.
11. Install inlet and outlet piping and hook up drain line tubing to drain.



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12. If you are in earthquake zone, strap your backwash filter tank to wall with metal strapping.
13. Proceed to programming your 7500-Rev4 control valve timer and backwash frequency.
14. **IMPORTANT: you must program the time and then start a backwash and rinse. The filter system must be backwashed and rinsed several times before using. See following pages for instructions.**



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Programming Your Valve and Setting Time and Days for Backwash



How to Start a Manual Backwash: Press the Back / Regen button

Pressing **"Back Regen"** at any time results in an immediate manual regeneration.

Pressing and holding for 3 seconds, when system is locked, results in a delayed regeneration at the preselected time.

Extended Power Outage Indicator

If power outage exceeds 3 days, the time-of-day indicator "_" will flash 12:12. The current time of day needs to be re-set. All other set parameters remain stored in memory. The valve will resume to operate from the point of the power outage.

Lockout Function

Keypad will lock after 5 minutes without use. To access the parameter changes, press and hold **"Up"** and **"Down"** buttons simultaneously for 3 seconds to unlock.

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Set Time of Day

1. If LOCK icon is lit, press, and hold both **UP** and **DOWN** buttons for 3 seconds to unlock keypad.
2. Then press the **MENU/CONFIRM** button to enter the main menu.
3. Press DOWN button to select "Set Time of Day"
4. Press the **MENU/CONFIRM** button again to change time of day (Hour will flash)
5. Adjust hour by using DOWN or UP buttons.
6. Press the **MENU/CONFIRM** button again to change minutes (Minutes will flash)
7. Adjust minutes by using DOWN or UP buttons.
8. Press Back/Regen



Set Date

1. If LOCK icon is lit, press, and hold both **UP** and **DOWN** buttons for 3 seconds to unlock keypad.
2. Then press the **MENU/CONFIRM** button to enter the main menu.
3. Press DOWN button to select "Set Date"
4. Month: Press the **MENU/CONFIRM** button again to change time of day (Month will flash) and adjust to current Month date by using DOWN or UP buttons.
5. Day: Press the **MENU/CONFIRM** button again to change Day date (Day date will flash) and adjust to current day date by using DOWN or UP buttons.
6. Year: Press the **MENU/CONFIRM** button again to change Year date (Year date will flash) and adjust to current Year by using DOWN or UP buttons.
7. Press **BACK/REGEN** button to save current date and go back to menu.
8. Continue to review and/or change the remaining settings (as follows)

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Determine Nitrate in Grains per Gallon and Set Capacity

This refers to the number of gallons your 7500-Rev4 is set to backwash.

If we know your water's nitrate and sulfate levels, we will preset this for you.

Step 1: Note capacity of resin: 18,000 grains per cubic foot. For example, if you have a 2.0 cubic system, it has the capacity to remove 36,000 grains equivalent of nitrate and sulfate. These nitrate systems remove sulfate as well as nitrate.

The nitrate resin capacity is rated as 'grains per gallon' of calcium carbonate, so we need to convert the sulfate parts per million to grains per gallon equivalent.

Step 2: Note the nitrate level in your well water as nitrogen: for example you have 44 PPM nitrate

Step 3: Note the sulfate level in your well water: for example you have 60 PPM sulfate

Step 4: Multiply the nitrate level by 0.81. Nitrate level = (Nitrate) ppm x 0.81 = ppm as CaCO₃

Step 5: Sulfate: Multiply the sulfate level x 1.04 (Sulfate) ppm x 1.04 = ppm as CaCO₃

Example

44 PPM x 0.81 = 36 grains

30 PPM x 1.04 = 31 grains

Step 6: Compute the Total grains = 67 grains per gallon

Total capacity of 2.0 Cubic Foot Nitrate system 36,000 grains divided by 67 grains = 537 gallons

Therefore set the Capacity to every 500 gallons.

B.R. Times	
0.75 CF	4 MIN.
1.0 CF	5 MIN.
1.5 CF	6 MIN.
2.0 CF	7 MIN.
2.5 CF	8 MIN.

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Set Regen Time This is the time your system will backwash. Default is 2:00 AM

Set Backwash Time Length Set for 10 minutes. This is the first cycle.

Set B. S. R. Time "Brine Slow Rinse" time. Set for 60 minutes. This is where the potassium permanganate solution is drawn in to the system.

Set Secondary Backwash Time Set for 8 minutes.

Set Fast Rinse Time Set for 8 minutes.

Set B. R. Time "Brine Refill" – this is where the brine tank refills with water. Pick your nitrate filter size and enter minutes.

Maximum Days for Regen. Set to 4 Days. This refers to the days between each backwash. The recommended initial setting for the Nitrate Filter is every 4 days for families or heavy use and every 7 days for 1 to 2 persons in the home.

Usage Logs: The following are diagnostic menus you can review later if you wish:

Daily Usage Log
Daily Peak Usage
Weekly Usage Log
Weekly Peak Usage
Monthly Usage Log
Monthly Peak Usage
Review Regen. Times

Start the First Backwash

1. **After programming, the system must be run through 2 or 3 backwash/rinse regeneration cycles to clean the new filter media.**
2. Start with both bypass valves in the Bypass Position.
3. Press the **BACK/REGEN** button once to enter the backwashing cycle.
4. When the backwash icon is displayed, **slowly** open the bypass to a quarter position to make the water flow into the tank and out the backwash drain line to drain.
5. After several minutes open bypass valve completely.
6. After the backwash, the system will automatically go into the fast rinse stage. The control valve will return to service status (indicated by the up flowing meter on the left).

CONGRATULATIONS, YOU ARE DONE SETTING UP YOUR SYSTEM!

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Advanced Programming Mode

The Advanced Programming Mode allows you to set the Regen Cycle and Regen Mode. Skip this for most applications as your filter system has already been set to correct modes.

1. Plug the RevV4 in and immediately press in sequence **MENU/CONFIRM**, then press **BACK/REGEN** button, then press the **DOWN** button to enter the Advanced Programming Mode.
2. Press **UP or DOWN** buttons or to select the menu item to be changed
3. **Note:** If valve locks while programming, unplug power supply and repeat step above.
4. Press **MENU/CONFIRM** to enter the main menu
5. Press the **UP or DOWN** buttons to highlight each option.
6. Press **MENU/CONFIRM** to enter highlighted option.
7. Press the **UP or DOWN** buttons to adjust the value.
8. Press the **MENU/CONFIRM** to accept the changes.
9. Press **BACK/REGEN** button to advance to service status

Screen View	Default Settings
View Company Info	CWS 831-462-8500
Set Valve Model	62605
Set Language	English
Set Company Info	CWS 831-462-8500
Set Hour Mode	12 HR
Set Time of Day	Current time of day
Set Date	Current date
Set Program Type	Interlock
Set Regen Cycles	No. 1
Set Set Clear Data	Close
Set Regen Mode	A-01
Set Capacity	Gals
Set Regen Time	2:00 AM
Set Backwash Time	10 Minutes
Set B.S.R. Time	60 Minutes
Set Fast Rinse Time	10 Minutes
Set B.R. Time	Minutes
Max Days for Regeneration	7
Signal Output Mode	b-01
Set Service Alarm	Disabled
Review Regen Times	NA
Review Software Version	Ver. 5.0

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7500-Rev4 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.
9. 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.