CLEAN WATER STORE



Twin Series Softener Manual

with

LEGACY VIEW

Installation / Operation Manual

email us: support@cleanwaterstore.com
Phone: 888-600-5426

REV-101926

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Cleanwaterstore.com

FCC Compliance Statement:
http://www.chandlersystemsinc.com/files/FCC_Compliance_Statement.pdf

Industry Canada Compliance Statement:
http://www.chandlersystemsinc.com/files/Industry_Canada_Compliance_Statement.pdf

One or more features of this product are covered by U.S. patents, visit http://www.watersoftinc.com/patents.php for more information.

General Specifications	SD48-TW	SD64TW	SD96-TW	SD128-TW
Grains Capacity Per Tank- Regeneration / Lbs Salt Used*	20,000 / 7.5	27,000 / 9	40,000 / 15	54,000 / 18
Maximum Raw Water Hardness (grains)	50	75	100	100
Maximum Clear Iron / Manganese	3	5	5	5
Exchange Resin (cu ft per tank)	.75	1.0	1.5	2.0
Mineral Tank Size	8 x 44	9 x 48	10 x 54	12 x 52
Brine Tank (polyethylene w grid & safety)	16 x 33	16 x 33	16 x 33	18 x 40
Service Flow Rate** (gpm)	8.0	10.0	11.0	12.0
Backwash Flow Rate (gpm)	1.5	2.0	2.4	3.5
Gallons Used / Regeneration	79	90	101	140
Space Required (D x W x H)	16x26x 53	16x27x 56	16x28x62	18x30x60
Approximate Shipping Weight (lbs)	88	100	133	164

WARNING

Lubricants

Do NOT use Vaseline, oils, hydrocarbon lubricants or spray silicone anywhere! Petroleum base lubricants will cause swelling of o-rings and seals. The use of other lubricants may attack plastic Noryl®. It is recommended that Dow Corning® silicone grease be used as a lubricant for all control valves. Dow Corning® 7 Release Compound is used in the manufacture of Chandler Systems control valves. (Part # LT-150)

Sealants

Pipe dope and liquid thread sealers may contain a carrier that attacks some plastic materials. It is recommended that Teflon® tape be used to seal plastic Noryl® threaded fittings.

PLEASE NOTE THESE SPECIFICATIONS BEFORE PROCEEDING

OPERATING PRESSURE RANGE : 30 - 125 PSI
OPERATING TEMPERATURE RANGE : 33° F - 120° F
INLET / OUTLET PIPE SIZE : 1" MNPT

PLEASE COMPLY WITH ALL APPLICABLE PLUMBING CODES
PROTECT THE SOFTENER AND PIPING FROM FREEZING TEMPERATURES

Please read the entire Owner's Manual and Instruction before installation.
This Owner's Manual must stay with the unit.

-How A Water Softener Works-

Water hardness is derived from Calcium and Magnesium minerals that have been dissolved into the water under the earth's surface. These minerals are found in limestone deposits and are the source of hard water. The amount of hardness in a given water supply is dependent upon the quantity of Calcium and Magnesium present and the length of time water has been in contact with them. This can vary dramatically from well-to-well and, for this reason, a water analysis is imperative in order to determine the proper treatment method. The degree of hardness increases as the concentration of Calcium and Magnesium "ions" increase and is measured in **Grains Per Gallon (gpg).**

The problem of hard water in the home / business comes to light in many facets of daily use. Water spots and scum left behind on bathtubs, fixtures and showers; wear and tear on appliances; calcium build-up in hot water heaters and piping; and, greater amounts of soap and detergents being used are just a few examples.

The modern water softener is designed to reduce hardness ions and their unpleasant side effects. Special resin beads in the softener mineral tank are used to change hard water into soft water. The surfaces of these beads are covered with sodium ions. As hard water enters the mineral tank and comes into contact with the resin, an exchange of ions takes place as dissolved Calcium and Magnesium ions cling to the resin surface and sodium ions are released in their place, thus softening the water. This process is called **Ion Exchange**. Over time, the sodium ions used for the exchange process become depleted and must be replenished.

The water softener provides a **Regeneration** process whereby brine solution enters the mineral tank, driving-off the collected hardness ions and replenishes the surface of the resin beads with more sodium ions. This process is automatically initiated by the control valve on the mineral tank. The regeneration process has five basic cycles as follows:

1. **Backwash** - The control valve directs the water flow in a reverse direction through the mineral tank, separating the resin beads and flushing any accumulated particles to a waste drain.

2. **Brine & Rinse** - In the first part of this cycle, the control valve directs brine solution downward through the mineral tank, driving-off collected hardness ions and replenishing the resin beads with sodium ions. The second part of the cycle rinses hardness ions and excess brine from the mineral tank to the waste drain.

3. **Second Back Wash** (Optional)

4. **Rapid Rinse** - The control valve directs the water flow downward, settling and recompacting the resin bed.

5. **Brine Refill** - The control valve directs fresh water into the salt compartment to create new brine solution for the next scheduled regeneration.

6. **Service** - This is the normal "operating" cycle where hard water enters the mineral tank, comes into contact with the resin beads and exchanges hardness ions for sodium ions - the water then becomes "soft" and ready for use.

Note: A tank in "**Standby"** has completed the regeneration process and is ready for service. When the current **"In Service"** tank in service is depleted the valve will shuttle to make the "Standby" tank now the "In Service" tank.

-Pre-Installation Check List-

A water test should always be performed in order to determine total water hardness (in gpg) and total dissolved iron (in parts per million - ppm). This is critical for proper equipment selection, sizing and for determining the program for regeneration frequency. If heavy concentrations of iron (above 5 ppm), iron coloration, iron bacteria or sediment are present, filtration prior to the softener will most generally be required. Certain states may require a licensed plumber for installation.

Note: Flexible water supply connectors and flexible drain line tubing may not be allowed in you locale. Please check with local plumbing code officials prior to installation.

Installation Requirements

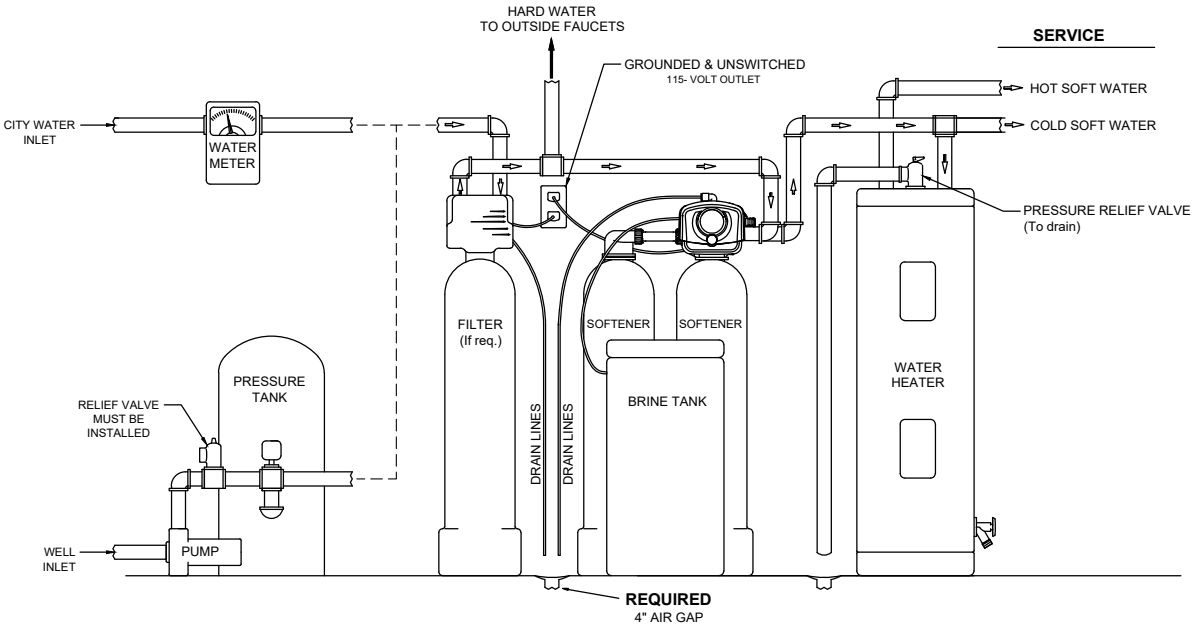
- A level floor position ahead of piping into water heater.
- Unit must be installed at least 10' ahead of the inlet to a water heater to prevent damage due to back-up of hot water.
- DO NOT install the unit in an area of direct sunlight or where freezing temperatures may occur!
  (See Installation Diagras for proper placement and plumbing connections.)

-Major System Components-

1. **Brine Tank** - This tank holds the salt that is added to the softener. This salt is dissolved with water to form a brine solution used in the softener regeneration process.
2. **Resin Tank** - These tanks contain the ion exchange resin media. Water flows through the resin tank under pressure to come into contact with the resin for water softening.
3. **Control Valve** - The valve directs water through the resin tank for water softening and controls the flow of water / brine for the regeneration process.

TWO TANK SETUP

(Incoming Water from Left-Side)



-Softener Location / Other Requirements-

- Locate the unit near an unswitched, 120 volt / 60 Hz grounded electrical outlet.
- Check for distance and proper drain installation (e.g. floor drain, washing machine standpipe).
- Determine type and size of piping required for softener connection (e.g. copper, galvanized, PVC plastic).

Note

- If household plumbing is galvanized and you intend to make the installation with copper (or vise versa), obtain di-electric unions to prevent dissimilar metal corrosion.
- Where the drain line is elevated above the control valve or exceeds 20 feet in length to reach the drain, use 3/4" I.D. drain line tubing instead of 1/2" I.D. Drain line tubing is not included.
- All plumbing lines not requiring "soft" water should be connected "upstream" of the softener.
- The brine tank drain line is gravity flow and must discharge below the overflow fitting.
- The brine overflow is provided as a back-up in the event the safety float shut-off should fail, allowing the brine tank to overfill. This drain connection would then carry the excess water to the drain and prevent flooding of the floor. Therefore, no liability will or can be assumed by the manufacturer of the softener should this occur.

Caution

- If sweat soldering copper pipe (remember to always use lead free solder and flux), cover yoke and bypass valve with wet rags to prevent heat damage to connections and control valve! If using PVC or plastic pipe primers and solvent cements specifically recommended for use with potable water are required.

- Do not "TEE" to the main drain line from control valve.

-Installation Procedure-

- Water Supply Connections and Bypass Valve -

To allow for softener servicing, swimming pool filling or lawn sprinkling, a manual bypass valve has been installed at the factory. The bypass allows hard water to be manually routed around the softener.

1. Position softener at desired location for installation. (See Installation Diagrams)

2. Glue schedule 80 interconnecting pipes provided to each socket connectors. **Hand tighten** connectors to each end of the control valve and the adapter to the second tank.
   NOTE: Schedule 80 pipes can be cut shorter if desired. Follow local plumbing codes.

3. Turn OFF main water supply and OPEN nearest faucet to relieve pressure.

4. Cut main line and install appropriate elbows and extensions.

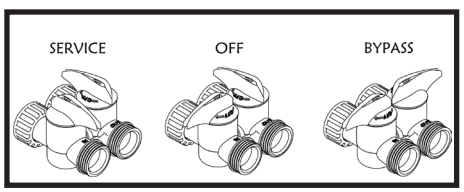
Caution: Raised arrows located on the sides of control valve body and bypass valve indicate proper direction of water flow. Install inlet and outlet piping in direction of arrows. It is recommended that a vacuum breaker be installed on the inlet plumbing.

5. Rotate bypass valve to the bypass position (position of lever is at right angle to inlet / outlet piping).

6. Turn the main supply line on to restore water service to the home.

7. OPEN nearest faucet to evacuate air and repressurize plumbing lines.

8. Check for leaks!



BYPASS - SHOWN

- Drain Line Connection -

1. The drain line flow control assembly is pre-assembled for your convenience. Should you choose to hard plumb the drain line, please remove the barb fitting. The flow control housing can be removed by removing the clip and pulling straight out on housing.

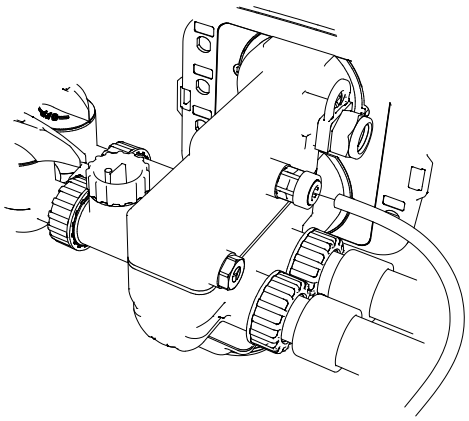
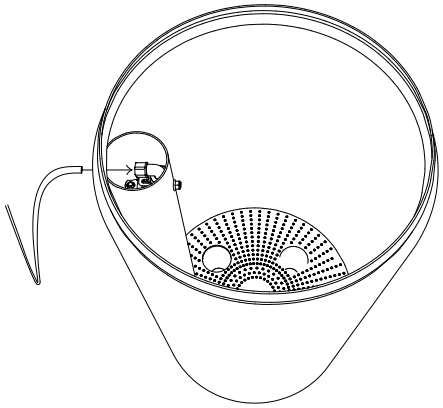
Note: When re-installing the drain line flow control housing, be sure you hear and feel the O-Ring pop into place before inserting the clip.

2. Install 1/2" I.D. drain line tubing (not included) from hose barb to an open drain. A 4" gap between end of the drain line and the open drain is required to prevent waste water backflow. Keep the drain line as short as possible. An overhead drain line can be used if necessary, but should discharge below the con trol valve. A syphon trap (taped loop) at the outlet of the drain line is advisable to keep the drain line full and assure correct flow during backwash. Elbows or other fittings must be kept at a bare minimum.

Note: Where the drain line is elevated above the control valve or exceeds 20 feet in length, 3/4" I.D. drain line tubing should be used.

-Brine Line and Overflow Connection-

Note: Your brine tank comes with two brine lines. Black is for outdoor installation. Opaque is for indoor installation.

Take brine tubing (packaged with brine tank) and insert the tubing into the control valve brine fitting, Push firmly.	Inside the brine tank, remove the cap from the top of the brine well. Feed the other end of the brine tubing through the hole in the side of the brine tank, and firmly insert it all the way into the push-lock elbow fitting inside the brine well. When this tubing is fully inserted, the fitting will grab the tubing and hold it in place. Add 5 gallons of water and Sani-Pack (provided) to brine tank.
	
BRINE LINE CONNECTION TO CONTROL VALVE	BRINE LINE CONNECTION TO BRINE TANK

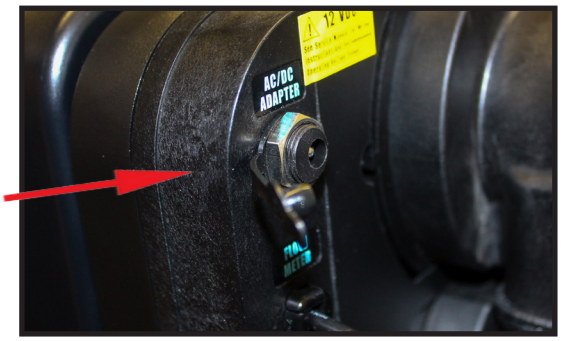
- Electrical Connection -

1. Connect the power cord and plug power supply into a 115 volt / 60 Hz receptacle.

Note : Do not plug into an outlet controlled by a wall switch or pull chain that could inadvertently be turned off

2. An extension cord is provided if needed.

Power Connection to the Valve Electronics



Battery Back-Up - Located under circuit board and uses a standard 9-volt alkaline battery.

Features of Battery Back-Up:

- During power failures, the battery will maintain the time of day as long as the battery has power. The display is turned off to conserve battery power during this time. To confirm that the battery is working, press either button and the display will turn on for five (5) seconds.
- If power failure occurs while system is regenerating, it will motor to a shut off position to prevent constant flow to drain. After power is restored, the unit will return and finish the cycle here it left off prior to the power interruption.
- When used without battery back-up, during a power failure, the unit stops at its current point in the regeneration position and then restarts at that point when the power is restored. The time of day will be offset by the increment of time the unit was without power, so it is necessary to reset the time of day on the unit. No other system settings will be affected.

- Pressurizing The System -

1. Make certain Control Valve is in **SERVICE** position.
2. Slowly rotate bypass valve to the **SERVICE** position. (Position of bypass lever is parallel to inlet / outlet piping.)
3. Open the nearest faucet to evacuate air from plumbing lines.
4. Check for leaks! If water is observed leaking from bottom of bypass, close and open bypass lever several times to seat o-rings. Exercise bypass valve
5. After air is evacuated from plumbing lines, close bypass (position of bypass lever is perpendicular to the direction of inlet pipe) on bypass valve.

Main Menu

1. To enter Main Menu, press the **Menu/Enter** button.
   Time of day is still the first menu item in the main (push button) menu. The time is only displayed when the Legacy View app is used, or someone enters this menu.

2. To set **Hardness** an "H" will appear to enter Compensated Hardness in grains per gallon (gpg)
   Default setting is 25 gpg. Example [H - 25]

3. To Exit Main Menu, press the **Menu/Enter** button.
   Note: If no buttons are pressed for 60 seconds, the Main Menu will be exited automatically.

NOTE: Time of day only appears on Legacy View App.

Normal Operation

1. **Home Display**
   The home display will alternate between the tank that is in service and gallons left until the next regeneration. The meter will count down to zero (0000) and then regenerate immediately switching to the alternate tank on standby.

Starting Extra Regeneration Cycle

1. To start **Immediate Extra Cycle** →
   - Press and hold the **Set/Change** button.
   - With Gallons Remaining Until Next Regeneration at '0000', softener will regenerate.

2. To **Fast Cycle** thru regeneration → First complete above step.
   Note: Press and hold the **Set/Change** button for 3 seconds to advance to the next cycle step. Fast Cycle is not necessary unless desired to manually step through each cycle step. (Repeat until valve returns to the home display)

Note : Salt settings are pre-set at the factory for the maximum efficiency.
Do not reduce salt settings below 9 lbs. per cu ft. as the water level in the brine tank will not reach the grid plate.

Softeners	Default (Min)	
Step 1	Backwash	10
Step 2	Brine & Rinse	60
Step 3	Second Backwash (optional)	0
Step 4	Rapid Rinse	10
Step 5	Brine Refill	9 lbs/ cu ft

- Start Up Procedure -

1. Put unit in bypass using the handles behind the control valve.

2. Start a regeneration by pressing and holding the set change button for 3 seconds.
   a. The display may show zeros or a 1, repeat holding the set change button.

3. Display on unit should read 1-10 (Step 1-10 min). Very slowly open the inlet bypass to remove any remaining air.

4. After the inlet bypass has been fully opened slowly, open the outlet bypass and let unit backwash for 2 min utes or until water is clear. Verify water is going to drain.

5. Fill the brine tank with a 5-gallon bucket of water and add the provided Sani pack.
   a. If you have already added salt, then pour the water and Sani pack down the white 4in brine well cylinder.

6. Advance unit to next regeneration cycle (Step 2-Brine draw) by holding the set change button for 3 seconds.

7. Stay in (step 2- Brine draw) for an additional 10 minutes and verify all water has been drawn out of the brine tank.

8. Advance unit to next regeneration cycle (Step 3-Rapid Rinse) by holding the set change button for 3 sec onds. Stay in this step for 2 minutes. Verify water is going to drain.

9. Advance unit to next regeneration cycle (Step 4- Brine fill) by holding the set change button for 3 seconds. Let this step continue until minutes remaining are zero and the time of day appears on display.
   a. When finished the brine tank should have water above the salt grid.

10. Lastly add salt to the brine tank. Do not fill salt higher than the brine well.

Repeat this procedure for tank two.

- Filling The Brine Tank With Salt -

To expect a high level of performance and reliability, a salt manufactured specifically for water softeners must be used. Salt of this grade is virtually free from dirt and other particulates that would eventually cause the softener to malfunction. A pellet type salt is recommended, although any high quality water softener salt (such as solar salt) will suffice. If iron is present in raw water, use of iron inhibiting salt is recommended. The salt level will decrease after each regeneration cycle. Consequently, the salt compartment will need to be checked and replenished periodically.

1. Fill the brine tank or salt compartment with water softener salt as described above. This will be approximately 160 pounds of salt.

Warning: Do not fill salt above level of the brine well.

2. Replace brine tank lid.

Master Programming Mode

To enter Master Programming Mode, press and hold both buttons for 5 seconds.

Note: All Master Programming functions have been preset at the factory. Unless a change is desired, it is **NOT** necessary to enter Master Programming Mode. These can be viewed and / or changed using the Legacy View App (see page 12).

1. Regeneration Day Override (A)

- Press **Menu/Enter** button. This display is used to set the maximum amount of time (in days) the unit can be in service without regeneration. This setting is identified by the letter "A" in the left digit. Regeneration will begin at the scheduled time. A setting of zero will cancel this feature.
- Example: Override every 7 days (A-07), default setting, or cancel setting (A-00). Maximum is 29.

2. Regeneration Cycle Step Times (Steps 1, 2, 3, 4, 5) Example [3 - 10]

- The next 5 displays set the duration of time in minutes for each regeneration cycle step.
- The step number which is currently modifiable is indicated on the far left of the display screen.
- The number of minutes allotted for the selected backwash step is displayed on the far right.
- Change the digit values using the **Set/Change** and **Menu/Enter** buttons as described above.

3. System Capacity in Grains (c)

- Press the **Menu/Enter** button. This display is used to set the system capacity in grains and is used in con junction with the hardness setting to calculate total gallons of treated water available between regenera tions. This option is identified by the letter "c" in the left digit. The maximum value for this item is 399.

Example: 32,000 grain capacity (c 032).

4. Bluetooth Enabled BE - 1 (ON)
BE - 0 (OFF)

6. Bluetooth Password **btPP** is displayed for one second, then password is displayed.

7. To Exit the Master Programming Mode, press the **Menu/Enter** button until time of day returns.

Display Off Setting do 0 (Display is ON)
do 1 (Display is OFF)

Note: If no buttons are pressed for 60 seconds, the Master Programming Mode will be exited automatically.

For simplified set up and control, please install the Legacy View on a compatible Bluetooth 4.0+ enabled smart phone or tablet.

1. Download and install the Legacy View app from the Google Play Store, Apple App Store

2. Open the Legacy View app
   - Choose a valve device at any time from the list of available devices to connect to by clicking on it.
   - If the valve you want to connect to doesn't show up, or there is a problem connecting to a device you can press the "Scan for Devices" button or the Legacy View logo at any time to refresh the list and start the process over.
   - If the valve device is a BTLE valve and it has a password other than the default password, the first time you connect to it the app will ask you to enter the password. After entering it the first time you should not need to enter it again unless it changes.
3. BTLE Valve devices can be updated by the App. When the app is updated from the Google Play Store or the Apple App Store, it may contain an updated firmware program for the valve devices. These updates could contain new features or operational improvements. It is up to the user to allow these updates to be sent to the valve device. Uploading a new program takes approximately 1 minute.

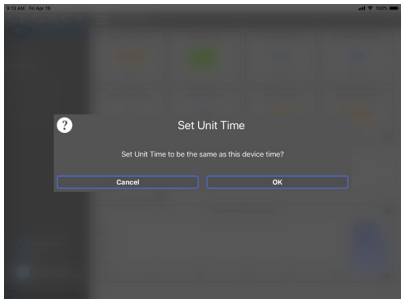
Dashboard

NOTE: Consult your dealer before making any changes

From the **Dashboard**, all items in ORANGE can be changed, while blue fields are informational only.



If you are unsure about the function of the field click the ⓘ for more information.



Change Time of Day (Press “SET” to set time automatically based on device).

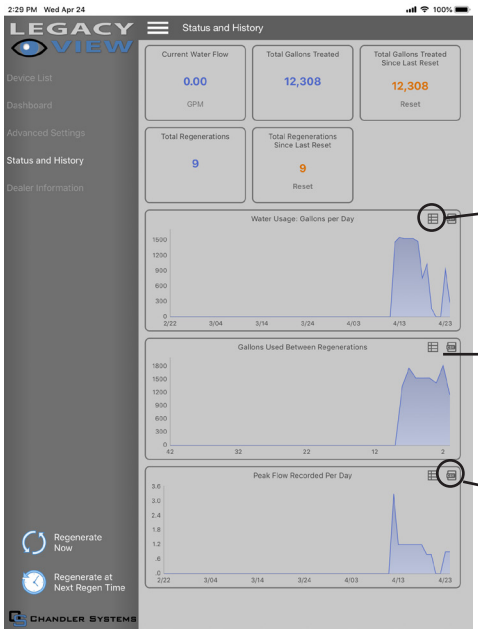
Advanced Settings

NOTE: Consult your dealer before making any changes. We do not recommend changing Advanced Settings unless you have a good understanding of the system operation.

From the **Advanced Settings**, all items in **ORANGE** with a “set” button can be changed.

Status and History

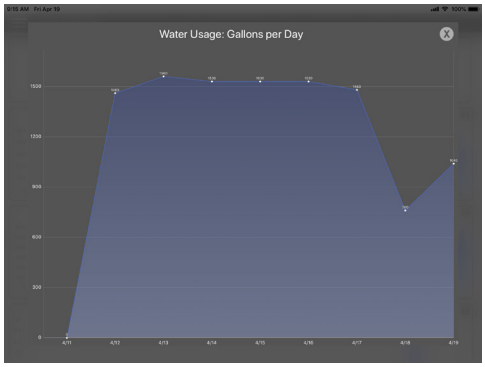
From the **Status and History**, all items in **ORANGE** can be reset.



Pressing this icon will show a list of the data that is in the graph.

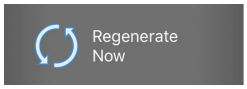
Touch any graph to enlarge and see details. Enlarged graphs are able to be zoomed in by pinching with two fingers.
(Enlarged graph shown below)

Pressing the .csv logo in the corner will allow the graph data to be exported and shared.

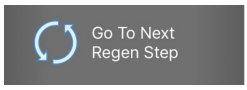


Enlarged graph showing water usage

1. Start a regeneration or backwash cycle

Option 1: 

Click the “Regenerate Unit Now.”



Once a regeneration has been started, if you would like to force the unit into the next cycle step click “Go to Next Regeneration Step”.

- Final Check -

1. Be certain the bypass valve is in the SERVICE position.
2. Make sure the power supply is connected to an uninterrupted 115-volt outlet.
3. Make final check for leaks!
4. Leave all manuals with unit.

- Operation, Care and Cleaning -

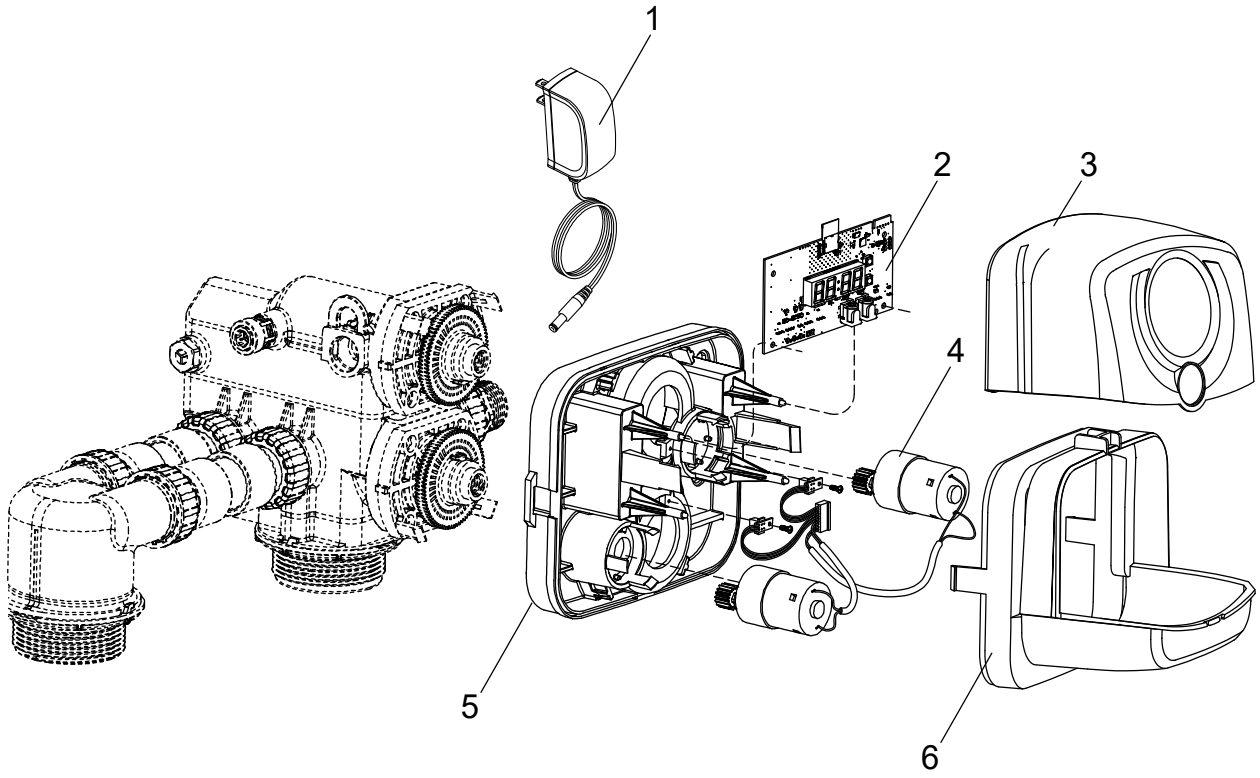
When the bypass valve is in the SERVICE position (position of bypass lever is parallel to the inlet / outlet piping), water is directed through the water softener. Water may be bypassed by turning the lever to the bypass position (position of bypass lever is at right angles to inlet / outlet piping). Water to the home will bypass the softener and be untreated.

You should manually bypass the softener if :

1. The outside lines do not bypass the water softener and water is to be used for lawn sprinkling or other similar uses.
2. Servicing the water softener.
3. A water leak from the water softener is evident.
4. Shock treating water well and piping with chlorine or other disinfectant.
5. If you leave your home for an extended period.

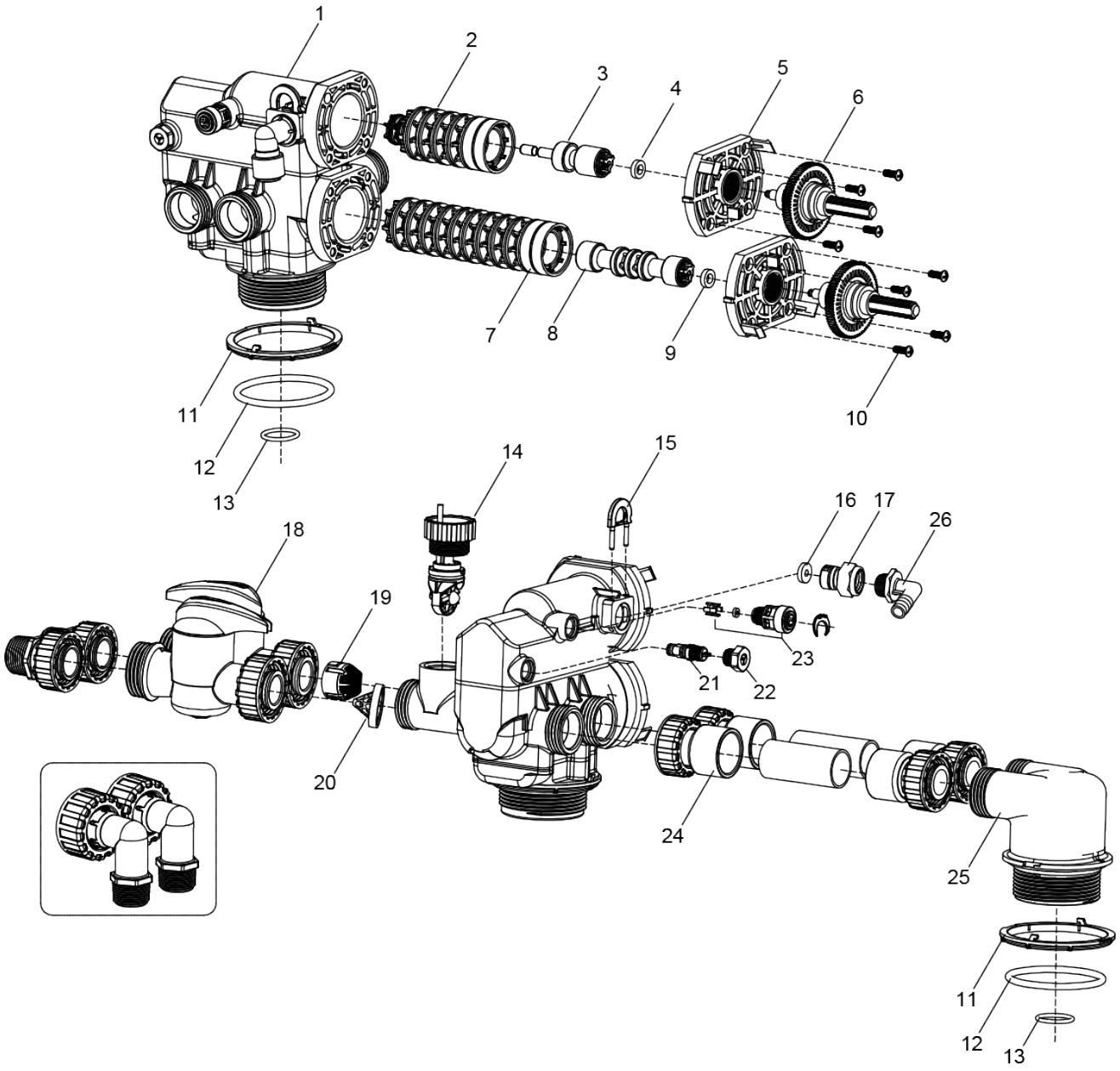
- General Care and Cleaning -

1. Do not place heavy or sharp objects on water softener or cabinet.
2. Use only mild soap and warm water to clean exterior of the unit. Never use harsh, abrasive cleaners.
3. Protect the water softener and drain line from freezing.
4. Reset time for daylight saving time periods.
5. Replace 9-volt battery once a year.
6. Inspect and clean the brine tank when sediment appears in the bottom of the salt compartment.
7. Always keep the brine tank supplied with good quality salt, a type designed for use in water softeners.



REF	DESCRIPTION	PART NO.	QTY
1	12VDC Power Supply	20018X125	1
2	Control Board	EVB-019-BT-C-TW	1
3	Slide Cover	20019X002	1
4	Motor Encoder Assembly	20100T022	1
5	Motor Drive Plate	20100T023	1
6	Slide Cover Mount	20019X006	1

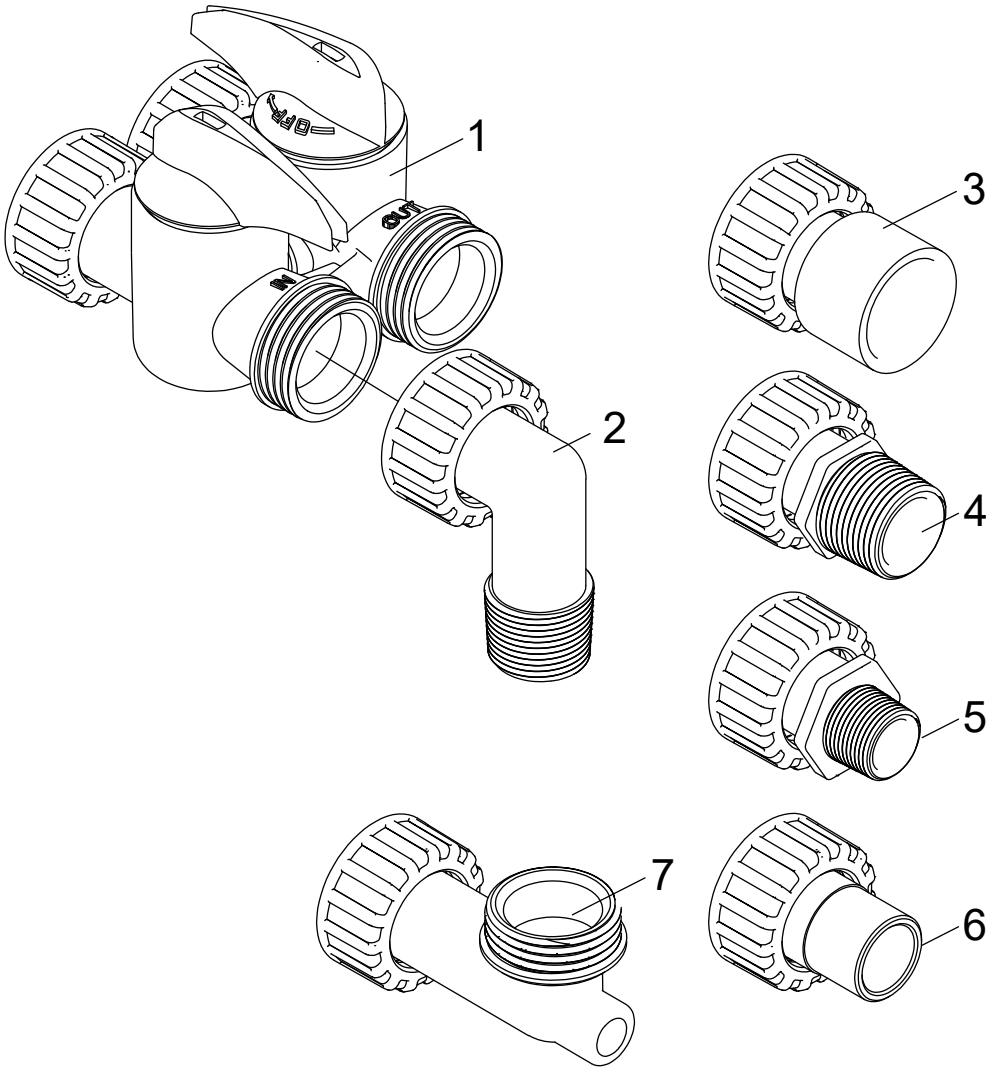
Valve Body Assembly



Valve Body Assembly

REF	DESCRIPTION	PART NO.	QTY
1	TW100 Valve Body	20100T000	1
2	Upper Seal Stack Assembly	20100T001	1
3	Upper Seal Stack Piston	20100T002	1
4	Upper Piston Stall Spacer	20100T003	2
5	Seal Plate	20100T004	2
6	Axial Gear Drive	20100T005	2
7	Lower Seal Stack Assembly	20100T006	1
8	Lower Seal Stack Piston	20100T007	1
9	Lower Piston Stall Spacer	20100T008	1
10	Seal Plate Screws	20100T009	8
11	Tank Groove Outer Ring	20100T010	2
12	Tank O-Ring	20100T011	2
13	Distributor Tube O-Ring	20100T012	2
14	Valve Meter Assembly	20100T013	1
15	Drain Line Retainer Clip	20100T014	1
16	Flow Control Button 1.5 GPM	20251X266	1
	Flow Control Button 2.0 GPM	20251X267	1
	Flow Control Button 2.4 GPM	20251X268	1
	Flow Control Button 3.5 GPM	20251X270	1
17	Drain Line Flow Control	20251X100	1
18	D15 Bypass	20017X283	1
19	Inlet Strainer Screen	20100T016	1
20	Meter Flow Straightener	20100T017	1
21	Injector Assembly #1 White	TW100-#1	1
	Injector Assembly #2 Blue	TW100-#2	1
	Injector Assembly #3 Yellow	TW100-#3	1
22	TW100 Injector Cap	20100T019	1
23	Brine Line Flow Control Assembly	20100T020	1
24	Solvent Weld Male Fitting (Pair)	20017X288	2
25	TW100 Duplex Tank Body	20100T021	1
26	Drain Hose Barb Elbow	20251X255	1

Bypass Assembly



REF	DESCRIPTION	PART NO.
1	D15 Bypass (included with all units)	20017X283
2	1" NPT Elbow Set (included with all units)	20017X284
3	1" Female Straight Slip Set (optional)	20017X288
4	1" NPT Straight Set (optional)	20017X289
5	3/4" NPT Straight Set (optional)	20017X307
6	1" X 3/4" Brass Sweat Connector Set (optional)	20017X304
7a	Elbow, Vertical Adapter Blank (optional)	20017X295
7b	Elbow, Vertical Adapter 1/4" NPT Tapped (optional)	20017X294

SYMPTOM	PROBABLE CAUSE	CORRECTION
1. Softener Fails to Regenerate Automatically	Power supply plugged into intermittent or dead power source	Connect to constant power source
	Disconnected meter cable	Reconnect cable
	Improper control valve programming	Reset program settings
	Defective power supply	Replace power supply
	Meter is dirty or defective	Clean or replace meter assembly
	Defective Drive motor	Replace motor
2. Loss of Capacity	Increased raw water hardness	Increase hardness setting or decrease days between regeneration
	Brine concentration and or / quantity	Keep brine tank full of salt at all times. Clean it yearly. Salt may be bridged. If using a salt grid plate, ensure refill water is over it.
	Resin fouling	Call dealer. Find out how to confirm it. Clean the resin and prevent future fouling.
	Poor distribution, channeling (uneven bed surface)	Call dealer. Check backwash flow. Regenerate more frequently
	Internal valve leak	Call dealer. Replace spacers, seals and / or piston
	Resin age	Call dealer. Check for resin oxidation caused by chlorine. Mushy resin.
	Resin loss	Call dealer. Check for correct bed depth. Broken distributor tube. Air or gas in bed: well gas eliminator. Loose brine line.
3. Poor Water Quality	Check items listed in #1 and #2	
	Bypass valve open	Close bypass valve.
	Channeling	Check for too slow or high service flow. Check for media fouling.
4. High Salt Usage	High salt setting	Lower brine tank refill time
	Excessive water in brine tank	See symptom #7
	Constant flow through the unit	Indicates plumbing leak (e.g. toilet tank)
	Regenerating too frequently	Lower hardness setting or increase days between regeneration.

SYMPTOM	PROBABLE CAUSE	CORRECTION
5. Loss of Water Pressure	Scaling / fouling of inlet pipe	Clean or replace pipeline. Pretreat to prevent.
	Fouled resin	Clean resin. Pretreat to prevent.
	Improper backwash setting	Backwash more frequently
6. Excessive Water in Brine Tank and / or Salty Water to Service	Plugged drain line or drain line control	Check flow to drain. Clean drainline flow control button
	Dirty or damaged brine valve	Clean or replace brine valve.
	Plugged injector or screen	Clean or replace injector screen.
	Low inlet pressure	Increase pressure to allow injector to perform properly. 30 psi minimum)
	Excessive brine refill cycle time	Lower brine refill time.
7. Softener Fails to Use Salt	Check items listed in #1	
	Improper control valve programming	Check and reset programming
	Plugged / restrict drain line	Clean drain line and / or flow control button
	Injector and / or screen is plugged	Clean or replace injector and screen
	No water in brine tank	Check for restriction in DLFC. Ensure safety float is not stuck. Check brine tank for leaks.
	Water pressure is too low	Line pressure must be at least 30 psi.
	Brine line injects air during brine draw	Check brine line connections for air leaks
	Internal control leak	Call dealer. Check piston, seals and spacers for scratches and dents.
8. Continuous Flow to Drain	Foreign material in control piston and seals	Call dealer. Clean valve and replace piston and seals.
	Internal control leak	Same as above.
	Valve jammed in backwash, brine or rapid rinse position	Same as above.
	Motor stopped or jammed	Check for jammed piston. Replace piston and seals. Replace motor if motor is unresponsive.

Control Valve Error Code Diagnosis

Under normal operating conditions, when your control valve is in the "in service" position, the display should alternate between the current time of day and the number of days remaining (for filters and time clock softeners) or gallons remaining (for metered softeners) until the next regeneration. This is the "home display." If the valve is currently going through a regeneration cycle, the display will show the cycle step on the left side of the display and the number of minutes remaining in that step on the right side of the display. If any other information is being displayed, then the valve is informing you of an issue. There are five error codes which could indicate an issue with the control valve. When an error is being displayed, the valve will be in a stopped position, and the buttons will not respond to being pressed. Even if the cause of the error code is corrected, the error code will not clear until the power supply has been disconnected and reconnected (this will be referred to as "cycling" the power). All error codes are displayed as the letters "Err" followed by a flashing number 2-6:

Error 2 - Valve is searching for homing slot.
Allow valve to continue running. If the homing slot is found, the valve will return to the home display, otherwise, another error code will appear.

Error 3 - No encoder slots are being seen.
This occurs when the motor is running, but the encoder is not seeing any of the slots in the encoder wheel. This can happen if the encoder has been disconnected, but most commonly occurs when debris in the valve body has stopped the piston, causing the encoder wheel to be unable to turn.

1. Check encoder connection. If the encoder is plugged in and snapped into place, skip to step #2 below. If encoder is disconnected, reconnect it and cycle power to clear the error.
2. Disconnect powerhead from valve body, cycle power to clear the error code. Manually cycle the power head through the regeneration cycle steps to verify that the motor can cycle properly while the power head is disconnected from the valve body. If the error 3 does not reappear, skip to step #3 below. If the error 3 does reappear, order a board & motor kit to replace the circuit board & motor.
3. Remove piston and seals from the valve body and inspect valve body for debris. Replace the seal & spacer kit. Inspect piston and replace piston if Teflon coating is worn

Error 4 - Unable to find homing slot.

1. Check encoder wheel for debris.
2. Cycle power. Valve should either find home or go to a different error code. If error 4 returns, replace powerhead assembly.

Error 5 - Motor overload.
This occurs when the motor current is too high. This could be caused by an issue with the motor itself, but is typically caused by friction in the valve body

1. Disconnect powerhead from valve body and cycle power to clear the error code.
2. If the error 5 returns, replace the motor. Otherwise, manually cycle the powerhead through the regeneration cycle steps to verify that the motor can cycle properly while the powerhead is disconnected from the valve body. Either way, proceed to the next step.
3. Remove piston and seals from the valve body and inspect valve body for debris. Replace the seal & spacer kit. Inspect piston and replace piston if Teflon coating is worn.

Error 6 - No motor current.
This typically occurs if the motor cable has come unplugged from the circuit board. Check that the motor cable is plugged into the circuit board and attached to the motor. If this is not the issue, the motor or circuit board may need to be replaced.

No Display

If your display is blank, there is no power going to the circuit board due to one of the following factors:

- The electrical outlet is not powered or is switched off
- Display Off setting is turned on. Check the Legacy View app or the advanced menu settings for the setting.
- The power cable has come unplugged from the circuit board
- The power supply has come unplugged from your electrical outlet
- The power supply has come unplugged from the control valve
- The power supply is not working

Clean Water Systems & Stores Inc.
2806 Soquel Ave Ste A, Santa Cruz, CA 95062
888-600-5426 (toll-free) · 831-462-8500
support@cleanwaterstore.com · cleanwaterstore.com

Limited Warranty

Water filters, softeners, and conditioners sold by Clean Water Store

We warrant the water treatment system you purchased from us to be free from defects in materials and workmanship, when installed and operated according to our instructions, for the periods below.

Warranty Periods

Component	Coverage
Fiberglass / composite mineral tanks, 6"–13" diameter	**Lifetime**
Fiberglass / composite mineral tanks, 14" diameter and larger	**5 years**
Contact / retention tanks (any size)	**5 years**
Control valves	**5 years**
Ceramic disc in 7500-Rev4 control valves	**Lifetime**
All other components	**1 year**

Coverage starts on the date of purchase. "Lifetime" means for as long as the original purchaser owns the system at the original installation address. Some components also carry the original manufacturer's warranty.

What's Covered

Defects in materials or workmanship under normal use. We will repair or replace the defective part, at our option.

What's Not Covered

- Shipping charges, labor, installation, or removal costs
- Damage from freezing, sunlight, rain, or other outdoor exposure
- Damage from sand, sediment, or coarse particles in the feed water
- Fractures from external impact, or tank damage from vacuum
- Misuse, neglect, alteration, rodents, fire, lightning, or power surges
- Water pressure above 100 psi or water temperature above 100°F
- Installation not in accordance with local codes and our instructions
- Normal wear items and consumables (filter cartridges, media, chemicals)
- Plumbing, pipes, fixtures, or appliances, and delays or consequential damages

Conditions

- This warranty applies to the original purchaser only and is not transferable.
- The same warranty periods apply to residential and commercial installations.
- Defective parts must be returned with a Returned Goods Authorization (RGA) number, freight prepaid. Contact us first.
- Repair or replacement does not extend the original warranty period.
- No other warranty, expressed or implied, applies beyond what is stated here, except where state law provides otherwise. Some states do not allow limits on implied warranties or on incidental or consequential damages, so these limits may not apply to you.

> **Separate from this warranty:** complete residential systems also carry our 6-month satisfaction guarantee. See full terms at **cleanwaterstore.com/returns-warranty**.

To Make a Warranty Claim

Contact us at 888-600-5426 or support@cleanwaterstore.com with your order number, the product and serial number (if applicable), and a short description of the problem. Most issues can be diagnosed over the phone.

Model: _____ Serial #: _____ Purchase date: _____