



Clean Water Made Easy

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# **7500-Rev2.5 Greensand Filter**

## **Installation Guide**



Thank you for purchasing a Clean Water System!

With proper installation and a little routine maintenance your system will be providing iron 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.

**Minimum pressure of 30 PSI recommended.**

**Maximum pressure recommended 80 PSI.**

**For indoor installation only.**

**Protect from sunlight, rain, and freezing.**


**GREENSAND MEDIA CONTAINS DUST.**

**USE MASK TO AVOID BREATHING DUST.**

**No potassium permanganate granules included.**

**Order separately.**

## 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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# 7500-Rev2.5 Greensand Filter Installation & Startup Guide

## Packing Lists

### All systems include:

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

### Find Your Size System to See What is Included:

#### **Greensand Filter 0.75 cubic foot size**

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

#### **Greensand Filter 1.0 cubic foot size**

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

#### **Greensand Filter 1.5 cubic foot size**

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

#### **Greensand Filter 2.0 cubic foot size**

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

#### **Greensand Filter 2.5 cubic foot size**

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

### 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 Greensand Filter must be allowed to run through a complete regeneration (backwash and rinse cycle) with potassium permanganate.
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 Greensand Filter and before the second ball valve. This makes it easy to rinse your new Greensand 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.



**By-Passed**



**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 Greensand Filter Works

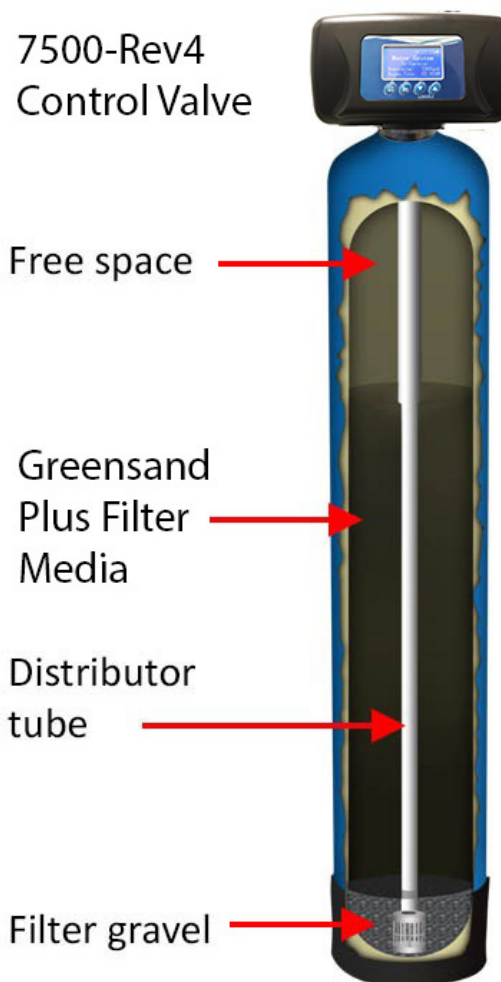
Water enters the top of the tank and flows down through the media and up the distributor tube. Iron and manganese are removed and trapped in the greensand media.

During backwash the flow of water is reversed and water flows down the distributor tube and up through the media, lifting and expanding the Greensand media and washing out the trapped iron and manganese to drain.

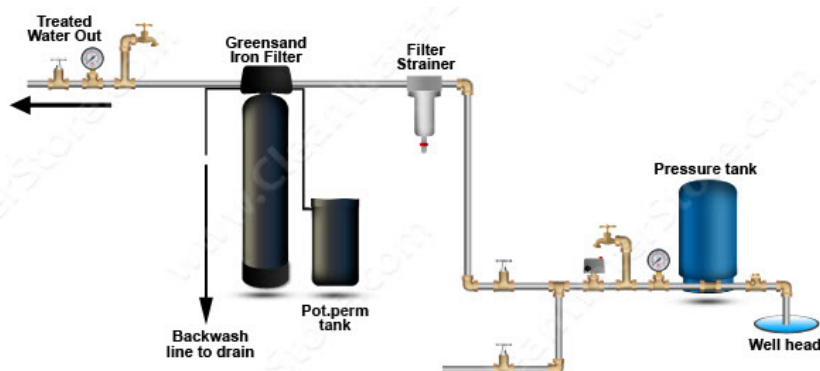
After the first backwash, a brine draw cycle draws in potassium permanganate solution from the pot perm tank and slowly rinses and restores the greensand media in a process called "regeneration".

The 7500-Rev4 Control Valve tracks the amount of water that is used and will backwash based on gallons OR every 4 to 7 days, whichever comes first.

The number of gallons and days between backwashes can be adjusted to suit your needs.



## Diagram of Typical Installation Well Water

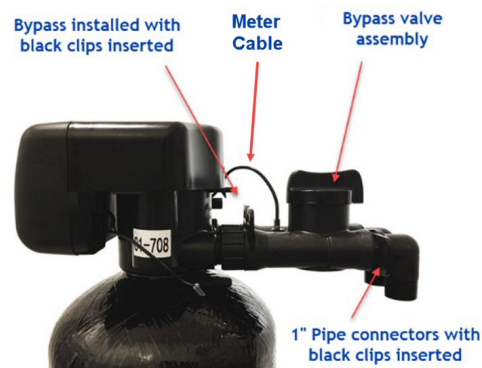




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## Filter Tank Assembly and Installation Instructions

1. Wrap the top of distributor tube with electrical or duct tape so that no gravel or Greensand 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 Greensand media.
3. Next add Greensand 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.
5. **A 1 cup of Clorox or other chlorine bleach and fill tank completely with water.** This will allow the Greensand Backwash Filter media to settle and reduce the need of purging the air out of the tank later. Allow Greensand 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 greases to lubricate tank threads.
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.
12. Connect 3/8" black tubing to potassium permanganate tank.





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13. If you are in earthquake zone, strap your backwash filter tank to wall with metal strapping.

14. Proceed to programming your 7500-Rev4 control valve timer and backwash frequency.

**15. IMPORTANT.**

**You must program the time and then start a backwash and rinse. The filter system must be allowed to go through a complete regeneration (backwash, brine draw of the potassium permanganate solution, rapid rinse). See following pages for instructions.**

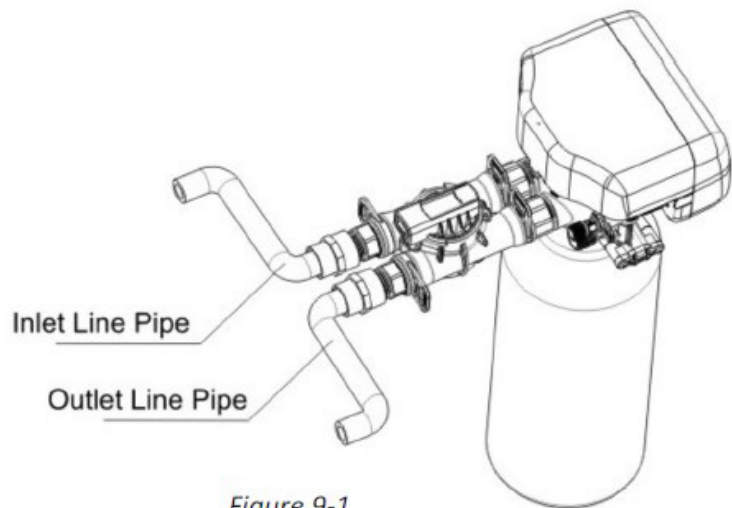
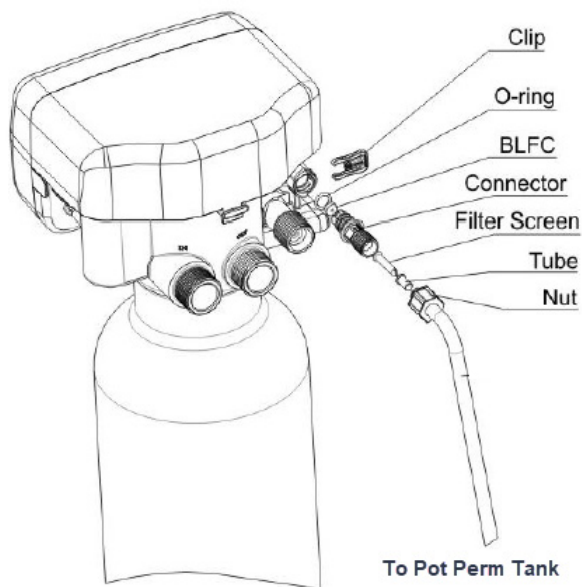
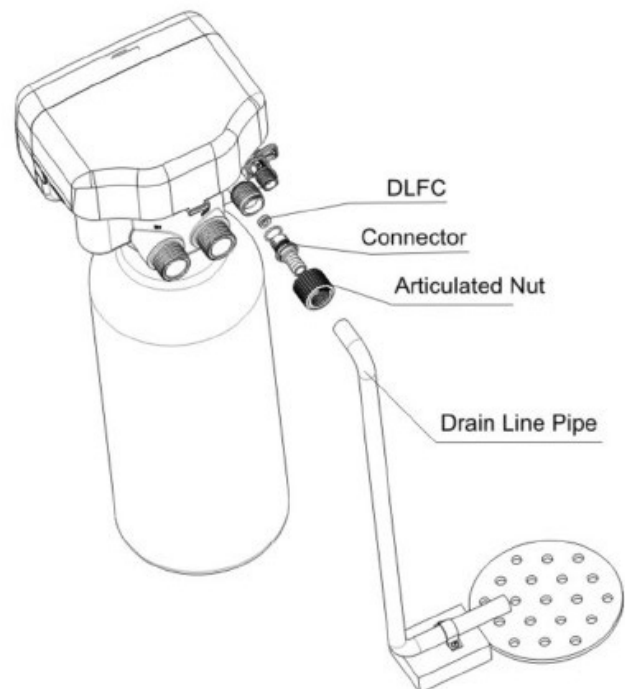


Figure 9-1



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## Pot Perm Tank Set Up

1. First remove the rubber band in the pot perm tank, that comes on the float assembly from the manufacturer.
2. Add enough clean water to the pot perm solution tank to bring water level about 1" above the felt pad.
3. Add one 2-lb or one 5-lb jug of potassium permanganate granules to the potassium perm tank by pouring it directly on top of the white felt pad.
4. Do not pour permanganate down the white plastic brine well where the black line is attached.
5. See the over-flow barbed fitting for the safety float on the side of the perm tank.
6. You do not have to connect this to a drain. But, if the safety float were to malfunction, there is a small chance that pot perm solution will leak or drip out of this fitting.
7. If this would cause a big mess where you have installed the greensand filter, hook some tubing to this and run to a bucket, floor pan or floor drain. Normally no pot perm solution will leak out of this fitting.

Connect 3/8" black pot perm tube to 7500-Rev4 Control Valve



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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.

**NOTE: To start all you need to do is set current time and date. All other parameters have been preset for you.**

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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 scroll down to and 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 not in the main menu, press the **MENU/CONFIRM** button to enter the main menu.
2. Press DOWN button to select and scroll down to **"Set Date"**
3. 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.
4. 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.
5. 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.
6. Press **BACK/REGEN** button to save current date and go back to menu.
7. Continue to review and/or change the remaining settings (as follows)

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## Set Capacity

This refers to the number of gallons your 7500-Rev2.5 is set to backwash. Default is 800 Gallons. This means that your filter will backwash every 800 gallons of water used, OR every 4 days, whichever comes first, since your Maximum Days for Regen. Is set to every 4 days as well.

**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 pot perm tank refills. Pick your iron 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 Greensand Filter is every 4 days for families or heavy use and every 7 days for 1 to 2 persons in the home.

If you experience pressure loss or see iron in water in between backwashes, increase frequency of backwash up to once per day.

**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

| 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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## 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. If possible, verify that the backwash flow corresponds with the size of your system below. Run drain hose to a bucket & verify the flow rate in gallons per minute. An adequate backwash is critical. For example, if the backwash water fills a 5-gal bucket in 1 minute, you have 5 gallons per minute (GPM).

| Backwash Flow Rates |               |
|---------------------|---------------|
| <b>0.75 CF</b>      | <b>5 GPM</b>  |
| <b>1.0 CF</b>       | <b>5 GPM</b>  |
| <b>1.5 CF</b>       | <b>5 GPM</b>  |
| <b>2.0 CF</b>       | <b>7 GPM</b>  |
| <b>2.5 CF</b>       | <b>10 GPM</b> |

7. 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).

8. Repeat the Regeneration (backwash and rapid rinse cycle) step one or two more times.

**CONGRATULATIONS,  
YOU ARE DONE SETTING UP YOUR VALVE!**

## Pink Water After the Greensand Filter

Note if you see pink water in the house after the greensand, this means that a cycle has been interrupted. This is caused when potassium permanganate solution is drawn into the greensand filter but then the backwash or rinses are interrupted.

This can happen if there is a power interruption during the regeneration (backwash, rinse) process. If you see pink water, run the water in the house until the water is clear.

Put the system on bypass or allow to run through a complete regeneration if you see pink water.



## Advanced Programming 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



## 7500-Rev2.5 Greensand Filter Installation & Startup Guide

| Screen View               | Default Settings    |
|---------------------------|---------------------|
| Review 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          | <b>No. 2</b>        |
| Set Set Clear Data        | Close               |
| Set Regen Mode            | <b>A-01</b>         |
| Set Capacity              | 800                 |
| Set Regen Time            | 2:00 AM             |
| Set Backwash Time         | 10 Minutes          |
| Set B.S.R. Time           | 60 Minutes          |
| Set Secondary B.W.T.      | 8 Minutes           |
| Set Fast Rinse Time       | 8 Minutes           |
| Set B.R. Time             | 10 Minutes          |
| Max Days for Regeneration | 4                   |
| Signal Output Mode        | b-01                |
| Set Service Alarm         | Disabled            |
| Review Regen Times        | NA                  |
| Review Software Version   | Ver. 5.0            |

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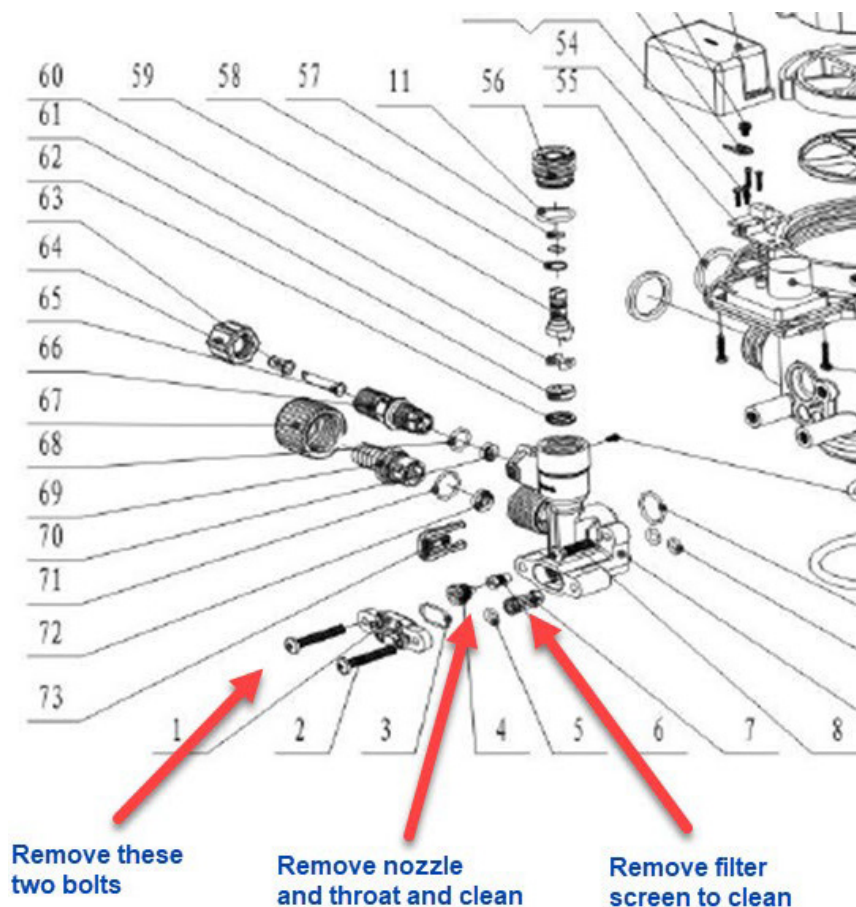
## When to Add More Potassium Permanganate

Add one 5-lb jug of potassium permanganate every 3 - 4 months. Check the potassium permanganate solution tank and when you see the mound of potassium permanganate disappear after a few months, just add another 5-lb jug. In some cases, you won't see the mound; you might just see solution after a couple of weeks. If you have it set to regenerate (backwash cycles) every 1 - 3 days, you might need to add it more frequently, perhaps every 2 months.

## Clean the Injector

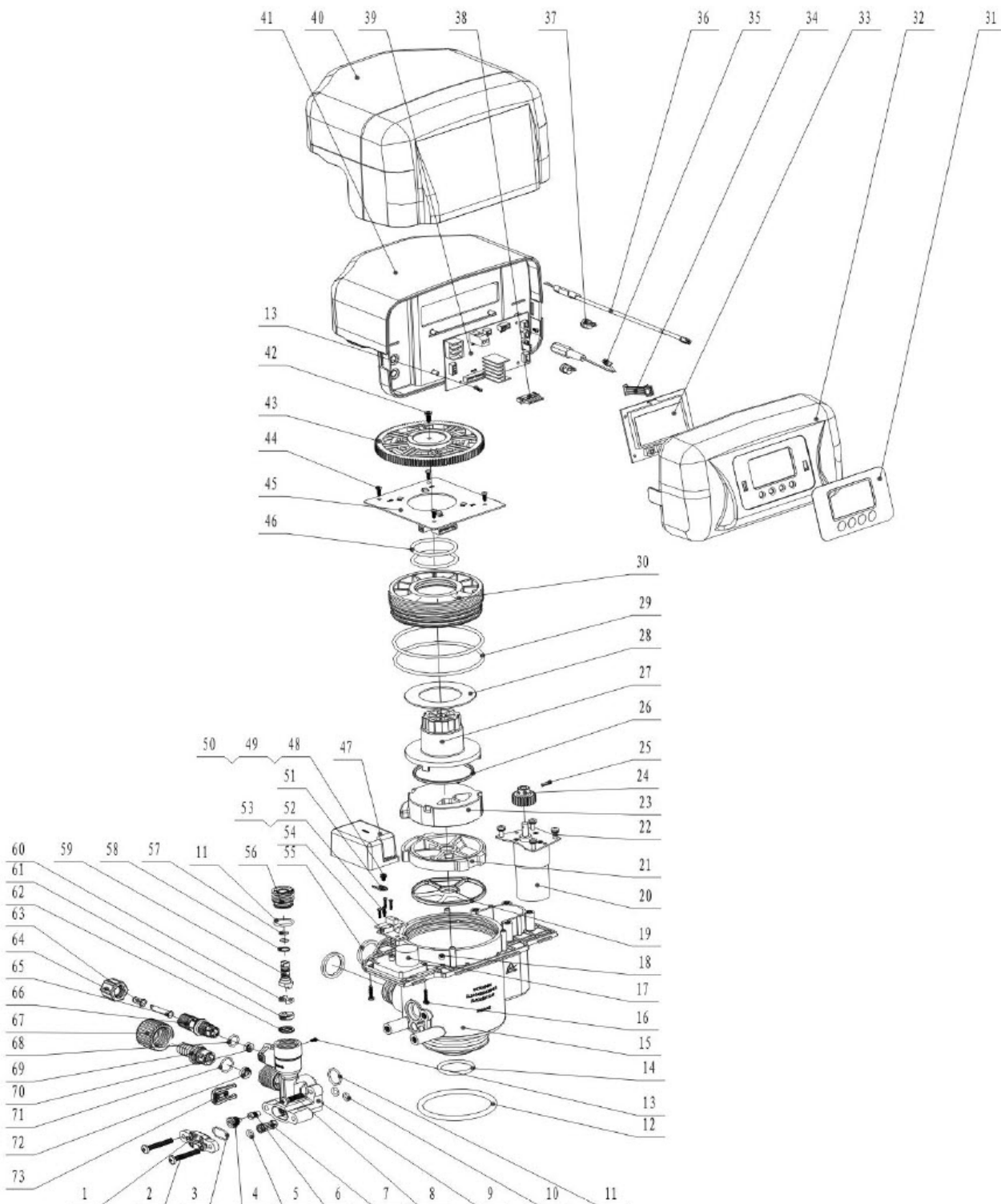
Once a year clean the nozzle and throat on the injector. Turn off water pressure to your system and release any pressure by opening a hose bib or faucet downstream of the filter system. Remove the two bolts covering the injector on the side the Rev4 Control Valve, near where the 3/8" tube from the pot perm tank attaches to the control valve.

Using small screwdriver remove the injector nozzle and throat and filter screen and clean with paperclip and rinse in vinegar to remove any deposits



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## Exploded Parts View



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| Item No. | Description            | Quantity | Item No. | Description             | Quantity |
|----------|------------------------|----------|----------|-------------------------|----------|
| 1        | Injector Cover         | 1        | 38       | Wire for Locating Board | 1        |
| 2        | Screw, Cross           | 2        | 39       | Control Board           | 1        |
| 3        | O-ring                 | 1        | 40       | Weather Cover           | 1        |
| 4        | Nozzle                 | 1        | 41       | Dust Cover              | 1        |
| 5        | O-ring                 | 1        | 42       | Screw, Cross            | 1        |
| 6        | Throat                 | 1        | 43       | Gear                    | 1        |
| 7        | Filter Screen          | 1        | 44       | Screw, Cross            | 4        |
| 8        | Screw, Cross           | 1        | 45       | Locating Board          | 1        |
| 9        | Injector Body          | 1        | 46       | O-ring                  | 2        |
| 10       | O-ring                 | 2        | 47       | Dust Cover              | 1        |
| 11       | O-ring                 | 2        | 48       | Screw, Cross            | 1        |
| 12       | O-ring                 | 1        | 49       | Washer                  | 1        |
| 13       | Screw, Cross           | 3        | 50       | Spring Washer           | 1        |
| 14       | O-ring                 | 1        | 51       | Pick                    | 1        |
| 15       | Valve Body             | 1        | 52       | Screw, Cross            | 4        |
| 16       | Screw, Cross           | 2        | 53       | Spring Washer           | 4        |
| 17       | Motor                  | 1        | 54       | Control Board           | 1        |
| 18       | Screw, Cross           | 4        | 55       | Seal Ring               | 2        |
| 19       | Seal Ring              | 1        | 56       | Fitting Nut             | 1        |
| 20       | Motor                  | 1        | 57       | O-ring                  | 2        |
| 21       | Fixed Disc             | 1        | 58       | Anti-friction Washer    | 1        |
| 22       | Screw, Cross           | 4        | 59       | Shaft                   | 1        |
| 23       | Moving Disc            | 1        | 60       | Moving Disc             | 1        |
| 24       | Small Gear             | 1        | 61       | Fixed Disc              | 1        |
| 25       | Pin                    | 1        | 62       | Seal Ring               | 1        |
| 26       | Moving Seal Ring       | 1        | 63       | Tube                    | 1        |
| 27       | Shaft                  | 1        | 64       | Hexagonal Nut           | 1        |
| 28       | Anti-friction Washer   | 1        | 65       | Net                     | 1        |
| 29       | O-ring                 | 2        | 66       | Connector               | 1        |
| 30       | Fitting Nut            | 1        | 67       | Articulated Nut         | 1        |
| 31       | Label                  | 1        | 68       | O-ring                  | 1        |
| 32       | Control Box            | 1        | 69       | Connector               | 1        |
| 33       | Display Board          | 1        | 70       | Brine Line Flow Control | 1        |
| 34       | Wire for Display Board | 1        | 71       | O-ring                  | 1        |
| 35       | Wire for Power         | 1        | 72       | Drain Line Flow Control | 1        |
| 36       | Probe Wire             | 1        | 73       | Clip                    | 1        |
| 37       | Cable Clip             | 2        |          |                         |          |

# 7500-Rev2.5 Greensand Filter Installation & Startup Guide

## 7500-Rev2.5 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.