Clean Water Made Easy

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7500-C Commercial Softener Installation Guide

Thank you for purchasing a Clean Water System! With proper installation your system will be providing soft 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.

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 Lists

All systems include:
2" 7500-C Softener valve; power supply; top screen; 1ea. fitting union with seal for inlet, 1ea. fitting union with flow meter for outlet, 1ea. Drain Line fitting; distributor tube with bottom screen; funnel for adding media through the top; and items included in one of the following options:

Find Your Size System to See What is Included:

Softener 4.0 cubic foot size (120k)
16" x 65" filter tank with distributor tube
50 lbs. 1/8" x ¼" filter gravel (1 box @ 50 lbs.)
4.0 cubic foot of Resin Media (4 boxes @ 50 lbs.)

Softener 5.0 cubic foot size (150K)
18" x 65" filter tank with distributor tube
75 lbs. 1/8" x ¼" Filter gravel (1 box 50 lbs. 1 box 25 lbs.)
5.0 cubic foot of Resin Media (5 boxes @50 lbs.)

Softener 7.0 cubic foot size (210K)
21" x 65" filter tank with distributor tube
100 lbs. 1/8" x ¼" filter gravel (2 boxes @ 50 lbs.)
7.0 cubic foot of Resin Media (7 boxes @ 50 lbs.)

Softener 10.0 cubic foot size (300k)
24" x 72" filter tank with distributor tube
100 lbs. 1/8" x ¼" filter gravel (2 boxes @ 50 lbs.)
100 lbs. ¼" x ½" filter gravel (2 boxes @ 50 lbs.)
10.0 cubic foot of Resin Media (10 boxes @ 50 lbs.)

Best Practices for Piping & Drain Installation:

NOTE: YOU MUST USE THE UNION ADAPTORS TO CONNECT THE PLUMBING TO THIS UNIT.

THESE UNIONS ARE SPECIFICALLY DESIGNED FOR THIS PURPOSE.

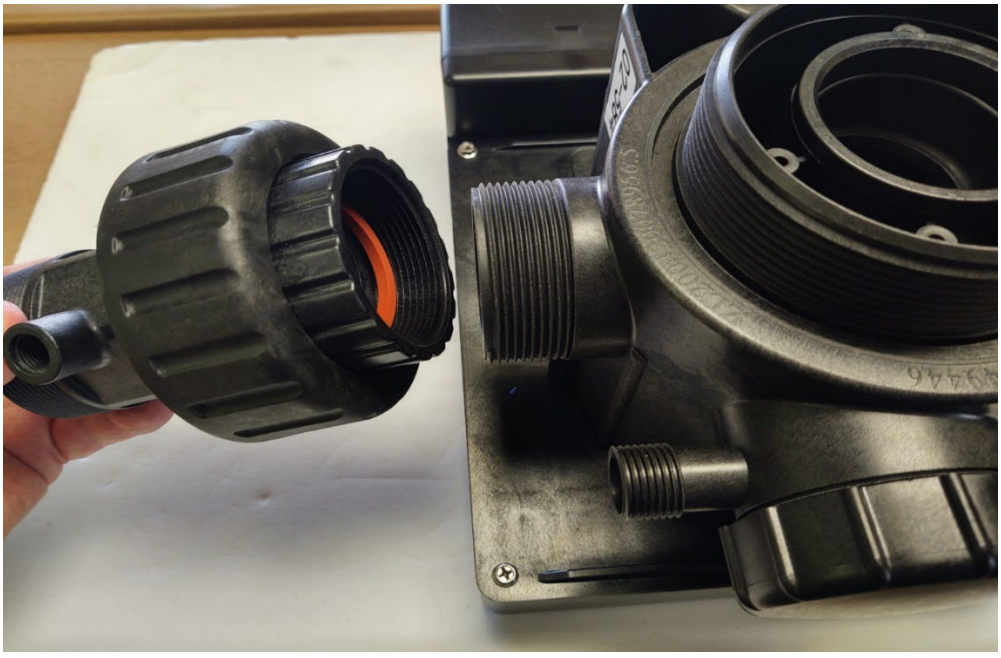
WARRANTY WILL BE VOIDED IF DAMAGE OR CRACKING TO THE CONTROL HEAD IS CAUSED BY NOT FOLLOWING THESE INSTRUCTIONS.

DO NOT USE ANY THREAD TAPE OR COMPOUND ON VALVE TO FITTING INTERFACE. THE SEALS ARE ALL THAT IS NEEDED.

ONLY HAND TIGHTEN THESE FITTINGS TO THE VALVE AS WELL.

THE OTHER END OF THE UNION IS A STANDARD 2” MNPT AND YOU CAN FOLLOW STATNDARD PLUMBING PRACTICES FOR THIS CONNECTION USING FLEX-LINES WITH WASHERS, THREAD TAPE, OR COMPOUND.

Making Connection to the Inlet Port using the Union Adaptor



Mating Connection to the Outlet Port using the Union / Flow Meter Adaptor

Mating the Drain Line Adaptor with the External flow control and Brine Line connection

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. Assemble all fittings into the 3 provided valve fitting prior to installion to the head. These seal with the blue seals and if overtightened can damage the valve body.

2. Make sure there is a working gate or ball valve before the 7500 Softener and also one after as well as a bypass valve. A hose bib (which is a faucet to which you can attach a garden hose) is strongly recommended after the Softener and before the second ball valve. This makes it easy to test the water before it enters your piping.

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

4. You should install unions and a bypass around the valve, so that you can remove it and still have water (See Build Your Bypass).

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.

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.

How Your Softener Works

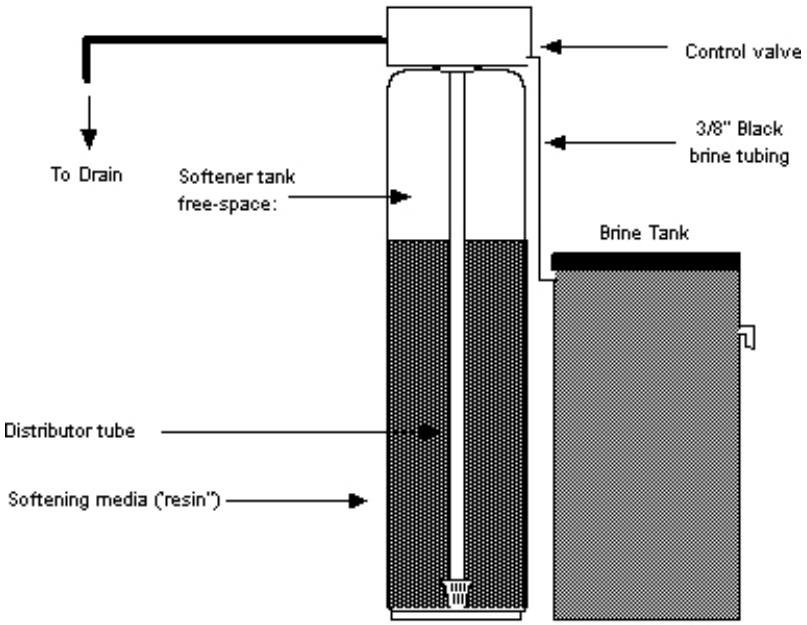
Fig. 1: In the softener, water enters the top of the tank and flows down through the media and up the distributor tube.

Hardness minerals are drawn to the resin beads in the softener where they are removed.

During regeneration the first cycle in the process backwashes and cleans the softener resin. Water flow is reversed and water flows down the distributor tube and up through the media, lifting and expanding the softening media, and removing any trapped particles.

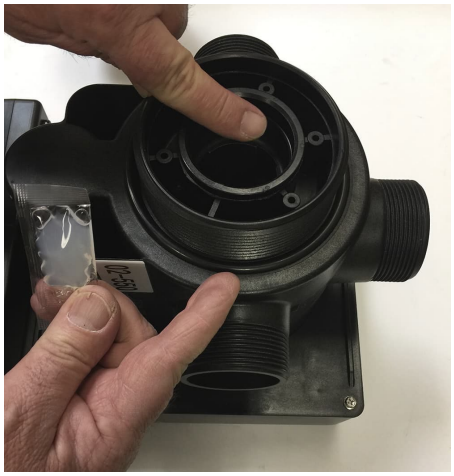
After the backwash stage, salt brine is automatically drawn in from the brine tank which then slowly rinses through the softening resin for 1 hour, allowing the hardness minerals to be swapped out with harmless sodium or potassium ions.

This entire automatic process, called 'regeneration' takes about 90 minutes. Typically, the softener filter is set to regenerate based on gallons used and time to occur during the middle of the night when no water is being used.



Assembly and Installation Instructions:

1. Wrap the top of distributor tube with electrical or duct tape so that no gravel or Carbon 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 Resin media. (Note: for 10 cu/ft systems, place the two bags of ¼" x ½" gravel (larger size) into the tank first then followed by the two bags of 1/8" x ¼" gravel (smaller size).
3. Next add the Resin 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. Fill tank completely with water.
6. Add a small amount of silicone grease to the inner O-ring, where the distribution tube goes. Lubricate the main tank O-ring 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.
7. Connect your brine line tubing to the brine tank. Fill your brine tank with coarse water softener salt.

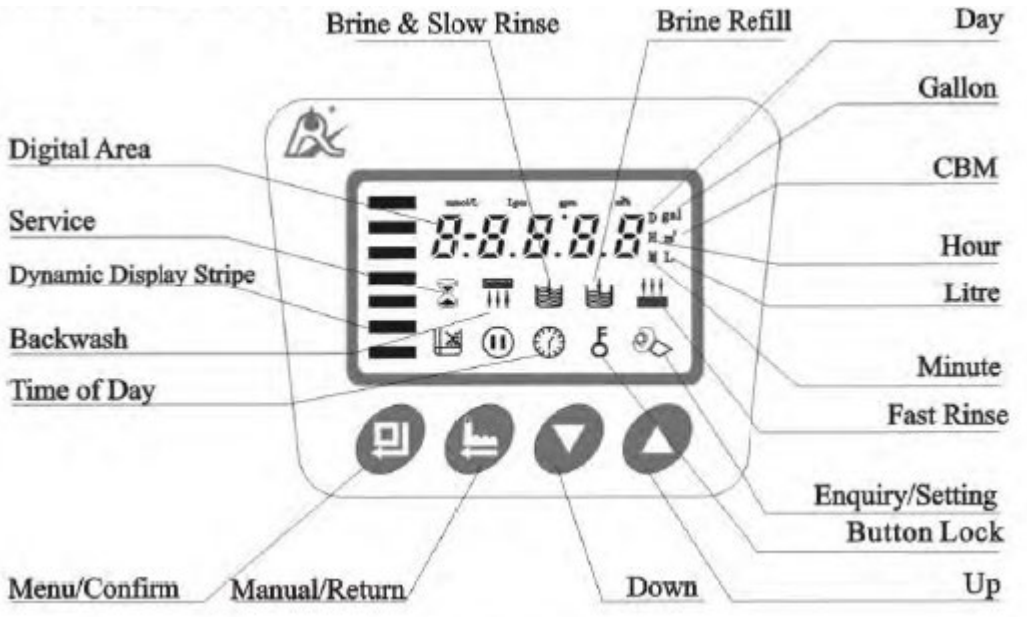


8. Next, install the top screen mount to the control valve by aligning the five-hole pattern and installing the machine screws out of your kit.

9. Thread the top screen to underside of 7500-C control valve. The Control valve is now ready to install onto the cylinder. Do not use wrenches hand tighten only.

Programming Your Valve and Setting Time and Days for Backwash

Next, you will need to program the system to work as a Softener. 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.

A. Parameter Specification

Function	Indicator	Factory Default	Parameter set range	Instruction
Time of Day	" "		00:00~ 23:59	Set the time of day when ":" is flashing.
Control Mode	A-01	A-01	A-01	Regeneration happens when the capacity reaches zero and the preset time of regeneration is reached.
			A-02	Regeneration happens when the capacity reaches zero.
			A-03	Meter Delayed Regeneration type, but by setting Resin Volume, Feed Water Hardness, Regeneration Factor, the controller will calculate the System Capacity. Regeneration mode same as A-01.
			A-04	Meter Immediately Regeneration Type, but by setting Resin Volume, Feed Water Hardness, Regeneration Factor, the controller will calculate the System Capacity. Regeneration mode same as A-02.
Service Days		1-03D.	0~99 Days	Only for Time Clock Type, regeneration by days.
Service Hours		1-20H.	0~99 Hours	Only for Time Clock Type, regeneration by hours.
Regeneration Time	02:00	02:00	00:00~ 23:59	Regeneration time; when ":" light is on.

Resin Volume	20L.	20L.	5—500L.	Resin volume in brine tank (L).
Feed Water Hardness	Yd1.2	1.2	0.1—9.9	Feed water hardness (mmol/L).
Exchange Factor	AL.65	0.65	0.30—0.99	Related to the raw water hardness. When hardness is higher, the factor is smaller.
Water Treatment Capacity		10 m^3	0~999.99 m^3	Water treatment capacity per cycle (m^3).
Backwash Time		10 min.	0~99	Backwash time (Minute).
Brine & Slow Rinse Time		60 min.	0~99	Brine & Slow rinse time (Minute).
Brine Refill Time		5 min.	0~99	Brine refill time (Minute).
Fast Rinse Time		10 min.	0~99	Fast rinse time (Minute).
Maximum Interval Regeneration Days	H-30	30	0~40	Regenerate on this day even though the available volume of treated water did not reach to zero (0).
Output Control Mode	b-01	b-01	b-01 or b-02	Mode b-01: Signal is sent at the start of regeneration and shuts off at the end of regeneration. (Connection refer to the Figure on P3) Mode b-02: Signal is available only during intervals of the regeneration cycles and in service (Connection refer to the Figure on P3).

B. **Process Display**

Figure A

FigureB

FigureC

FigureD

Figure E

Figure F

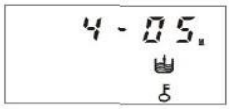


Figure G

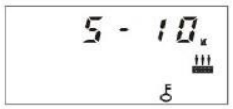


Figure H

Illustration

- In Service status, shown in figure A/B/C/D; In Backwash status, shown in figure E/C; In Brine & Slow Rinse status, shown in F/C; In Brine Refill status, shown in figure G/C; In Fast Rinse status, shown in figure H/C. In each status, every figure is shown for 15 seconds.
- Above displays are using the Meter Type as an example. For the Time Clock Type, it shows the rest days or hours, such as 1-03D or 1-10H.
- The display screen will only show "-00-" when the electrical motor is running.
- The time of day figure "⏱" flashes continuously, such as "12:12" flashing, indicates a long outage of power. This is a reminder to reset the time of day.
- The display will show the error code, "-E1-" when the system is in error.

C. **Working Process**: Service→ Backwash→ Brine & Slow Rinse→ Brine Refill→ Fast Rinse→ Service.

After installation is completed, parameters are set, and a trial run is completed, the valve is ready to be put into use. In order to ensure the quality of outlet water, the user should complete the steps below:

① Ensure that there is solid salt at all times in the brine tank when the valve is used for softening. The brine tank should use softening salts only, 99.5% pure.

② Test the product water and raw water hardness on a regular basis. When the outlet water hardness is at an undesired level, press the ● button; the valve will temporary regenerate (It will not affect the original set operation cycle.)

③ When the feed water hardness changes, you can adjust the water treatment capacity as follows:

Press and hold both ▲ and ▼ for 5 seconds to lift the lock status. Press ■, and the ◇ light turns on, then press ▼, the display shows the control mode.

If it shows A-01 or A-02, press ▼ two times, and the display will show the given water treatment capacity (If the control mode shows A-03 or A-04, then press ▼ three times, the display will show the feed water hardness)

Press ■ again, ◇ on display will flash. Press or to change the capacity value (Or water hardness). Press ■ a confirmation beep will sound finishing the adjustment.

Press ↵ to exit and return to service status.

To calculate the water treatment capacity, refer to the manufacturer's specifications. Selecting A-03 or A-04 intelligent control mode, the control will automatically calculate the water treatment capacity by setting resin volume, feed water hardness, and regeneration factor

④ For A-01 or A-03 control mode (Delayed regeneration type), ensure the time is set correctly. If the time is not correct, you can adjust as follow: After lifting the lock status, press ■, the ◇ buttons and light will turn on. ▼

Then press ■, the ◇ buttons and hour value will flash. ■

Press ▲ or to change the hour value;

Press ■ again, ◇ and minute value will flash. Press ▲ or ▼ to change the minute value. A confirmation beep will sound finishing the adjustment.

Press ↵ to exit and return to service status.

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 manufacture'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 or 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.