

Water Specialist iGen[®]

Control Valve

Programming and Cover Drawing Manual

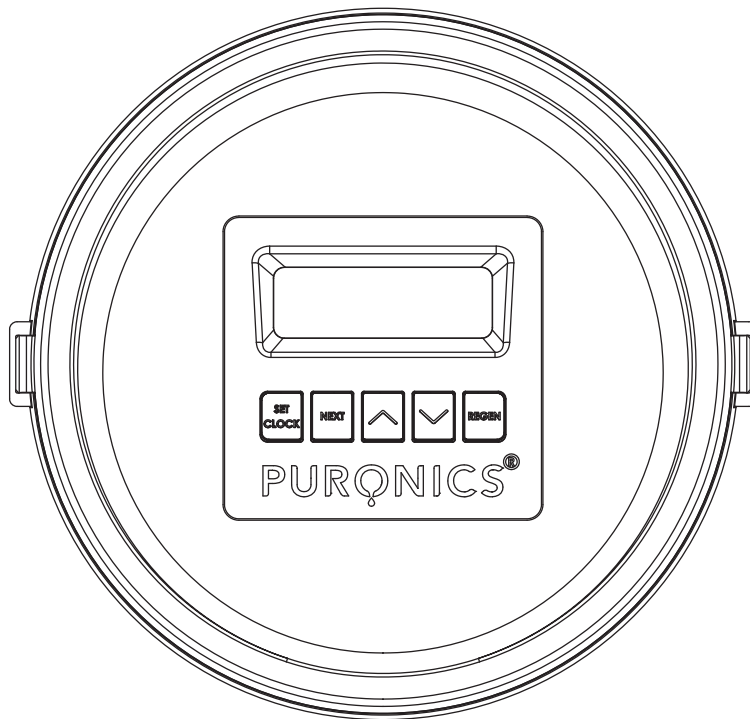


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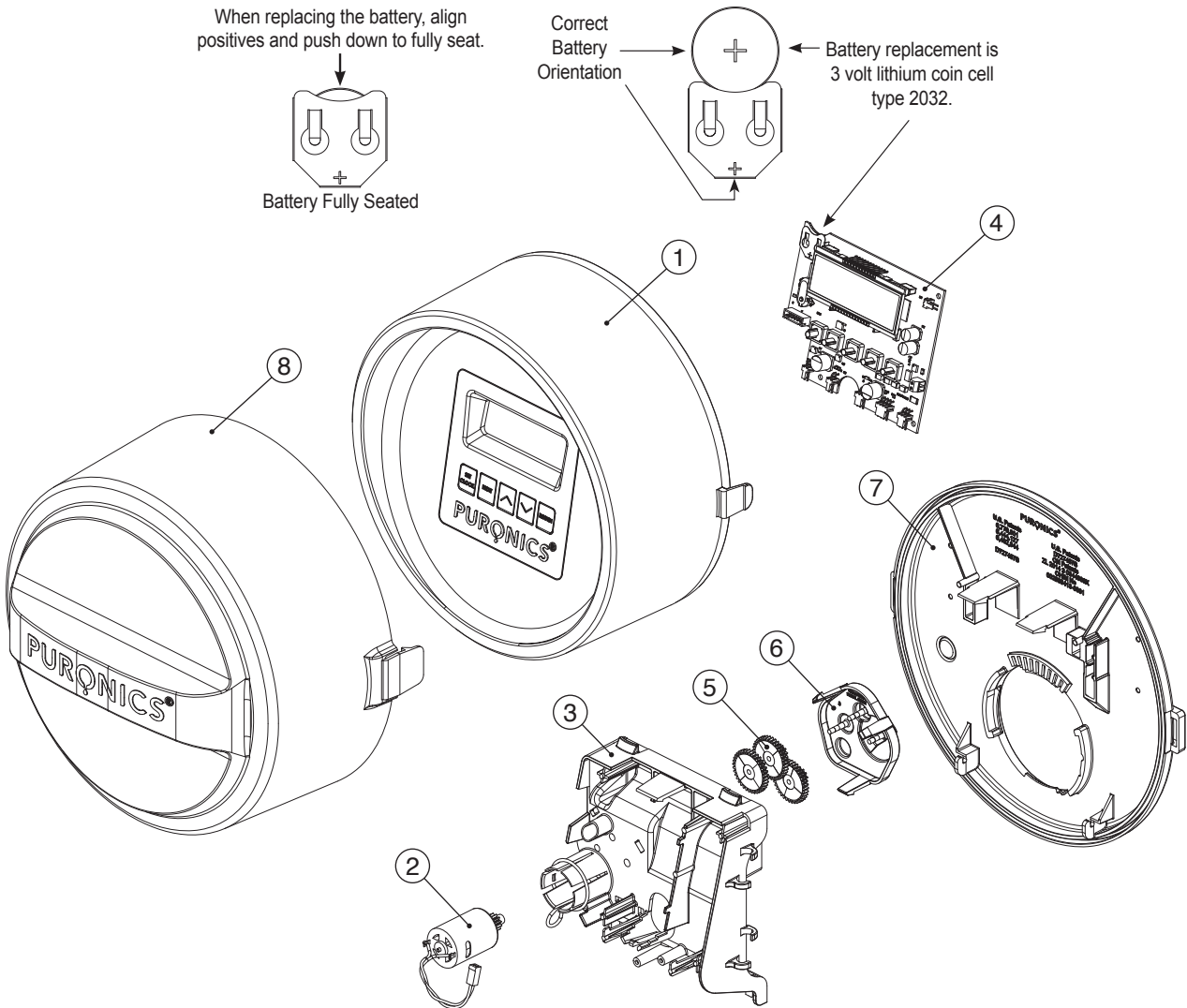
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iGen® Front Cover and Drive Assembly

Drawing No.	Order No.	Description	Quantity
1	V4165-01	WS1 iGen® FRONT COVER ASY	1
2	V3107-01	WS1 MOTOR	1
3	V3106-01	WS1 DRIVE BRACKET&SPRING CLIP	1
4	V4164PU-BOARD	WS1 iGen® PCB REPLACE	1
5	V3110	WS1 DRIVE REDUCING GEAR 12X36	3
6	V3109	WS1 DRIVE GEAR COVER	1
7	V4166	WS1 iGen® BACK PLATE	1
8	V4169	WS1 iGen® WEATHER COVER	1
Not Shown	V3186	WS1 AC ADAPTER 120V-12V	1

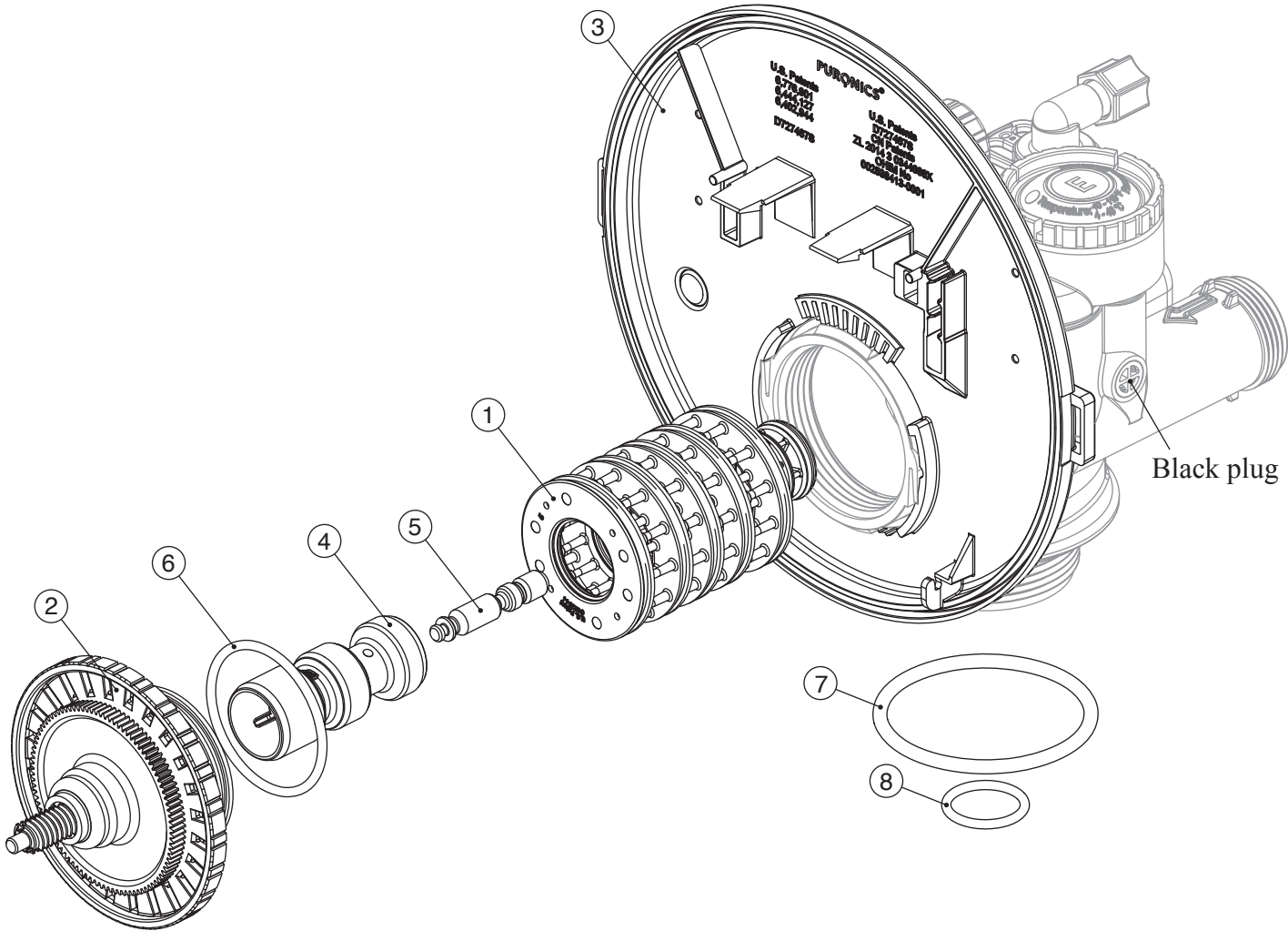
AC Adapter	U.S.
Supply Voltage	120 V AC
Supply Frequency	60 Hz
Output Voltage	12 V AC
Output Current	500 mA



WS1 iGen® Drive Cap Assembly, Downflow Piston, Regenerant Piston and Spacer Stack Assembly

Drawing No.	Order No.	Description	Quantity
1	V3005-02	WS1 SPACER STACK ASSEMBLY	1
2	V3004	DRIVE CAP ASY	1
3	V4166	WS1 iGen® BACK PLATE	1
4	V3011	WS1 PISTON DOWNFLOW ASY	1
5	V3174	WS1 REGENERANT PISTON	1
6	V3135	O-RING 228	1
7	V3180	O-RING 337	1
8	V3105	O-RING 215 (DISTRIBUTOR TUBE)	1
Not Shown	V3001	WS1 BODY ASY DOWNFLOW	1

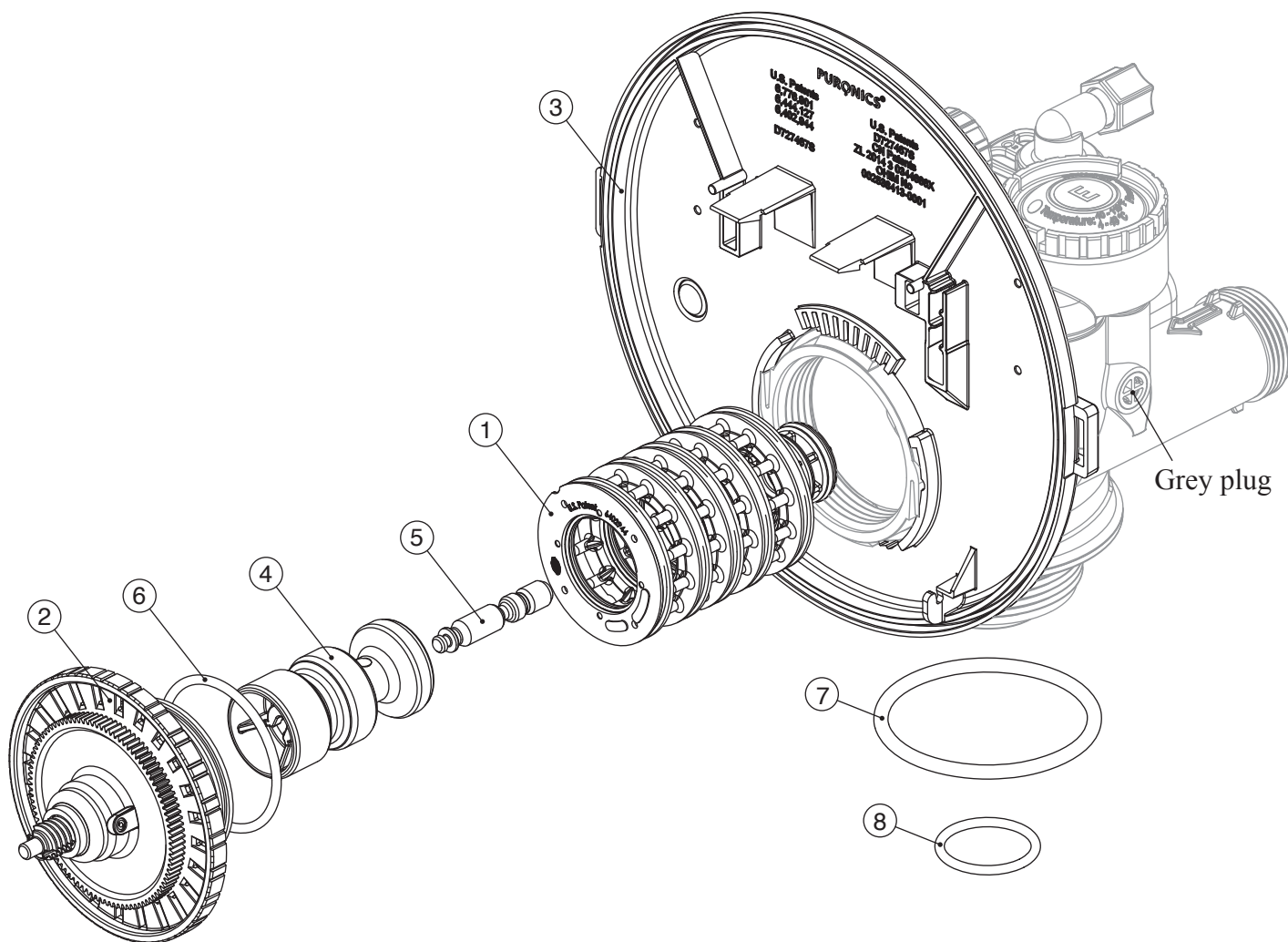
Note: The regenerant piston is not used in backwash only applications.



WS1.25 iGen® Drive Cap Assembly, Downflow Piston, Regenerant Piston and Spacer Stack Assembly

Drawing No.	Order No.	Description	Quantity
1	V3430-01	WS1.5 SPACER STACK ASSEMBLY	1
2	V3004	DRIVE CAP ASY	1
3	V4166	WS1 iGen® BACK PLATE	1
4	V3407	WS125/15 PISTON DOWNFLOW ASY (AMBER)	1
5	V3174	WS1 REGENERANT PISTON	1
6	V3135	O-RING 228	1
7	V3180	O-RING 337	1
8	V3358	O-RING 219 (DISTRIBUTOR TUBE OPENING 1.32")	1
Not Shown	V3020	WS1.25 BODY ASY DOWNFLOW (DISTRIBUTOR TUBE OPENING 1.32")	1

Note: The regenerant piston is not used in backwash only applications.



Control Valve Function and Cycles of Operation

Target Range	Low	Medium	High
Lbs. of salt per 1 Ft ² of resin	<7.5	7.5 - 12.0	12>
Grains Capacity per lbs. of salt	6000 – 3501	3500 – 2501	2500 - 1700

	Code	Salting Range	Backwash Type	Fill Type	Brine Direction	Fill Minutes	Service Minutes	BW Minutes	Rinse* Minutes	Brine Minutes	BW Minutes	Rinse Minutes	BW** Minutes	Fill Minutes	Fill** Minutes
Softening	C1	Low	Normal	Post	Down			6		45	3	3		0:22-78:13	
	C2	Medium	Normal	Post	Down			8		60	8	4		0:22-78:13	
	C3	High	Normal	Post	Down			8		75	10	6		0:22-78:13	
	C4	Low	Longer	Post	Down			8		45	8	4		0:22-78:13	
	C5	Medium	Longer	Post	Down			10		60	10	6		0:22-78:13	
	C6	High	Longer	Post	Down			12		75	12	8		0:22-78:13	
	C7	Low	Normal	Pre	Down	0:22-78:13	120	6		45	3	3			0:05
	C8	Medium	Normal	Pre	Down	0:22-78:13	120	8		60	8	4			0:05
	C9	High	Normal	Pre	Down	0:22-78:13	120	8		75	10	6			0:05
	C10	Low	Longer	Pre	Down	0:22-78:13	120	8		45	8	4			0:05
	C11	Medium	Longer	Pre	Down	0:22-78:13	120	10		60	10	6			0:05
	C12	High	Longer	Pre	Down	0:22-78:13	120	12		75	12	8			0:05
	C21	Low	Normal	Post	Up				0:15	45	6	3		0:22-78:13	
	C22	Medium	Normal	Post	Up				0:15	60	10	4		0:22-78:13	
	C23	High	Normal	Post	Up				0:15	75	12	6		0:22-78:13	
	C24	Low	Longer	Post	Up				0:15	60	12	5		0:22-78:13	
	C25	Medium	Longer	Post	Up				0:15	70	14	7		0:22-78:13	
	C26	High	Longer	Post	Up				0:15	80	16	9		0:22-78:13	
	C27	Low	Normal	Pre	Up	0:22-78:13	120		0:15	45	6	3			0:05
	C28	Medium	Normal	Pre	Up	0:22-78:13	120		0:15	60	10	4			0:05
	C29	High	Normal	Pre	Up	0:22-78:13	120		0:15	75	12	6			0:05
	C30	Low	Longer	Pre	Up	0:22-78:13	120		0:15	60	12	5			0:05
	C31	Medium	Longer	Pre	Up	0:22-78:13	120		0:15	70	14	7			0:05
	C32	High	Longer	Pre	Up	0:22-78:13	120		0:15	80	16	9			0:05
Filtering	C41	Fill OFF	Normal	NA	Down						14	8		NA	
	C42	Fill OFF	Longer	NA	Down						16	10		NA	
	C43	Fill OFF	Normal 2	NA	Down			8	6		10	8		NA	
	C44	Fill OFF	Longer 2	NA	Down			12	6		12	10		NA	
	C45	Fill ON	Normal	Post	Down			14		60		8	0:30	0:00-39:50	
	C46	Fill ON	Longer	Post	Down			16		60		10	0:30	0:00-39:50	
	C47	Fill ON	Normal 2	Post	Down			8		60	10	8	0:30	0:00-39:50	
	C48	Fill ON	Longer 2	Post	Down			12		60	12	10	0:30	0:00-39:50	
	C49	Fill ON	Normal	Pre	Down	0:00-39:50	120	14		60		8	0:30		0:05
	C50	Fill ON	Longer	Pre	Down	0:00-39:50	120	16		60		10	0:30		0:05
	C51	Fill ON	Normal 2	Pre	Down	0:00-39:50	120	8		60	10	8	0:30		0:05
	C52	Fill ON	Longer 2	Pre	Down	0:00-39:50	120	12		60	12	10	0:30		0:05

Fill time varies, depending on settings. *Fixed for Upflow Softeners ** Fixed, non-adjustable cycle times

Setting Options Table

System Type	Regeneration Option	Regeneration Type	Day Override	
Softening	Auto	Normal	1-28 days	Regeneration occurs at the next regeneration time when volume capacity falls below the reserve capacity, or the specified number of days is reached, whichever comes first.
Softening	Auto	Normal	OFF	Regeneration occurs at the next regeneration time when volume capacity falls below the reserve capacity.
Softening or Filtering	20 – 50,000 Gallons	Normal	1-28 days	Regeneration occurs at the next regeneration time when volume capacity reaches 0, or the specified number of days is reached, whichever comes first.
Softening or Filtering	20 – 50,000 Gallons	Normal	OFF	Regeneration occurs at the next regeneration time when volume capacity reaches 0.
Softening or Filtering	OFF	Normal	1-28 days	Time Clock operation. Regeneration occurs at the next regeneration time the specified number of days is reached.
Softening	Auto or 20 – 50,000 Gallons	On 0	1-28 days	Regeneration occurs immediately when volume capacity reaches 0, or the specified number of days is reached, whichever comes first.
Softening or Filtering	20-50,000 Gallons	On 0	OFF	Regeneration occurs immediately when volume capacity reaches 0.
Softening	Auto	Normal + On 0	1-28 days	Regeneration occurs at the next regeneration time when volume capacity falls below the reserve capacity, or the specified number of days is reached, or regeneration occurs after 10 minutes of no water usage when volume capacity reaches 0.
Softening or Filtering	20 – 50,000 Gallons	Normal + On 0	1-28 days	Regeneration occurs at the next regeneration time the specified number of days is reached or regeneration occurs after 10 minutes of no water usage when volume capacity reaches 0.
Softening	Auto	Normal + On 0	OFF	Regeneration occurs at the next regeneration time when volume capacity falls below the reserve capacity, or regeneration occurs after 10 minutes of no water usage when volume capacity reaches 0.

The control valve with a water meter can be set for

- Demand Initiated Regeneration (DIR) only
- Time Clock operation only
- DIR and Time Clock, whichever occurs first, depending upon what settings are selected for Day Override and Gallon Capacity

If a control valve does not contain a meter, the valve can only act as a time clock, and day override should be set to any number and gallon capacity should be set to off.

The user can initiate manual regeneration. The user has the option to request the manual regeneration at the delayed regeneration time or to have the regeneration occur immediately:

1. Press and release REGEN. “Regen Today” will flash on the display and the regeneration will occur at the delayed regeneration time. The user can cancel the request by pressing and releasing REGEN. NOTE: This method of manually initiating regeneration is NOT allowed when the Regeneration Type is set to On 0.°
2. Press and hold REGEN for approximately 3 seconds to immediately start the regeneration. The user cannot cancel this request, except by resetting the control by pressing NEXT and REGEN simultaneously for 3 seconds.

The control valve may be stepped through the regeneration cycles by pressing REGEN.

OEM General Instructions

The control valve offers multiple procedures that allow the valve to be modified to suit the needs of the installation. These procedures are:

- OEM Softener Setup
- OEM Filter Setup
- Installer Displays & Settings
- Service Alarm Setup
- User Displays & Settings
- Diagnostics
- Valve History

These procedures can be accessed in any order. Details on each of the procedures are provided on the following pages.

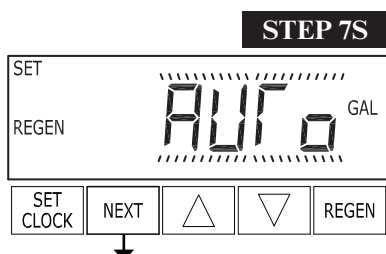
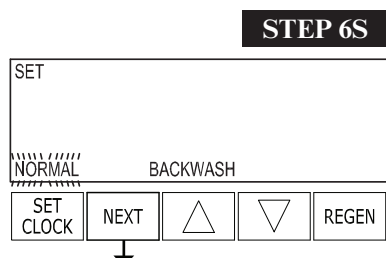
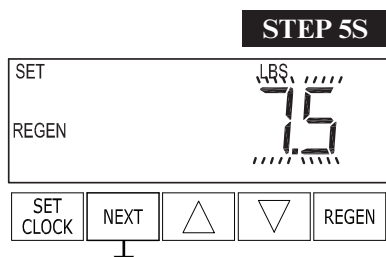
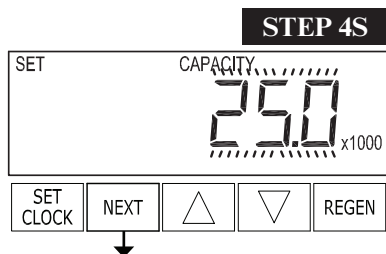
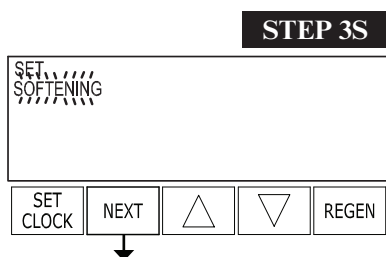
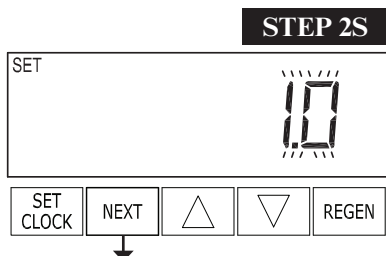
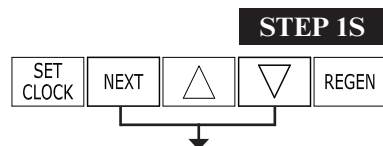
At the discretion of the manufacturer, the field technician can access all settings. To “lock out” access to diagnostic and valve history displays and modifications to settings except hardness, day override, time of regeneration and time of day by anyone but the manufacturer, press ▼, NEXT, ▲, and SET CLOCK in sequence after settings are made. To “unlock”, so other displays can be viewed and changes can be made, press ▼, NEXT, ▲, and SET CLOCK in sequence.

When in operation normal user displays such as time of day, gallons remaining or days remaining before regeneration are shown. When stepping through a procedure, if no buttons are pressed within five minutes the display returns to a normal user display. Any changes made prior to the five minute time out are incorporated.

To quickly exit OEM Softener Setup, OEM Filter Setup, Installer Display Settings, Diagnostics or Valve History press SET CLOCK. Any changes made prior to the exit are incorporated.

When desired all information in Diagnostics may be reset to zero when the valve is moved to a new location. To reset to zero, press NEXT and ▼ simultaneously to go to the Service/OEM 1 screen, and release. Press ▲ and ▼ simultaneously to reset diagnostic values to zero. Screen will return to User Display.

OEM Softener System Setup



STEP 1S – Press NEXT and ▼ simultaneously for 3 seconds. If screen in step 2S does not appear in 5 seconds the lock on the valve is activated. To unlock press ▼, NEXT, ▲, and SET CLOCK in sequence, then press NEXT and ▼ simultaneously for 3 seconds.

STEP 2S – Select Valve Type. Use ▲ or ▼ to select between 1.0 and 1.25. Press NEXT to go to Step 3S. Press REGEN to exit OEM Softener System Setup.

STEP 3S – Choose Softening using ▲ or ▼. Press NEXT to go to Step 4S. Press REGEN to exit OEM Softener System Setup.

STEP 4S – Enter the ion exchange capacity in grains of hardness as calcium carbonate for the system based on test data using ▲ or ▼. Press NEXT to go to Step 5S. Press REGEN to return to previous step.

STEP 5S – Enter the pounds of salt per regeneration using ▲ or ▼. Press NEXT to go to Step 6S. Press REGEN to return to previous step.

STEP 6S – Backwash: Select “NORMAL” or “LONGER” using ▲ or ▼. Press NEXT to go to Step 7S. Press REGEN to return to previous step.

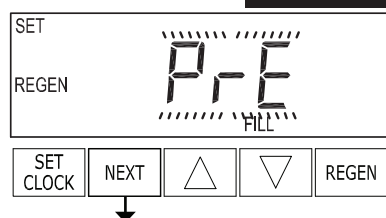
STEP 7S – Set Gallons Capacity using ▲ or ▼:

- “AUTO” (reserve capacity automatically estimated and gallons capacity automatically calculated from grains capacity and water hardness);
- “OFF” (regeneration based on day override); or
- number of gallons (20 to 50,000).

See Setting Options Table for more detail. Press NEXT to go to Step 8S. Press REGEN to return to previous step.

OEM Softener System Setup (continued)

STEP 8S

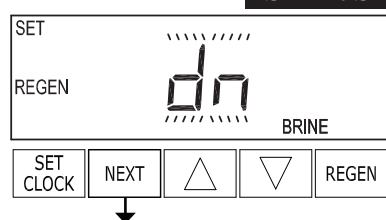


STEP 8S – Set Refill option using ▲ or ▼:

- “PoST” to refill the brine tank after the final rinse; or
- “PrE” to refill the brine tank two hours before the regeneration time set.

Press NEXT to go to Step 9S. Press REGEN to return to previous step.

STEP 9S



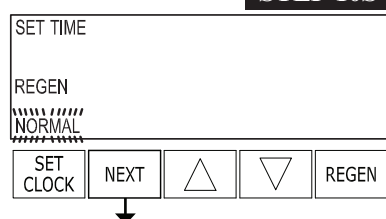
STEP 9S – Set regenerant downflow or upflow using ▲ or ▼:

- “dn” if the regenerant is to flow downward through the media; or
- “UP” if the regenerant is to flow upward through the media.

Prior to selecting a regenerant flow direction, 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.

Press NEXT to go to Step 10S. Press REGEN to return to previous step.

STEP 10S



STEP 10S – Set Regeneration Time Option using ▲ or ▼:

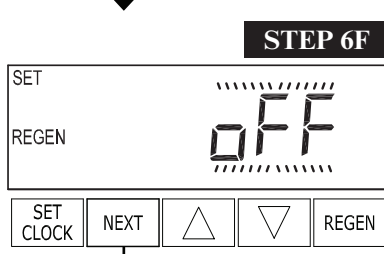
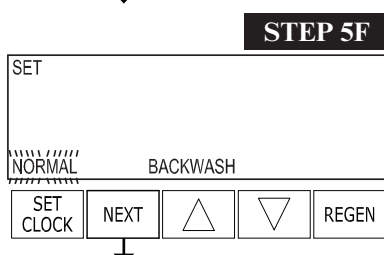
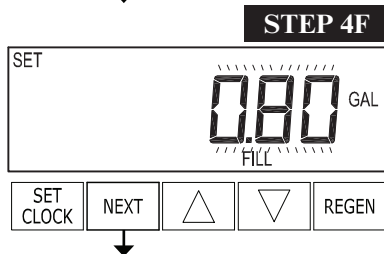
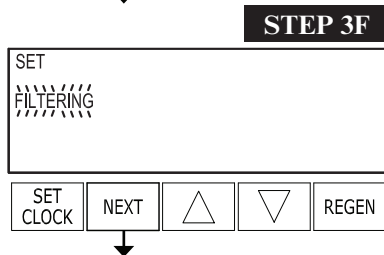
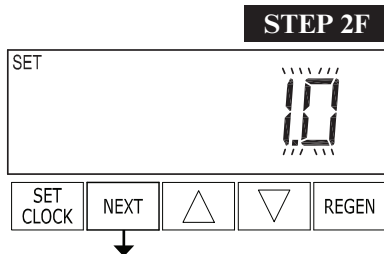
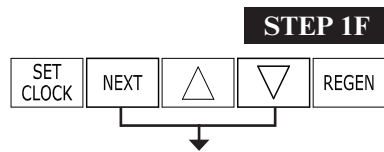
- “NORMAL” means regeneration will occur at the preset time;
- “on 0” means regeneration will occur immediately when the gallons capacity reaches 0 (zero); or
- “NORMAL + on 0” means regeneration will occur at one of the following:
 - the preset time when the gallons capacity falls below the reserve or the specified number of days between regenerations is reached whichever comes first; or
 - after 10 minutes of no water usage when the gallon capacity reaches 0 (zero).

See Setting Options Table for more detail. Press NEXT to exit OEM Softener System Setup. Press REGEN to return to previous step.

**RETURN TO
NORMAL MODE**

OEM Filter System Setup

This is a quick reference setup procedure. See OEM Filter System Setup Detail for more information on available settings.



STEP 1F – Press NEXT and ▼ simultaneously for 3 seconds. If screen in step 2F does not appear in 5 seconds the lock on the valve is activated. To unlock press ▼, NEXT, ▲, and SET CLOCK in sequence, then press NEXT and ▼ simultaneously for 3 seconds.

STEP 2F – Select Valve Type. Use ▲ or ▼ to select between 1.0 and 1.25. Press NEXT to go to Step 3F. Press REGEN to exit OEM Filter System Setup.

STEP 3F – Choose Filtering using ▲ or ▼. Press NEXT to go to step 4F. Press REGEN to exit OEM Filter System Setup.

STEP 4F – Enter “oFF” if regenerant is not used (i.e. backwash only) or enter the refill volume (in gallons) using ▲ or ▼. Prior to selecting oFF or regenerant volume, 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. Press NEXT to go to step 5F. Press REGEN to return to previous step.

STEP 5F – Backwash: Select using ▲ or ▼:

- “NORMAL” for one “NORMAL” backwash (14 minutes);
- “NORMAL 2” for two “NORMAL” backwashes (8 minutes each);
- “LONGER” for one “LONGER” backwash (16 minutes); or
- “LONGER 2” for two “LONGER” backwashes (12 minutes each). Press NEXT to go to step 6F. Press REGEN to return to previous step.

STEP 6F – Set Gallons Capacity using ▲ or ▼:

- “oFF” (regeneration based on day override); or
- number of gallons (20 to 50,000).

See Setting Options Table for more detail. Press NEXT to go to step 7F. Press REGEN to return to previous step.

STEP 7F – Set Refill option using ▲ or ▼:

- “PoST” to refill the brine tank after the final rinse; or
- “PrE” to refill the brine tank two hours before the regeneration time set.

Press NEXT to go to step 8F. Press REGEN to return to previous step.

OEM Filter System Setup (continued)**STEP 8F**

SET TIME				
REGEN				
NORMAL				
SET CLOCK	NEXT	▲	▼	REGEN

↓
**RETURN TO
NORMAL MODE**

STEP 8F – Set Regeneration Time Option using ▲ or ▼:

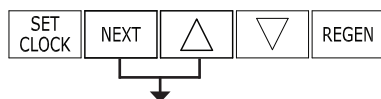
- “NORMAL” means regeneration will occur at the preset time;
- “on 0” means regeneration will occur immediately when the gallons capacity reaches 0 (zero); or
- “NORMAL + on 0” means regeneration will occur at one of the following:
 - the preset time when the specified number of days between regenerations is reached; or
 - after 10 minutes of no water usage when the gallon capacity reaches 0 (zero).

This display will not appear if Step 6F is set to oFF.

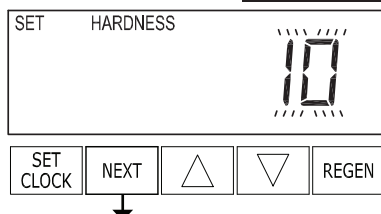
See Setting Options Table for more detail. Press NEXT to exit OEM Filter System Setup. Press REGEN to return to previous step.

Installer Display Settings

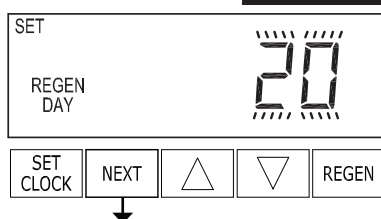
STEP 1I



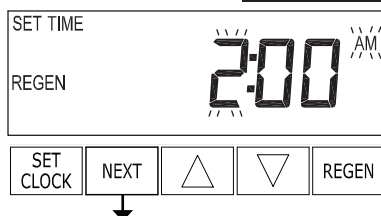
STEP 2I



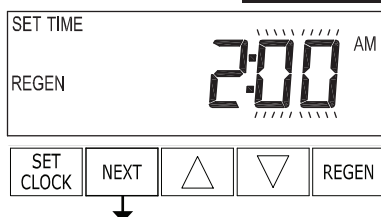
STEP 3I



STEP 4I



STEP 5I



**RETURN TO
NORMAL MODE**

STEP 1F – Press NEXT and ▲ simultaneously for 3 seconds.

STEP 2I – Hardness: Set the amount of hardness in grains of hardness as calcium carbonate per gallon using ▲ or ▼. This display will not appear if Step 3F is set to FILTERING or if OFF or a number is selected in Step 8S. Press NEXT to go to step 3I. Press REGEN to exit Installer Display Settings.

STEP 3I – Day Override: When gallon capacity is set to off, Day Override sets the number of days between regenerations. When gallon capacity is set to AUTO or to a number, Day Override sets the maximum number of days between regenerations. If value set to “oFF” regeneration initiation is based solely on gallons used. If value is set as a number (allowable range from 1 to 28) a regeneration initiation will be called for on that day even if sufficient number of gallons were not used to call for a regeneration. Set Day Override using ▲ or ▼:

- number of days between regeneration (1 to 28); or
- “oFF”.

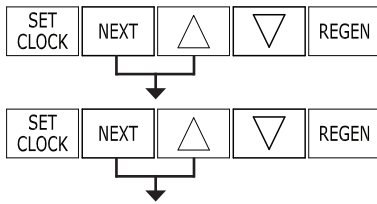
See Setting Options Table for more detail on setup. Press NEXT to go to step 4I. Press REGEN to return to previous step.

STEP 4I – Next Regeneration Time (hour): Set the hour of day for regeneration using ▲ or ▼. AM/PM toggles after 12. The default time is 2:00 a.m. This display will show “REGEN on 0 GAL” if “on 0” is selected in Step 10S or Step 8F. Press NEXT to go to step 5I. Press REGEN to return to previous step.

STEP 5I – Next Regeneration Time (minutes): Set the minutes of day for regeneration using ▲ or ▼. This display will not be shown if “on 0” is selected in Step 10S or Step 8F. Press NEXT to exit Installer Display Settings. Press REGEN to return to previous step.

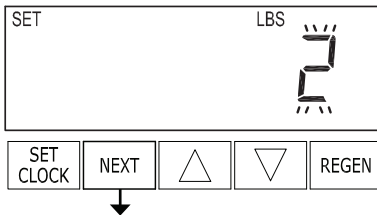
Service Alarm Settings

STEP 1SA



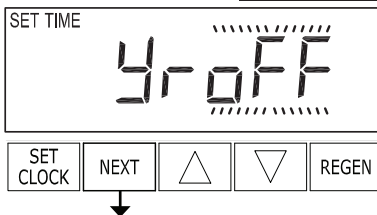
STEP 1SA – Press NEXT and ▲ simultaneously for approximately 3 seconds. Then press NEXT and ▲ simultaneously for approximately 10 seconds.

STEP 2SA



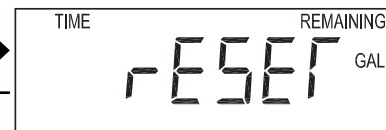
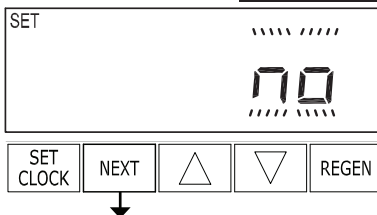
STEP 2SA – Set Treatment Media Weight. Use ▲ or ▼ to select a weight in 1 lb. increments from 1 to 14 lbs. or OFF. This value is multiplied by 37,500 and the result will display in the User Screens. That value will decrement with usage. Press NEXT to go to Step 3SA. Press REGEN to exit Service Alarm Settings.

STEP 3SA



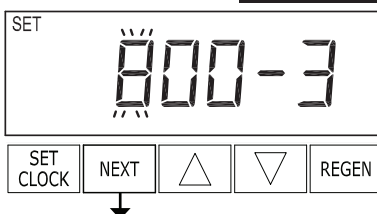
STEP 3SA – Set time between scheduled service calls. Use ▲ or ▼ to select duration in .25 year increments from 0.25 to 9.75 years, or OFF. Press NEXT to go to Step 4SA. Press REGEN to return to previous step.

STEP 4SA



STEP 4SA – Reset time and gallons remaining to Service Alarm. Setting YES will reset user display back to the initial maximum value. Press NEXT to go to Step 5SA. Press REGEN to return to previous step.

STEP 5SA



STEP 5SA – Set Contact Phone Number for Service Alarm. Use ▲ or ▼ to set the correct number, use NEXT to advance to the next number. Default: 800-339-8780. Press NEXT to exit Service Alarm Settings. Press REGEN to return to previous screen.

**RETURN TO
NORMAL MODE**

User Displays / Settings



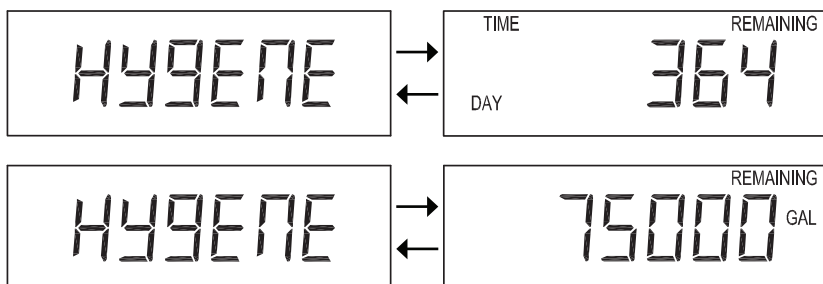
↑
REGEN TODAY will be displayed if a regeneration is expected "Tonight."

General Operation

When the system is operating one of several displays will be shown. Pressing NEXT will alternate between the displays. One of the displays is always the current time of day. Days remaining is the number of days left before the system goes through a regeneration cycle. Capacity remaining is the number of gallons that will be treated before the system goes through a regeneration cycle. The user can scroll between the displays as desired.

If the system has called for a regeneration that will occur at the preset time of regeneration, the words REGEN TODAY will appear on the display.

When water is being treated (i.e. water is flowing through the system) the word "Softening" or "Filtering" flashes on the display if a water meter is installed.



Service Alarm

If the Service Alarm is set in Steps 2SA or 3SA, the time or volume remaining until service is required will be displayed.

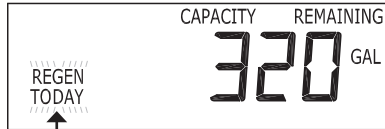


Regeneration Mode

Typically a system is set to regenerate at a time of low water usage. An example of a time with low water usage is when a household is asleep. If there is a demand for water when the system is regenerating, untreated water will be used.

When the system begins to regenerate, the display will change to include information about the step of the regeneration process and the time remaining for that step to be completed. The system runs through the steps automatically and will reset itself to provide treated water when the regeneration has been completed.

User Displays / Settings (continued)



REGEN TODAY will be displayed if a regeneration is expected "Tonight."

Manual Regeneration

Sometimes there is a need to regenerate the system sooner than when the system calls for it, usually referred to as manual regeneration. There may be a period of heavy water usage because of guests or a heavy laundry day.

To initiate a manual regeneration at the preset delayed regeneration time, when the regeneration time option is set to "NORMAL" or "NORMAL + on 0", press and release REGEN. The words "REGEN TODAY" will flash on the display to indicate that the system will regenerate at the preset delayed regeneration time. If you pressed REGEN in error, pressing the button again will cancel the request. Note: If the regeneration time option is set to "on 0" there is no set delayed regeneration time so "REGEN TODAY" will not activate if REGEN is pressed.

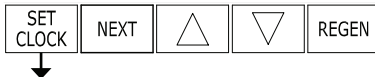
To initiate a manual regeneration immediately, press and hold REGEN for three seconds. The system will begin to regenerate immediately. The request cannot be cancelled.

Note: For softeners, if brine tank does not contain salt, fill with salt and wait at least two hours before regenerating.

Set Time of Day

The user can also set the time of day. Time of day should only need to be set after power outages lasting more than 8 hours, if the battery has been depleted and a power outage occurs, or when daylight saving time begins or ends. If a power outage lasting more than 8 hours occurs, the time of day will flash on and off which indicates the time of day should be reset. If a power outage lasts less than 8 hours and the time of day flashes on and off, the time of day should be reset and the battery replaced.

STEP 1U



STEP 1U – Press SET CLOCK.

STEP 2U



STEP 2U - Current Time (hour): Set the hour of the day using ▲ or ▼. AM/PM toggles after 12. Press NEXT to go to step 3U.

STEP 3U



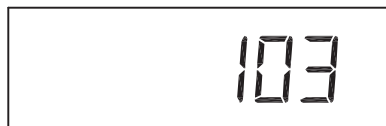
STEP 3U - Current Time (minutes): Set the minutes of the day using ▼ or ▲. Press NEXT to exit Set Clock. Press REGEN to return to previous step.

RETURN TO
NORMAL MODE

User Displays / Settings (continued)

Power Loss

If the power goes out, the system will keep time for up to 8 hours or until the battery is depleted. If a power outage of more than 8 hours occurs, the time of day will flash on and off which indicates the time of day should be reset. The system will remember the rest. If a power outage lasts less than 8 hours and the time of day flashes on and off, the non rechargeable battery should be replaced.

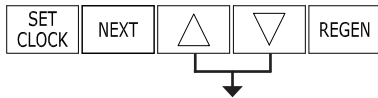


Error Message

If the word “ERROR” and a number are alternately flashing on the display contact the OEM for help. This indicates that the valve was not able to function properly.

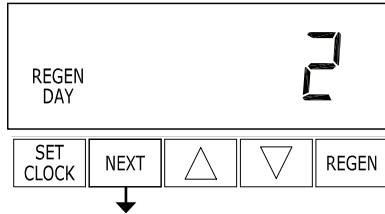
Diagnostics

STEP 1D



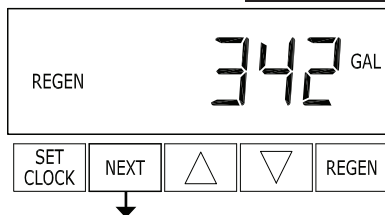
STEP 1D – Press ▼ or ▲ simultaneously for three seconds. If screen in step 2D does not appear in 5 seconds the lock on the valve is activated. To unlock press ▼, NEXT, ▲, and SET CLOCK in sequence, then press NEXT and ▼ simultaneously for 3 seconds.

STEP 2D



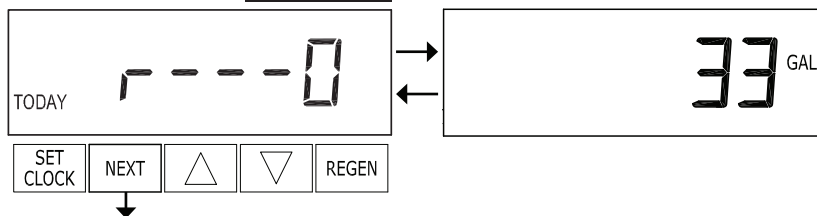
STEP 2D – Days, since last regeneration: This display shows the days since the last regeneration occurred. Press NEXT to go to Step 3D. Press REGEN to exit Diagnostics.

STEP 3D



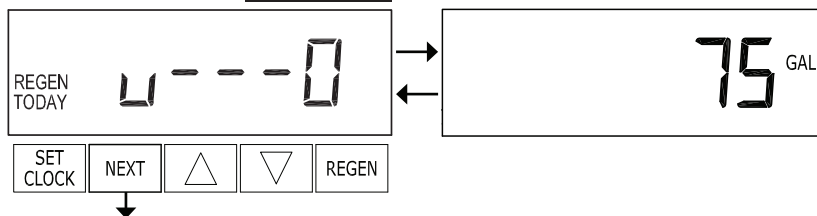
STEP 3D – Gallons, since last regeneration: This display shows the number of gallons that have been treated since the last regeneration. This display will equal zero if a water meter is not installed. Press NEXT to go to Step 4D. Press REGEN to return to previous step.

STEP 4D



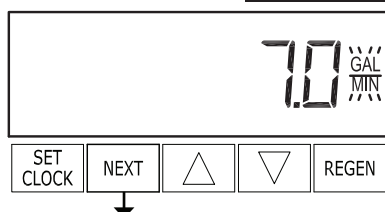
STEP 4D – Gallons, reserve capacity used for last 7 days: If the valve is set up as a softener, a meter is installed and Set Gallons Capacity is set to “Auto,” this display shows 0 day (for today) and flashes the reserve capacity. Pressing ▲ will show day 1 (which would be yesterday) and flashes the reserve capacity used. Pressing ▲ again will show day 2 (the day before yesterday) and the reserve capacity. Keep pressing ▲ to the gallons for days 3, 4, 5 and 6. ▼ can be pressed to move backwards in the day series. Press NEXT at any time to go to Step 5D. Press REGEN to return to previous step.

STEP 5D



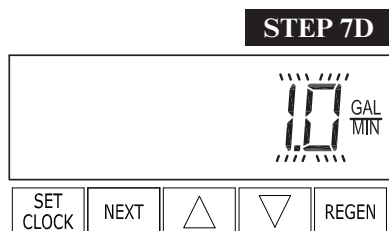
STEP 5D - Gallons, 63 day usage history: This display shows day 1 (for yesterday) and flashes the number of gallons treated yesterday. Pressing ▲ will show day 2 (which would be the day before yesterday) and flashes the number of gallons treated on that day. Continue to press ▲ to show the maximum number of gallons treated for the last 63 days. This display will show dashes if a water meter is not installed. Press NEXT at any time to go to Step 6D. Press REGEN to return to previous step.

STEP 6D

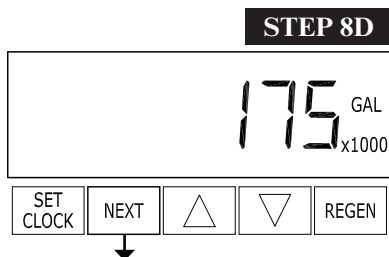


STEP 6D – Flow rate, current: The flow rate in gallons per minute will be displayed. If flow stops the value will fall to zero in a few seconds. This display will equal zero if a water meter is not installed. Press NEXT to go to Step 7D. Press REGEN to return to previous step.

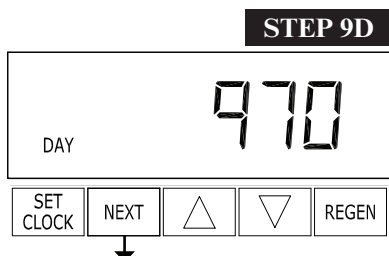
Diagnostics (continued)



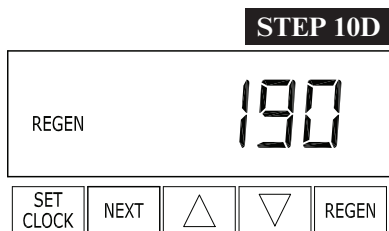
STEP 7D – Flow rate, maximum last seven days: The maximum flow rate in gallons per minute that occurred in the last seven days will be displayed. This display will equal zero if a water meter is not installed. Press and hold ▲ and ▼ for approximately 3 seconds to reset to zero. Press NEXT to go to Step 8D. Press REGEN to return to previous step.



STEP 8D – Gallons, total used since last reset: The total number of gallons used since last reset will be displayed. This display will equal zero if a water meter is not installed. Press NEXT to go to Step 9D. Press REGEN to return to previous step.



STEP 9D – Days, total number since last reset: The total number of days the control valve has been in service since last reset will be displayed. Press NEXT to go to Step 10D. Press REGEN to return to previous step.



STEP 10D – Regenerations, total number since last reset: The total number of regenerations that have occurred since last reset will be displayed. Press NEXT to exit Diagnostics. Press REGEN to return to previous step.

**RETURN TO
NORMAL MODE**

When desired, all information in Diagnostics may be reset to zero when the valve is installed in a new location. To reset to zero, press NEXT and ▼ simultaneously to go to the Service/OEM screen, and release. Press ▲ and ▼ simultaneously to reset diagnostic values to zero. Screen will return to user display.

Valve History

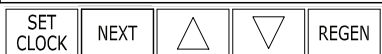
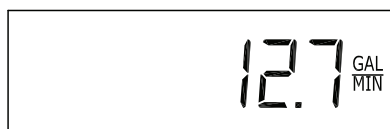
STEP 1VH



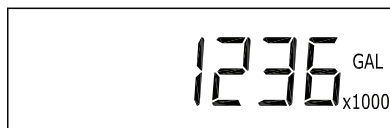
STEP 2VH



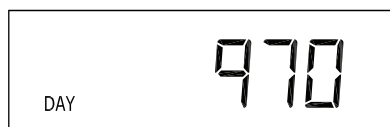
STEP 3VH



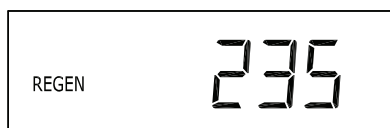
STEP 4VH



STEP 5VH



STEP 6VH



STEP 7VH



**RETURN TO
NORMAL MODE**

STEP 1VH – Press ▲ and ▼ simultaneously for three seconds and release. Then press ▲ and ▼ simultaneously and release. If screen in step 2VH does not appear in 5 seconds the lock on the valve is activated. To unlock press ▼, NEXT, ▲, and SET CLOCK in sequence, then press ▲ and ▼ simultaneously for 3 seconds and release. Then press ▲ and ▼ simultaneously and release.

STEP 2VH – Software Version: This display shows the software version of the valve. Press NEXT to go to Step 3VH. Press REGEN to exit Valve History.

STEP 3VH¹ – Flow rate, maximum since startup: This display shows the maximum flow rate in gallons per minute that has occurred since startup. This display will equal zero if a water meter is not installed. Press NEXT to go to Step 4VH. Press REGEN to return to previous step.

STEP 4VH – Gallons, total used since start-up: This display shows the total gallons treated since startup. This display will equal zero if a water meter is not installed. Press NEXT to go to Step 5VH. Press REGEN to return to previous step.

STEP 5VH – Days, total since start-up: This display shows the total days since startup. Press NEXT to go to Step 6VH. Press REGEN to return to previous step.

STEP 6VH – Regenerations, total number since start-up: This display shows the total number of regenerations that have occurred since startup. Press NEXT to go to Step 7VH. Press REGEN to return to previous step.

STEP 7VH – Error Log: This display shows a history of the last 10 errors generated by the control during operation. Press ▲ or ▼ to review each error recorded. Press NEXT to exit Valve History. Press REGEN to return to previous step.

¹ Values in steps 3VH through 7VH cannot be reset.

