

# **Premium EN SERIES**

**1" Control Valve**

**1.25" Control Valve**

**Programming and Cover Manual**

**(Gen-3)**



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# General Programming Instructions

The back lit display offers an easier to read control valve offers Performance modes that allow the valve to be modified to suit higher efficiency and/or the need of the installation.

	PERFORMANCE MODE	
OPERATION	STANDARD	CUSTOM
CONDITIONER	Standard Efficiency	High Efficiency
CONDITIONER-FILTER		Two Tank System-MAV
FILTER	X	X
CHEMICAL-FREE FILTER		Two Tank System-MAV
IRON-SULFUR ZAPPER	X	X
CHEM DRAW FILTER	X	

Display and set up screens are:

- Installer Screens
- Alarm Screens
- System Screens
- Contact Screens
- Relay Screen
- Salt Monitor Screens
- User Display Screens
- Diagnostics
- Valve History
- Service Screens

Depending on the System Type selection in the Installer Programming Sequence, the system will control regeneration/ backwash of the tank(s) in the system utilizing the available control outputs in different ways:

For Demand Initiated Regeneration Conditioners, the Treated Water Capacity is automatically determined from a series of values entered in the Installer Screens. Reserve Capacity is of a fixed type, based on the current setting of "CAPACITY AT REGEN" located in the Installer Screens. For Filters, the backwash schedule is also set in the Installer Screens. Programming for the various regeneration cycle steps that are required for a proper regeneration/ backwash of the system are automatically recalculated at the start of each regeneration/backwash from base duration values entered in Service/OEM Screens, as well as additional system programming, and usage data stored during system use

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

To quickly exit any programming level, diagnostic or history displays, press SET. Any changes made prior to the exit are saved.



To clear the Service Call reminder, press the ▲ and ▼ buttons simultaneously while Alarm Screen is displayed.

## Regeneration

Sometimes it is desirable to have the valve initiate and complete two regenerations within 24 hours and then return to the preset regeneration procedure.

To do an immediate regeneration:

1. Press and hold the "REGEN" button

To do a double regeneration:

1. Press the "REGEN" button once. REGEN TODAY will flash on the display.
2. Press and hold the "REGEN" button for three seconds until the valve regeneration initiates. Once the valve has completed the immediate regeneration, the valve will regenerate one more time at the preset regeneration

# User Display Screens

When the system is operating, one of six possible displays will be shown. Pressing NEXT will alternate display viewing. "GPM" and the flow rate flashes on Displays #1 and #3 whenever water is being treated in the system (i.e. water is flowing through the system).

TIME OF DAY	
GPM	12:01 PM

Display #1 Displays Time of Day, which is always active. Push Set button to set time of day.

CAPACITY REMAINING	
GPM	1200 GAL

Display #2 – Viewed only in Conditioner Systems Displays Capacity Remaining, which indicates the remaining gallons to be treated before the system requires a regeneration cycle. Pressing the ▼ button while in the Capacity Remaining display will temporarily decrease the capacity remaining in 10-gallon increments and will also increase the recorded values in volume related Diagnostics and Valve History Displays. **Push Set button to view/set Installer Screens.**

REGENERATION IN	
GPM	2 DAYS

Display #3 Display indicates regeneration status. **Push Set button to view/set Alarm Screens.**

SALT REMAINING	
GPM	150 LBS

Display #4 – Viewed only in Conditioner Systems Displays Salt Remaining, which indicates the number of pounds left before the system no longer has enough salt for a successful regeneration cycle. **Push Set button to view/set Salt Monitor Screens.**

NEXT BACKWASH FLT1	
	2 DAY

Display #5 – Viewed only in Filter Only Systems Indicates when the next Backwash will occur on Filter #1. **Push Set button to view/set Installer Screens.**

NEXT BW C-F FILTER	
	2 DAY

Display #6 – Viewed only in Chemical-Free Filter Systems Indicates when the next regeneration cycle will occur on the Chemical-Free Filter. **Push Set button to view/set Installer Screens.**

YOUR NAME HERE	
555	5555555

Display #7 – Viewed only with Programmed Contact Screens Displays Contact Screen information (see Contact Screen Sequence).

# Set time of Day

The user can also set the time of day. Time of day should only need to be set when daylight saving time begins or ends, or if an extended power outage occurs. If an extended power outage occurs, the time of day will flash on and off which indicates the time of day will need to be reset.

TIME OF DAY				
12:01 PM				
SET CLOCK	NEXT	▲	▼	REGEN

**STEP 1U** – With current User Display viewed, press SET

TIME HOUR				
SET	12:01 PM			
SET CLOCK	NEXT	▲	▼	REGEN

**STEP 2U** – Set Current Time (hour): Set the hour of the day using ▲ or ▼ buttons. AM/ PM toggles at 12:00. Press NEXT to go to Step 3U. Press REGEN to exit Set Time of Day Sequence.

TIME MINUTES				
SET	12:01 PM			
SET CLOCK	NEXT	▲	▼	REGEN

**STEP 3U** – Set Current Time (minutes): Set the minutes of the day using ▲ or ▼ buttons. Press NEXT to go to Step 4U. Press REGEN to return to previous step.

REGEN TIME HOUR				
SET	2:00 AM			
SET CLOCK	NEXT	▲	▼	REGEN

**STEP 4U** – Set hour of the Regeneration Time: Set the regeneration hour using ▲ or ▼ buttons. Press NEXT to go to Step 5U. Press REGEN to return to previous step. DEFAULT = 2:00 AM

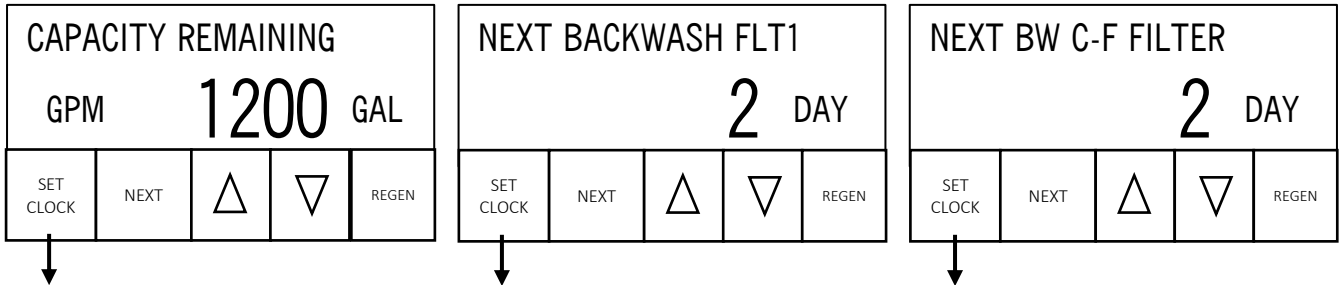
REGEN TIME MINUTES				
SET	2:00 AM			
SET CLOCK	NEXT	▲	▼	REGEN

**STEP 5U** – Set minute of the Regeneration Time: Set the regeneration minute using ▲ or ▼ buttons. Press NEXT to exit Set Time of Day Sequence. Press REGEN to return to previous step.

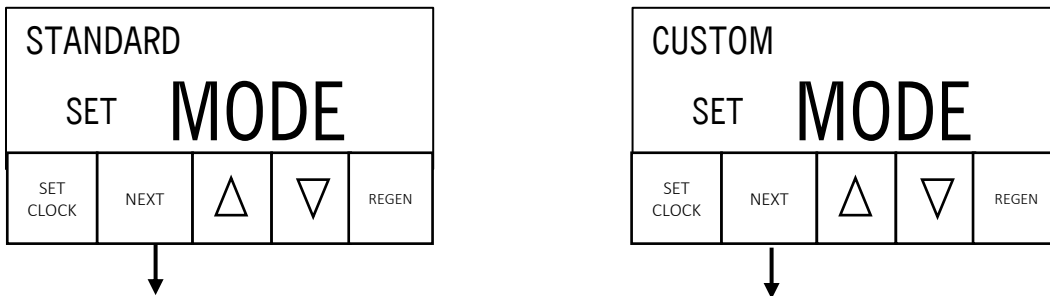
Return to home

# Installer Setup Screens

**Step 1I** – With one of the three displays below currently active, press SET. If screen in Step 2I does not appear in 5 seconds the lock on the valve is activated. To unlock press ▼, NEXT, ▲, and SET in sequence, then press NEXT and ▼ simultaneously for 3 seconds and release.



**Step 2I** – Set Mode Type. Setting determines the efficiency parameters of the system. The two modes available are **STANDARD** and **CUSTOM**. Use ▲ or ▼ to select value. Press NEXT to go to Step 3IC. Press REGEN to exit Installer Screen Settings.



**Step 2I-A** – Set **STANDARD MODE**. Setting determines the normal operating parameters of the system. The three system types available are CONDITIONER, FILTER, and CHEM FILTER. Use ▲ or ▼ to select value. When STANDARD MODE is set follow the series of settings and steps for 3I-A. Press REGEN to exit Installer Screen Settings.

**Step 2I-B** – Set **CUSTOM MODE**. Setting determines the high efficiency operating parameters of the system. The five system types available are CONDITIONER, CONDITIONER-FILTER, FILTER, CHEMICAL-FREE FLT, and IRON SULFUR ZAPPER. Use ▲ or ▼ to select value. When CUSTOM MODE is set follow the series of settings and steps for 3I-B. Press REGEN to exit Installer Screen Settings.



## 2I-A Standard Softener Mode Setup Screens

STANDARD				
SET		MODE		
SET CLOCK	NEXT	▲	▼	REGEN

**Step 2I-A – Set STANDARD MODE.** Press NEXT to go to Step 3I-A. Press REGEN to exit Installer Screen Settings.

1.0" Valve				
SET		TYPE		
SET CLOCK	NEXT	▲	▼	REGEN

**Step 3I-A– Set VALVE SIZE.** 1.0" Valve or 1.25" Valve. Use ▲ or ▼ to select value. Press NEXT to go to Step 4I-A. Press REGEN to exit Installer Screen Settings.

CONDITIONER				
SET		TYPE		
SET CLOCK	NEXT	▲	▼	REGEN

**Step 4I-A – Set VALVE FUNCTION.** CONDITIONER , FILTER, and CHEM FILTER. Use ▲ or ▼ to select value. Press NEXT to go to Step 5I-A. (Go to Step 4F for Filter set up) Press REGEN to exit Installer Screen Settings.

**NOTE:** For Filter setting continue pg. 15, Press NEXT go to continue with STEP 4F pg. 15.

GALLONS CAPACITY				
SET		AUTO		
SET CLOCK	NEXT	▲	▼	REGEN

**STEP 5I-A – Set Gallons Capacity** using ▼ or ▲ buttons:

- “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 6I-A. Press REGEN to return to previous step.

DELAY REGENERATION				
SET		TYPE		
SET CLOCK	NEXT	▲	▼	REGEN

**Step 6I-A – Set REGENERATION SCHEDULE.**

- DELAY REGENERATION – regen @ scheduled time
- IMMEDIATE – regen @ 0 capacity remaining
- DELAY + IMMEDIATE. – delayed regeneration with 0 capacity override after first 10 min of zero flow rate

Use ▲ or ▼ to select value. Press NEXT to go to Step 7I-A. Press REGEN to exit Installer Screen Settings.

## 2I-A Standard Softener Mode Setup Continued

GRAINS OF CAPACITY				
SET <u>36.0</u> X1KM				
SET CLOCK	NEXT	▲	▼	REGEN



WATER HARDNESS				
SET <u>20</u> GR				
SET CLOCK	NEXT	▲	▼	REGEN



IRON				
SET <u>20</u> PPM				
SET CLOCK	NEXT	▲	▼	REGEN



DAY OVERRIDE				
SET <u>14</u>				
SET CLOCK	NEXT	▲	▼	REGEN



FILL AMOUNT				
SET <u>15.0</u> LBS				
SET CLOCK	NEXT	▲	▼	REGEN



**STEP 7I-A** – Enter the ion exchange capacity in grains of hardness as calcium carbonate for the system based on test data using ▼ or ▲ buttons. Press NEXT to go to Step 8I-A. Press REGEN to return to previous step.

**Step 8I-A** – Set amount of water hardness present at water inlet. This setting is adjustable from 1 - 150 grains and is used in determining the volumetric capacity of the system. Use ▲ or ▼ to select value. Press NEXT to go to Step 9I-A. Press REGEN to exit Installer Screen Settings.

**Step 9I-A** – Set amount of ferrous (soluble) iron present at water inlet. This setting is used in determining the operating parameters of the system. Adjustable from 0 - 2 ppm in 0.1 ppm increments. Use ▲ or ▼ to select value. This setting also affects the maximum amount of days between regeneration of the softener. When set to 0 – 1 ppm, this amount of days is automatically adjusted to 6 days maximum. When set to 1.1-2 ppm, the amount of days is automatically adjusted to a 5 days maximum setting. Press NEXT to go to Step 10I-A. Press REGEN to return to previous step.

**Step 10I-A** – Set maximum number of days before an override regeneration occurs of the conditioner. When Step 8I-B is set to zero, this display will have the full possibility of setting between 1 to 28 days, including OFF, or no override. The default value in this mode is 14 days. When Step 8I-B is not set to zero, this display can only reduce in value from 5 or 6 days to 1. The default value in this mode is 5 or 6 days, depending on the current Step 9I-B setting. Press NEXT to go to Step 11I-A. Press REGEN to return to previous step.

**STEP 11I-A** – Enter the pounds of salt per regeneration using ▼ or ▲ buttons. Press NEXT to go to Step 12I-A. Press REGEN to return to previous step

## 2I-A Standard Softener Mode Setup Continued

BACKWASH TIME #1				
SET		<u>4:00</u>		MIN
SET CLOCK	NEXT	▲	▼	REGEN



BRINE DRAW DN TIME				
SET		<u>0:00</u>		MIN
SET CLOCK	NEXT	▲	▼	REGEN



BACKWASH TIME #2				
SET		<u>4:00</u>		MIN
SET CLOCK	NEXT	▲	▼	REGEN



RINSE TIME				
SET		<u>4:00</u>		MIN
SET CLOCK	NEXT	▲	▼	REGEN



DISPLAY LT USUALLY				
SET		<u>OFF</u>		
SET CLOCK	NEXT	▲	▼	REGEN



Return to home

**Step 12I-A** – Select duration of 1st cycle. Use ▲ or ▼ to select value other than default value. Setting will flash when changed from this initial value. Press NEXT to go to Step 13I-A. Press REGEN to return to previous step.

**NOTE:** Press NEXT and ▲ to add Relay or MAV operation STEP 1I-R

**Step 13I-A** – Select minutes added to the calculated duration of the 2nd cycle, Brine Draw. Use ▲ or ▼ to select value. Press NEXT to go to Step 14I-A. Press REGEN to return to previous step.

**Step 14I-A** – Select duration of 3rd cycle. Use ▲ or ▼ to select value other than default value. Setting will flash when changed from this initial value. Press NEXT to go to Step 15I-A. Press REGEN to return to previous step.

**Step 15I-A** – Select duration of 4th cycle. Use ▲ or ▼ to select value other than default value. Setting will flash when changed from this initial value. Press NEXT to go to Step 16I-A. Press REGEN to return to previous step.

**Step 16I-A** – Select display light always on or off when not in use. Use ▲ or ▼ to select value other than default value. Setting will flash when changed from this initial value. Press NEXT to go to Return Screen. Press REGEN to return to previous step.

# 2I-B Custom Softener Mode Setup Screens

CUSTOM				
SET		MODE		
SET CLOCK	NEXT	▲	▼	REGEN

**Step 2I-B** – Set **CUSTOM MODE**. Press NEXT to go to Step 3I-B. Press REGEN to exit Installer Screen Settings.

1.0" Valve				
SET		TYPE		
SET CLOCK	NEXT	▲	▼	REGEN

**Step 3I-B** – Set **VALVE TYPE**. 1.0" Valve or 1.25" Valve. Use ▲ or ▼ to select value. Press NEXT to go to Step 4I-B. Press REGEN to exit Installer Screen Settings.

CONDITIONER				
SET		TYPE		
SET CLOCK	NEXT	▲	▼	REGEN

**Step 4I-B** – Set **VALVE TYPE**. CONDITIONER , CONDITIONER-FILTER, FILTER, CHEMICAL-FREE FILTER AND IRON-SULFUR ZAPPER. Use ▲ or ▼ to select value. . (Go to Step 4F for Filter set up) Press NEXT to go to Step 5I-B. Press REGEN to exit Installer Screen Settings.

**NOTE:** For Filter setting continue pg. 15, Press NEXT go to continue with STEP 4F pg. 15.

RESIN VOLUME				
SET		1.0 FT <sup>3</sup>		
SET CLOCK	NEXT	▲	▼	REGEN

**Step 5I-B** –Set the amount of resin used in the system. The seven settings available are 0.4, 0.5, 0.6, 0.75, 1.0, 1.5, and 2.5 FT<sup>3</sup>. Use ▲ or ▼ to select value. Press NEXT to go to Step 6I-B. Press REGEN to return to previous step.

WATER HARDNESS				
SET		20 GR		
SET CLOCK	NEXT	▲	▼	REGEN

**Step 6I-B** – Set amount of water hardness present at water inlet. This setting is adjustable from 1 - 150 grains and is used in determining the volumetric capacity of the system. . Use ▲ or ▼ to select value. Press NEXT to go to Step 7I-B. Press REGEN to exit Installer Screen Settings.

## 2I-B Custom Softener Mode Setup Continued

IRON				
SET <u>20</u> PPM				
SET CLOCK	NEXT	▲	▼	REGEN

↓

**Step 7I-B** – Set amount of ferrous (soluble) iron present at water inlet. This setting is used in determining the operating parameters of the system. Adjustable from 0 - 2 ppm in 0.1 ppm increments. Use ▲ or ▼ to select value. This setting also affects the maximum amount of days between regeneration of the softener. When set to 0 – 1 ppm, this amount of days is automatically adjusted to 6 days maximum. When set to 1.1-2 ppm, the amount of days is automatically adjusted to a 5 days maximum setting. Press NEXT to go to Step 8I-B. Press REGEN to return to previous step.

DAY OVERRIDE				
SET <u>14</u>				
SET CLOCK	NEXT	▲	▼	REGEN

↓

**Step 8I-B** – Set maximum number of days before an override regeneration occurs of the conditioner. When Step 8I-B is set to zero, this display will have the full possibility of setting between 1 to 28 days, including OFF, or no override. The default value in this mode is 14 days. When Step 8I-B is not set to zero, this display can only reduce in value from 5 or 6 days to 1. The default value in this mode is 5 or 6 days, depending on the current Step 7I-B setting. Press NEXT to go to Step 9I-B. Press REGEN to return to previous step.

CAPACITY AT REGEN				
SET <u>50%USED</u>				
SET CLOCK	NEXT	▲	▼	REGEN

↓

**Step 9I-B** – Set how much of the initial capacity may be used before the control would automatically trigger a regeneration cycle at the next regeneration time. Adjustable from 30 - 90% in 10% increments. Use ▲ or ▼ to select value. Press NEXT to go to Step 10I-B. Press REGEN to return to previous step.

INSTALLED INJECTOR				
SET <u>SIZE E</u>				
SET CLOCK	NEXT	▲	▼	REGEN

↓

**Step 10I-B** – Select the size of injector to be used with the valve. Used in determining the duration of Brine Draw. Range is A – K. Use ▲ or ▼ to select value. Press NEXT to go to Step 11I-B. Press REGEN to return to previous step.

## 2I-B Custom Softener Mode Setup Continued

BACKWASH TIME				
SET		<u>4:00</u>		MIN
SET CLOCK	NEXT	△	▽	REGEN

**Step 11I-B** – Select duration of 1st cycle. Use ▲ or ▼ to select value other than default value. Setting will flash when changed from this initial value. Press NEXT to go to Step 12I-B. Press REGEN to return to previous step.

**NOTE:** Press NEXT and ▲ to add Relay or MAV operation STEP 1I-R

ADD TO DRAW TIME				
SET		<u>0:00</u>		MIN
SET CLOCK	NEXT	△	▽	REGEN

**Step 12I-B** – Select minutes added to the calculated duration of the 2nd cycle, Brine Draw. Use ▲ or ▼ to select value. Press NEXT to go to Step 13I-B. Press REGEN to return to previous step.

2 <sup>ND</sup> BACKWASH TIME				
SET		<u>4:00</u>		MIN
SET CLOCK	NEXT	△	▽	REGEN

**Step 13I-B** – Select duration of 3rd cycle. Use ▲ or ▼ to select value other than default value. Setting will flash when changed from this initial value. Press NEXT to go to Step 14I-B. Press REGEN to return to previous step.

RINSE TIME				
SET		<u>4:00</u>		MIN
SET CLOCK	NEXT	△	▽	REGEN

**Step 14I-B** – Select duration of 4th cycle. Use ▲ or ▼ to select value other than default value Setting will flash when changed from this initial value. Press NEXT to go to Step 15I-B. Press REGEN to return to previous step.

DISPLAY NORMALLY				
SET		<u>OFF</u>		
SET CLOCK	NEXT	△	▽	REGEN

**Step 15I-B** – Select display light always on or off when not in use. Use ▲ or ▼ to select value other than default value Setting will flash when changed from this initial value. Press NEXT to go to Return Screen. Press REGEN to return to previous step.

Return to home

# 4F FILTER Mode Setup Continued from Step 2I (pg 8)

**CAUTION:** Filter mode can only be selected after efficiency operation is selected in initial installer set up in STEP 1I starting on page 8.

FILTER SCHEDULE				
SET		2 DAY		
SET CLOCK	NEXT	▲	▼	REGEN



FILTER BACKWASH				
SET		14:00 MIN		
SET CLOCK	NEXT	▲	▼	REGEN



FILTER RINSE				
SET		6:00 MIN		
SET CLOCK	NEXT	▲	▼	REGEN



Return to home

**Step 4F** – Select duration of Filter 1 1st cycle. Viewed only when CONDITIONERFILTER, CHEMICAL-FREE FLT , or FILTER is set in Step 2I. Use ▲ or ▼ to select value. Press NEXT to go to Step 5F. Press REGEN to return to previous step. DEFAULT = 21:00 MIN (CONDITIONER-FILTER), 14:00 (CHEMICAL-FREE FLT, or FILTER)

**Step 5F** – Select duration of Filter 1 2nd cycle. Only viewed if CHEMICAL-FREE FLT or FILTER is set in Step 2IF, when Filter 1 can be operated directly by the Valve Drive Motor. Use ▲ or ▼ to select value. Press NEXT to go to Step 6F. Press REGEN to return to previous step.

**NOTE:** Press NEXT and ▲ to add Relay or MAV operation STEP 1I-R

**Step 6F** – Select duration of Chemical-Free Filter 3rd cycle. Viewed only with CHEMICAL-FREE FLT set in Step 2I. In this cycle Aux MAV #1 is used to Air Charge the system. Use ▲ or ▼ to select value. Press NEXT to go to home screen. Press REGEN to return to previous step.

# 1I-R Relay/MAV Mode Setup

**CAUTION:** RELAY/MAV mode can only be selected at the BACKWASH TIME SETTING while in initial installer set up from STEP 1I. Press and hold NEXT and ▲

MAV DRIVE 1				
SET		OFF		
SET CLOCK	NEXT	▲	▼	REGEN

↓

**Step 1I-R**– Select MAV DRIVE 1 output for use with NHWB or separate source backwash. Use ▲ or ▼ to select value other than default value

- OFF – no relay output
- TIME –output changes based on a set time referenced to the start of regeneration
- SEPARATE SOURCE–Output changes at the start and end of regeneration

Setting will flash when changed from this initial value. Press NEXT to go to Step 2I-R. Press REGEN to return to previous step.

MAV DRIVE 2				
SET		OFF		
SET CLOCK	NEXT	▲	▼	REGEN

↓

**Step 2I-R**– Select MAV DRIVE 2 output for use with NHWB or separate source backwash. Use ▲ or ▼ to select value other than default value

- OFF – no relay output
- TIME –output changes based on a set time referenced to the start of regeneration
- SEPARATE SOURCE–Output changes at the start and end of regeneration

Setting will flash when changed from this initial value. Press NEXT to go to Step 3I-R. Press REGEN to return to previous step.

## MAV DRIVE Setting (only viewed if TIME is selected)

MAV DRIVE 1 SETPOINT				
SET		10:00 MIN		
SET CLOCK	NEXT	▲	▼	REGEN

→

MAV DRIVE 1 DURATION				
SET		4:00 MIN		
SET CLOCK	NEXT	▲	▼	REGEN

↓  
**Step 2I-R**



# 1I-R Relay/MAV Mode Setup Continued

OFF				
SET RELAY 1				
SET CLOCK	NEXT	△	▽	REGEN



**Step 3I-R**– Select RELAY 1 output. Use ▲ or ▼ to select value other than default value

- OFF – no relay output
- TIME – Relay output based on time setting
- SERVICE FLOW – Relay output while flow is detected
- SERVICE + REGEN FLOW – Relay output while flow is detected or while system is in regeneration mode

Setting will flash when changed from this initial value. Press NEXT to go to Step 4I-R. Press REGEN to return to previous step.

OFF				
SET RELAY 2				
SET CLOCK	NEXT	△	▽	REGEN



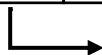
**Step 4I-R**– Select RELAY 2 output. Use ▲ or ▼ to select value other than default value

- OFF – no relay output
- TIME – Relay output based on time setting
- SERVICE FLOW – Relay output while flow is detected
- SERVICE + REGEN FLOW – Relay output while flow is detected or while system is in regeneration mode

Setting will flash when changed from this initial value. Press NEXT to return to installer setup. Press REGEN to return to previous step.

## TIME Relay Setting (only viewed if RELAY TIME is selected)

RELAY SETPOINT				
SET 10 MIN				
SET CLOCK	NEXT	△	▽	REGEN

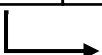


RELAY DURATION				
SET 4:00 MIN				
SET CLOCK	NEXT	△	▽	REGEN



## FLOW Relay Setting (only viewed if RELAY FLOW is selected)

RELAY SETPOINT				
SET 20.0 GAL				
SET CLOCK	NEXT	△	▽	REGEN



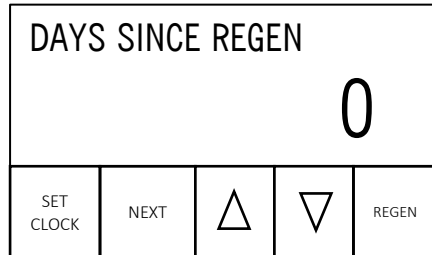
RELAY DURATION				
SET 4:00 MIN				
SET CLOCK	NEXT	△	▽	REGEN



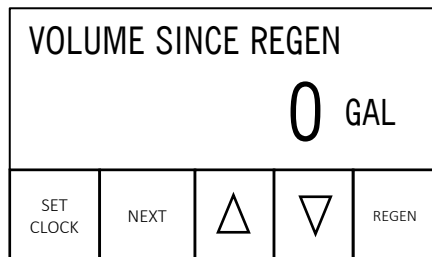
# DIAGNOSTIC SCREENS



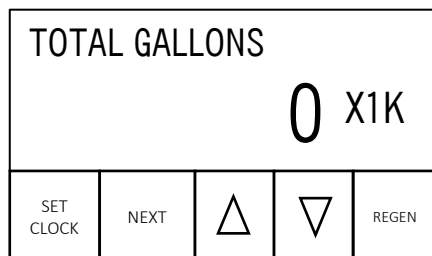
**STEP 1D** – From the TIME of day screen, Press ▼ and ▲ simultaneously for three seconds. If screen in step 2D does not appear in 5 seconds the lock on the valve is activated. To unlock press ▼, NEXT, ▲, and SET CLOCK in sequence, then press ▲ and ▼ simultaneously for 3 seconds.



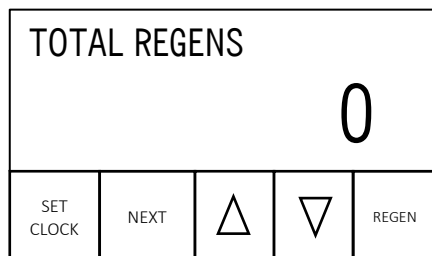
**STEP 2D** – Days, since last regeneration: This display shows the days since the last regeneration occurred. Press the NEXT button to go to Step 3D. Press REGEN to exit Diagnostics.



**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 the NEXT button to go to Step 4D. Press REGEN to return to previous step.

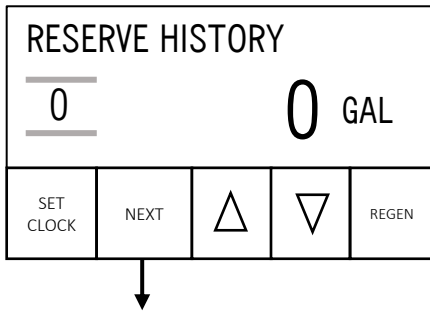


**STEP 4D** – Volume, total used since start-up: This display shows the total gallons treated since startup. This display will equal zero if a water meter is not installed. Press NEXT to go to Step5D. Press REGEN to return to previous step.

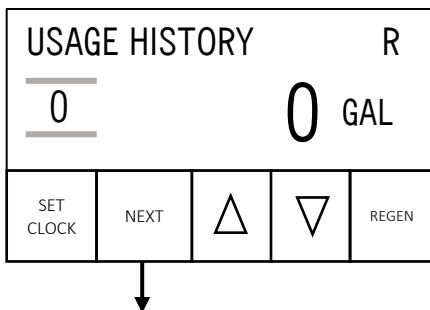


**STEP 5D** – Regenerations, total number since start-up: This display shows the total number of regenerations that have occurred since startup. Press NEXT to go to Step 6D. Press REGEN to return to previous step

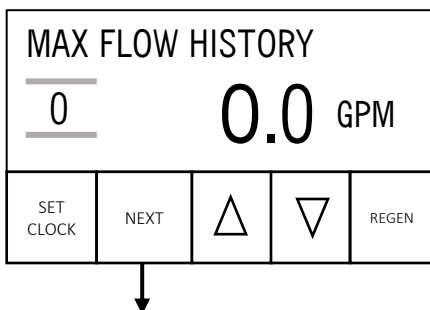
## DIAGNOSTIC SCREENS Continued



**STEP 6D** – 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 the ▲ button will show day 1 (which would be yesterday) and flashes the reserve capacity used. Pressing the ▲ button again will show day 2 (the day before yesterday) and the reserve capacity. Keep pressing the ▲ button to show the gallons for days 3, 4, 5 and 6. The ▼ button can be pressed to move backwards in the day series. Press the NEXT button at any time to go to Step 7D. Press REGEN to return to previous step.



**STEP 7D** - Gallons, 63-day usage history: This display shows day 1 (for yesterday) and flashes the number of gallons treated yesterday. Pressing the ▲ button will show day 2 (which would be the day before yesterday) and flashes the number of gallons treated on that day. Continue to press the ▲ button 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 the NEXT button at any time to go to Step 8D. Press REGEN to return to previous step.



Return to home

**STEP 8D** – 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. This display shows day 1 (for yesterday) and flashes the number of gallons treated yesterday. Pressing the ▲ button will show day 2 (which would be the day before yesterday) and flashes the number of gallons treated on that day. Continue to press the ▲ button to show the maximum number of gallons treated for the last 7 days. Press the NEXT button to return to home screen. Press REGEN to return to previous step

# CONDITIONAL SCREENS

**Locked Valve** – used to secure the programming, screen will be unresponsive to edits

TIME OF DAY	
GPM	12:01 PM

To lock and unlock program press ▼, NEXT, ▲, and SET in sequence

**ALARM Settings**– used to set up salt alarm and service reminders (from home screen)

TIME OF DAY				
12:01 PM				
SET CLOCK	NEXT	▲	▼	REGEN

**Step 1M** – At the time of day screen press NEXT and ▲ to set up SALT and SERVICE reminders.

SALT ALARM				
SET OFF				
SET CLOCK	NEXT	▲	▼	REGEN

**Step 2M** – Set the Salt Alarm ON or OFF. Use ▲ or ▼ to select value. Press NEXT to go to Step 4M. Press REGEN to return to previous step.

SERVICE ALARM				
SET OFF				
SET CLOCK	NEXT	▲	▼	REGEN

**Step 3M** – Set the Service Alarm. Use ▲ or ▼ to select value.

- OFF - Default
- TIME – Range 0.25 YR to 9.75 YR
- ON Gal – based on gallons used 100-9980000
- BOTH – Alarm triggers by Time or Gal

Return to home

Press SET and ▲ to add service information and CONTACT NUMBER (STEP 1-M3)

Press NEXT to go to HOME. Press REGEN to return to previous step.

## CONDITIONAL SCREENS Continued

### SALT ALARM Settings (only visible on user screens when SALT ALARM is ON)

SALT REMAINING				
GPM		150		LBS
SET CLOCK	NEXT	▲	▼	REGEN



SALT REMAINING				
SET		200		LBS
SET CLOCK	NEXT	▲	▼	REGEN



Return to home

**Step 1-M2** – With the Salt Remaining display currently active, press SET to advance to Set Salt Level.

**Step 2-M2** – Set current salt pound levels in the brine tank. Range 0 - 400. Use ▲ or ▼ to select value. Press NEXT to go to HOME.

### CONTACT Settings (only accessible from STEP 3M pg. 20)

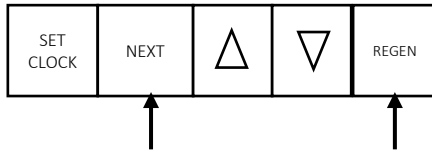
YOUR NAME HERE				
555		5555555		
SET CLOCK	NEXT	▲	▼	REGEN

**STEP 1-M3** - Set phone number using the ▼ or ▲ arrow. Press NEXT to forward to the next digit. Press REGEN to return to previous digit.

— —				
555		5555555		
SET CLOCK	NEXT	▲	▼	REGEN

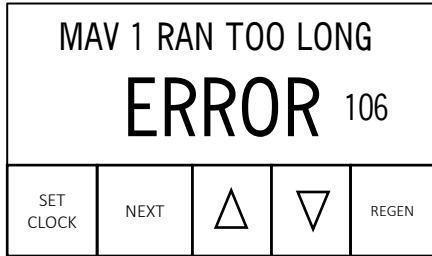
**STEP 2-M3**– Set the banner text up to a maximum of 44 characters. Use the ▼ or ▲ to select letters of the alphabet or a number in the banner text. Press NEXT to forward to the next character or to exit the OEM Cycle Sequence

# ERROR SCREENS



## GENERAL RESET INSTRUCTIONS

Press NEXT and REGEN together for 5 seconds to clear an error screen



## MAV ERROR

MAV Valve not connected or not functioning correctly. To reset valve Press NEXT and REGEN together for 5 seconds to clear an error screen.

## SOLUTIONS:

- Connect MAV valve to control board to the correct MAV port, Press NEXT and REGEN to reset.
- MAV Mode selected for operation, but not required: QUICKLY, enter installer set up mode to turn off MAV

ERROR CODE	POSSIBLE CAUSE	SOLUTION
No Display	No power at outlet, adapter not plugged in, improper adapter, defective adapter or PC board	Check outlet for power, plug in adapter, replace adapter or replace PC board
101, 102, 103	Unable to start, motor stalled, motor ran too long	Check PC board for proper placement, check seals for foreign materials, check reduction gears for optical interference
104	Piston unable to find Home Position	Check reduction gears, check piston for damage or foreign materials
106, 107	MAV1 Error,	Check MAV connection, Check programming for MAV1 operation
109	INVALID MOTOR STATE	Reset Error, Replace Board, motor or both
116, 117	MAV2 Error,	Check MAV connection, Check programming for MAV2 operation
201	Invalid REGEN STEP	Replace PC Board
202	Unexpected motor stall during regeneration	Reset Error, Check for power interruption

**SAFE WATER ALLIANCE, LLC.**  
**LIMITED LIFETIME SOFTENER AND FILTER CONTROLS**  
**LIMITED WARRANTY**  
**1" & 1.5" EN SERIES CONTROL**

Safe Water Alliance, LLC. ("SWA") warrants that its Softener and Filter Control Valves will be free from defects in material and workmanship under normal use and service for a period of 10 years from the date of shipment of such Valves from SWA'S plant in Ocala, Florida when installed and operated within recommended parameters. Limited Warranty on Service Parts such as, but not limited to, PC board, Transformer, Piston, Seal, etc. may be covered for a lifetime for the original owner with warranty registration. No warranty is made with respect to defects not reported to SWA within the warranty period and/or defects or damages due to neglect, misuse, alterations, accident, misapplication, physical damage, or damage caused by fire, acts of God, freezing or hot water or similar causes. For outdoor installations where the Softener and Filter Control Valves are not under cover, the weather cover must be utilized for the warranty to be valid. SWA's obligation to the Dealer under this Limited Warranty shall be limited, at its option, to replacement or repair of any Softener and Filter Control valve covered by this Limited Warranty. Prior to returning a Control Valve, Dealer must obtain a return goods authorization number from SWA and return the Control Valve freight prepaid. If any Control Valve is covered under this Limited Warranty, SWA shall return the Control Valve repaired, or its replacement, prepaid to the original point of shipment.

SWA GIVES THIS WARRANTY TO THE DEALER IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND HEREBY EXPRESSLY DISCLAIMS ALL OTHER SUCH WARRANTIES. SWA'S LIABILITY HERE UNDER SHALL NOT EXCEED THE COST OF THE PRODUCT. UNDER NO CIRCUMSTANCES WILL SWA BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES OR FOR ANY OTHER LOSS, DAMAGE OR EXPENSE OF ANY KIND, INCLUDING LOSS OF PROFITS, ARISING IN CONNECTION WITH THE INSTALLATION OR USE OR INABILITY TO USE THE CONTROL VALVES OR ANY WATER TREATMENT SYSTEM THE CONTROL VALVE IS INCORPORATED INTO.

Model: \_\_\_\_\_

Installed Date: \_\_\_\_\_

Service Company: \_\_\_\_\_

Phone: \_\_\_\_\_

