



ORIGINS

WC 100 / WC 200 • WATER CONDITIONER

Operation Manual

System Installation

**CAUTION:**

Do not use systems on untreated well water that is microbiologically unsafe.

- Do not exceed 125 psi water pressure.
- Do not exceed 110F water temperature.
- Do not subject unit to freezing conditions.

All plumbing must be in compliance with local and state plumbing codes.

Determine a suitable location for the system. The chosen location should provide you adequate access to service the unit. Ensure that the location is after the main water supply control valve with access to the water line that feeds the home (prior to hot water heater).

OVERVIEW

- Plumbing connections
 - Shut off main
 - Release water pressure
 - Make pipe connections
- Level I valve programming
(Initial settings)
 - Time of day
 - Date
 - Number of people
 - Water hardness
- Level II programming
(settings made during assembly)
- Brine tank set up and initial fill
- Brine line connection
- Drain line connection
- System start up (in backwash)



Plumbing Connections



Be sure to comply with all required plumbing codes.

1. Shut off main water supply to the home.
2. Release water pressure by opening a faucet at the kitchen sink or other location.

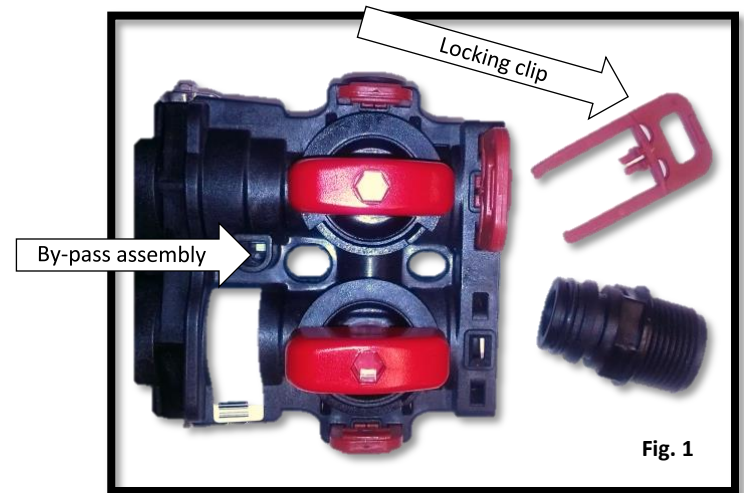
Important! - Be sure to lubricate the o-rings on the quick connect fittings prior to installation.

3. Make final main water connections to the valve, using quick connect fittings.

Includes:

- (2) 3/4 " male threaded 90 quick connect fitting
- (2) 1" male threaded straight quick connect fitting

- a) Install fittings on the by-pass by removing the red locking clips.
- b) Return the red locking clips to secure the fitting



1850 Valve

(Metered for demand regeneration)

Features

- By-pass valve is included and comes with $\frac{3}{4}$ " and 1" quick connect pipe fittings
- Metered for demand regeneration
- Ideal for softeners, iron, sulfur, carbon and sediment filters
- For tanks to 16" (softeners)
- For tanks to 10" (filters)
- Easy to program
- Operational data shown on LED, including flow rate, last regeneration date, gallons remaining and more



Valve Programming







FIRST - UNLOCK VALVE

Press  and hold for 3 seconds to unlock the valve for programming.

Settings

Valve button programming control definitions

- 1) Menu Key 
Press this key to enters or exit menu
- 2) Set / Save Regen Key 
Press this key to select a program or to save a setting
- 3) Up arrow Key 
Press these keys to go to the previous menu
- 4) Down arrow Key 
Press these keys to go to the next menu



Level-I Set up Parameters

(Required for initial set-up)

Level-1

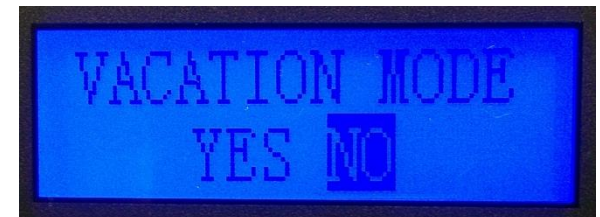
Time – Enter the time of valve set up.

Date - Enter Today's date at time of valve set up.

Number of People – Enter # of full-time residence (default 4).

Water Hardness – Set it to your test results (default 20 gpg).

Vacation Mode – default is no, changing this setting will change the valve operation to a calendar cycle.
















Making Adjustments – Level I

All programing is adjusted using the methods described in the programing method.

Setting level I programing

Time

- 1) Press * to enter menu (hour display will be highlighted)
- 2) Press  to enter hour setting (**must be flashing to edit**)
- 3) Press  or  to adjust hour
- 4) Press  to save and move to minute setting (flashing)
- 5) Press  or  to adjust minute
- 6) Press  to save and move to AM/PM setting (flashing)
- 7) Press  or  to adjust AM/PM
- 8) Press  to save and move to hour spot (not flashing)
- 9) Press  to go to current date set up or to cycle through level I settings (continue to set all level I setting)
- 10) Press * to exit menu and return to main screen

***Note:** if valve is “locked” you will need to press and hold menu for 3 seconds. Valve will “beep” when changing menu’s or parameters. Highlighted parameter must flash to be able to adjust setting.

Level-II Programming

(Settings have been pre-set at the factory)

Level-II

These settings have been made at the factory and are held in memory. Level-II settings will not be lost during a power outage. However, if adjustments are desired, follow the directions below.

- Language
- Valve operation
- Regen Mode
- Regen Time
- Capacity Calc.
- Resin Volume (FT3)
- Salt Settings (lbs./FT3)
- Refill Flow Rate (GPM)
- Unit Capacity (grains)
- Reserve Capacity
- Backwash (min)
- Brine/Rinse (min)
- Rapid Rinse (min)
- Refill (min)

Reasons to change Level-II setting (examples)

- 1) Initial start up configurations
- 2) Using tanks other than 9X48
- 3) Using Valve for Carbon or Iron Filter
- 4) Setting valve up for use in in Iron Filter
- 5) Adjusting any cycle or setting to enhance performance

Making Adjustments – Level II

All programming is adjusted using the same methods as for Level-I programming.

Setting level II programming

Backwash

- 1) Press ▲ and ▼ together to enter menu (5 sec.)
- 2) Press ▲ or ▼ scroll to backwash setting
- 3) Press ■ to enter menu (flashing)
- 4) Press ▲ or ▼ to adjust minutes (flashing)
- 5) Press ■ to save setting and advance to tenths of minute
- 6) Press ▲ or ▼ to adjust tenths of minute for backwash
- 7) Press ■ to save
- 8) Press ▲ or ▼ to move to another menu
- 9) Press □ to exit menu and return to main screen

Note: Valve must be in manual mode to adjust and save capacity and refill duration.

***Note:** If the valve is “locked” you will need to press and hold menu for 3 seconds. Valve will “beep” when changing menus or parameters. Highlighted parameter will flash when you are able to adjust setting.

Making Adjustments – Level II

All programming is adjusted using the same methods as for Level-I programming.

Setting level II programming

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Note: Valve must be in manual mode to adjust and save capacity and refill duration.

***Note:** If the valve is “locked” you will need to press and hold menu for 3 seconds. Valve will “beep” when changing menus or parameters. Highlighted parameter will flash when you are able to adjust setting.

Softener Settings

Level-II Parameters (factory settings)

Tank Size	System Language	Valve Operation	Regen. Mode	Regen. Time	Resin Volume	Carbon Volume	Unit Capacity	Reserve Capacity	Backwash	Brine/Rinse	Rapid Rinse
9X48	English	Softener	Meter Delay	2:00 AM	1.00	None	30,000	75	10	60	10
12X52 Combo	English	Softener	Meter Delay	2:00 AM	1.00	1.0	30,000	75	10	60	10

Factory settings: Capacity Calculation (AUTO), Refill Flow Rate (0.70 GPM), 10 lbs. salt settings.

All settings may be adjusted. However, to change the gallons capacity and re-fill, valve must be set up in MANUAL MODE to save altered settings for these two fields.

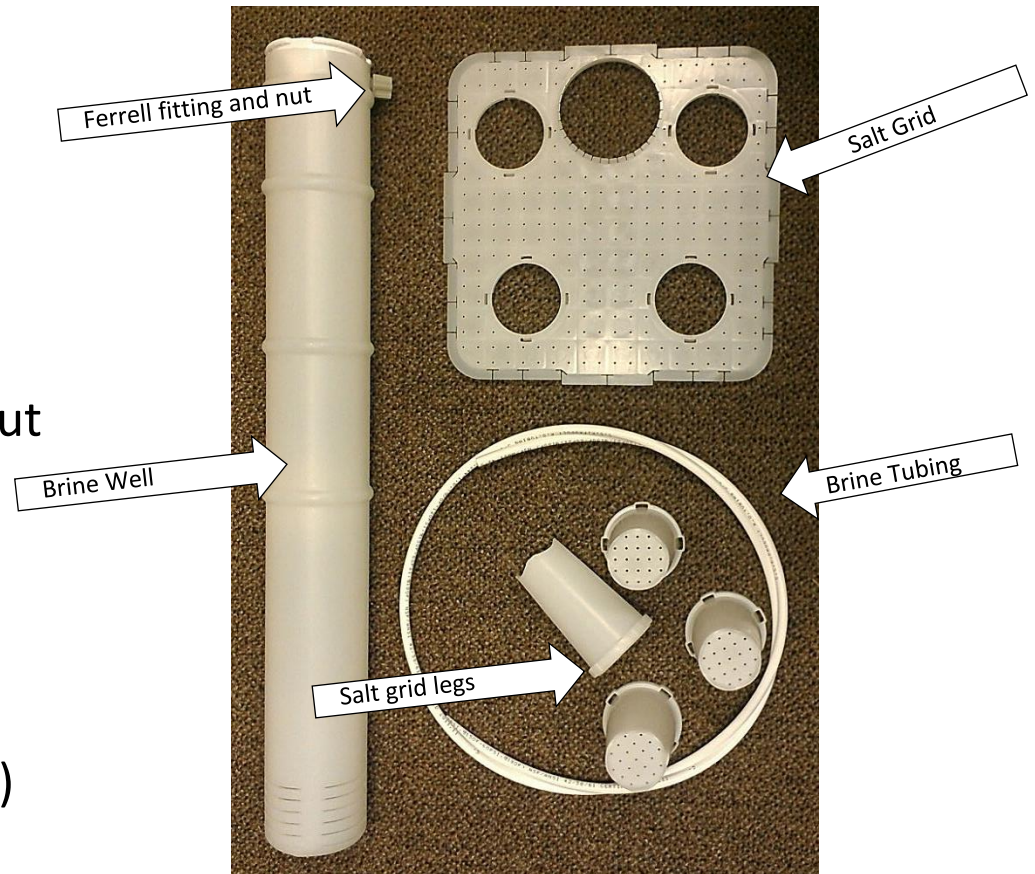
Brine Tank Installation



Brine Tank Components (Softeners)

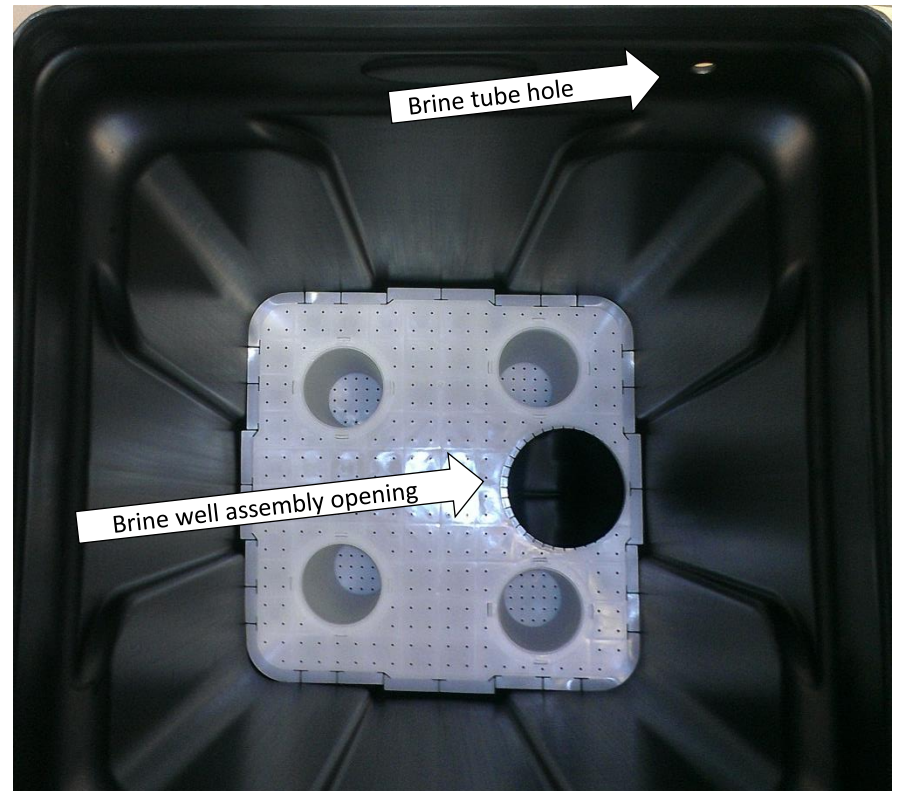
Brine tank components are packed in the brine tank.

- 1) Brine tank with cover
- 2) Brine well assembly
- 3) Brine line Ferrell fitting and nut
- 4) Salt grid with legs (4)
- 5) Brine line tubing (approx. 6 ft)



Installing the Salt Grid

- 1) Carefully line up the brine line hole, in the side of the tank, with the salt grid, so that the brine well assembly will line up to the brine line hole making it easier to plumb without bending the tubing.
- 2) Insert assembled salt grid, legs down.
- 3) Push the salt grid to the bottom of the tank, the position tabs on the outer edge of the salt grid make it a tight fit to keep the grid from floating if the tank runs out of salt.

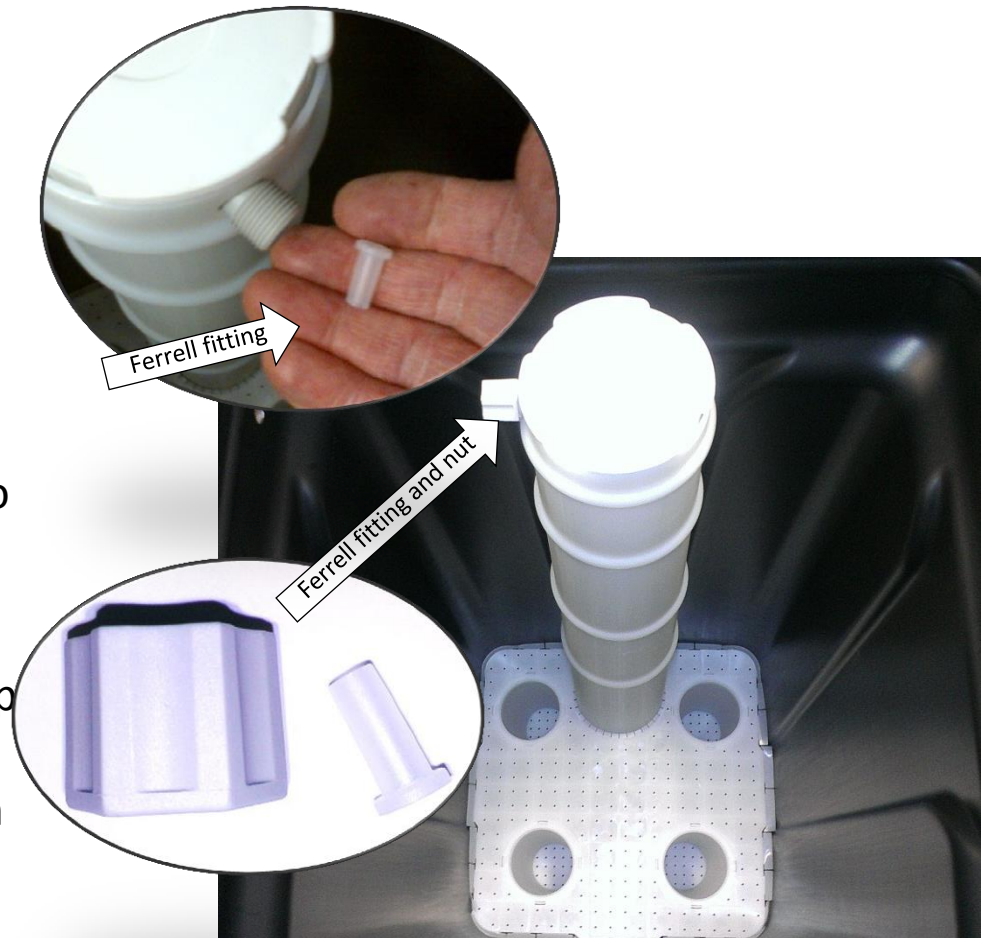


Installing the Brine Well

- 1) Remove nut and tube Ferrell from brine well assembly.
(Ferrell is inside the brine well tube connection)

Note: you may need to retrieve Ferrell from inside fitting.

- 2) Insert brine well assembly into tank, push to the bottom of the tank.
- 3) Rotate the brine well to line up the brine line hole in the tank and the Ferrell nut connection on the brine well assembly.



Connecting Brine Line

- 1) Feed brine line tube through the hole in the side of the brine tank.
- 2) Place Ferrell nut on tube.
- 3) Insert Ferrell into brine line tubing.
- 4) Insert tubing w/ Ferrell into brine well assembly.

Note: Removing the cap, to the brine well assembly, and hold the threaded connection to make is easier to get a good seal.

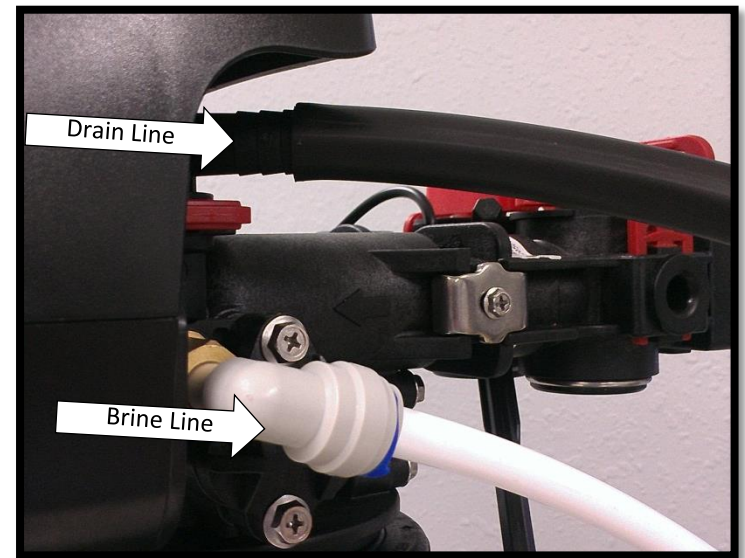
- 5) Hand tighten Ferrell nut to brine well assembly.



Brine Tank is now ready to be connected for service – Do not add salt at this time!

Connect Brine & Drain Lines

- 1) Connect drain Line to the valve
 - a) Slide drain line tube over barbed drain line connection fitting until secured
- 2) Connect brine line to the valve.
 - a) Remove Blue collet clip
(hold on to it, it goes back)
 - b) Insert 3/8" tubing into John Guest fitting
 - c) Press tubing in again to ensure a good seal
 - d) Replace blue collet clip



Add Water to the Brine Tank

Be sure to have the brine tank in its final position before proceeding.

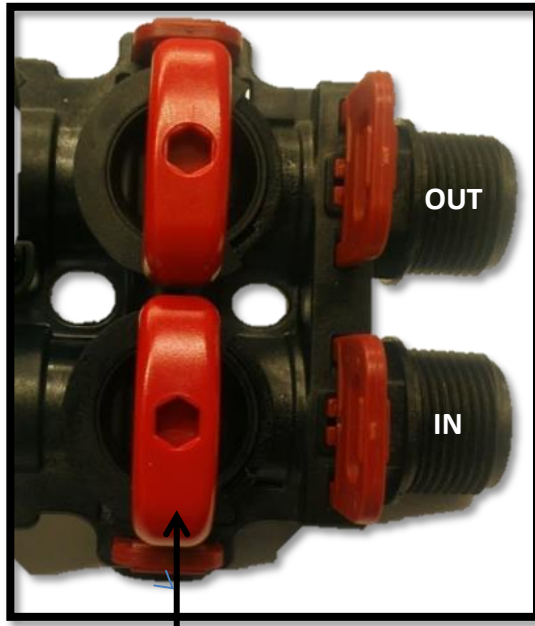
DO NOT ADD SALT AT THIS POINT

Add only water to the brine tank with a sanitary hose until water is 3" – 4" above the grid plate.

*If you are using a tank that does not have a grid plate, fill water until it is above the air check in the brine tank.



System Installation



Off Position

Turn the by-pass valves to the “OFF” position (red valves) pointing “across” the valve as shown.

With the faucet still on, open the main water supply valve.



CAUTION: *Inspect all plumbing connections. Check for leaks and make repairs as needed.*

System Start Up

Notice:

For initial start-up, the Inlet and Outlet valves on the bypass should be in the closed position.

- 1) Press and hold ■ to enter Manual Regen. Mode. (press for 3-5 seconds)
- 2) Press ■ to enter edit mode (flashing).
- 3) Press ▲ or ▼ to select immediate (flashing).
- 4) Press ■ to save.
- 5) Press □ to show “Advancing to Backwash”.



Note: Valve will reset backwash cycle to delay after manual regen. cycle has finished.

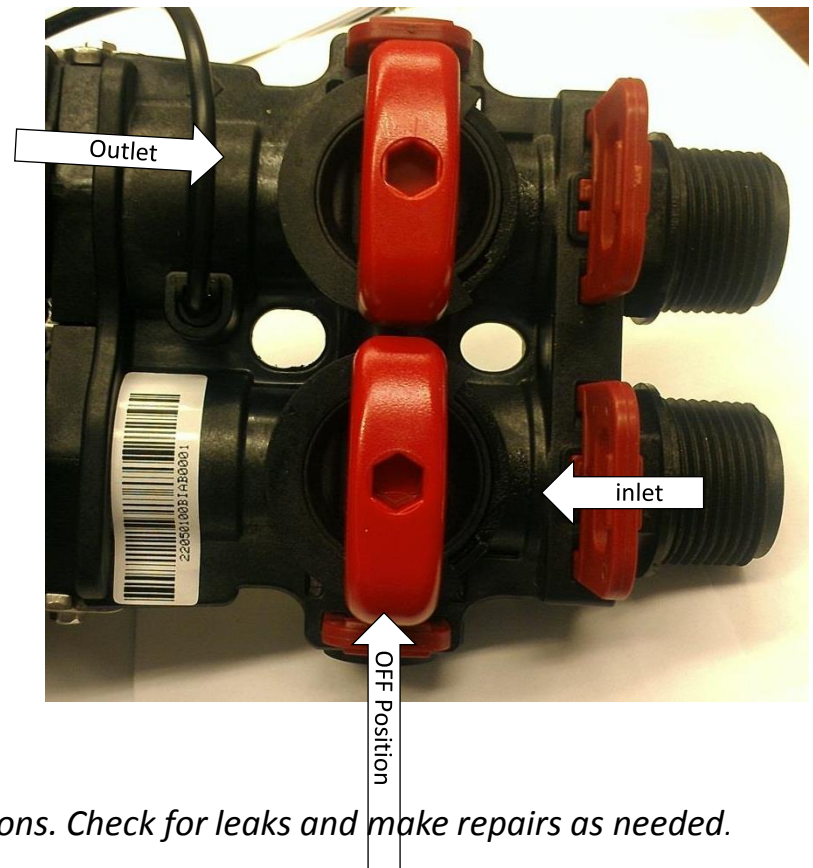
Fill the Mineral Tank



CAUTION: *Allow time for glued connections to cure before proceeding.*

If the mineral tank was not filled, do so at this time following the directions below:

- 1) With bypass valves in the “OFF” position turn on the main water supply.
- 2) Open “Inlet” valve slowly $\frac{1}{4}$ turn clockwise to fill the media tank. Continue to open inlet all the way.

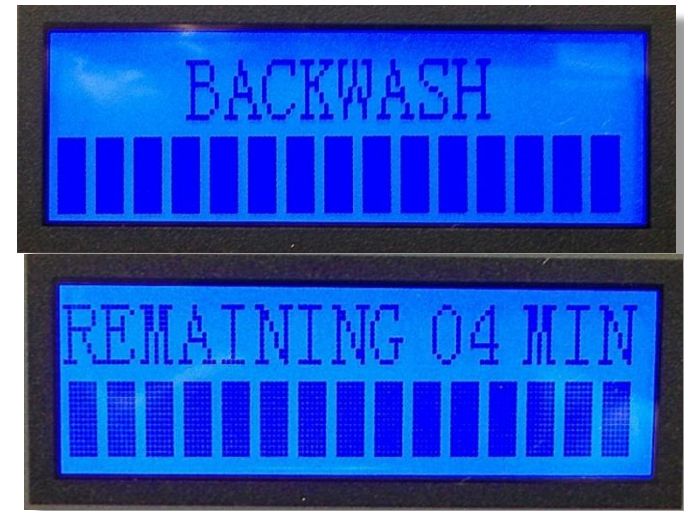


CAUTION: *Inspect all plumbing connections. Check for leaks and make repairs as needed.*

Start-Up In Backwash

Inlet on by-pass is “open” – Outlet on by-pass is “closed”.

- 1) Screen will now display “Backwash” and flash “Remaining XX min”
- 2) Run Backwash cycle until drain line runs clear.



Note: When advancing to another cycle, valve will show “advancing to”. Once the valve is “in” a subsequent cycle, you may press any button to advance to another cycle. Valve cannot be advanced in the “advancing to” position.

Note: Watch to see if the backwash flow rate is proper – do not obstruct drain line. This is particularly important for Iron and Sulfur filters.



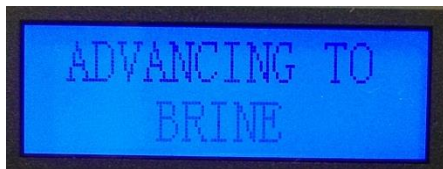
Check for leaks and repair as needed.

System Installation



Leave the system in backwash for a minimum of five to ten minutes until the water runs clear. This will flush loose particles from and preservatives from the media.

REPEAT of the initial backwash cycle may be required should the backwash discharge water does not run “clear” after unit has finished the first cycle.



Press  to advance to the next cycle “Advancing to Brine”

NOTE: *It's common to run multiple backwash cycles with Carbon and Iron filters due to the amount of “fines” in the media.*

Brine Rinse (Draw)

Look for the water level to drop in brine tank.

NOTE: *This is critical to ensure proper operation.*

(Hold the brine line to feel for flow)



Press  to go to “Advancing to Rinse”

Press  to go to “Advancing to Refill”

Brine Tank Re-fill

Watch . . .

The water level in the brine tank go up during refill.

Otherwise there will not be sufficient brine water for the next regeneration cycle (for softeners).

The water level should fill to 3" to 4" above the salt grid.

(Hold the brine line to feel for the flow)



Press  to show "Advancing to Service"

Ready for Service

- 1) Slowly open outlet to supply water to the house.
- 2) Open a faucet on the treated water side in the house until water runs clear.



Finally . . .

Add salt to the brine tank.

Weather Cover

(For outdoor installations)



WARNING

If the water treatment system is to be installed outside, exposed to the weather and/or UV Rays, it is necessary to install a weather cover over the valve. The weather cover will protect the valve from the damaging effects of UV Rays on the LCD Screen and is required to submit a warranty claim.

