

General installation & Guide

The control valve, fittings and/or bypass are designed to accommodate minor plumbing misalignments but are not designed to support the weight of a system or the plumbing.

Do not use Vaseline, oils, other hydrocarbon lubricants or spray silicone anywhere. A silicone lubricant may be used on black o-rings but is not necessary. Avoid any type of lubricants, including silicone on red or clear lip seals.

Do not use pipe dope or other sealants on threads. Teflon tape must be used on the threads of the 1" or the 1/4" connection and on the threads for the drain line connection. Teflon tape is not necessary on the nut connections or cap because o-rings seals are used. The nuts and caps are designed to be tightened by hand or with the special plastic service wrench, #V3193-XXX. If necessary a pliers can be used to unscrew the nut or cap. Do not use a pipe wrench. Do not place screwdriver in slots on caps and/or tap with a hammer.

1. The distance between the drain and the water filter should be as short as possible. All plumbing should be done in accordance with local plumbing codes.
2. Do not install any water filter with less than 10 feet of piping between its outlet and the inlet of a water heater.
3. Do not locate unit where it or its connections (including the drain and overflow lines) will ever be subjected to room temperatures under 34F.
4. Inlet/outlet plumbing: connect to a supply line and install an inlet shutoff valve.
5. Drain line: Be sure that the drain can handle the backwash rate of the system and install a flexible plastic tube to the Drain Line Assembly.
6. Serial number: Record the serial number on the installer's and customer's records.

Bypass Valve (optional)

The bypass valve is used to isolate the control valve from the plumbing system in order to perform valve repairs or maintenance.

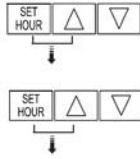
1. **Normal Operation Position:** The inlet and outlet handles point in the direction of flow indicated by the engraved arrows on the control valve. (See Figure 1)
2. **Bypass Position:** The inlet and outlet handles point to the center of the bypass. Untreated water is supplied to the plumbing system. (See Figure 2)

Start-up Instructions

- After installation is completed rotate the bypass handles to the bypass position.
- Fully open a cold water faucet
- Allow water to run until clear to ride pipes of debris, which may have occurred during installation.
- The system is now ready for testing:
 1. Press and hold the UP and DOWN buttons simultaneously for three seconds until the drive motor starts. Wait until the motor stops and the display reads "C1"
 2. Open the inlet handle of the bypass valve very slightly allowing water to fill the tank slowly in order to expel air. CAUTION: If water flow is too rapid, there will be a loss of media out of the drain.
 3. When the water is flowing steadily to the drain without the presence of air, fully open the inlet bypass valve handle.
 4. Press the UP button again to advance the control to the next positions and allow water to run to drain for 2-3 minutes. Control will transfer and the display will read C3 or C4 depending on the program used. If C3 is displayed, press the UP button to advance the control to the rinse position C4. Allow water to run to drain until clear.
 5. Press the UP button to advance the control to the service position.

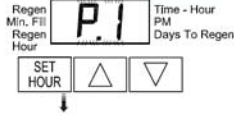
SYSTEM SETUP

STEP 1SS



STEP 1SS – From normal mode, press SET HOUR + UP buttons simultaneously for 3 seconds and release. Then press SET HOUR + UP buttons simultaneously for 3 seconds and release.

STEP 2SS

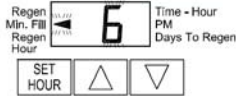


STEP 2SS – Choose the desired program by pressing the UP or DOWN buttons. Prior to selecting a program, verify the correct valve body, main piston, regenerant piston, and stack are being used, and that the injector or injector plug(s) are in the correct locations. See Compliance Table in Service Instructions under Injector Cap, Screen, Injector Plug and Injector section and Figure 6. Press SET HOUR button to go to Step 3SS.

Regeneration Cycles and Times for Different Programs

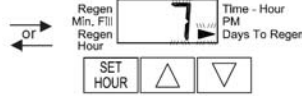
Program	All times in Minutes				
	C1 1st Backwash	C2 Regenerate	C3 2nd Backwash	C4 Rinse	C5 Fill
P0	3	50	3	3	1-99
P1	8	50	8	4	1-99
P2	8	70	10	6	1-99
P3	12	70	12	8	1-99
P4	10	50	Skipped	8	1-99
P5	4	50	Skipped	4	1-99
P6	12	6	Skipped	12	1-99
P7	6	Skipped	Skipped	4	Skipped
P8	10	Skipped	Skipped	6	Skipped
P9	14	Skipped	Skipped	8	Skipped

STEP 3SS



STEP 3SS – If program P0 through P6 was selected, enter in the minutes of fill using the UP or DOWN buttons. The allowable values vary from a low of 1 to a high of 99. If program P7, P8 or P9 was selected, dashes will appear for minutes of fill. Press SET HOUR button to go to Step 4SS. Note: For each minute of fill 0.5 gallons of water is added to the solution tank. With salt (sodium chloride) this equates to approximately 1 1/2 pounds of salt per minute of fill.

STEP 4SS



STEP 4SS — Use UP or DOWN buttons to switch between:

- 1-99 Days Between Regen; or
- 7-Day.

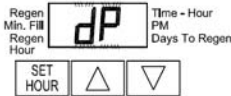
Press SET HOUR button to go to Step 5SS.

STEP 5SS



STEP 5SS — Use UP or DOWN buttons to switch between 60 Hz or 50 Hz option. Press SET HOUR button to go to Step 6SS.

STEP 6SS



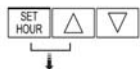
STEP 6SS — If a differential pressure switch is installed and actuated:

- a regeneration will occur immediately if no arrow points at Regen Hour; or
- a regeneration will occur at the delayed regeneration hour if an arrow points at Regen Hour.

Use UP or DOWN buttons to switch between the two choices. If a differential switch is not installed the settings in this display are ignored. Press SET HOUR to exit OEM system setup.

Return to Normal Mode

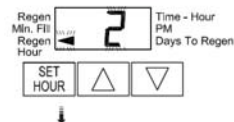
STEP 1ID



Installer Displays & Settings (1-99 Days Between Regeneration option)

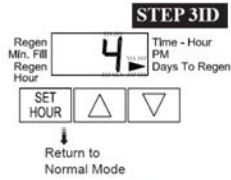
STEP 1ID – From normal mode, press SET HOUR + UP buttons simultaneously for 3 seconds and release.

STEP 2ID



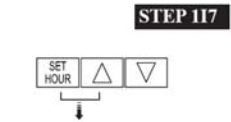
STEP 2ID – Regeneration Time: Set the clock to the hour the regeneration should occur by using the UP or DOWN buttons. An arrow points to PM after 12. Press SET HOUR to go to STEP 3ID.

SYSTEM SETUP – CONTINUED

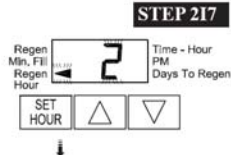


STEP 31D – Days To Regen: Set the number of days between regenerations. The allowable range is 1 to 99. Press SET HOUR to exit Installer Displays & Settings.

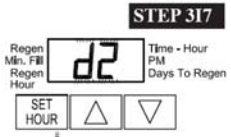
Installer Displays & Settings (7 day option)



STEP 117 – From normal mode, press SET HOUR + UP buttons simultaneously for 3 seconds and release.

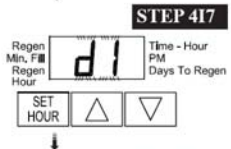


STEP 217 – Regeneration Time: Set the clock to the hour the regeneration should occur by using the UP or DOWN buttons. An arrow points to PM after 12. Press SET HOUR to go to STEP 317.

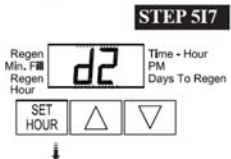


STEP 317 – Current Day of Week: Set the current day of the week by using the UP or DOWN buttons (See chart at right for date codes). Press SET HOUR to go to STEP 417.

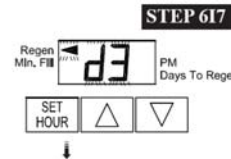
Display	Day of Week
d1	Sunday
d2	Monday
d3	Tuesday
d4	Wednesday
d5	Thursday
d6	Friday
d7	Saturday



STEP 417 – Sunday Regeneration: To regenerate on Sunday use the UP or DOWN button until the arrow points to Regen. If the arrow does not point to Regen a regeneration will not occur on Sunday. Press SET HOUR to go to STEP 517.



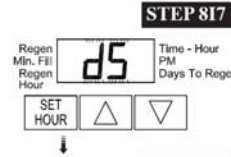
STEP 517 – Monday Regeneration: To regenerate on Monday use the UP or DOWN button until the arrow points to Regen. If the arrow does not point to Regen a regeneration will not occur on Monday. Press SET HOUR to go to STEP 617.



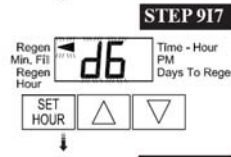
STEP 617 – Tuesday Regeneration: To regenerate on Tuesday use the UP or DOWN button until the arrow points to Regen. If the arrow does not point to Regen a regeneration will not occur on Tuesday. Press SET HOUR to go to STEP 717.



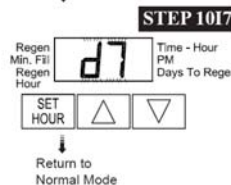
STEP 717 – Wednesday Regeneration: To regenerate on Wednesday use the UP or DOWN button until the arrow points to Regen. If the arrow does not point to Regen a regeneration will not occur on Wednesday. Press SET HOUR to go to STEP 817.



STEP 817 – Thursday Regeneration: To regenerate on Thursday use the UP or DOWN button until the arrow points to Regen. If the arrow does not point to Regen a regeneration will not occur on Thursday. Press SET HOUR to go to STEP 917.



STEP 917 – Friday Regeneration: To regenerate on Friday use the UP or DOWN button until the arrow points to Regen. If the arrow does not point to Regen a regeneration will not occur on Friday. Press SET HOUR to go to STEP 1017.

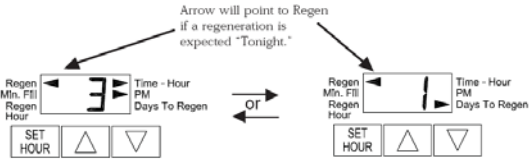


STEP 1017 – Saturday Regeneration: To regenerate on Saturday use the UP or DOWN button until the arrow points to Regen. If the arrow does not point to Regen a regeneration will not occur on Saturday. Press SET HOUR to exit Installer Displays & Settings.

NOTE: If all arrows are turned off in d1-d7, Days to Regen in the User Displays will always read 7 and a regeneration will never occur.

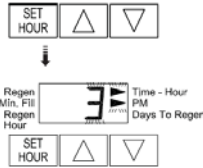
GENERAL OPERATION

When the system is operating one of two displays will be shown: time of day or days until the next regeneration. Pressing UP or DOWN will toggle between the two choices.



TO SET TIME OF DAY

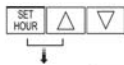
In the event of a power outage, time of day needs to be reset. All other information will be stored in memory no matter how long the power outage. Please complete the steps as shown to the right. To access this mode, press SET HOUR.



1. Accessed by pressing SET HOUR.
2. Adjust to the nearest hour using UP or DOWN. An arrow points to PM during p.m. hours.
3. Press SET HOUR to complete and return to normal operation.

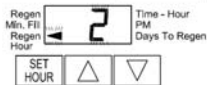
STEP 1ID

Installer Displays & Settings (1-99 Days Between Regeneration option)



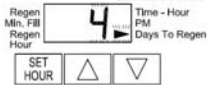
STEP 1ID – From normal mode, press SET HOUR + UP buttons simultaneously for 3 seconds and release.

STEP 2ID



STEP 2ID – Regeneration Time: Set the clock to the hour the regeneration should occur by using the UP or DOWN buttons. An arrow points to PM after 12. Press SET HOUR to go to STEP 3ID.

STEP 3ID



STEP 3ID – Days To Regen: Set the number of days between regenerations. The allowable range is 1 to 99. Press SET HOUR to exit Installer Displays & Settings.

Return to Normal Mode

MANUAL REGENERATION

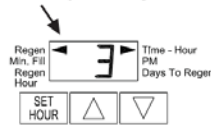
NOTE: For softeners, if brine tank does not contain salt, fill with salt and wait at least 2 hours before regeneration.

If you need to initiate a manual regeneration, either immediately, or tonight at the preprogrammed time (typically 2 a.m.), complete the following steps.

For Immediate Regeneration:

Press and hold UP and DOWN simultaneously until valve motor starts (typically 3 seconds).

Arrow will point to Regen if a regeneration is expected "Tonight."



For Regeneration Tonight:

Press and release UP and DOWN simultaneously (notice that arrow points to Regen).

If the display shows "E1," "E2" or "E3" (for error), call a service technician.



To shut off water to the system, please position arrow handles as shown in the bypass operation diagram below. If your valve doesn't look like the diagram below, contact your service technician for instructions on how to shut off water.

NORMAL OPERATION

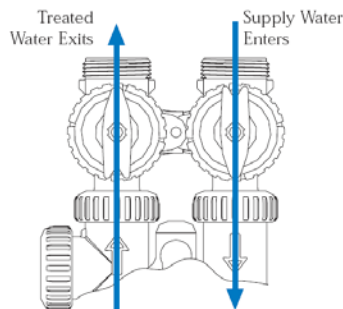


Figure 1

BYPASS OPERATION

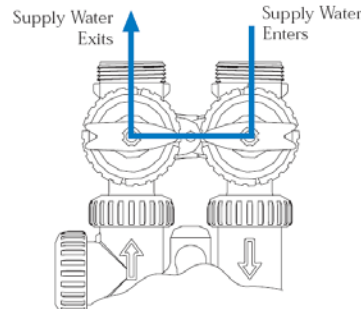


Figure 2