PENTAIR

FLECK 5800/5810/5812 XTRi (CONNECTED XTR2) SERVICE MANUAL

TABLE OF CONTENTS

IMPORTANT PLEASE READ:

- The information, specifications and illustrations in this manual are based on the latest information available at the time of release. The manufacturer reserves the right to make changes at any time without notice.

- This manual is intended as a guide for service of the valve only. System installation requires information from a number of suppliers not known at the time of manufacture. This product should be installed by a plumbing professional.

- This unit is designed to be installed on potable water systems only.

- This product must be installed in compliance with all state and municipal plumbing and electrical codes. Permits may be required at the time of installation.

- It is established that when daytime water pressure exceeds 80 psi (5.5 bar), the maximum pressure rating of 125 psi (8.6 bar) can be exceeded. A pressure regulator must be installed on this system or warranty is voided.

- Do not install the unit where temperatures may drop below 32°F (0°C) or above 120°F (52°C).

- Do not place the unit in direct sunlight. Black units will absorb radiant heat, increasing internal temperatures.

- Do not strike the valve or any of the components. Warranty of this product extends to manufacturing defects. Misapplication of this product may result in failure to properly condition water, damage to product, or personal injury.

- A prefilter should be used on installations in which free solids are present.

- In some applications local municipalities treat water with Chloramines. High Chloramine levels may damage valve components.

- Correct and constant voltage must be supplied to the controller to maintain proper function.

- The system is intended to treat potable water only. The system is not intended to be used for treating water that is microbiologically unsafe or of unknown quality without adequate disinfection before and after the system.

- This system is not intended for use by persons (including children) with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

- Children shall not play with the system.

- Cleaning shall not be made by children without supervision.

- Periodic cleaning and maintenance may be required to function properly. See disinfection instructions on page 5.

OPERATING PARAMETERS

Minimum Pressure	20 psi/1.4 bar/138 kPa
Maximum Pressure	125 psi/8.61 bar/861 kPa
Minimum Water Temperature	34°F/1°C
Maximum Water Temperature	110°F/43°C
Minimum Ambient Temperature	34°F/1°C
Maximum Ambient Temperature	120°F/52°C
Maximum Humidity	75%
Input Voltage	100-240 VAC
Input Frequency	50/60 Hz
Output Voltage	12 VDC
Output Current	2.0 amps
Maximum Altitude	2,000 meters

JOB SPECIFICATION SHEET

Job Number: _____

Model Number: _____

Water Hardness: _____ ppm or gpg

Capacity Per Unit: _____

Mineral Tank Size: _____ Diameter: _____ Height: _____

Salt Setting per Regeneration: _____

Regenerant Flow: Downflow Upflow Backwash Downflow 2x Backwash
    Filter Upflow Variable Refill Custom Downflow Custom Upflow

1. Meter Size:

    A. 3/4"   Paddle Wheel   Turbine

    B. 1"   Paddle Wheel   Turbine

    C. 1-1/2"   Paddle Wheel   Turbine

    D. 2"   Paddle Wheel

    E. 3"   Paddle Wheel

    F. Generic_____   Pulse Count_____   Meter Size_____

2. System Type:

    A. System #4: 1 Tank, 1 Meter, Immediate, or Delayed Regeneration

    B. System #4: Time Clock

3. Cycle Settings:

    A. Backwash: _____ Minutes

    B. Brine and Slow Rinse: _____ Minutes

    C. Rapid Rinse: _____ Minutes

    D. Brine Tank Refill: _____ Minutes

    E. Pause Time: _____ Minutes

    F. Second Backwash: _____ Minutes

4. Drain Line Flow Control:_____ gpm

5. Brine Line Flow Control: _____gpm

6. Injector Size#: _____

7. Battery Install/Change Date: _____

INSTALLATION

Water Pressure

A minimum of 20 psi (1.4 bar) of water pressure is required for the regeneration valve to operate effectively.

Electrical Facilities

An uninterrupted power supply is required. The control uses a transformer to supply 12 VDC. Please make sure your voltage supply is compatible with your unit before installation.

Existing Plumbing

Condition of existing plumbing should be free from lime and iron buildup. Piping that is built up heavily with lime and/or iron should be replaced. If piping is clogged with iron, a separate iron filter unit should be installed ahead of the system.

Location of System and Drain

You must have an air gap on the drain line to prevent back flow of drain water into the system. A 2x the drain line pipe diameter air gap (Figure 1) is required with a minimum 1" air gap.

Air Gap

Drain
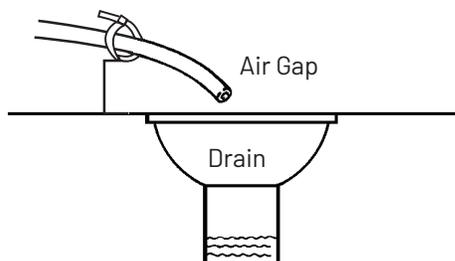
Figure 1

Installation Locations

FOR DRY LOCATIONS ONLY.

Bypass Valves

Always provide for the installation of a bypass valve if unit is not equipped with one.

! CAUTION **Water pressure is not to exceed 125 psi (8.6 bar), water temperature is not to exceed 110°F (43°C), and the unit cannot be subjected to freezing conditions.**

⚠ WARNING: **The system must be depressurized before removing any connections for servicing.**

Installation Instructions

1. Place the media tank where you want to install the unit. Make sure the unit is level and on a firm base.
2. During cold weather, the installer should warm the valve to room temperature before operating.
3. All plumbing should be done in accordance with local plumbing codes. The pipe size for a residential drain line should be a minimum of 1/2" (13 mm). Backwash flow rates in excess of 7 gpm (26.5 Lpm) or drain line length in excess of 20' (6 m) require 3/4" (19 mm) drain line. Commercial drain lines should be the same size as the drain line flow control.

NOTE: The tank should have the distributor tube installed and have the proper amount of regenerant in place.

4. Refer to the valve spec sheet for cutting height of the distributor tube.
5. Lubricate the distributor O-ring seal and tank O-ring seal. Place the main control valve on tank. Note: Only use silicone lubricant.

6. Soldering of joints near the drain port must be done prior to connecting the Drain Line Flow Control fitting (DLFC). Leave at least 6" (15 cm) between the DLFC and solder joints when soldering pipes that are connected on the DLFC. Failure to do this could cause interior damage to the DLFC.
7. Plumber tape is the only sealant to be used on the drain fitting.
8. Make sure that the floor is clean beneath the salt storage tank and that the tank is level.
9. Place approximately 1" (25 mm) of water above the grid plate. If a grid is not utilized, fill to the top of the air check (Figure 2) in the salt tank. Do not add salt to the brine tank at this time.

CAUTION : If grid plate is used, cut air check height just below the grid plate. This is critical on 6", 7", 8" and 9" tanks. The brine refill water must come above the grid plate and make contact with the salt.

10. On units with a bypass, place in bypass position. Turn on the main water supply. Open a cold soft water tap nearby and let run a few minutes or until the plumbing is free from foreign material (usually solder) that may have resulted from the installation. Once clean, close the water tap.
11. Slowly place the bypass in service position and let water flow into the mineral tank. When water flow stops, slowly open a cold water tap nearby and let water run until the air is purged from the plumbing lines.
12. Plug the transformer into an electrical outlet.

NOTE: All electrical connections must be connected according to local codes. Be certain the outlet is uninterrupted.
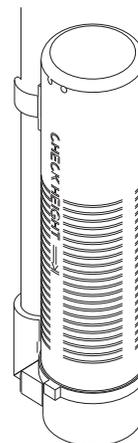
60002 Rev E

Figure 2 Residential Air Check Valve

Electrical Connection

The controller operates on 12-volt DC power supply. Do not operate the controller with a power supply other than the one supplied by the manufacturer for this model. For installation location assistance, see Transformer Port Location on page 4. When installing IOT, a WiFi connection is important. See IOT BOARD POSITIONING OPTIONS on page 4. These positions will provide maximum connection locations.

NOTE: The power source should be constant. Be certain the power adapter is not on a switched outlet. Power interruptions longer than eight hours may cause the controller to lose the time setting. When power is restored, the time setting must then be re-entered.

INSTALLATION *CONTINUED*

Typical Residential System Plumbing

Bath Tub   Lavatory   Toilet   Kitchen

Outside Faucet

Hot Water Outlet

Grounding Strap

⇨ Soft Water
→ Hard Water

Bypass

Drain Line

Water Heater

Pump or Meter

Laundry Tubs

Brine Tank Overflow Drain (Optional)

Softener

Floor Drain

Air Gap

Outside Faucet
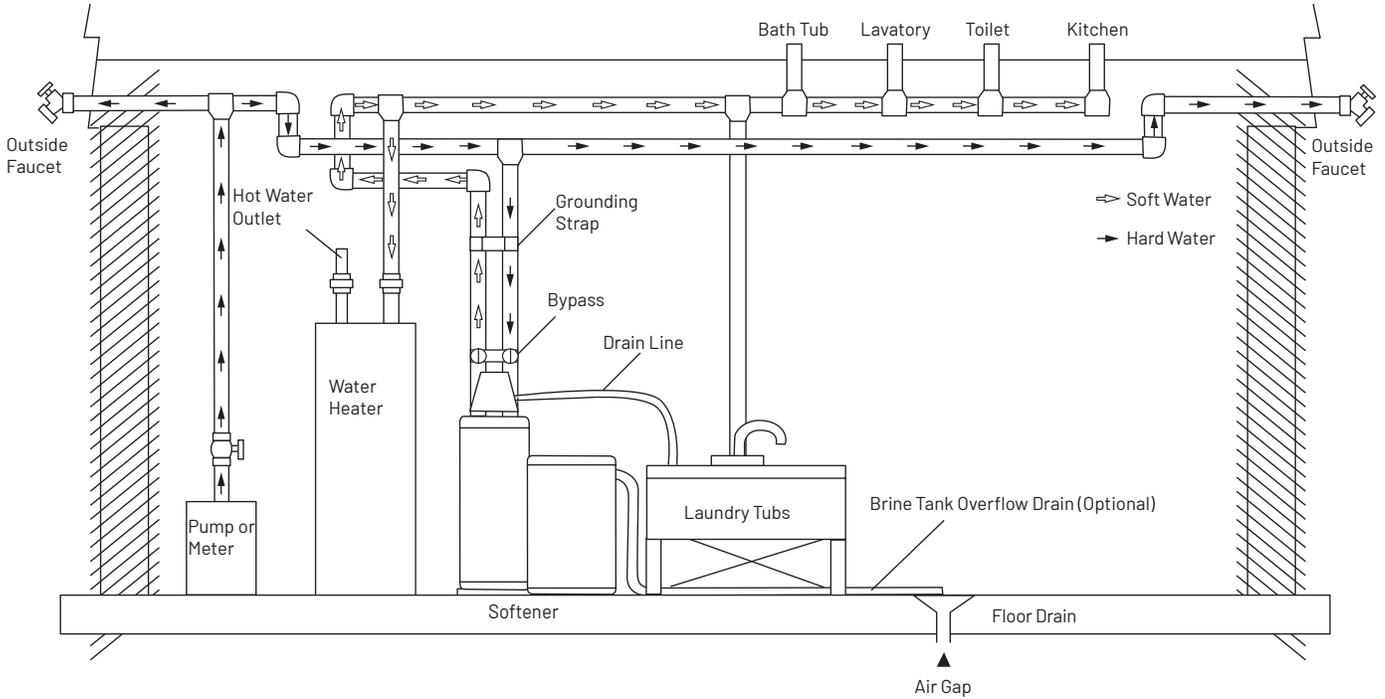
Figure 3 Softened Water Flow

IOT BOARD POSITIONING OPTIONS

- Side Mount -

- Top Mount -
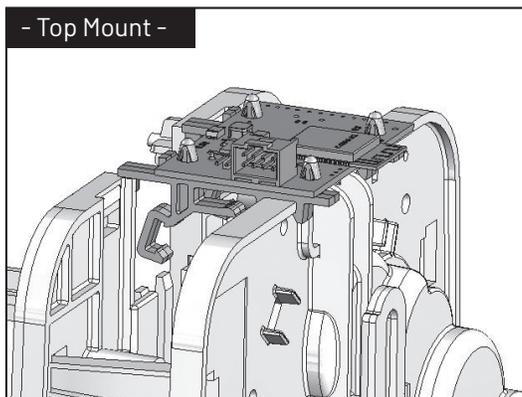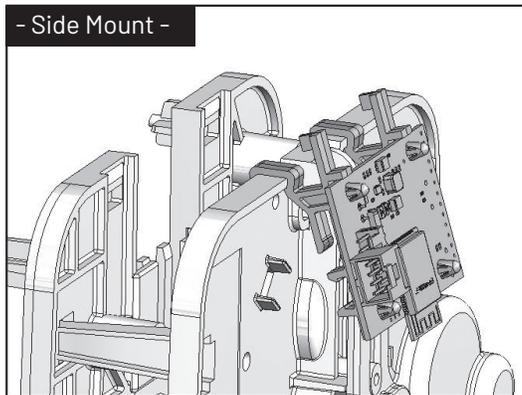
TRANSFORMER PORT LOCATION
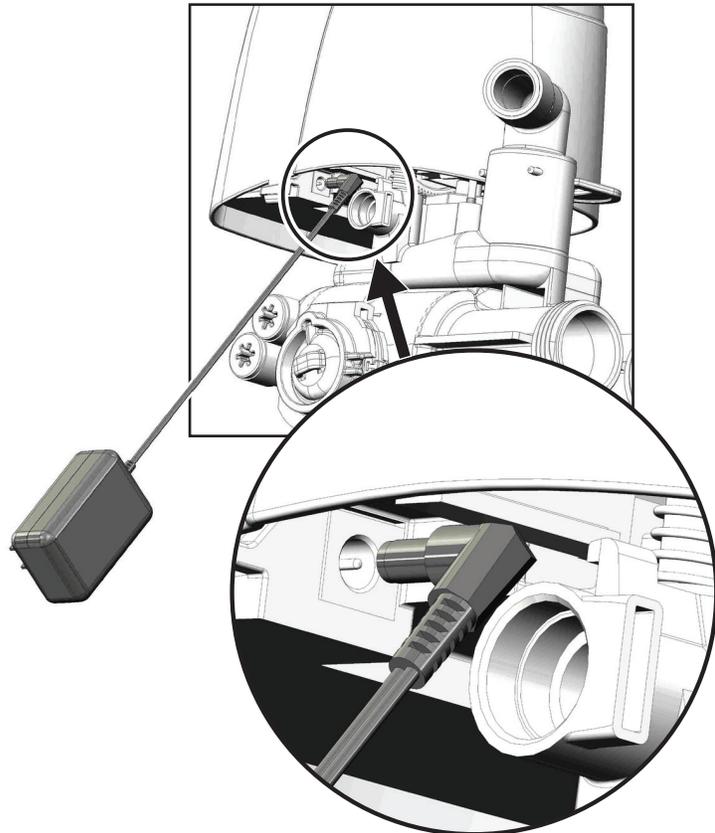
START-UP INSTRUCTIONS/ FLUSHING & CONDITIONING

The water softener should be installed with the inlet, outlet, and drain connections made in accordance with the manufacturer's recommendations, and to meet applicable plumbing codes.

1. Program the valve control according to instructions shown in this manual.

2. Start an immediate regeneration by pushing the regeneration button on the home screen. Position the valve to backwash. Ensure the drain line flow remains steady for 10 minutes or until the water runs clear.

3. Position the valve to the brine draw/slow rinse position. Ensure the unit is drawing water from the brine tank (this step may need to be repeated).

4. Position the valve to the rapid rinse position. Check the drain line flow, and run for five minutes or until the water runs clear.

5. Position the valve to the start of the brine tank fill cycle. Ensure water goes into the brine tank at the desired rate. The brine valve drive cam will hold the valve in this position to fill the brine tank for the first regeneration.

6. Replace control cover.

7. Put salt in the brine tank.

   NOTE: Do not use granulated or rock salt.

SYSTEM DISINFECTION

Disinfection of Water Softeners

The materials of construction of the modern water softener will not support bacterial growth, nor will these materials contaminate a water supply. During normal use, a softener may become fouled with organic matter, or in some cases with bacteria from the water supply. This may result in an off-taste or odor in the water.

Some softeners may need to be disinfected after installation and some softeners will require periodic disinfection during their normal life.

Depending upon the conditions of use, the style of softener, the type of ion exchanger, and the disinfectant available, a choice can be made among the following methods.

Sodium or Calcium Hypochlorite

Application

These materials are satisfactory for use with polystyrene resins, synthetic gel zeolite, greensand and bentonites.

5.25% Sodium Hypochlorite

These solutions are available under brand names of household bleach. If stronger solutions are used, such as those sold for commercial laundries, adjust the dosage accordingly.

1. Dosage
   A. Polystyrene resin; 1.2 fluid ounce (35.5 ml) per cubic foot.
   B. Non-resinous exchangers; 0.8 fluid ounce (23.7 ml) per cubic foot.

2. Salt tank softeners
   A. Backwash the softener and add the required amount of hypochlorite solution to the well of the salt tank. The salt tank should have water in it to permit the solution to be carried into the softener.

   B. Proceed with the normal recharge.

Calcium Hypochlorite

Calcium hypochlorite, 70% available chlorine, is available in several forms including tablets and granules. These solid materials may be used directly without dissolving before use.

1. Dosage
   A. Two grains (approximately 0.1 ounce [3 ml]) per cubic foot.

2. Salt tank softeners
   A. Backwash the softener and add the required amount of hypochlorite to the well of the salt tank. The salt tank should have water in it to permit the chlorine solution to be carried into the softener.

   B. Proceed with the normal recharge.

TOUCHSCREEN CONTROL FEATURES

Features of the XTRi Touchscreen Control

- Full-featured easy to use graphical touchscreen interface for programming, servicing, and diagnostics.
- Non-linear programming no longer requires cycling through every parameter when programming/servicing.

Buttons and Symbols

NOTE: Not all buttons appear on all screens.

Regeneration Cycle Wheel

- Displays the regeneration cycle step the system is currently in. The wheel rotates with each step so that the current step is shown in green.

NOTE: On metered units, the "Treatment" step on the Regeneration Cycle Wheel will flash when water is flowing through the unit.

Home: Displays the Home screen.

Regeneration: Displays the Regeneration screen, which allows you to start a regeneration and manually cycle through the regeneration steps.

Settings: Displays the Settings screen, which allows you to adjust commonly used settings. Pressing this button while in the Settings screen provides access to the Master Settings screen, which allows you to fully program the valve.

NOTE: Due to the complexity of these settings and the potential for errors, Master Settings should only be accessed by your local water professional.

Diagnostics: Displays the Diagnostic screen, which can assist in performing maintenance and troubleshooting performance issues with the valve.

Brightness/Sound: Displays the Brightness/Sound screen, which allows you to adjust the backlight of the control screen and allows you to mute the alarms of the control.

Vacation Mode: Halts all scheduled regenerations when pressed; press again to resume normal operation. When Vacation Mode is on, the 100 day regeneration error will be suspended.

Assistance: Displays a name and phone number to call for unit service°))°.

USB Connect: Allows you to connect the control to a PC via a USB cable for field programming or download of diagnostic parameters via PC (Field Programmer application required).

Screen Navigation Arrows: Displayed in the upper-left and upper-right corners of the screen, these arrows allow you to navigate from one screen to another.
NOTE: Settings on previous screen are not saved unless ✓ is pressed.

Settings Arrows: These arrows allow you to change the values of certain settings when programming the control.

Alarm: Displayed when an alarm has been triggered; accompanied by an audible alarm. Press to silence the audible alarm.

Error: Displayed when an error has occurred. Press to display the Error screen for more detailed error information.

Advance: This arrow allows you to advance through cycle steps during a regeneration.

Reset: Displayed in the Diagnostics screen to reset Totalizer and Peak Flow data and in Master Settings to reset parameters to factory or non-factory settings.

Accept: Press to save or accept changes in control configuration.

Cancel: Press to cancel configuration and exit to previous screen without saving.

Alert: Will display when there is no internet connection.

WIFI: Represents signal strength to WiFi router.

Bluetooth: When displayed in black, bluetooth signal is open. When displayed in white, bluetooth connection is engaged.

TOUCHSCREEN SETUP

The XTRi control was designed to be easy to set up and begin using right out of the box. The following simple procedure can be used to set up the system and begin treating water in most typical applications.

NOTE: **Steps 2 and 3 are optional and are not required to start the system. All control settings may be changed after the unit is in service.**

NOTE: Press ⓧ on any Quick Start screen to reset the screen back to its default settings.

1. After plugging in the unit, the Format screen (Figure 4) is displayed.
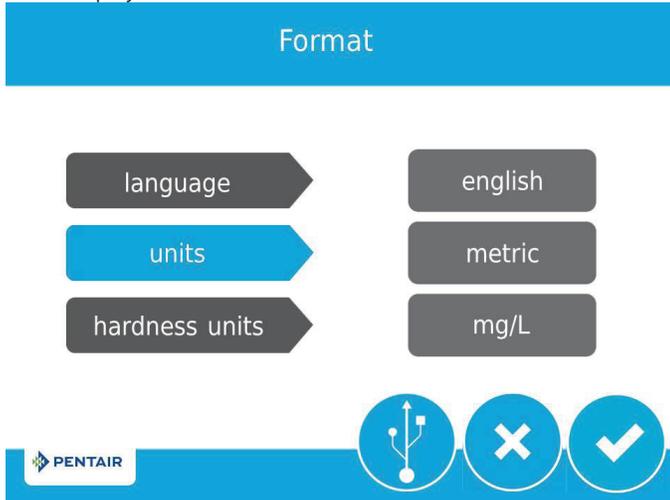
Figure 4 Format Screen

Press the **language** button to adjust the system's displayed language (international version only): English, French, German, Italian, Spanish, or Dutch. Press ✓ when finished.
Press the **units** button to adjust the system's units of measure (either U.S. or metric). Press ✓ when finished.

Press the **hardness units** button to adjust the system's hardness units of measure (grains per gallon, mg/L or ppm, German degrees, French degrees, or English degrees). Press ✓ when finished. Hardness units are adjustable only if metric units are selected.

NOTE: If the screen is blank after plugging in the unit, touch the screen to turn the screen on.

2. After pressing ✓, the Assistance/Mainten. Name screen (Figure 5) is displayed.

Figure 5 Assistance/Mainten. Name Screen

Using the keypad, type the name of the water treatment professional or company that the homeowner may call for system service (optional).

To enter a letter using the keypad, quickly press the keypad button the number of times that correspond with the position of the correct letter on the button. For example, to enter the letter "C", quickly press the ABC button three times. Press ✓ when finished.

3. After pressing ✓, the Assistance/Mainten. Phone screen (Figure 6) is displayed.
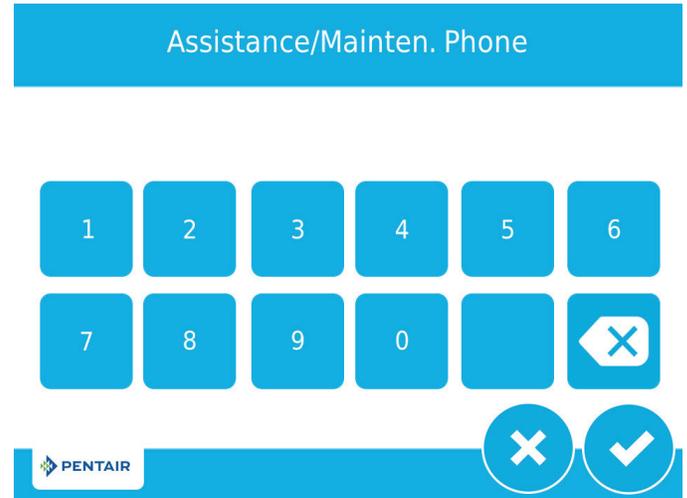
Figure 6 Assistance/Mainten. Phone Screen

Enter the phone number of the water treatment professional or company that the homeowner may call for system service (optional). Press ✓ when finished.

4. After pressing ✓, the Assistance/Mainten. Interval screen (Figure 7) is displayed.
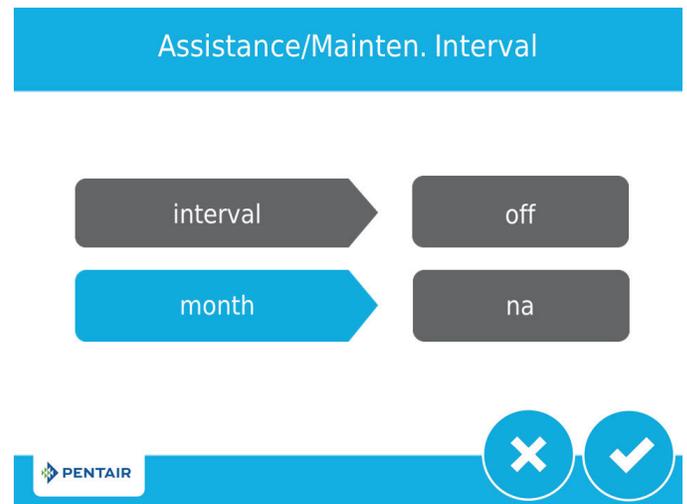
Figure 7 Assistance/Mainten. Interval Screen

Use the Assistance/Mainten. Interval screen to set the interval in which the homeowner will need to call a water treatment professional for system service (optional). The assistance interval can be based on a set number of months (month based) or a number of regenerations (regen based).

Press the **interval** button to select a month-based or regenbased assistance interval, then press ✓. Press either the **month** or **regen** button (depending on your previous selection), and select the number of months (up to 60) or regenerations (up to 2000) until the homeowner will need to call for service. Press ✓ when finished.

5. After pressing ✅, the Home screen (Figure 8) appears.
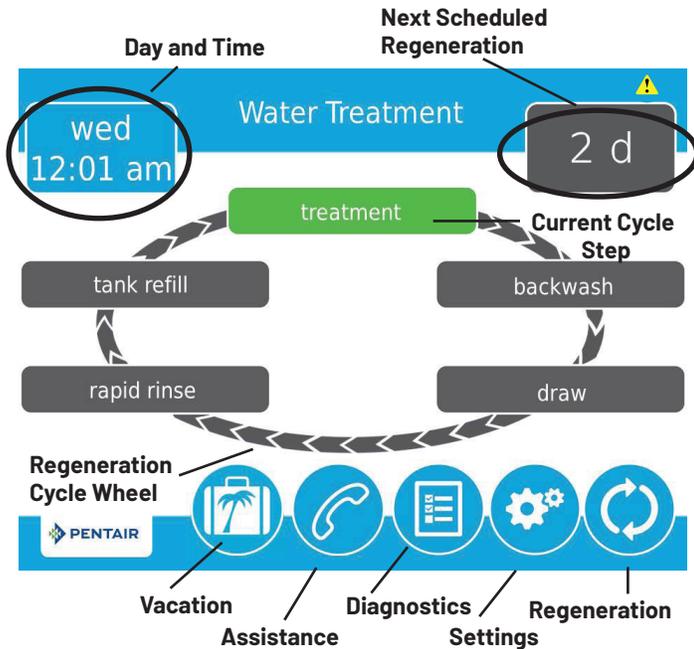
Figure 8 Home Screen

The **Day and Time** button will be flashing, indicating that the day of the week and time need to be set. If the date and time are incorrect, press the **Day and Time** button to update to the correct day and time. The Day and Time screen (Figure 9) appears.
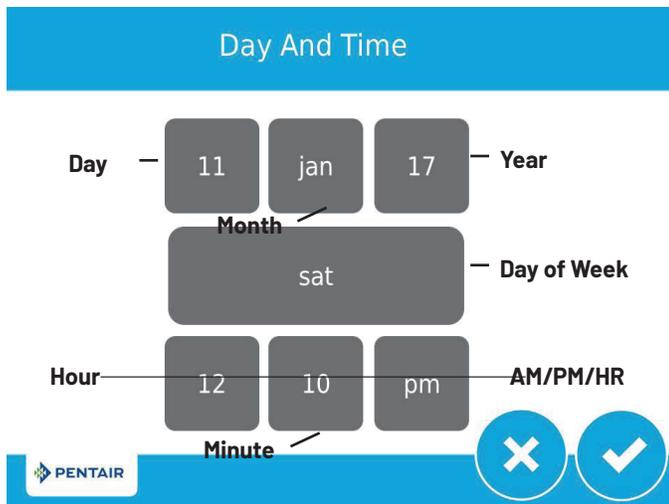
Figure 9 Day and Time Screen

Press the **Day of Week**, **Hour**, **Minute**, and **AM/PM/HR** buttons to adjust the values to the correct day of week and time. Setting the value of the **AM/PM/HR** button to HR changes the display to a 24 hour clock. Press the **Day, Month,** and **Year** buttons to adjust the values to the correct date. Press the ✅ button when finished to return to the Home screen. Press ❌ to return to the Home screen without saving.

Settings

The Settings screen allows you to change basic control settings including time of regeneration and water hardness. These settings improve the operational efficiency of the system and can be adjusted independently from other control settings without needing to enter Master Settings.

From the Home screen, press the **Settings** button ⚙. The Settings screen is displayed.
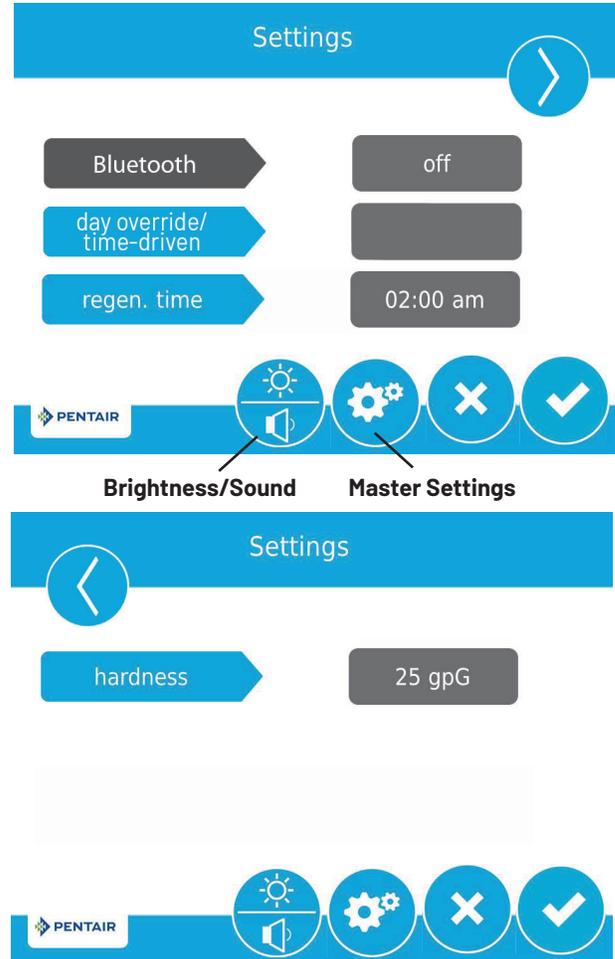
Figure 10 Settings Screen

- **Bluetooth** button should be turned on to open bluetooth signal during programming will automatically turn to off when WiFi connected.

- Press **day override** to adjust the number of days since last regeneration in which a new regeneration will automatically be run whether one is scheduled or not.

- Press **regen time** to adjust the time of day that an automatic regeneration cycle will begin.

- Press **hardness** to adjust the hardness setting. This value should match the hardness of the incoming untreated water supply.

  NOTE: Changing the hardness setting recalculates treatment volume and regeneration interval. This setting should only be changed on the advice of a professional.

- Press ✅ to save your changes or press ❌ to return to the Home screen.

Additional features may be accessed from the Settings screen by pressing the buttons at the bottom of the screen. (see Figure 14):

- **Master Settings**: Displays the Master Settings screen, which allows you to fully program the valve.
- **Brightness/Sound**: Displays the Brightness/Sound screen, which allows you to adjust the backlight of the control screen and allows you to mute the alarms of the control.

NOTE: **Due to the complexity of these settings and the potential for errors, Master Settings should only be accessed by your local water professional.**

NOTE: **Settings can not be accessed during a regeneration. If a regeneration starts while in the settings menu, the screen will return to the main screen and all parameters will be voided.**

Master Settings

The Master Settings screens include all configurable parameters available in the control.

CAUTION **Improperly adjusting master settings may cause the system to operate incorrectly. Before entering master settings please contact your professional water dealer.**

From the Settings screen, press the Settings button ⚙. A warning message appears.
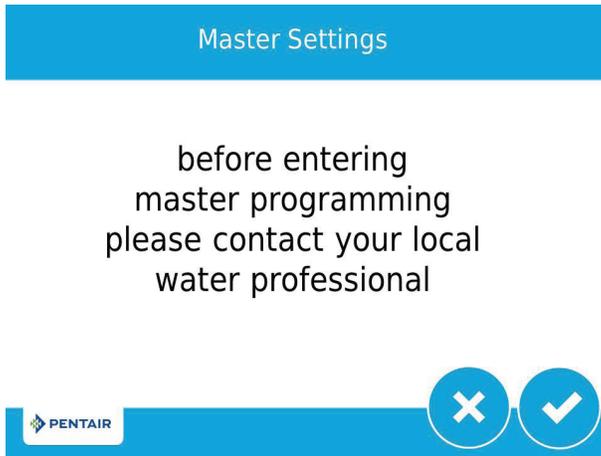
Figure 11 Master Settings Warning Screen

Press ✔ to continue to the Password screen or press ✖ to return to the Home screen.

The Password screen displays a numeric keypad.
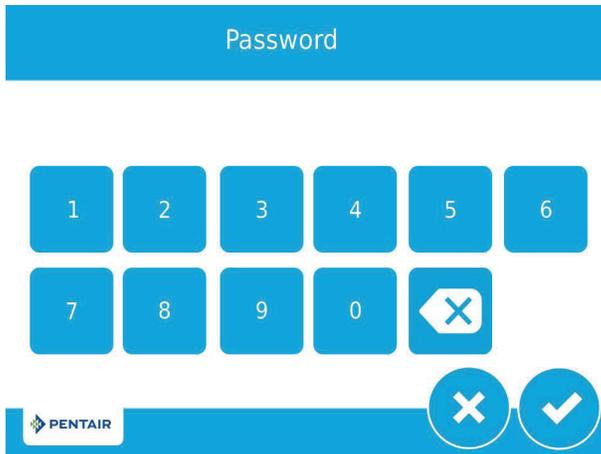
Figure 12 Password Screen

- Enter the master settings password **1201** and press ✖ to continue to the main Master Settings screen, or press ✔ to return to the Home screen.

After entering the correct password and pressing ✔, the main Master Settings screen is displayed.
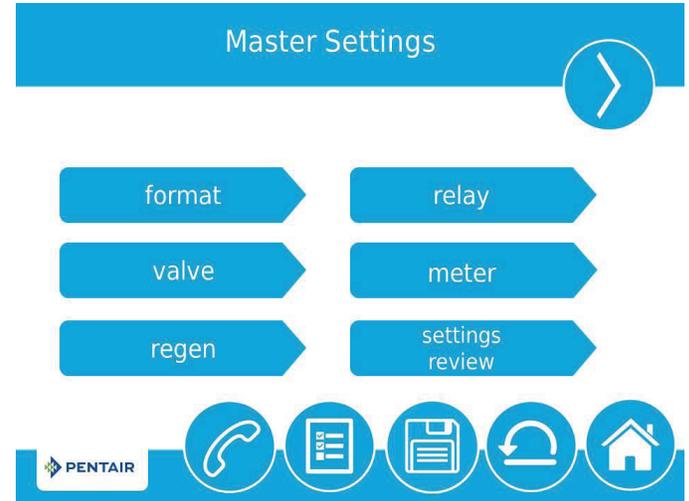
Figure 13 Main Master Settings Screen

While in the Master Settings screens, press 💾 to save all set parameters to a custom profile (see "NON-FACTORY SETTINGS" on page 13 or press the **Home** button 🏠 to return to the Home screen. Features of the Master Settings screens are described below. See MASTER SETTINGS PROGRAMMING and MASTER SETTINGS REFERENCE CHART for more detailed information.

- **format**: Contains settings for Language, Units, Hardness Units, Assistance Name, Assistance Phone, and Assistance Interval.
- **valve**: Contains settings for System, Valve, and Regeneration Type.
- **regen**: Contains settings for Regen Flow.
- **relay**: Contains settings for Aux 1 and Aux 2 relays.
- **meter**: (except for time clock systems) Contains settings for Meter Types, emergency regeneration.
- **settings review**: Displays a summary of all programmed settings.

MASTER SETTINGS PROGRAMMING
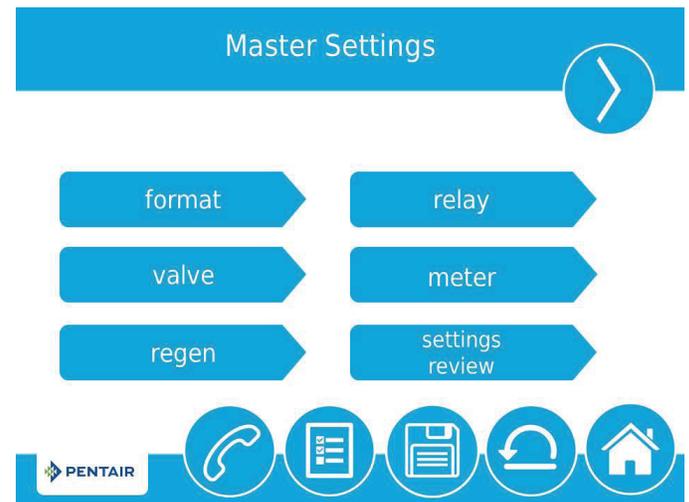
MASTER SETTINGS PROGRAMMING
(CONTINUED)

The following is a detailed overview of settings available in Master Settings. Please see the MASTER SETTINGS REFERENCE CHART for the complete set of values and ranges available to program while in Master Settings.

Format Screen

From the main Master Settings screen (Figure 13) press the **format** button to display the Format screen.
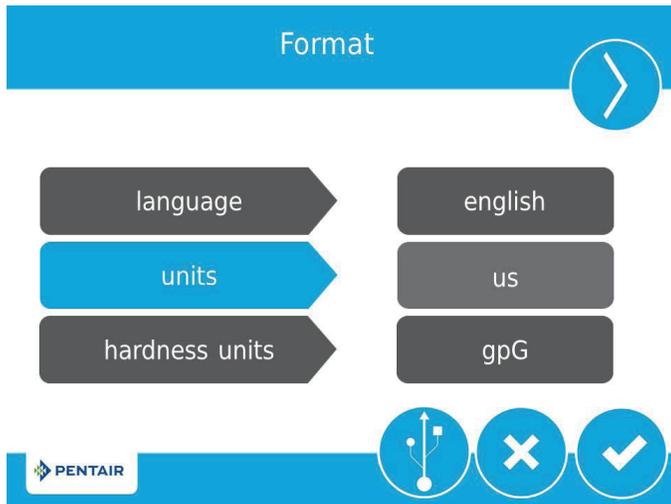
Figure 14 Format Screen

- **language**: Displays the language used on the control (international version only): English, French, German, Italian, Spanish, or Dutch.
- **units**: Contains settings for the unit type (either US or Metric) to be used in the control.
- **hardness units**: Contains settings for hardness units of measure (grains per gallon, mg/L or ppm, German degrees, French degrees, or English degrees). Hardness units are adjustable only if metric units are selected.

  NOTE: Degree hardness units are converted to ppm upon input. Degree inputs may be rounded up or down to the nearest ppm equivalent.

- Press the screen navigation arrows at the upper-right and left of the screen to navigate to the Assistance Name, Assistance Phone, and Assistance Interval screens.
- Press ✓ to save changes.

Valve Screen

From the main Master Settings screen (Figure 13) press the **valve** button to display the Valve screen.
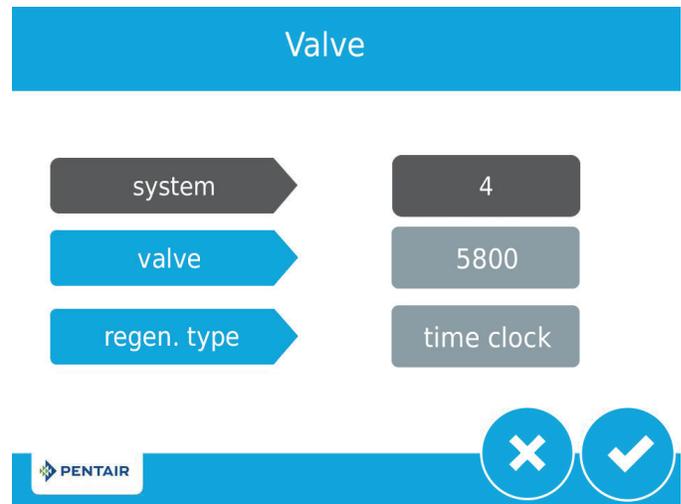
Figure 15 Valve Screen

- **system**: Displays the system type. Type 4 (single system) is currently the only available selection.
- **valve**: Contains settings to select the valve model installed with the control.
- **regen type**: Contains settings for the type of regeneration to use for the system. Regeneration types are described in detail below.

Regeneration Types

The XTRi control supports several different Regeneration Types. The Regeneration Type defines the method of automatic regeneration for the system. Each type is explained below.

Time Clock

Triggers a regeneration on a timed interval. The control will initiate a regeneration cycle at the selected Regeneration Time when the number of days since the last regeneration equals the Day Override value. The Day Override can be set from 1 - 99 days as well as partial day intervals of 4, 8, 12, 16 and 20 hours.

Softener Immediate

Measures water usage and regenerates the system as soon as the calculated system capacity is depleted. The control calculates the system capacity by dividing the unit capacity by the feed water hardness. Softener Immediate systems do not use a reserve volume. The control will also start a regeneration cycle at the programmed regeneration time if a number of days equal to the Day Override pass before water usage depletes the calculated system capacity. The Day Override parameter default is OFF, and REGEN TIME will be grayed out unless the day override value has been modified.

CAUTION **When setting the system for softener immediate regeneration, setting the capacity to a value lower than that of feed water hardness may cause the system to constantly regenerate. If this occurs, disconnect the motor from the control and correct the capacity and feed water hardness values in Master Settings.**

Softener Delayed

Measures water usage and regenerates the system at the selected Regeneration Time after the calculated system capacity is depleted. The control calculates the system capacity by dividing the unit capacity by the feed water hardness and subtracting the reserve.

The reserve should be set to ensure that the system delivers treated water between the time the system capacity is depleted and the actual regeneration time. Reserves can be set at a Fixed Volume, Fixed Percentage of capacity, a Variable Reserve based on the previous calendar day's water usage, or a Weekly Reserve based on the average water usage for the current day of the week. The default for the day override parameter is OFF, and the default reserve type is Weekly Reserve.

A Softener Delayed control will also start a regeneration cycle at the selected Regeneration Time if a number of days equal to the Day Override pass before water usage depletes the calculated system capacity.

If the regen type is changed from Softener Immediate to Softener Delayed (or vice-versa), all parameters within those types will be reset to factory default.

Filter Immediate

Regenerates the system immediately after the selected Volume Override value is depleted. A Filter Immediate control will also start a regeneration cycle at the selected Regeneration Time if a number of days equal to the Day Override pass before water usage depletes the calculated system capacity.

Filter Delayed

Regenerates the system at the selected Regeneration Time after the selected Volume Override value is depleted. A Filter Delayed control will also start a regeneration cycle at the selected Regeneration Time if a number of days equal to the Day Override pass before water usage depletes the calculated system capacity.

NOTE: **If Filter Immediate or Filter Delayed are selected, Regenerant Flow selections are limited to Filter, Upflow Filter, Custom Filter, and Custom Upflow Filter.**

Regeneration Screen

From the main Master Settings screen (Figure 13) press the **regen** button to display the Regeneration screen.
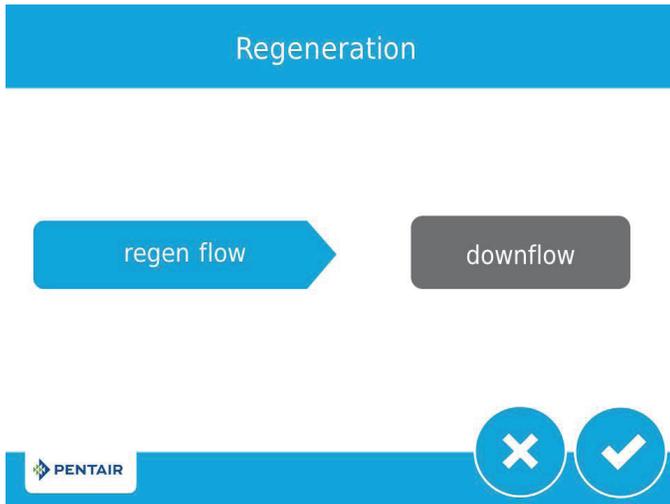
Figure 16 Regeneration Screen

CAUTION **Adjusting Regeneration settings will turn any set relays off. Any required relays will need to be reprogrammed in the Relay Output screen.**

- **regen flow**: Contains settings for the type of regenerant flow to be used in the valve. Changes to this setting affects the cycle steps displayed in the Regeneration Cycle Wheel on the Home screen. Regenerant flow cycle steps are described below.
- **downflow**: Cycle steps are as follows: Backwash, Draw, Rapid Rinse, Tank Refill
- **upflow**: Cycle steps are as follows: Draw, Backwash, Rapid Rinse, Tank Refill
- **downflow 2X backwash**: Cycle steps are as follows: Backwash, Draw, Backwash, Rapid Rinse, Tank Refill
- **custom upflow / downflow / filter**: Allows for up to 20 programmable cycle steps.
- **variable refill**: (softener delayed only) Cycle steps are as follows: Refill, Pause, Draw, Backwash, Rinse. Variable refill calculates refill time based on salt dosage, media volume, and BLFC size.
- **Relay Output Screen** From the main Master Settings screen (Figure 13) press the **relay** button to display the Relay Outputs screen.
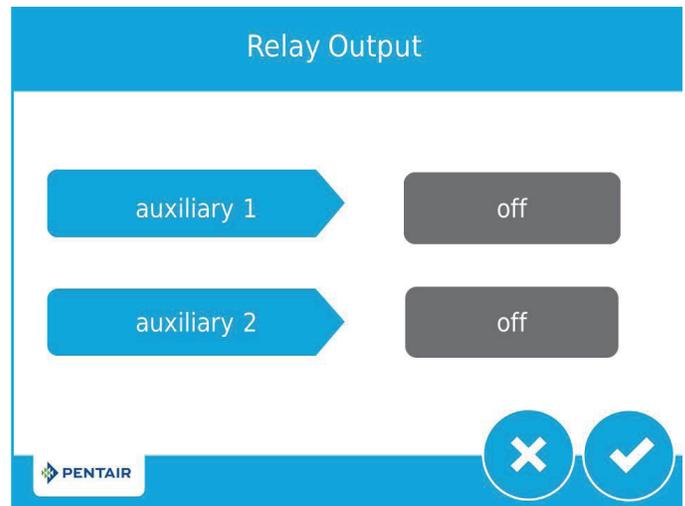
- **auxiliary 1 / auxiliary 2**: Contains settings for programming up to two auxiliary relay outputs. There are three types of relays that can be programmed:
  - **Cycle Based**: The relay will turn on when the valve moves to the specified regeneration cycle steps. To program, select each cycle step button for which the relay should turn on.
  - **Time Based**: The relay will turn on and off at up to two specified start and end times. If water saving regeneration is on, this is not an available option.
  - **Volume Based**: The relay will turn on when the valve has treated a specified volume of water. Duration can be set for up to two hours.
  - **Alarm Based**: The relay will turn on when the specified alarm condition (or any alarm condition) is met. The relay will turn off when the alarm is cleared.

MASTER SETTINGS PROGRAMMING (continued)

Meter Screen

From the main Master Settings screen (Figure 13) press the **meter** button to display the Meter screen.

Meter

meter type	1.25" turbine
generic	na
emerg. regen	off
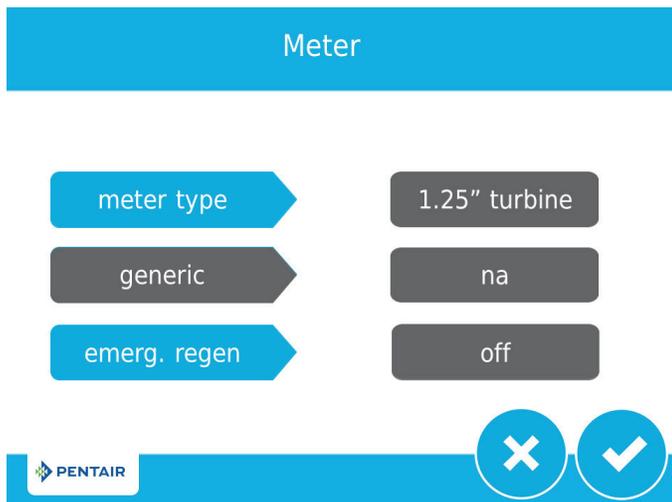
Figure 17 Meter Screen

- **meter type**: Contains settings for the type of meter installed with the system. The 5810/5812 valve uses an internal 1.25" turbine meter.
- **generic**: A generic option is available if the installed meter does not match any other selection. Requires setting the number of pulses per volume to ensure proper metering.
- **emergency regen**: When on, the emergency regen feature causes a regen to occur immediately when 105% or greater of the capacity (e.g., volume plus reserve) is used.

Continuous Flow Detect Screen

From the Meter screen (Figure 19) press ✔ to display the Continuous Flow Detect screen.

Continuous Flow Detect

Continuous flow detect	off
flow rate	na
duration	na
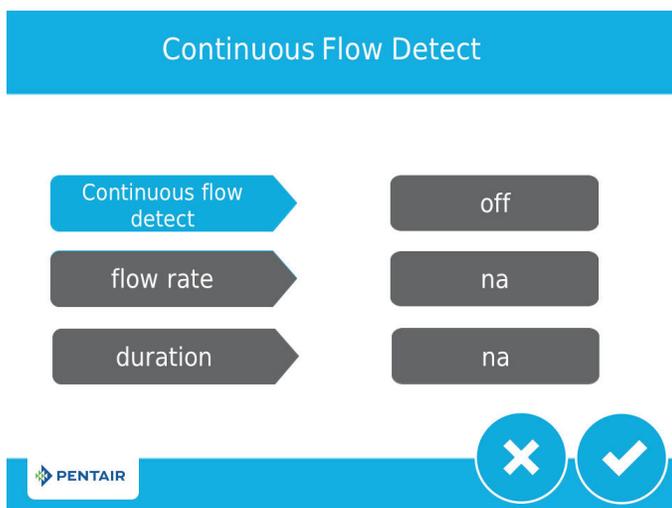
Figure 18 Continuous Flow Detect Screen

- **continuous flow detect:** When active, triggers an alarm when continuous flow of 0.5 GPM or 1 LPM is detected by the flow meter over an 8-hour period.
- Press the ✔ button when finished to return to the Home screen.

Settings Review

From the main Master Settings screen (Figure 13) press the settings review button to display the Settings Review screens, which display a read-only summary of all programmed settings in the control. Use the navigation arrows at the top of the screen to scroll through the parameters currently set in the control. The Settings Review screens are formatted similarly to the corresponding screen where each parameter was set. Press 🔄 to return to Master Settings.

Non-Factory Settings

After all parameters in Master Programming have been set, these settings can be saved to a custom profile by pressing 💾 on the main Master Settings screen (Figure 13). After pressing 💾 the Non-Factory Settings screen appears.

Non-factory Settings

current settings will
be saved as
the non-factory settings?
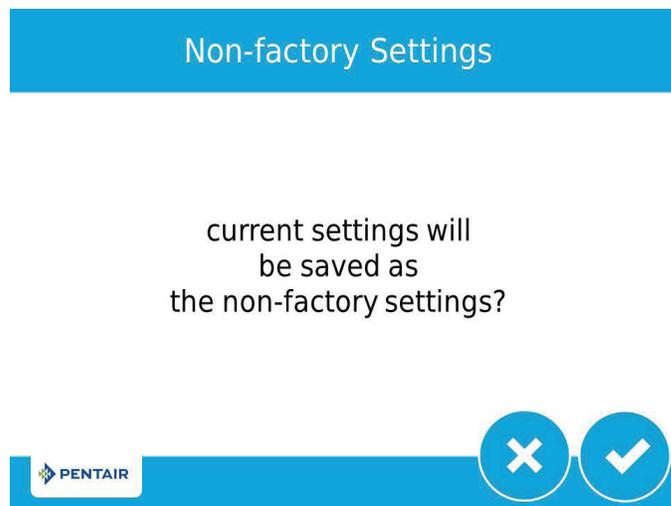
Figure 19 Non-Factory Settings Screen

Press ✔ to save all programmed Master Settings parameters to non-factory settings. At any point, the control can be reset to these saved custom settings. By performing a custom reset, any setting that is subsequently programmed without saving to non-factory settings will be reset to the previously saved nonfactory settings in the control.

ADDITIONAL FEATURES

Press the screen navigation arrow at the top right of the Master Settings screen (Figure 13) to navigate to the secondary Master Settings screen.

Master Settings

water saver regen.

remote regen.

cl generation / low salt
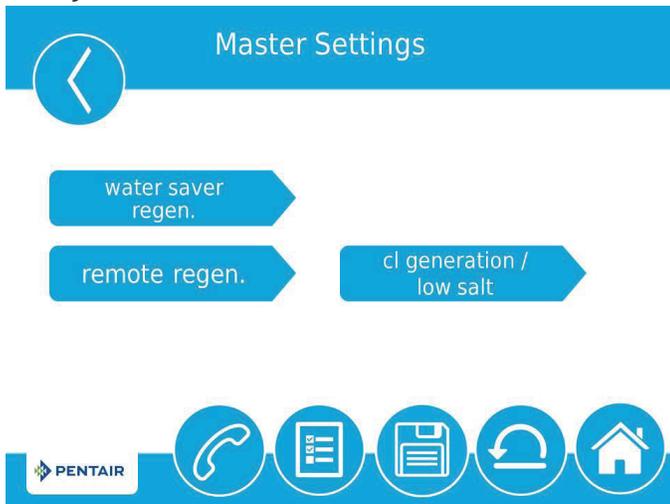
Figure 20 Secondary Master Settings Screen

- **water saver regen:** Contains settings for setting regenerations to save water by reducing backwash and rinse time on a particular interval
- **remote regen:** Contains settings for triggering a regeneration via a remote input
- **cl generation/low salt:** (international version only) Contains settings to trigger chlorine generator for the control

Water Saver Regeneration

From the secondary Master Settings screen (Figure 22) press the **water saver regen.** button to display the Water Saver Regen screen (Figure 23).

Water Saver Regen
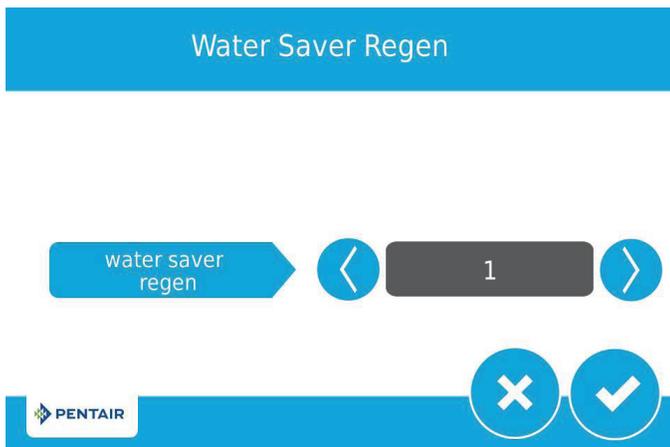
water saver regen   1

Figure 21 Water Saver Regen Screen

- **water saver regen:** reduces backwash and rapid rinse times on a particular interval. The reduced backwash time is 50% less than the backwash time (rounded down to the nearest minute, e.g. if the backwash time is set to 10 minutes, enabling the water saver regen function will reduce the backwash time to 5 minutes). The reduced rapid rinse time is 66% less than the rapid rinse time (rounded down to the nearest minute, e.g. if the rapid rinse time is set to 10 minutes, enabling the water saver regen function will reduce the backwash time to 3 minutes).
- **range:** 1-25 regenerations (for example, a setting of 3 will produce 1 normal regeneration then 3 reduced water saving regenerations).

From the secondary Master Settings screen (Figure 22) press the **remote regen** button to display the Remote Regen screen.

Remote Regeneration

remote signal duration   10 s
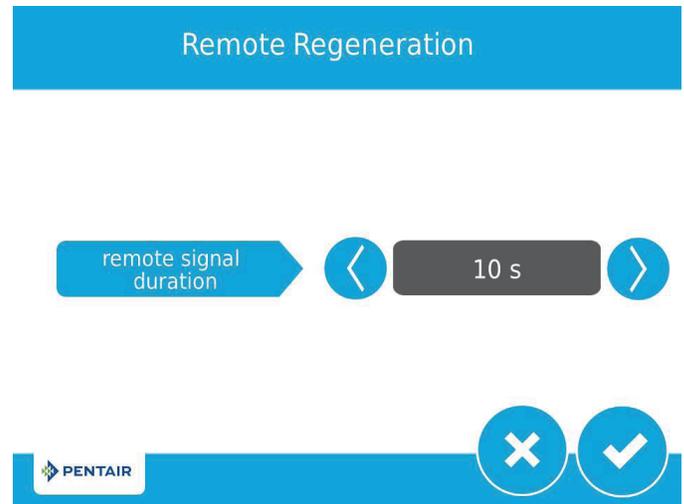
Figure 22 Remote Regeneration Screen

- **remote regeneration duration:** Contains settings for triggering a regeneration via a remote input. Select a value in seconds that the remote switch must be closed in order to trigger the regeneration.

Connect a remote switch (such as a differential pressure switch) to the remote start input terminals on the back of the XTRi control board. When the remote switch remains closed for the number of seconds specified in the Remote Regen screen, a regeneration will be triggered regardless of volume, capacity, or time remaining until the next scheduled regeneration.

Chlorine Generation/Low Salt (international version only)

From the secondary Master Settings screen (Figure 22) press the **cl generation/low salt** button to display the Chlorine Gen/ Low Salt screen (Figure 25).

Chlorine Gen/Low Salt

cl generation/ low salt   on
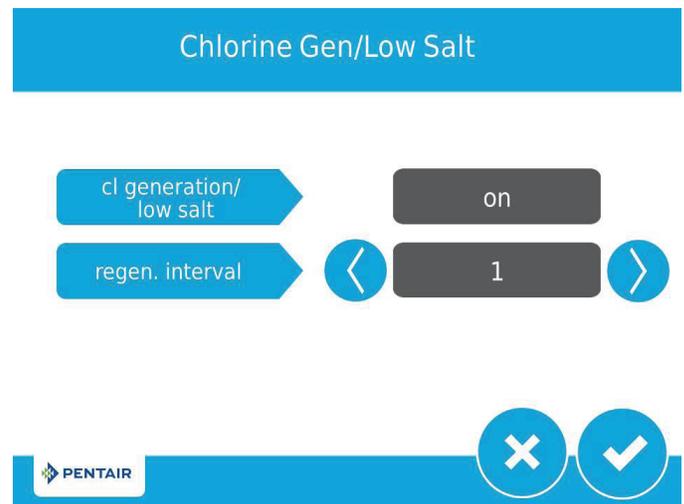
regen. interval   1

Figure 23 Chlorine Gen/Low Salt Screen

- **cl generation/low salt:** Contains settings to trigger chlorine generator for the control (on/off)
- **regen interval range:** 1 to 255 regenerations

REGENERATION

Start a regeneration by pressing the **Regeneration** button ⟳.
The Regeneration screen appears (Figure 26).
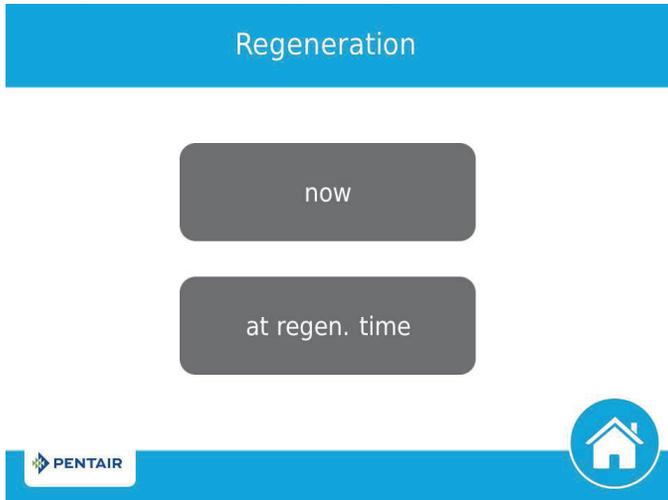
- Press **now** to begin a regeneration immediately, or press **at regen. time** to queue the regeneration for the programmed regeneration time (2:00 AM default for softeners, 12:00 AM default for filters). Pressing **at regen. time** again will cancel the manual regeneration.

- During Regeneration, press the ⟫ button to immediately advance to the next cycle step. Once in regeneration, the volume or time will be displayed below the ⟫ button. For softener systems, put salt in the brine tank before starting a regeneration.

NOTE: Do not use granulated or rock salt.

The unit is now fully programmed and ready to treat water. This quick setup uses the control's default settings, which are appropriate for most residential applications.

CONTROL OPERATION

Control Operation During Regeneration

During regeneration, the Regeneration Cycle Wheel shows the regeneration step the valve is advancing to, or has reached, and the time remaining in that step. Once all regeneration steps are complete the valve returns to treatment position and resumes normal operation. The time remaining in regeneration will be displayed on the home screen in hours and minutes.

Pressing the ⟫ button during a regeneration cycle immediately advances the valve to the next cycle step position and resumes normal step timing. The ⟫ button is only shown when the valve is in position and the motor has stopped. Pressing the ✕ button will cancel the regeneration.

Control Operation During Programming

The control can only be programmed with the valve in treatment. While being programmed the control continues to operate normally, monitoring water usage and keeping all displays up to date. Control programming is stored in memory permanently until reset.

Control Operation During a Power Failure

The XTRi includes internal power backup. In the event of power failure, the control shifts into a power-saving mode. The control stops monitoring water usage. The display and motor shut down, but it continues to keep track of the time and day for a minimum of eight hours. The system configuration settings are stored in a non-volatile memory and are stored indefinitely with or without power.

After a long power outage, the Time of Day button may flash indicating it needs to be reset. Press the button to stop the Time of Day from flashing and reset time if needed. If power fails while the unit is in regeneration, the control will save the current valve position before it shuts down. When power is restored, the control will resume the regeneration cycle from the point where power failed. If power remains off for more than eight hours, upon power restoration the regeneration is canceled and the piston returns to service.

CAUTION   If power fails during a regeneration cycle, the valve will remain in its current position until power is restored. The valve system should include all required safety components to prevent overflows resulting from a power failure during regeneration.

The control will not start a new regeneration cycle without power. If the valve misses a scheduled regeneration due to a power failure, it will queue a regeneration. Once power is restored, the control will initiate a regeneration cycle the next time that the Time of Day equals the programmed regeneration time. Typically, this means that the valve will regenerate one day after it was originally scheduled. If the treated water output is important and power interruptions are expected, the system should be set up with a sufficient reserve capacity to compensate for regeneration delays.

Remote Lockout

If a remote switch is installed, the control will not allow the system to go into regeneration until the regeneration lockout input signal to the control is cleared. This requires opening the contact closure to clear the lockout condition. The recommended gauge wire is 20 with a maximum length of 500 feet. See "WIRING DIAGRAM" on page 43.

Sleep Mode

The control will go into sleep mode if no button is pressed after five minutes. All other control functions will continue to operate. The display will wake from sleep mode when any part of the display is touched.

MASTER RESET

Press the ⌂ button while in the Master Settings main screen (Figure 13) to display the Reset screen.
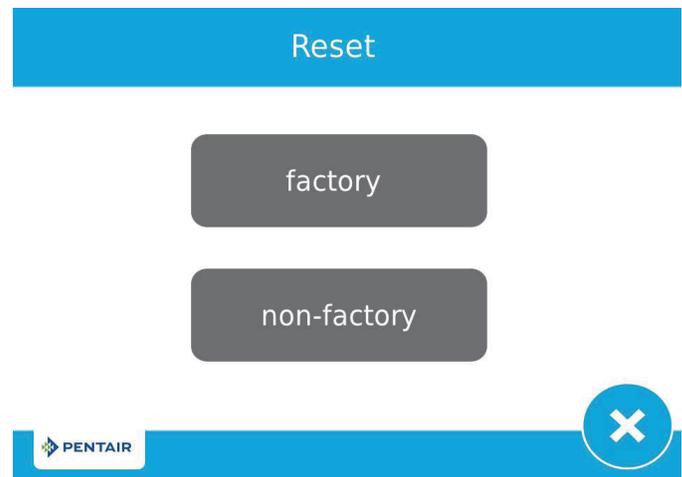
Figure 25 Reset Screen

Press the **factory** button to reset all control parameters to their factory defaults, or press the **non-factory** button to reset control parameters to previously saved custom settings (see "NON-FACTORY SETTINGS" on page 13). A warning screen appears before parameters are reset. Press ✓ to confirm the reset or press ✕ to return to Master Settings.

DIAGNOSTICS

The control records and displays a variety of diagnostic data to assist with troubleshooting performance issues and fine-tuning system efficiency. Press the **Diagnostics** button 📖 from the Master Settings or Home screens to view the Diagnostic screen.
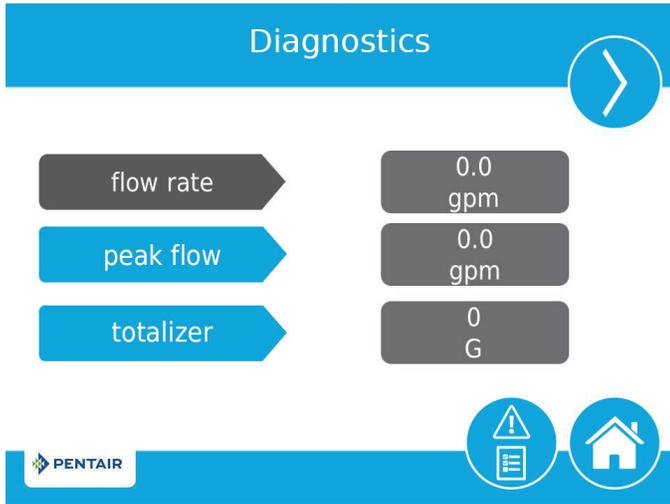
Figure 26 Diagnostic Screen

- Press the screen navigation arrows at the upper-right and left of the screen to view each diagnostic parameter.
- Press the Error Log button 🔶 to access the Error Log (Figure 29) screen. To clear the Error Log, press the Reset button then the Reset button again on the Clear All Error Logs screen, then enter "1201" at the password prompt screen, then press the Accept button to confirm.
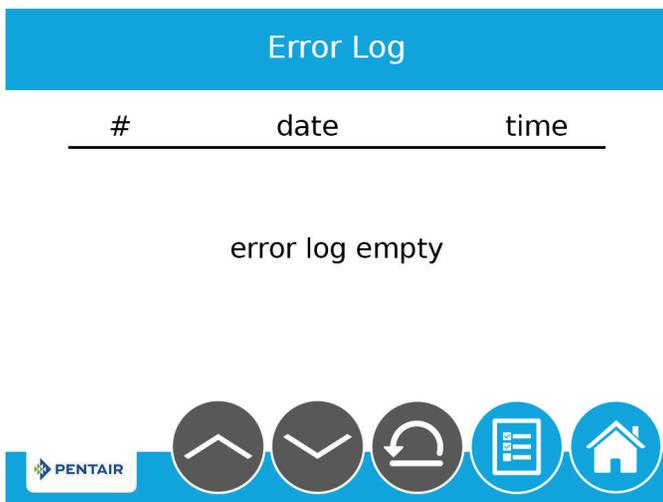
Figure 27 Error Log Screen

Press the **Home** button 🏠 to return to the Home screen.

NOTE: If a regeneration occurs while in the Diagnostic screen, the unit will return to the main screen.

Parameter	Description
Flow Rate	Displays the current flow rate.
Peak Flow*	Displays maximum flow rate of water along with date and time of occurrence, since last reset.
Totalizer*,**	Displays total volume of water used since last reset.
Last Regen	Displays when last regeneration occurred.
Reserve	Displays the reserve volume based on the reserve type selected under master settings. *This parameter is only available for meter delayed regeneration type.
Software Version	Displays the software version installed on the controller.
No of Regens	Displays how many manually and system initiated regenerations the system has gone through since last reset.
Regen Interval	Displays the average length of time between regenerations based on the past four regenerations.
Daily Usage	Displays average water usage for each day of the week based on the usage on that day for the past six weeks.
Usage Since Regen	Displays water usage since last regeneration.
Last Setting Change	Displays the date and time of the last update to Master Settings.

NOTE*: Only Peak Flow and Totalizer can be changed – they can be reset to zero.

NOTE:Totalizer has a maximum value of 99,999,999. If this number is reached, the Totalizer must be reset to zero to continue tracking this value.**

ALARMS AND ERRORS

If an error in valve or control function occurs, an alarm will sound and the Home screen will display the Error Alert button 🔺 and the Alarm button 🔊.
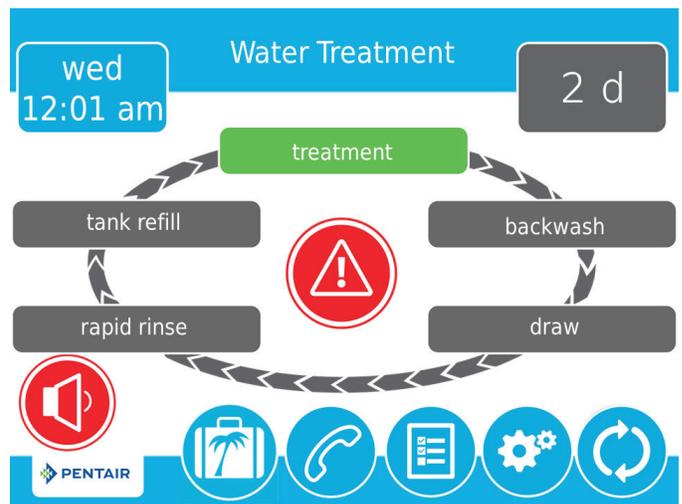
Figure 28 Alarm and Error Alert

- Press the **Alarm** button to mute the alarm.
- Press the **Error Alert** button to view information about the error.

If the display is in sleep mode when an error occurs, the screen will turn on for five minutes. The error will beep for one second per minute until the error is cleared. If the error is not cleared after five minutes, the screen will switch to power saving mode and display the Error Alert button as a screen saver.

See TROUBLESHOOTING for more information about error conditions.

USB CONNECTION FOR FIELD PROGRAMMING

The XTRi features a USB port that allows you to connect a PC to the control for field programming and diagnostic parameter download.

NOTE: **Field Programmer software is required for field programming features. See XTRi Field Programmer Manual for more information on using the Field Programmer software.**

Pressing ⬤ on the Format screen displays the USB screen.

Figure 29 USB Screen

When the USB screen appears, connect a USB cable to the USB port on the control circuit board. Connect the other end of the USB cable to a PC with the Field Programmer software installed and follow the directions in the XTRi Field Programmer manual to complete the connection. Press ⬤ to return to Master Settings.

NOTE: **Do not remove USB cable from computer or control while connected and transferring data. See the XTRi Field Programmer manual for proper disconnection procedure.**

TROUBLESHOOTING

Problem	Cause	Correction
Valve constantly regenerates	Error in programming has caused a regeneration loop condition in the control.	Disconnect the motor from the control circuit board (see "WIRING DIAGRAM" on page 43 for location on circuit board). A Motor Stall error will occur, allowing access to Master Settings. Navigate to the Valve screen and check Regen Type settings. Ensure that the value for Capacity is larger than the value for Hardness, and save settings. If the error continues to occur, unplug the unit, put it into bypass and contact technical support.

Error Alerts

NOTE: **An Error Alert appears on the Home screen if an error condition is detected. Press the Error Alert button ⚠ to view the error message.**

NOTE: **Most error alerts are cleared at regeneration. If the error persists following a regeneration, attempt the appropriate reset and recovery procedure below or contact technical support.**

ERROR SCREEN DISPLAY			
XTRi Display	App Display	Cause	Reset and Recovery
Motor Stall Motor Run-On No changes detected in the optical sensor for 6 seconds	Motor stall	No state changes in the optical sensor are detected for six seconds.	Unplug the unit and plug back in. Allow the control to attempt to find position again. Verify the optical sensor is in place with the wires connected to the circuit board. Verify the motor and drive train components are in good condition and assembled properly. Check the valve and verify that the piston travels freely. Replace/reassemble the various components as necessary. Plug the unit back in and observe its behavior. If the error reoccurs, unplug the unit, put it into bypass and contact technical support.
Optical Sensor Undesired change detected in the optical sensor	Optical sensor	An undesired optical sensor state change occurred.	Non-critical error. Extra optical sensor pulse detected. Press the Regeneration button to advance motor to clear error.
Flow meter error Continuous Flow	Flow meter	The flow meter has reported continuous flow for more than 8 hours.	Error will clear when flow to meter drops below 0.5 GPM or 1 LPM. If continuous flow is expected, turn plumbing leak detection off in Master Settings
Over current Motor over current detected	Over current	Motor drew too much current	Attempt to perform a manual regeneration. If error continues, call technical support.
Flow meter error No flow detected	Flow meter	detected for 7 days. No flow has been	Error will clear when a flow pulse is detected. Check to ensure meter cable is properly installed and meter spins freely. Clear meter of debris if necessary. If error continues, call technical support.
No regeneration for 100 days	No regen 100 day	The valve has not regenerated in more than 100 days.	Initiate a regeneration.
Service Interval	Service Interval	Service Interval timer has expired.	From within Master Settings, navigate to the Assistance/Mainten. Interval screen and set a new Service Interval time.
No Salt Detect (international version only)	No Salt Detect	When chlorine generator is on but does not read salt from the chlorine generator.	Error will clear if salt is added to the brine tank and a manual regeneration is performed.
Emergency Regen Occurred	Emer Reg Occur	Over 105% of the total capacity (e.g., volume plus reserve) has been depleted	Error will clear when regeneration occurs. When the Emergency Regen is enabled, the Emergency Regen Occurred error alert will display to let the user know an Emergency Regen Occurred. Repeated Emergency Regen may indicate an undersized system.
- NA -	IOT Conn Failure	XTRi & IOT Board Communication not working	Remove data cable. Reset IOT Board by reset button on top, then plug data cable back in.
- NA -	Offline	WiFi Connection has been disrupted for more than 60 minutes	Verify WiFi is not experiencing any issues.

PENTAIR PRO: APP SETUP

Pairing the Fleck 5800/5810/5812 XTRi Connected Valve with Wi-Fi Devices

The Fleck 5800/5810/5812 XTRi Connected Valve can be paired with a smartphone or tablet. New users can download and install the Pentair Home App from the App Store or Google Play. WiFi connection must be 2.4 GHz.

Sign Up and Log In

New users will need to create an account to monitor their water softeners. From the Log In page, press **SIGN UP** to create a new account. If you already have an account, skip to Login.
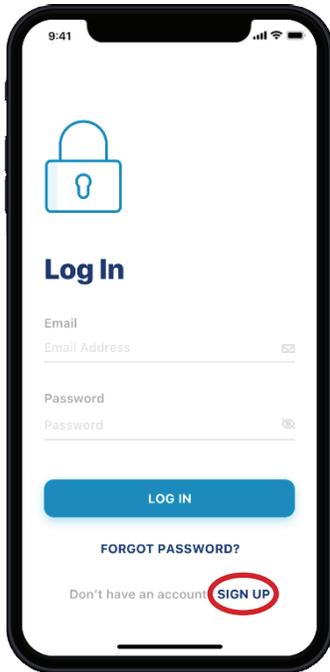
Add your email address and set your password.
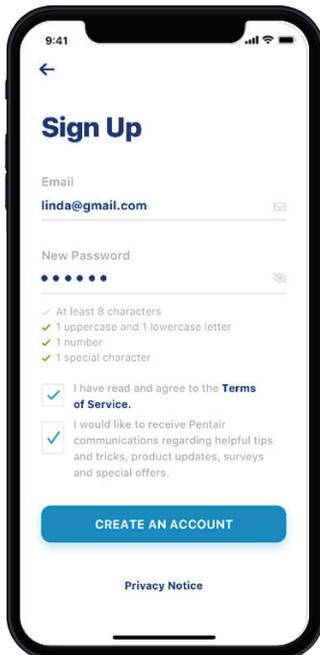
Once you select Create Account, an email will be sent to your email for verification.

Thank you for registering for the Pentair Pro app. To complete the registration process, please confirm your email address by clicking on the button below.

VERIFY EMAIL ADDRESS

PENTAIR

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THIS EMAIL WAS SENT BY: PENTAIR, 5500 WAYZATA BOULEVARD, SUITE 800, Minneapolis, MN 55416, UNITED STATES

Privacy Notice

Click the "Verify Email" link to complete the process.
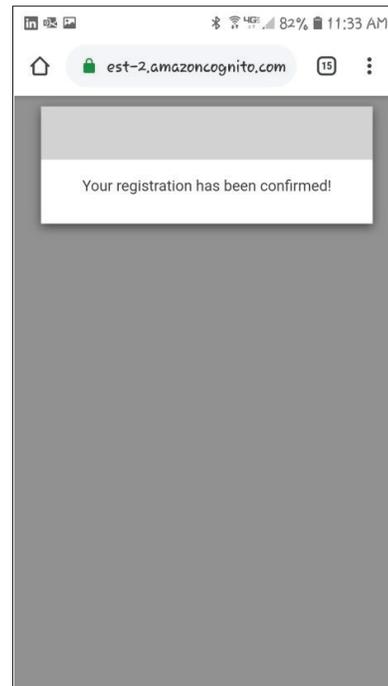
Sign in to the app with your verified email and password.
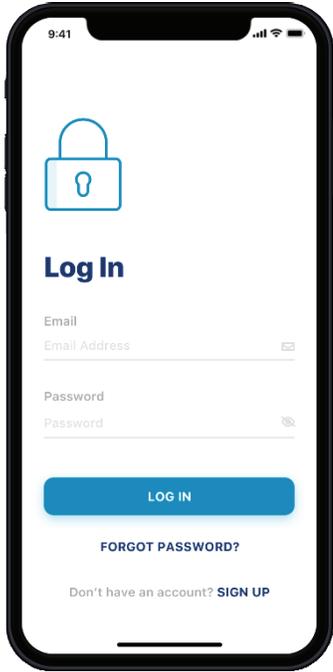
If you have a Pentair Partner Center Account, select **Yes** to indicate that you are a participant. If you will be the main administrator for the Pro account, select **Admin**. The **Admin** for the partner portal must be the initial sign up for the app. (Employees will be able to be invited to be part of your Pro app team through the Pentair Pro Web App.) The Pentair ID and password is the same as your Partner Center email and password.
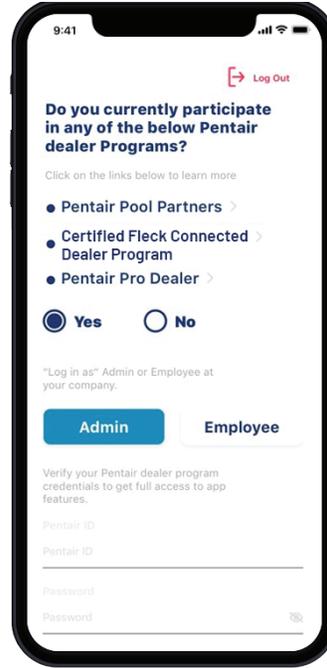
Once you sign in, the app will take you through the following series of screens:
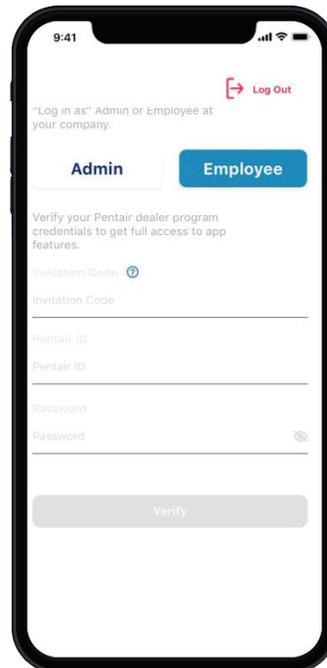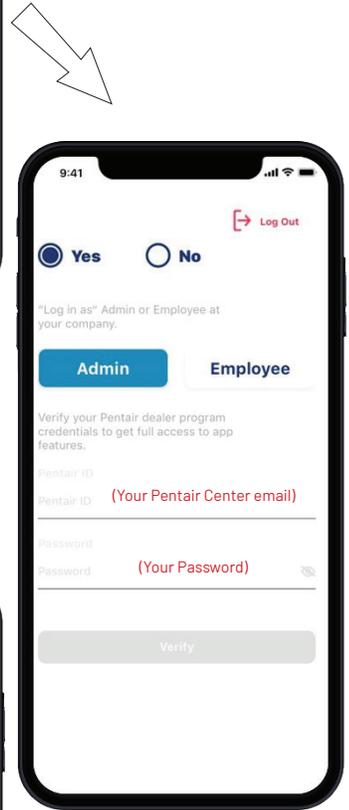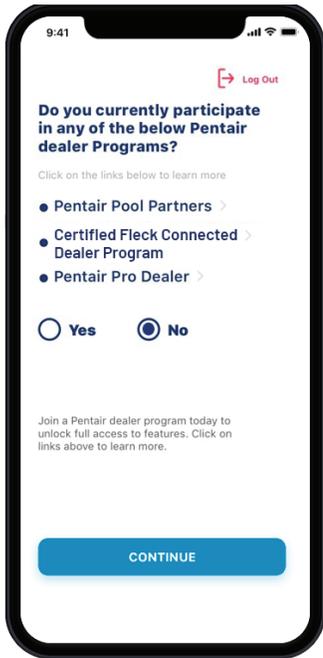
Available only by Admin through invitation.

In the event you are not a Partner Center user, then please select No and proceed through the log in pages. This will provide for limited screens and options.
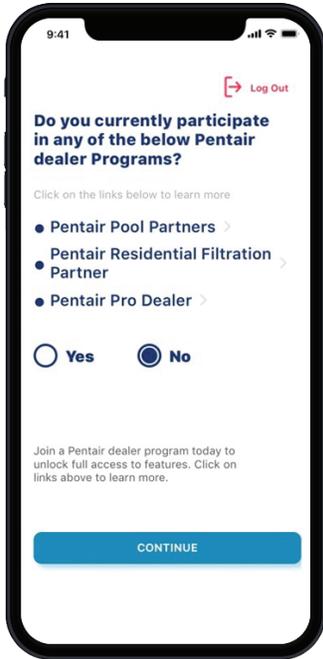
The app will then take you to the dashboard. To add a device click on the + sign.
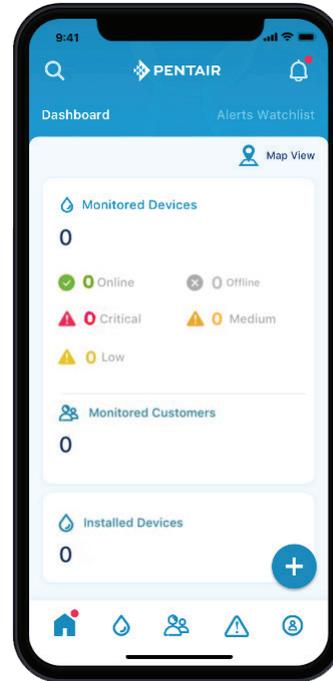
Once in the app, it will take you through a Create a Profile screen. Once you create your profile, click the save button at the bottom of the screen. This will take you to the main dashboard.
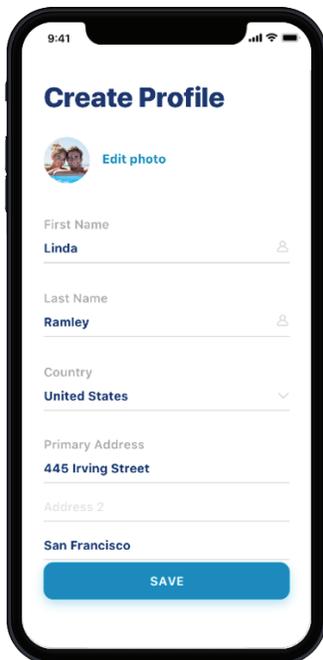
Select Water Softener.
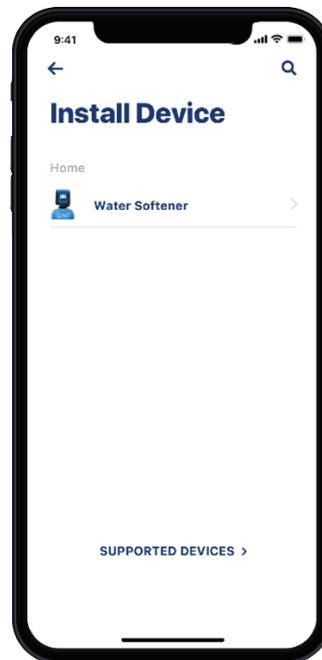
The screens will now take you through the provisioning process.
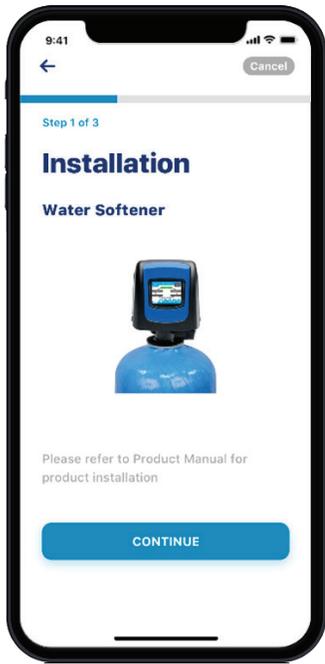
You are now ready to provision your valve.

1. From the XTRi control, press the gear button ⚙ on the main screen to proceed to settings.
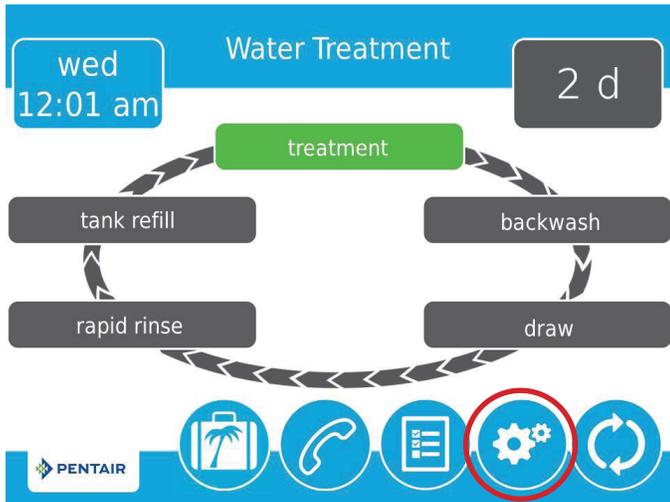
2. Turn the Bluetooth to "ON" and then click the check mark at the bottom right hand corner.
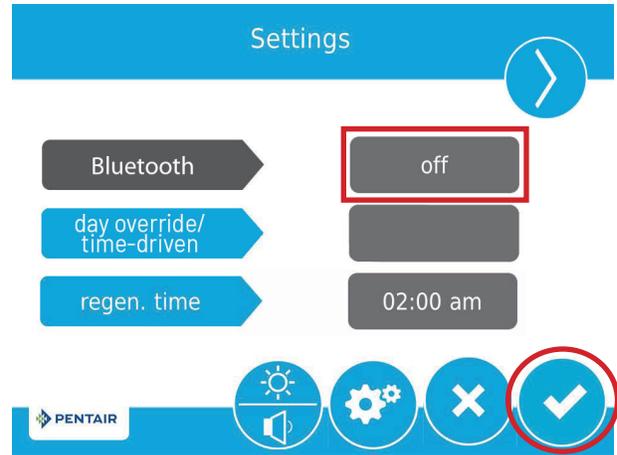
3. A Bluetooth icon will appear in the upper right hand corner of the main screen.

    a. A black icon ⦿ reflects the Bluetooth is open, but not connected.

    b. A white icon ⦿ reflects the Bluetooth signal is open and connected.

    c. The alert icon ⚠ will show up on the screen until a WiFi connection has been established.

4. Once the Bluetooth signal is open ⦿ on the screen, press the continue button on the app to scan for the device.
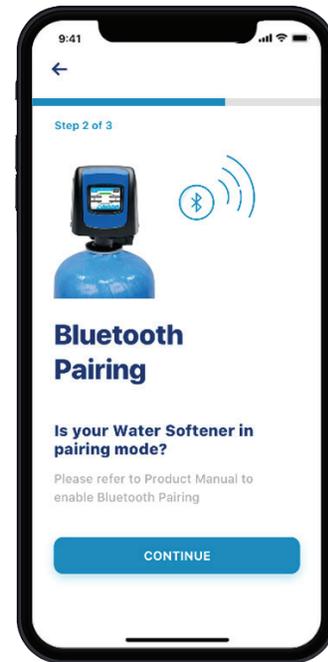
5. A list of available devices will appear. Once the device is found, select that device from the list.

6. Authorize the pairing of the device by clicking "Pair".
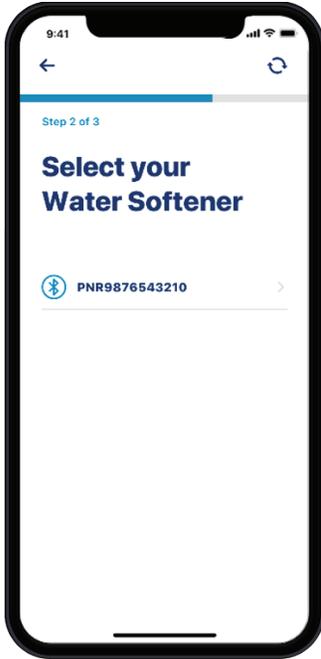
7. Once pairing is complete, if you are using the Pentair Pro App, set up is complete.
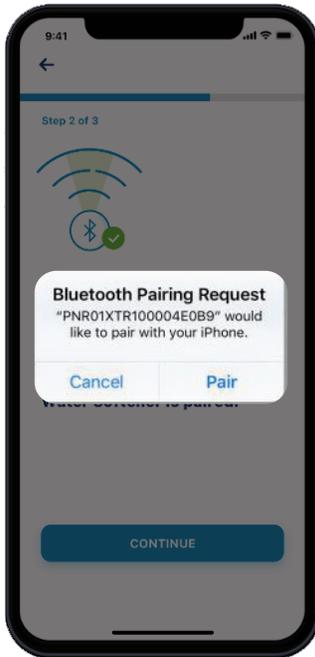
If you are using the Pentair Home app, please proceed to the screens to set up the WiFi connections as referenced in the **Pentair Home Homeowner Guide**.

8. In the Pentair Pro app the product will now show up in your installed devices.
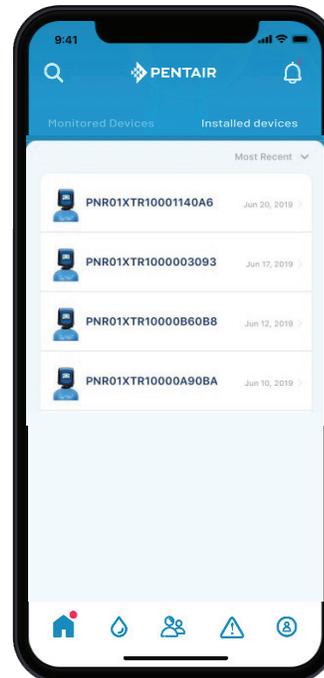
MASTER SETTINGS REFERENCE CHART

CAUTION: Before entering Master Settings, please contact your local professional water dealer.

Screen Name	Parameters	Values	Notes
Format	Language	English, French, German, Italian, Spanish, Dutch	Changes the language to display screen text and button labels in the control (available with international version of control only).
	Units	U.S. Metric	Changes system units and values across all parameters in the control. All programmed units and values should be recalculated after adjusting this setting.
	Hardness Units	Grains per gallon mg/L or ppm German degrees French degrees English degrees	Changes hardness units used in displaying hardness parameters and calculating system capacity and editing exchange capacity and hardness settings.
Assistance Name	Free-form text	A - Z and space	Name of service provider to display when viewing the Assistance screen. 20 character limit.
Assistance Phone	Free-form text	0 - 9 and space	Phone number of service provider to display when viewing the Assistance screen. 20 character limit.
Assistance Interval	Month Based Regen Based	1 - 60 1 - 2000 Off	Set to automatically display the Assistance screen after a certain number of months or regenerations.
Valve	System	4	System 4 (single system) is currently the only available selection.
	Valve	5800 5810 5812	Select the type of valve to be installed.
	Media Volume	0.25 - 999.00 ft^3 1 - 9999 L	Used to calculate capacity.
	Salt Dosage	3 - 18 lbs/ft^3 50 - 290 g/L	Used to calculate capacity and refill time.
	BLFC size	0.125 gpm 0.250 gpm 0.500 gpm 1.000 gpm	Brine Line Flow Control; Used to calculate refill time.
	Regen. Type	Time Clock Softener Immediate Softener Delayed Filter Immediate Filter Delayed	Regeneration Types are described in detail on page 11. Additional Valve screen parameters are dependent upon selected Regeneration Type. Not all parameters will be displayed. Softener Delayed regeneration type has four reserve options (Fixed %, Fixed Volume, Variable Reserve, Weekly Reserve). The control will display additional configuration options depending on the selected reserve type.
	Capacity	1 - 99 999 999 grains / grams / degrees	Only required on metered systems to calculate treated water capacity and reserve. Represents total system capacity between regenerations.
	Hardness	1 - 199 grains/gallon 1 - 1 999 mg/liter x - x degrees	Only required on metered systems to calculate treated water capacity and reserve. Represents hardness of untreated water.
	Reserve	Fixed % Fixed Volume Weekly Reserve Variable Reserve	Only available when Meter Delayed regeneration type is selected. Selecting Fixed % or Fixed Volume will display additional configuration options. Weekly Reserve is calculated based on average day of week's water usage. Variable Reserve is calculated based on previous day's water usage.
	Day Override	1 - 99 days 4, 8, 12, 16, 20 hours	Available to be programmed for all Regeneration Types.
	Regen Time	12 / 24 hour clock	Required for Time Clock and delayed Regeneration Types. Set for immediate regeneration types only when a Day Override is also set.
	Volume Override	1 - 99 999 999 gallons / liters	Only displayed when Regeneration Type is Filter Immediate or Filter Delayed.
Regeneration	Regen. Flow	Upflow Downflow Downflow 2x Backwash Filter Custom Upflow/Downflow/Filter Variable Refill	Cycle steps on the Home screen and during regeneration will change to reflect the cycle steps and order in the selected Regenerant Flow. Additional Regeneration screen parameters are dependent upon selected Regenerant Flow. Not all parameters will be displayed. Custom Upflow and Downflow allows for up to 20 programmable cycle steps. Variable Refill calculates refill time based on Salt Dosage, Media Volume, and BLFC Size. Time per cycle step can be programmed for all other Regenerant Flow options.
Relay Outputs	Aux 1/Aux 2	Cycle Based Time Based Volume Based Alarm Based Off	For Cycle Based relays, select the cycle steps on which the relays will turn on. For Time Based relays, two start/end times will need to be selected for each relay. Relay times are based on total regeneration cycle time. Volume Based relays can be programmed from zero gallons/liters to the full system capacity. Duration can be set from zero seconds to two hours. Volume Based option is not available when Regeneration Type is set to Time Clock. Alarm Based relays will turn on when an alarm condition is met, and will turn off when the alarm is cleared.
Meter	Meter Type	.75 inch Turbine .75 inch Paddle 1.00 inch Paddle 1.25 inch Turbine 1.50 inch Paddle 1.50 inch Turbine 2.00 inch Paddle 3.00 inch Paddle Generic	Select the type of meter installed with the system. A Generic option is available if the installed meter does not match any other selection. Selecting the Generic meter type requires setting the number of pulses per gallon or liter to ensure proper metering.
	Generic	1 - 999.9 /1 - 1500 pulses per gallon / liter	Only available when Generic meter type is selected.
Remote Regen	Remote Regen	1 - 255 seconds Off	Select a value in seconds that the remote switch must be closed in order to trigger the regeneration.

NOTE: Some items may not be shown depending on control configuration. The control will discard any changes and exit Master Settings if any button is not pressed for five minutes.

5800 CONTROL VALVE PART NUMBERS

Item No.	QTY	Part No.	Description
1	1	580008-004	Turbine Meter, Downflow Softener, U.S. Power Supply, #00 Injector, 0.125 GPM BLFC
		580008-005	Turbine Meter, Upflow Softener, U.S. Power Supply, #00 Injector, 0.125 GPM BLFC
		580008-006	Time Clock B/W Filter, U.S. Power Supply

NOTE: Above part numbers DO NOT include the following parts.

Bezel
Bypass Assembly
Connector Assembly
Flow Washer
DLFC

See 5800 accessories page for options.
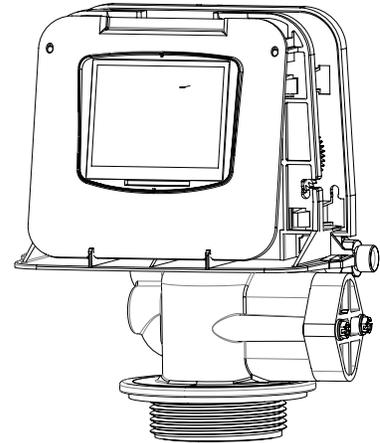
5810 CONTROL VALVE PART NUMBERS

Item No.	QTY	Part No.	Description
1	1	581008-005	1.25" Integral Meter, Downflow Softener, U.S. Power Supply, #00 Injector, 0.125 GPM BLFC
		581008-006	1.25" Integral Meter, Upflow Softener, U.S. Power Supply, #00 Injector, 0.125 GPM BLFC
		581008-007	Time Clock B/W Filter, U.S. Power Supply

NOTE: Above part numbers DO NOT include the following parts.

Bezel
Distributor Pilot
Bypass Assembly
Connector Assembly
Flow Washer
DLFC

See 5810/5812 accessories page for options.
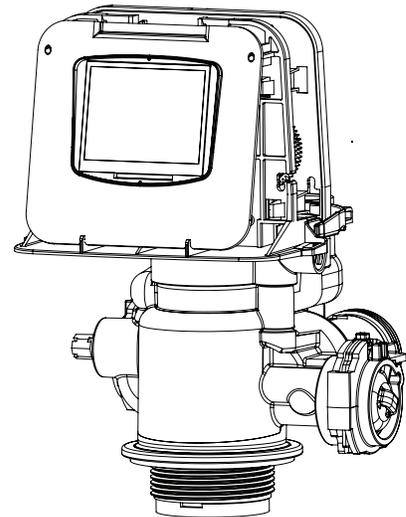
5812 CONTROL VALVE PART NUMBERS

Item No.	QTY	Part No.	Description
1	1	581208-0010	1.25" Integral Meter, Downflow Softener, U.S. Power Supply, 2.5" Base, Less Distributor Pilot, #00 Injector, 0.125 GPM BLFC
		581208-0011	Time Clock B/W Filter, U.S. Power Supply, 4" Base, 1.9" OD Distributor Pilot
		581208-0012	Time Clock B/W Filter, INT'L Power Supply, 4" Base, 1.9" OD Distributor Pilot

NOTE: Above part numbers DO NOT include the following parts.

Bezel
Distributor Pilot (except on 4" base models)
Bypass Assembly
Connector Assembly
Flow Washer
DLFC

See 5810/5812 accessories page for options.
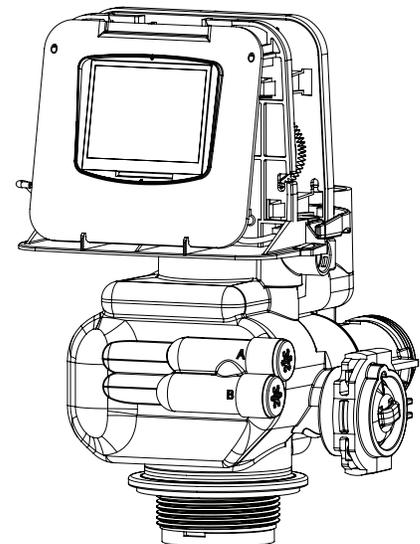
POWERHEAD ASSEMBLY
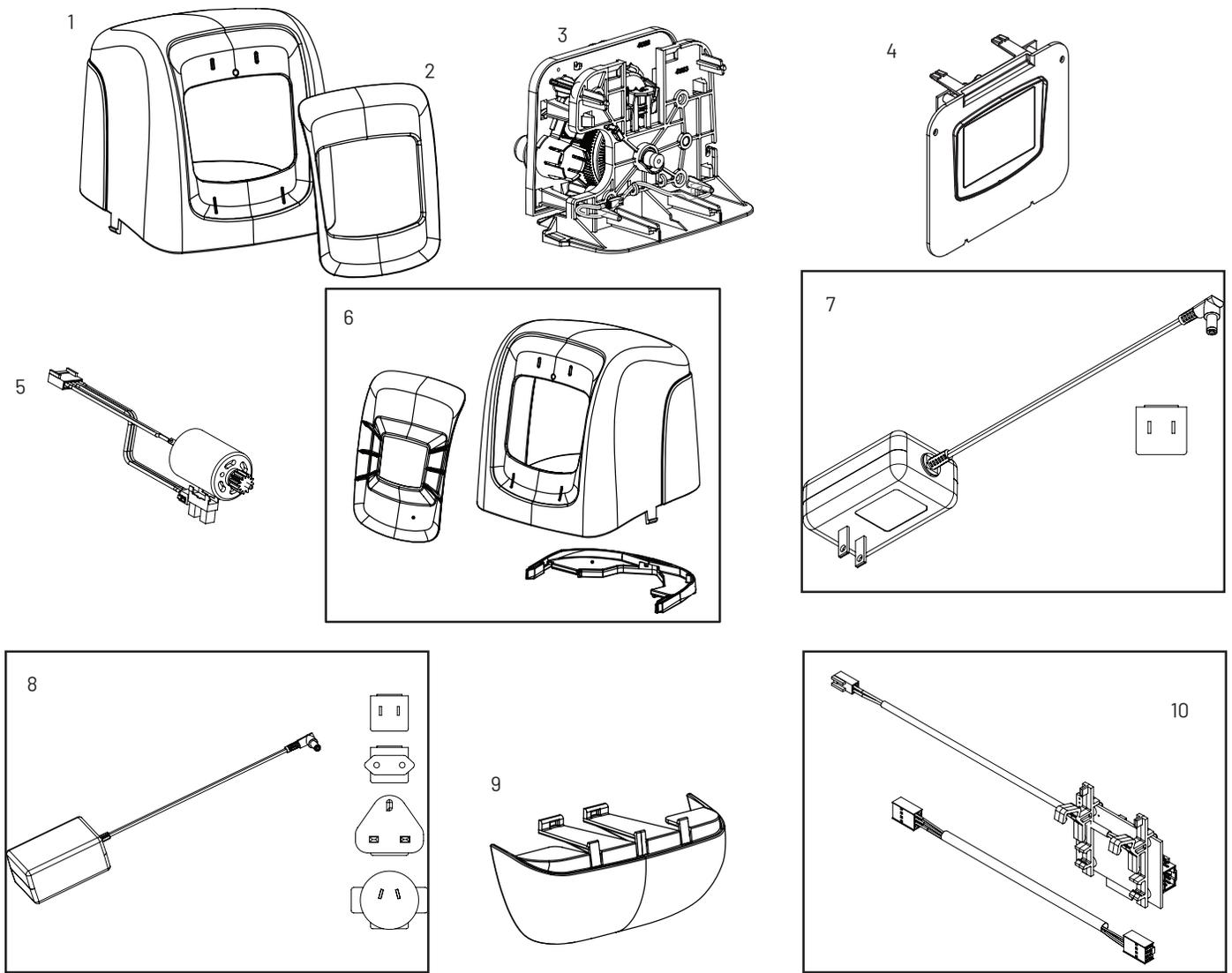
Item No.	QTY	Part No.	Description
1	1	43261	Cover, Black
2	1	43262-00	Bezel, Blue
		43262-01	Bezel, Black
		43262-02	Bezel, Silver
3	1	61957	Panel Gear Assy, 5800/5810/5812
4	1	62126	Timer Assy, 5800XTR Touch Scrn w/Logo, International Lang
5	1	61835	Motor Assembly
6	1	61882	Cover Assy, Environmental, 5800, Gray
		61994	Cover Assy, Environmental, 5810/12, Gray
7	1	44161	Transformer, 12V UL
8	1	44162	Transformer, Intl, 12V UL
9	1	43715	Cover, Lower, Black, 5800
10	1	62125	Kit, IOT Module, 5800 XTRi

5800 CONTROL VALVE ASSEMBLY
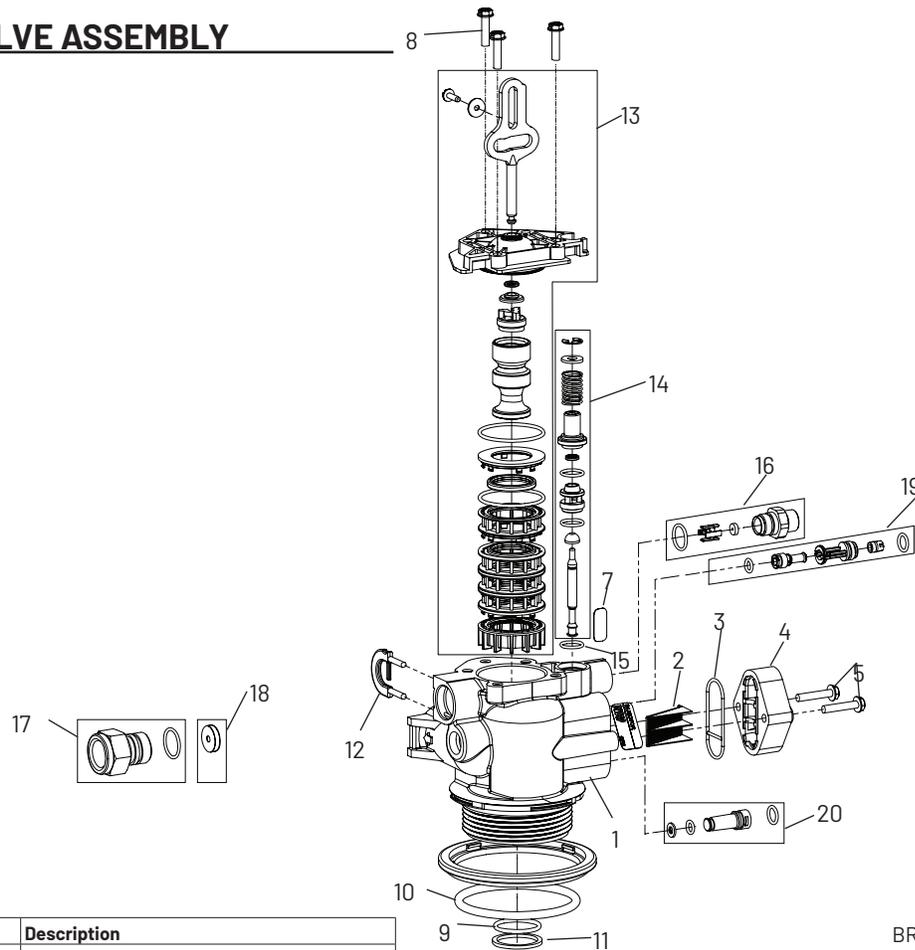
BR61500-5800 Rev A

Item No.	QTY	Part No.	Description
1	1	61857-01	Valve Body Assy, Downflow/Upflow (Includes Items 9, 10, 11, 12)
		61857-20	Valve Body Assy, Mixing, Downflow/Upflow (Includes Items 9, 10, 11, 12)
2	1	18271	Screen Injector, 5800
3	1	40064	Seal Injector
4	1	18277	Cap Injector
		18278-20	Injector Cap Assy, 1610 Regulated, 5800, 20 psi, Black, Upflow
		18278-30	Injector Cap Assy, 1610 Regulated, 5800, 30 psi, Gray, Upflow
5	2	18262	Screw, Hex Washer Head, #10-24 x 1.00
6	1	19654	Label, 0.125 gpm Brine Flow
		12128	Label, 0.25 gpm BLFC
		10759	Label, 0.5 gpm 1.5 lbs Salt/Min
		10760	Label, 1.0 gpm 3 lbs Salt/Min
7	1	13333	Label, Injector, Blank
8	3	18261	Screw, Hex Washer Head, #10-24 0.81
9	1	13304	O-ring, -121
10	1	18303-01	O-ring, -336, 560CD
11	1	13030	Retainer, Distributor Tube O-ring
12	1	18312	DLFC Housing Retainer Clip
13	1	61837	Piston and Seal Kit Assy, Downflow, 5800
		61838	Piston and Seal Kit Assy, Upflow, 5800
14	1	60032	Brine Valve, 4600/5600
15	1	13302	O-ring, -014
16	-	60022-12	BLFC, 0.125 gpm
		60022-25	BLFC, 0.25 gpm
		60022-50	BLFC, 0.5 gpm
		60022-100	BLFC, 1.0 gpm
17	-	60705-00	DLFC, Plastic, Blank
		60706-8.0	DLFC, QC x 3/4"F, 8.0 GPM
		60706-9.0	DLFC, QC x 3/4"F, 9.0 GPM
		60706-10	DLFC, QC x 3/4"F, 10 GPM
		60706-12	DLFC, QC x 3/4"F, 12 GPM
		60706-15	DLFC, QC x 3/4"F, 15 GPM

Item No.	QTY	Part No.	Description
18	-	19153	Washer, Flow, 0.6 GPM
		19152	Washer, Flow, 0.8 GPM
		12085	Washer, Flow, 1.2 GPM
		19150	Washer, Flow, 1.3 GPM
		12086	Washer, Flow, 1.5 GPM
		12087	Washer, Flow, 2.0 GPM
		12088	Washer, Flow, 2.4 GPM
		12089	Washer, Flow, 3.0 GPM
		12090	Washer, Flow, 3.5 GPM
		12091	Washer, Flow, 4.0 GPM
		19147	Washer, Flow, 4.5 GPM
		12092	Washer, Flow, 5.0 GPM
		17814	Washer, Flow, 6.0 GPM
		12408	Washer, Flow, 7.0 GPM
19	-	18272-000	Injector Assy, 1610, #000, Brown
		18272-00	Injector Assy, 1610, #00, Violet
		18272-0	Injector Assy, 1610, #0, Red
		18272-1	Injector Assy, 1610, #1, White
		18272-2	Injector Assy, 1610, #2, Blue
		18272-3	Injector Assy, 1610, #3, Yellow
20	-	18276-01	Injector Assy, Plug, w/O-rings
Not Shown			
-	-	40947-01	Plug, Brine Valve, w/O-ring, 560CD
-	-	13918-01	BLFC Module Plug Assy, w/O-ring

NOTE: IN UPFLOW UNITS, THE INJECTOR PLUG AND INJECTOR ASSY ARE PUT IN THE REVERSE HOLES. IN FILTER UNITS, BOTH INJECTOR HOLES ARE PLUGGED WITH 18276-01.

CAUTION: Excessive side load on piston rod may cause premature failure.

CAUTION: If seal/spacer stack is stuck in valve bore during disassembly, rotate stack prior to removal.

5810 CONTROL VALVE ASSEMBLY

Item No.	QTY	Part No.	Description
1	1	61961	Kit, Mounting, 5810/5812
2	1	61956-01	Kit, Piston, Seal, and Spacer, 5810, Downflow
		61956-02	Kit, Piston, Seal, and Spacer, 5810, Upflow
		61956-03	Kit, Piston, Seal, and Spacer, 5810, Filter
3	1	19791-01	Assy, Meter Cable
4	1	60016-01	Brine Valve
5	1	40947	Plug, Brine Valve
6	1	13302	O-ring, -014
7	1	61450-00	BLFC Assy 3/8", Blank
		61450-12	BLFC Assy 3/8", .12 GPM
		61450-25	BLFC Assy 3/8", .25 GPM
		61450-50	BLFC Assy 3/8", .50 GPM
		61450-100	BLFC Assy 3/8", 1.0 GPM
8	1	61451-00	BLFC Assy 1/2", Blank
		61451-12	BLFC Assy 1/2", .12 GPM
		61451-25	BLFC Assy 1/2", .25 GPM
		61451-50	BLFC Assy 1/2", .50 GPM
		61451-100	BLFC Assy 1/2", 1.0 GPM
9	1	19625	Nut Assy, 3/8"
10	2	40576-01	Clip, H, Plastic
11	1	61923-20	Cap, Regulated Injector, 20 PSI
		61923-30	Cap, Regulated Injector, 30 PSI
12	2	61958	Injector Cap Assy, w/O-ring
13	1	61454-0	Injector Assy, #0, Red
		61454-00	Injector Assy, #00, Violet
		61454-00	Injector Assy, 7000, #000, Brown
		61454-1	Injector Assy, #1, White
		61454-2	Injector Assy, #2, Blue
		61454-3	Injector Assy, #3, Yellow
		61454-4	Injector Assy, #4, Green
		61454-5	Injector Assy, #5, Gray
14	1	40945	Clip, Drain Retaining
15	1	61959	Injector Plug, w/O-rings
16	1	43719	Screen, Injector 5810/5812
17	1	40946	Clip, Brine Retaining
18	1	61983-01	Valve Body Assy, 5810
		61983-02	Valve Body Assy, 5810, Mixing
19	1	61919	Meter Assy, 1-1/4", 5810/5812
20	1	61419-02	Kit, 32mm Distributor, Adapter
21	1	61419-01	Kit, 1.315" Distributor, Adapter
22	1	61419	Kit, 1.05" Distributor, Adapter
23	1	61455-00	Kit, 1.315" Distributor, Adapter
24	-	61456-00	DLFC 1", Straight Blank
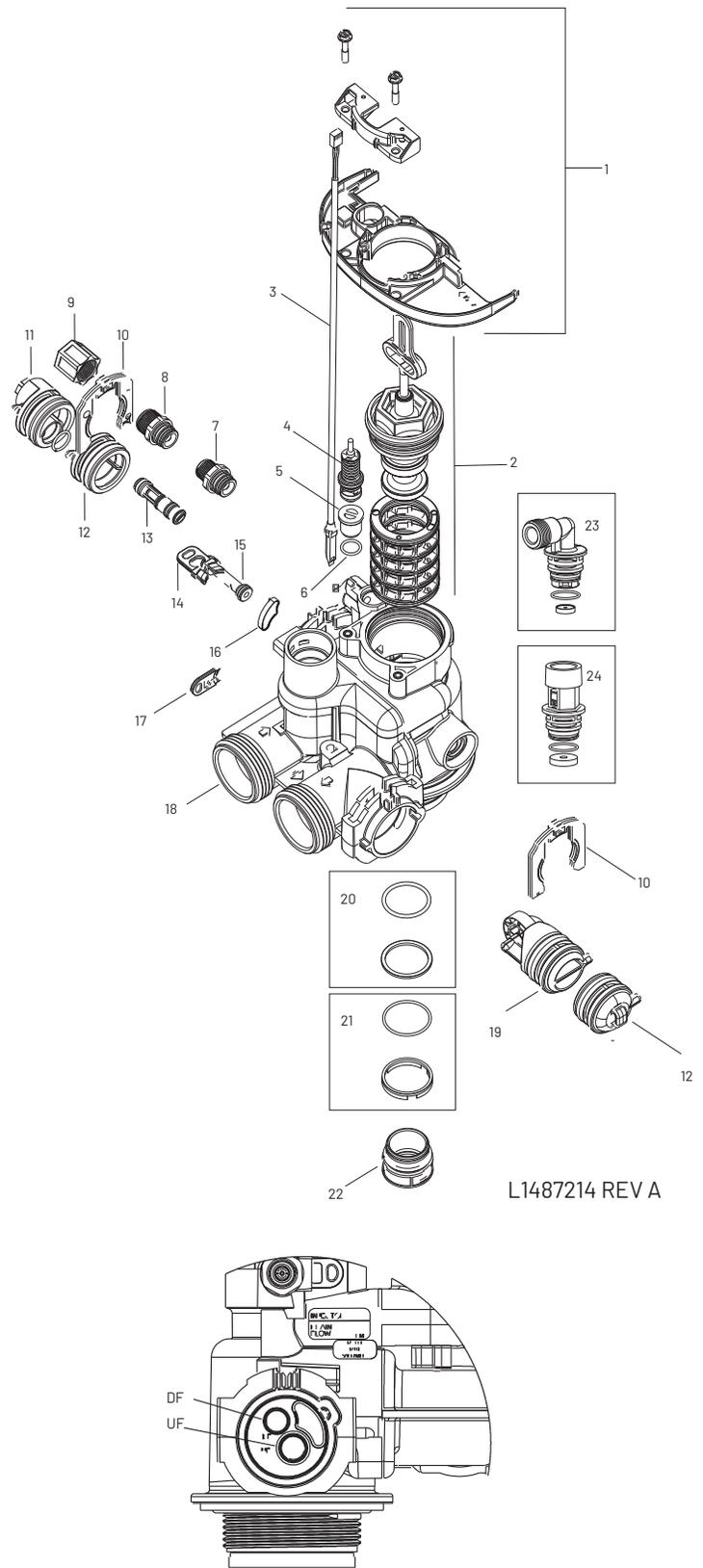
L1487214 REV A

NOTE: Install injector in hole "DF" and plug in hole "UF" for downflow units. In upflow units the injector plug and injector assembly are installed in reverse holes. In filter units, both injector holes are plugged with 61959. See illustration below.

5812 CONTROL VALVE ASSEMBLY

Item No.	QTY	Part No.	Description
1	1	61961	Kit, Mounting, 5810/5812
2	1	61960-01	Kit, Piston, Seal, and Spacer, 5812, Downflow
		61960-02	Kit, Piston, Seal, and Spacer, 5812, Upflow
		61960-03	Kit, Piston, Seal, and Spacer, 5812, Filter
3	1	19791-01	Assy, Meter Cable
4	1	60016-01	Brine Valve
5	1	40947	Plug, Brine Valve
6	1	13302	O-ring, -014
7	1	61450-00	BLFC Assy 3/8", Blank
		61450-12	BLFC Assy 3/8", .12 GPM
		61450-25	BLFC Assy 3/8", .25 GPM
		61450-50	BLFC Assy 3/8", .50 GPM
		61450-100	BLFC Assy 3/8", 1.0 GPM
8	1	61451-00	BLFC Assy 1/2", Blank
		61451-12	BLFC Assy 1/2", .12 GPM
		61451-25	BLFC Assy 1/2", .25 GPM
		61451-50	BLFC Assy 1/2", .50 GPM
		61451-100	BLFC Assy 1/2", 1.0 GPM
9	1	19625	Nut Assy, 3/8"
10	2	40576-01	Clip, H, Plastic
11	1	61923-20	Cap, Regulated Injector, 20 PSI
		61923-30	Cap, Regulated Injector, 30 PSI
12	2	61454-0	Injector Assy, #0, Red
		61454-00	Injector Assy, #00, Violet
		61454-00	Injector Assy, 7000, #000, Brown
		61454-1	Injector Assy, #1, White
		61454-2	Injector Assy, #2, Blue
		61454-3	Injector Assy, #3, Yellow
		61454-4	Injector Assy, #4, Green
		61454-5	Injector Assy, #5, Gray
13	1	61959	Injector Plug, w/O-rings
14	1	43719	Screen, Injector 5810/5812
15	1	40946	Clip, Brine Retaining
16	1	61984-01	Valve Body Assy, 5812, 2-1/2" Base
		61984-11	Valve Body Assy, 5812, 2-1/2" Base
		61984-02	Valve Body Assy, 5812, 2-1/2" Base
17	1	43596	Clip, Drain Retaining
18	1	61919	Meter Assy, 1-1/4", 5810/5812
19	1	61419-01	Kit, 1.315" Distributor Adapter
20	1	61419-02	Kit, 32mm Distributor Adapter
21	1	61419	Kit, 1.05" Distributor Adapter
22	1	13577-01	O-ring, -226, 560CD
23	1	41747	Retainer, Distributor, 1.5"
24	2	61958	Injector Cap Assy, w/O-ring
25	2	1000269	Cap Assembly, Blank

* *Includes items 24 and 25. Each valve body is installed with adapters for a 4" tank base and packaged with distributor adapter kits for 1.5" distributors (items 24 and 25).*

***See "5812 Valve Accessories"*

**See NOTE below.

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NOTE: Install injector in hole "DF" and plug in hole "UF" for downflow units. In upflow units the plug and injector are installed in reverse holes. In filter units, both injector holes are plugged with 61959. See illustration below.

NOTE: Install plug in hole "A" for units that allow hard water to flow during regeneration. For no hard water bypass (downflow only), install plug in hole "B". See illustration below.

5800/5810/5812 VALVE ACCESSORIES

Covers

43261	Cover
43715	Cover, Lower
61994	Cover Assy, Environmental 5810/5812 Gray
61882	Cover Assy, Environmental 5800 Gray

Bezels

43262-00	Bezel, Blue
43262-01	Bezel, Black
43262-02	Bezel, Silver

Adapter Kits (5810, 5812)

61419	Kit, 1.05" Distributor, Adapter
61419-01	Kit, 1.315" Distributor, Adapter
61419-02	Kit, 32mm Distributor, Adapter

Bypasses

43644	Bypass Assembly, 1.25", 5810/12
60040SS	3/4" Bypass, SS, NPT (5800 only)
60041SS	1" Bypass, SS, NPT (5800 only)
60049	Bypass, Plastic (5800 only)

Connector Assemblies (5810, 5812)

61991-01	Connector Assy, 1" NPT
61991-02	Connector Assy, 1" BSP
61991-03	Connector Assy, 1¼" NPT
61991-04	Connector Assy, 1¼" BSP
61991-05	Connector Assy, ¾"-1" Sweat
61991-06	Connector Assy, 1"-1¼" Sweat
61991-07	Connector Assy, 1¼" - 1½" Sweat
61991-08	Connector Assy, 1½" NPT
61991-09	Connector Assy, 1½" BSP
61991-10	Connector Assy, ¾" & 1" CPVC
61991-11	Connector Assy, 1¼" & 1½" CPVC

Connector Elbow (5810, 5812)

61992	Connector Elbow Assembly

Collectors (5800)

18280	Top Collector, 1.050
18280-01	Top Collector, 1.050 Wide
18280-02	Top Collector, 1.050 Narrow

Power Supplies

44161	Power Supply, US, 12V DC 3M, 2A
44162	Power Supply, INTL, 12V DC 3M, 2A

Washers

19153	Washer, Flow, 0.6 GPM (5800 only)
19152	Washer, Flow, 0.8 GPM (5800 only)
12085	Washer, Flow, 1.2 GPM (5800 only)
19150	Washer, Flow, 1.3 GPM (5800 only)
12086	Washer, Flow, 1.5 GPM (5800 only)
19149	Washer, Flow, 1.7 GPM (5800 only)
12087	Washer, Flow, 2.0 GPM (5800, 5810, 5812)
12088	Washer, Flow, 2.4 GPM (5800, 5810, 5812)
12089	Washer, Flow, 3.0 GPM (5800, 5810, 5812)
12090	Washer, Flow, 3.5 GPM (5800, 5810, 5812)
12091	Washer, Flow, 4.0 GPM (5800, 5810, 5812)
19147	Washer, Flow, 4.5 GPM (5800, 5810, 5812)
12092	Washer, Flow, 5.0 GPM (5800, 5810, 5812)
17814	Washer, Flow, 6.0 GPM (5800, 5810, 5812)
12408	Washer, Flow, 7.0 GPM (5800, 5810, 5812)
17943	Washer, Flow, 8.0 GPM (5810, 5812)
17944	Washer, Flow, 9.0 GPM (5810, 5812)
16529	Washer, Flow, 10.0 GPM (5810, 5812)
16735	Washer, Flow, 12.0 GPM (5810, 5812)
16736	Washer, Flow, 15.0 GPM (5810, 5812)
16528	Washer, Flow, 20.0 GPM (5810, 5812)
16737	Washer, Flow, 25.0 GPM (5810, 5812)
43736	Washer, Flow, 30.0 GPM (5812 Only)
43737	Washer, Flow, 35.0 GPM (5812 Only)
43738	Washer, Flow, 40.0 GPM (5812 Only)
43739	Washer, Flow, 45.0 GPM (5812 Only)

Yokes (5800)

19620-01	Yoke Assy, 3/4", r/angle, 90 deg.
18706	1" Yoke, Plastic NPT
18706-02	3/4" Yoke, Plastic NPT
18706-10	1" Yoke, Plastic BSP
18706-12	3/4" Yoke, Plastic BSP
61694	1" Yoke, QC
61700	3/4" Yoke, QC
13708-40	1" Yoke, Sweat
41026-01	1" Yoke, SS, NPT
42690	3/4" Yoke, Sweat
41027-01	3/4" Yoke, SS, NPT

DLFC (5800)

60705-00	DLFC, Plastic, Blank
60706-8.0	DLFC, QC x 3/4"F, 8.0 GPM
60706-9.0	DLFC, QC x 3/4"F, 9.0 GPM
60706-10	DLFC, QC x 3/4"F, 10 GPM
60706-12	DLFC, QC x 3/4"F, 12 GPM
60706-15	DLFC, QC x 3/4"F, 15 GPM

DLFC (5810)

61455-00	DLFC, ¾", Elbow, NPT, Blank, For 0.6-7.0 GPM Washers
61456-00	DLFC Assy, 1", Straight, NPT, For 0.8 - 25 GPM Washers
62088-00	DLFC Assy, 1", Straight, NPT, Blank, For 8.0 - 25 GPM Washers
61456-30	DLFC Assy, 1", 30 GPM

DLFC (5812)

61971-00	DLFC, 1" NPT, Blank, Elbow, 5812
61974-00	DLFC, 1" BSP, Blank, Elbow, 5812
61977-00	DLFC, 1¼" NPT, Blank, Straight, 5812
61980-00	DLFC, 1¼" BSP, Blank, Straight, 5812

COVER, LOWER

COVER, ENVIRONMENTAL

COVER, BEZEL

CONNECTOR ASSY, STRAIGHT

CONNECTOR ASS, ELBOW

BYPASS ASSY

ADAPTER KITS

WASHERS

POWER SUPPLIES

COLLECTORS

YOKES

DLFC
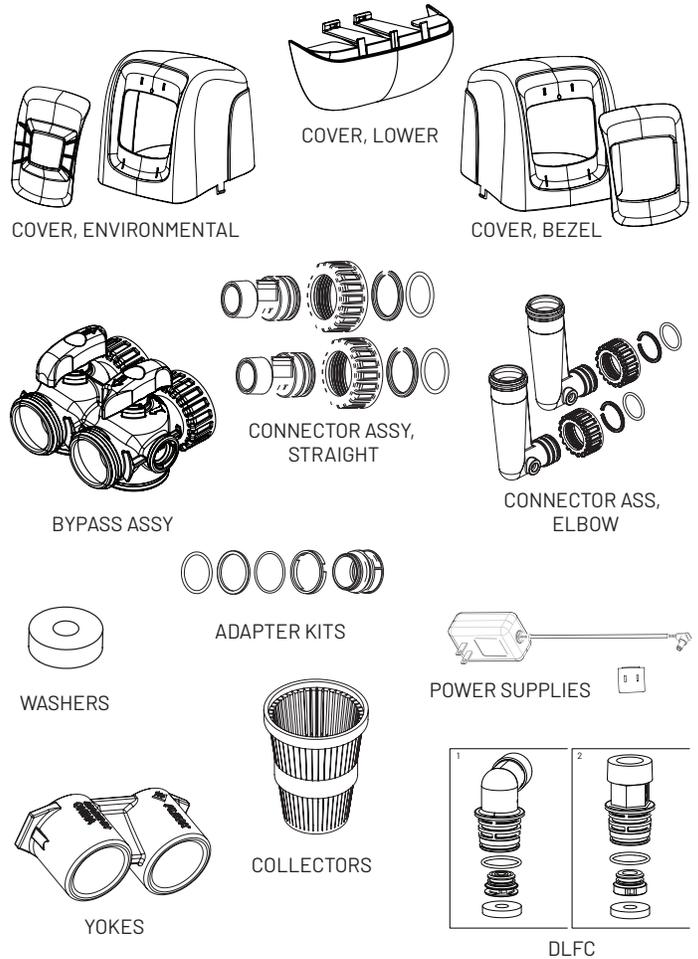
5800/5810/5812 VALVE ASSEMBLIES

BLFC

60022-12	BLFC, 0.125 GPM (0.375 lbs NaCl/min) (5800 only)
60022-25	BLFC, 0.25 GPM (0.75 lbs NaCl/min) (5800 only)
60022-50	BLFC, 0.50 GPM (1.5 lbs NaCl/min) (5800 only)
60022-100	BLFC, 1.0 GPM (3 lbs NaCl/min) (5800 only)
61450-00.	BLFC, 3/8", Blank (5810, 5812)
61450-12	BLFC, 3/8", 0.125 GPM (5810, 5812)
61450-25.	BLFC, 3/8", 0.25 GPM (5810, 5812)
61450-50.	BLFC, 3/8", 0.50 GPM (5810, 5812)
61450-100	BLFC, 3/8", 1.0 GPM (5810, 5812)
61451-00	BLFC, 1/2", Blank (5810, 5812)
61451-12.	BLFC, 1/2", 0.125 GPM (5810, 5812)
61451-25	BLFC, 1/2", 0.25 GPM (5810, 5812)
61451-50	BLFC, 1/2", 0.50 GPM (5810, 5812)
61451-100	BLFC, 1/2", 1.0 GPM (5810, 5812)

BLFC

Injector Assemblies

18272-000	Injector Assy, 1610, #000, BROWN (8" Tank) (5800 only)
18272-00.	Injector Assy, 1610, #00, VIOLET (9" & 10" Tank) (5800 only)
18272-0	Injector Assy, 1610, #0, RED(12" & 13" Tank) (5800 only)
18272-1	Injector Assy, 1610, #1, WHITE (14" & 16" Tank) (5800 only)
18272-2	Injector Assy, 1610, #2, BLUE (18" Tank) (5800 only)
18272-3	Injector Assy, 1610, #3, YELLOW (20" Tank) (5800 only)
61454-0	Injector Assy, #0 RED (12" & 13" Tank) (5810, 5812)
61454-00.	Injector Assy, #00 VIOLET (9" & 10" Tank) (5810, 5812)
61454-000	Injector Assy, #000 BROWN (8" Tank) (5810, 5812)
61454-1	Injector Assy, #1 WHITE (14" & 16" Tank) (5810, 5812)
61454-2	Injector Assy, #2 BLUE (18" Tank) (5810, 5812)
61454-3	Injector Assy, #3 YELLOW (20" Tank) (5810, 5812)
61454-4	Injector Assy, #4 GREEN (21" Tank) (5810, 5812)
61454-5	Injector Assy, #5 GRAY (24" Tank) (5810, 5812)

INJECTOR ASSY
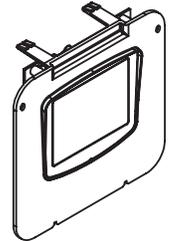
CAP, REGULATED INJECTOR

Injector Caps

18278-20	Injector Cap Assy, 1610 Regulated, 5800, 20 PSI, Black (5800 only)
18278-30	Injector Cap Assy, 1610 Regulated, 5800, 30 PSI, Gray (5800 only)
61923-20	Cap, Regulated Injector, 20 PSI (5810, 5812)
61923-30	Cap, Regulated Injector, 30 PSI (5810, 5812)
61958	Injector Cap w/o-ring (5810, 5812)

POWERHEAD

TIMER ASSY, XTRi

Powerheads

61957	5800/5810/5812 Powerhead. Less Timer, Less Power Supply

Timers

61931-03	Timer Assy, 5800XTR Touch Scrn w/Logo, International Lang
62126	Timer Assy, 5800 IOT XTRi Touch Scrn
62076	Timer Assy, SXT,
62085-01	Timer Assy, LXT 5800, Soft TC DF (5800 only)
62085-02	Timer Assy, LXT 5800, Soft TC UF (5800 only)
62085-03	Timer Assy, LXT 5800, Soft Mtr DF (5800 only)
62085-04	Timer Assy, LXT 5800, Soft Mtr UF (5800 only)
62085-05	Timer Assy, LXT 5800, Fltr Clock (5800 only)
62085-06	Timer Assy, LXT 5800, Fltr Meter (5800 only)

METER ASSY

METER CABLE ASSY

Meter Assemblies

60086-50	Meter Assy, 3/4" Dual Port, Slip Elec, Plas, Pdl, w Clps (5800 only)
60626	Meter Assy, Turbine, Electronic 3/4" with Clips and Screws (5800 only)
61919	Meter Assy, 1-1/4", (5810, 5812)

Meter Cables

19121-01	Meter Cable Assy, SE, Paddle (5800 only)
19791-01.	Meter Cable Assy, Turbine/SXT

Module

62125	Kit, IOT Module 5800 XTRi

IOT MODULE

Misc.

40947-02	Plug, Brine Valve, with o-rings (5800 only)
13918-01.	BLFC Module Plug Assy, with o-rings (5800 only)
18276-01	Injector Assy, Plug, with o-rings (5800 only)

5800 TURBINE METER ASSEMBLY – P/N 60626

BR60626
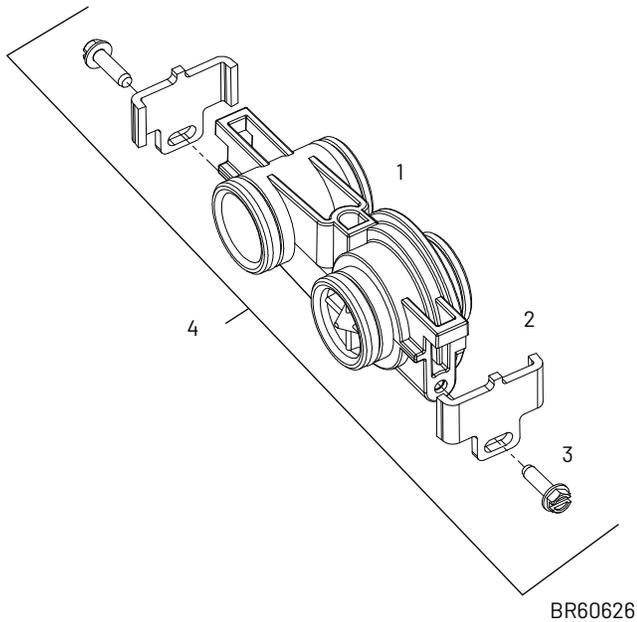
Item No.	QTY	Part No.	Description
1	1	19797	Meter Assy, 3/4" Dual Port, SLP
2	2	19569	Clip, Flow Meter
3	2	13314	Screw, Slot Ind Hex, 8-18 x 0.60
4	1	60626	Meter Assy, Turbine, Electronic 3/4" with Clips and Screws (includes 14613 Flow Straightener)
Not Shown			
-	-	14613	Flow Straightener
-	-	19791-01	Meter Cable Assy, Turbine/SXT

5800 PADDLE METER ASSEMBLY – P/N 60086-50

BR60086 Rev E
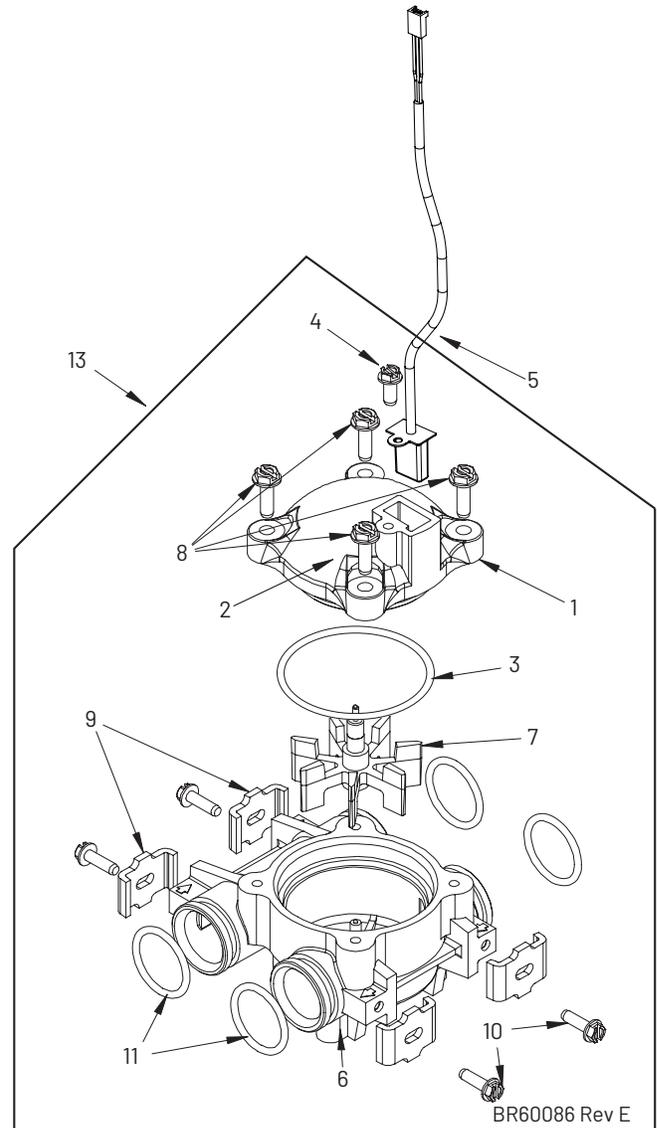
Item No.	QTY	Part No.	Description
1	1	14716	Meter Cap Assy, NT (includes items 2, 3, and 4)
2	1	13874	Cap, Meter, Electronic
3	1	13847	O-ring, -137, Std, Meter
4	1	17798	Screw, Slot Hex Washer Head
5	1	19121-01	Meter Cable Assy, SXT, Paddle (not included in P/N 60086-50)
6	1	13821	Body, Meter, 5600
7	1	13509	Impeller, Meter
8	4	12473	Screw, Hex Wsh, 10-24 x 5/8
9	4	13255	Clip, Mounting
10	4	13314	Screw, Slot Ind Hex, 8-18 x 0.60
11	4	13305	O-ring, -119
12	1	14613	Flow Straightener
13	1	60086-50	Meter Assy, 3/4" Dual Port, Slip

5800 BYPASS VALVE ASSEMBLY (METAL)

60040SS Rev Y
60041SS Rev AA
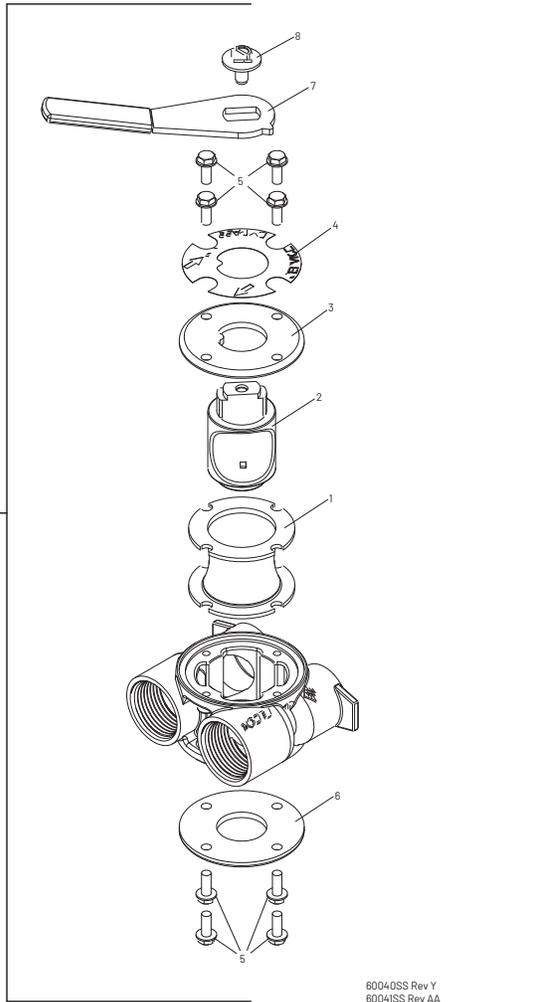
Item No.	QTY	Part No.	Description
1	1	14105	Seal, Bypass, 560CD
2	1	11972	Plug, Bypass
3	1	11978	Side Cover
4	1	13604-01	Label
5	8	15727	Screw, 10-24 x 0.5"
6	1	11986	Side Cover
7	1	11979	Lever, Bypass
8	1	11989	Screw, Hex Head, 1/4-14 x 1.5"
9	1	60040SS	Bypass Valve, 5600, 3/4" NPT Black Grip Lever, SS
		60041SS	Bypass Valve, 5600, 1" NPT Black Grip Lever, Stainless Steel
Not Shown			
	2	19228-01	Adapter Assy, Coupling, w/O-rings

5800 BYPASS VALVE ASSEMBLY (PLASTIC)

BR60049 Rev H

BR41027 Rev G

BR18706 Rev J
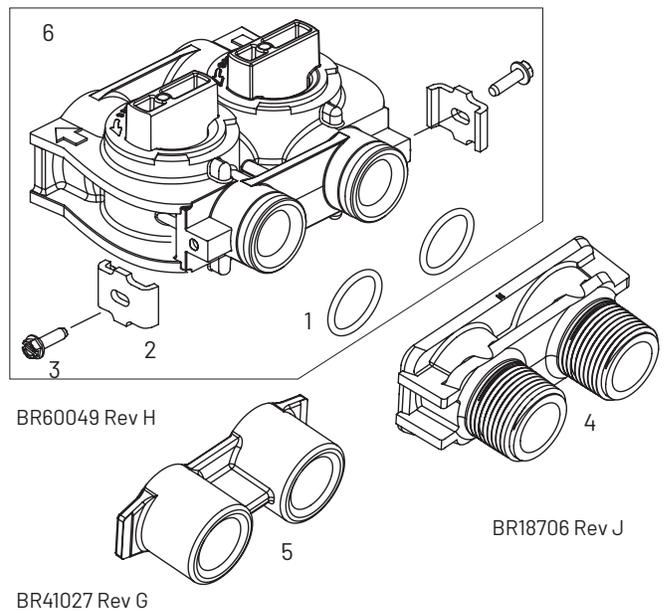
Item No.	QTY	Part No.	Description
1	2	13305	O-ring, -119
2	2	13255	Clip, Mounting
3	2	13314	Screw, Slot Ind Hex, 8-18 x 0.60
4	1	18706	Yoke, 1", NPT, Plastic
		18706-02	Yoke, 3/4", NPT, Plastic
5	1	13708-40	Yoke, 1", Sweat
		13708-45	Yoke, 3/4", Sweat
		19275	Yoke, Angle 90 Deg, 3/4", NPT
		19275-45	Yoke, Angle 90 Deg, 3/4", Sweat
		19620-01	Yoke, Assy, 3/4", R/Angle 90 Deg, w/O-rings, Clips & Screws
		40636	Yoke, 1-1/4", NPT
		40636-49	Yoke, 1-1/4", Sweat
		41027-01	Yoke, 3/4", NPT, Cast, Machined
		41026-01	Yoke, 1", NPT, Cast, Machined, SS
		41026-02	Yoke, 1", BSP, Cast, Machined, SS
		18706-10	Yoke, 1", BSP, Plastic
		41027-02	Yoke, 3/4", BSP, Cast, Machined
		18706-12	Yoke, 3/4", BSP, Plastic
		19620-01	Yoke Assy, 3/4", R/Angle, 90 Deg
6	1	60049	Bypass Plastic
Not Shown			
	2	19228-01	Adapter Assy, Coupling, w/O-rings

SAFETY BRINE VALVE
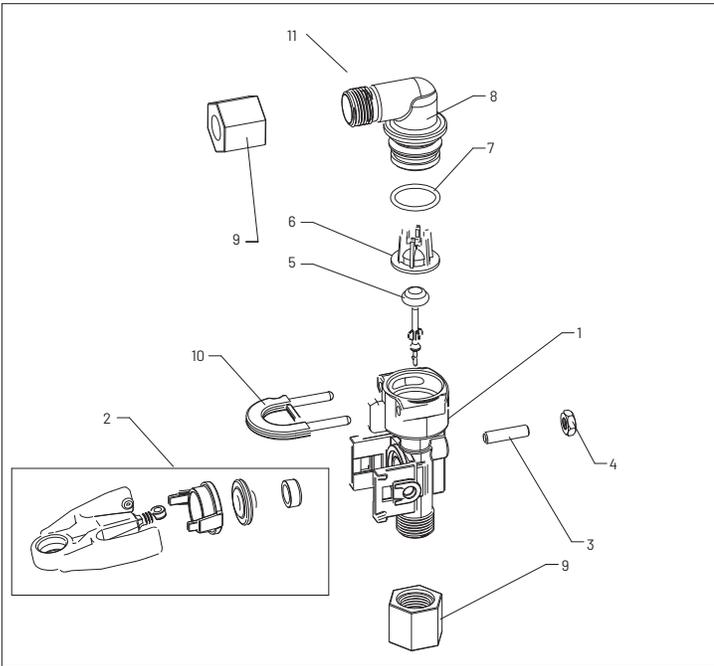
42112 Rev A
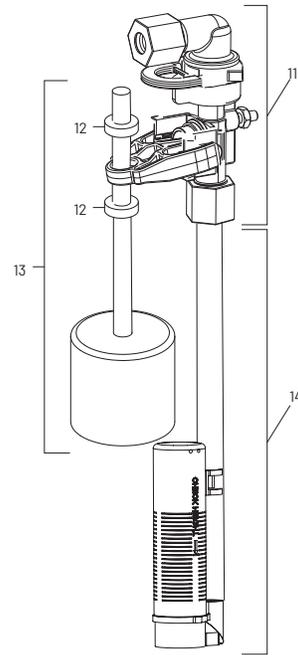
42112 Rev A

Item No.	QTY	Part No.	Description
1	1	19645	Body, Safety Brine Valve, 2310
2	1	19803	Safety Brine Valve Assy
3	1	19804	Screw, Sckt Hd, Set, 10-24 x 0.75
4	1	19805	Nut, Hex, 10-24, Nylon Black
5	1	19652-01	Poppet Assy, SBV w/O-ring
6	1	19649	Flow Dispenser
7	1	11183	O-ring, -017
8	1	19647	Elbow, Safety Brine Valve
9	2	19625	Nut Assy, 3/8" Plastic
10	1	18312	Retainer, Drain
11	1	60014	Safety Brine Valve Assy, 2310
12	2	10150	Grommet, 0.30 Dia
13	1	60068-10.5	Float Assy, 2310, w/10.5" Rod
		60068-11.5	Float Assy, 2310, w/11.5" Rod
		60068-20	Float Assy, 2310, w/20" Rod
		60068-30	Float Assy, 2310, w/30" Rod
14	1	60002-11.38	Air Check, #500, 11.38" Long
		60002-27	Air Check, #500, 27" Long
		60002-32	Air Check, #500, 32" Long
		60002-34	Air Check, #500, 34" Long
		60002-36	Air Check, #500, 36" Long
		60002-48	Air Check, #500, 48" Long
		60002-26.25	Air Check, #500, 26.25" Long
		60002-33.25	Air Check, #500, 33.25" Long

WATER CONDITIONER FLOW DIAGRAMS

5800 Upflow

1. Service Position (Treatment)
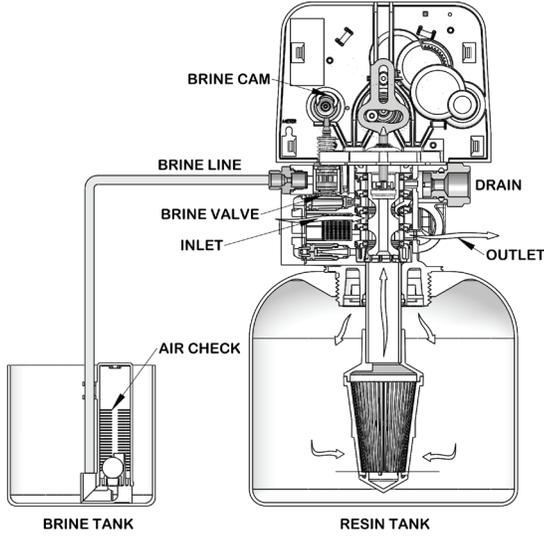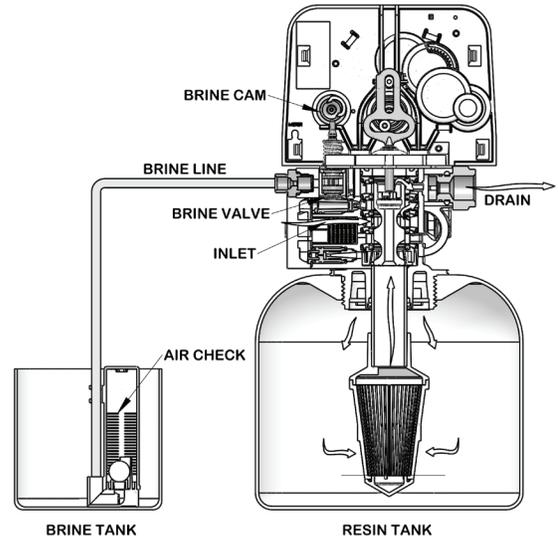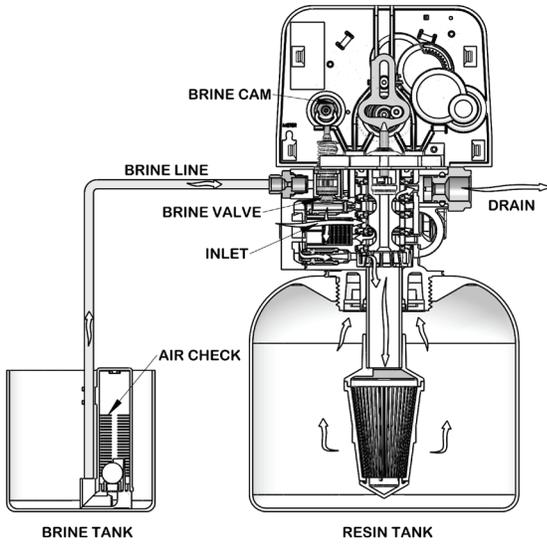
BRINE CAM

BRINE LINE

BRINE VALVE

INLET

DRAIN

OUTLET

AIR CHECK

BRINE TANK

RESIN TANK

2. Brine/Slow Rinse Position (Draw)

BRINE CAM

BRINE LINE

BRINE VALVE

INLET

DRAIN

AIR CHECK

BRINE TANK

RESIN TANK

3. Backwash Position

BRINE CAM

BRINE LINE

BRINE VALVE

INLET

DRAIN

AIR CHECK

BRINE TANK

RESIN TANK

4. Rapid Rinse Position (Rinse)

BRINE CAM

BRINE LINE

BRINE VALVE

INLET

DRAIN

AIR CHECK

BRINE TANK

RESIN TANK

5. Brine Tank Refill Position (Refill)

BRINE CAM

BRINE LINE

BRINE VALVE

INLET

DRAIN

AIR CHECK

BRINE TANK

RESIN TANK
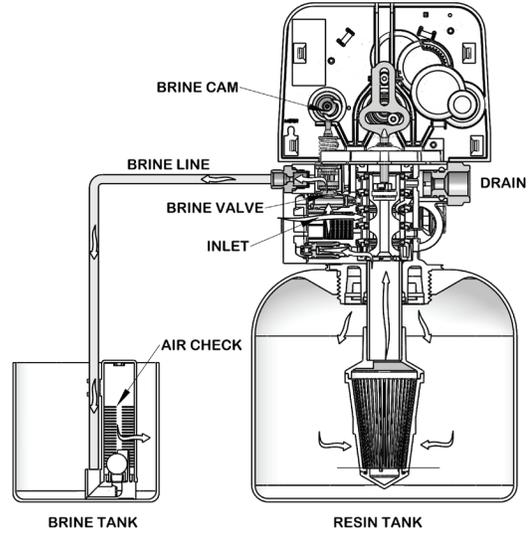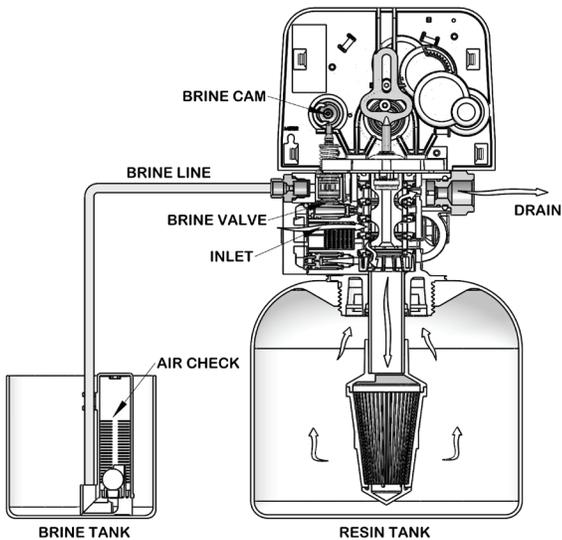
WATER CONDITIONER FLOW DIAGRAMS

5800 Downflow

1. Service
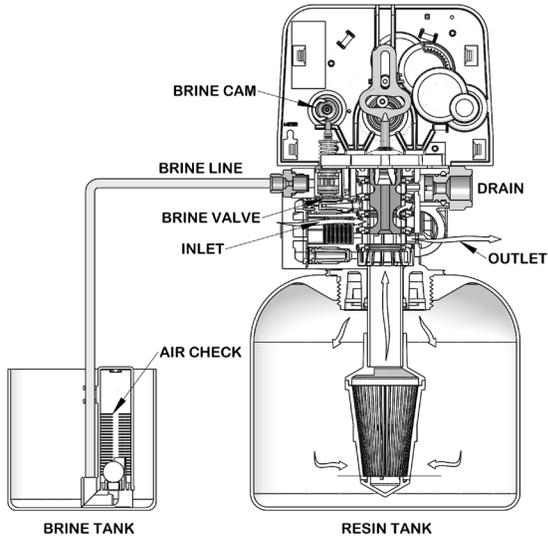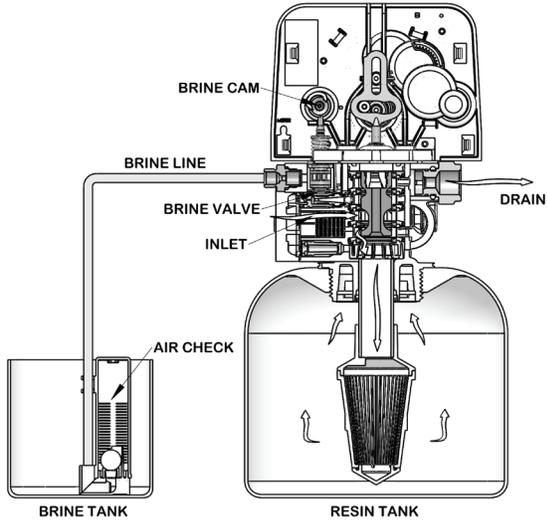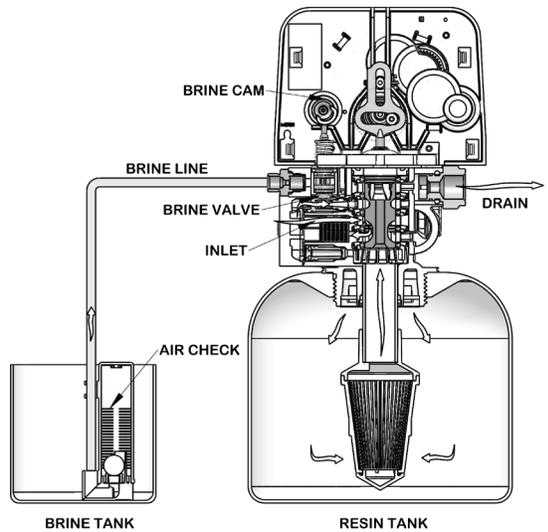
BRINE CAM
BRINE LINE
BRINE VALVE
INLET
DRAIN
OUTLET
AIR CHECK
BRINE TANK
RESIN TANK

2. Backwash Position

BRINE CAM
BRINE LINE
BRINE VALVE
INLET
DRAIN
AIR CHECK
BRINE TANK
RESIN TANK

3. Brine/Slow Rinse Position (Draw)

BRINE CAM
BRINE LINE
BRINE VALVE
INLET
DRAIN
AIR CHECK
BRINE TANK
RESIN TANK

4. Rapid Rinse Position (Rinse)

BRINE CAM
BRINE LINE
BRINE VALVE
INLET
DRAIN
AIR CHECK
BRINE TANK
RESIN TANK

5. Brine Tank Refill Position (Refill)

BRINE CAM
BRINE LINE
BRINE VALVE
INLET
DRAIN
AIR CHECK
BRINE TANK
RESIN TANK
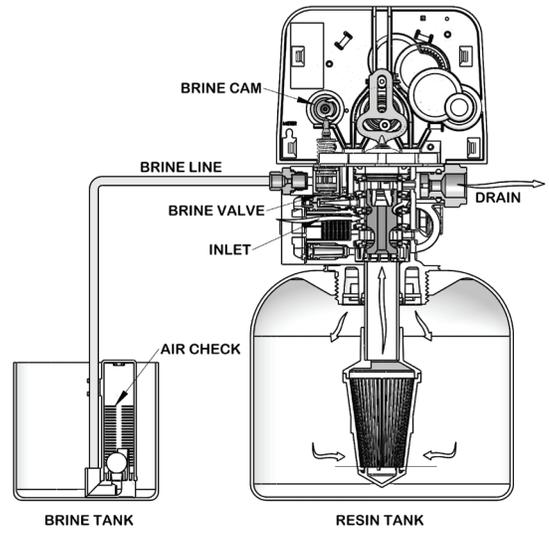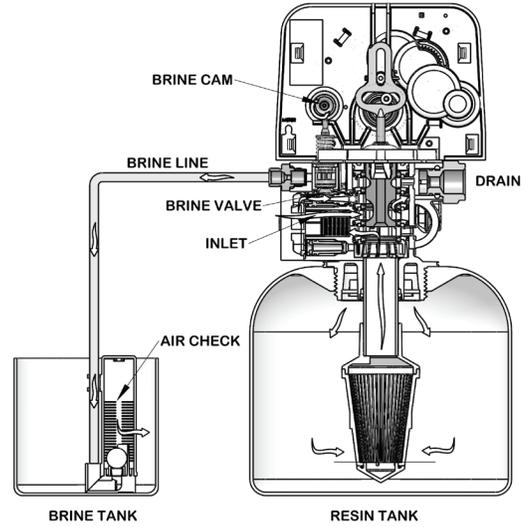
WATER CONDITIONER FLOW DIAGRAMS

5810 Upflow

1. SERVICE POSITION
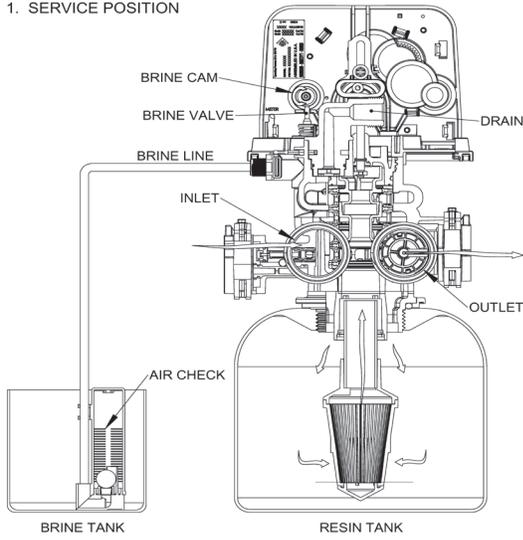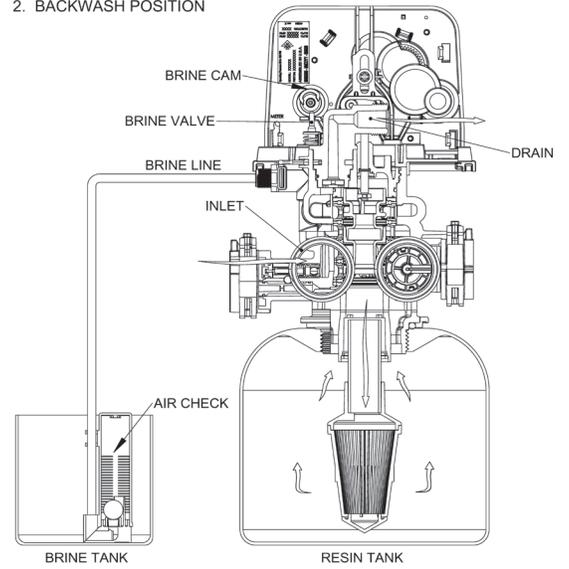
BRINE CAM
BRINE VALVE
DRAIN
BRINE LINE
INLET
OUTLET
AIR CHECK
BRINE TANK
RESIN TANK

2. BACKWASH POSITION

BRINE CAM
BRINE VALVE
DRAIN
BRINE LINE
INLET
AIR CHECK
BRINE TANK
RESIN TANK

3. BRINE/SLOW RINSE POSITION

BRINE CAM
BRINE VALVE
DRAIN
BRINE LINE
INLET
AIR CHECK
BRINE TANK
RESIN TANK

4. RAPID RINSE POSITION

BRINE CAM
BRINE VALVE
DRAIN
BRINE LINE
INLET
AIR CHECK
BRINE TANK
RESIN TANK

5. BRINE TANK REFILL POSITION

BRINE CAM
BRINE VALVE
DRAIN
BRINE LINE
INLET
AIR CHECK
BRINE TANK
RESIN TANK
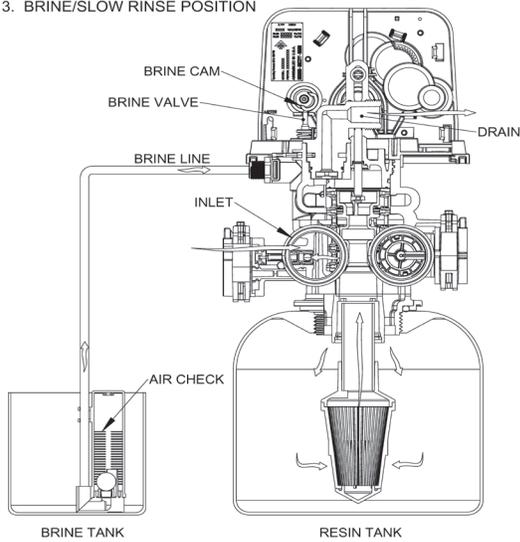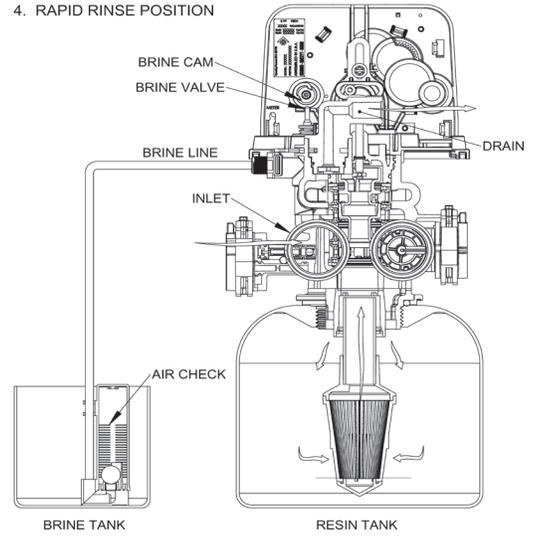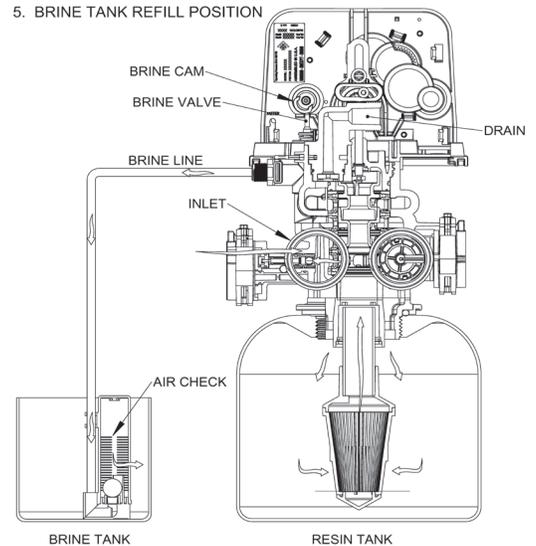
WATER CONDITIONER FLOW DIAGRAMS

5810 Downflow

1. SERVICE POSITION
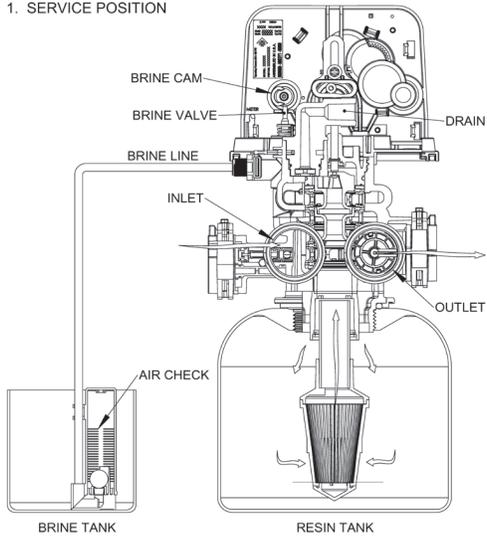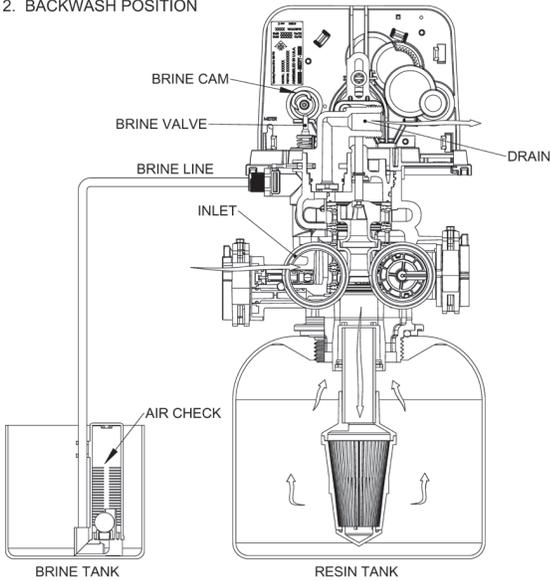
BRINE CAM
BRINE VALVE
DRAIN
BRINE LINE
INLET
OUTLET
AIR CHECK
BRINE TANK
RESIN TANK

2. BACKWASH POSITION

BRINE CAM
BRINE VALVE
DRAIN
BRINE LINE
INLET
AIR CHECK
BRINE TANK
RESIN TANK

3. BRINE/SLOW RINSE POSITION

BRINE CAM
BRINE VALVE
DRAIN
BRINE LINE
INLET
AIR CHECK
BRINE TANK
RESIN TANK

4. RAPID RINSE POSITION

BRINE CAM
BRINE VALVE
DRAIN
BRINE LINE
INLET
AIR CHECK
BRINE TANK
RESIN TANK

5. BRINE TANK REFILL POSITION

BRINE CAM
BRINE VALVE
DRAIN
BRINE LINE
INLET
AIR CHECK
BRINE TANK
RESIN TANK
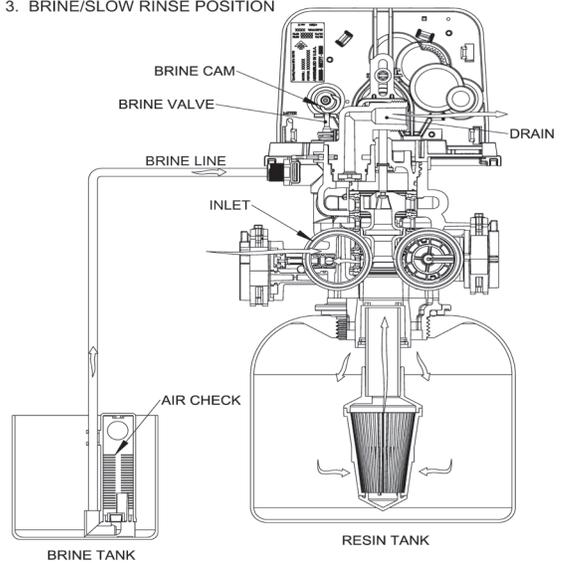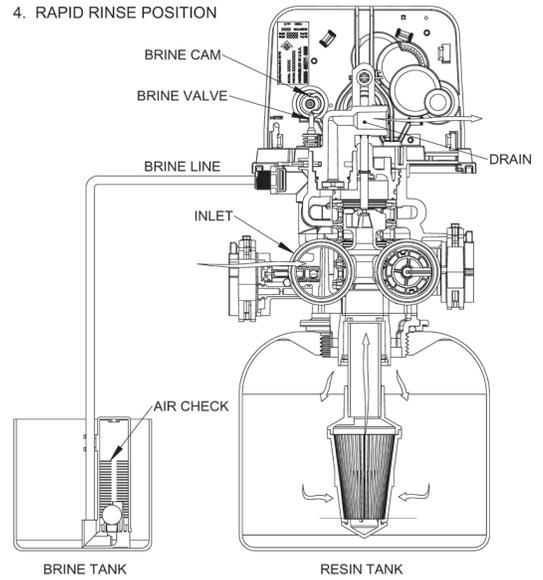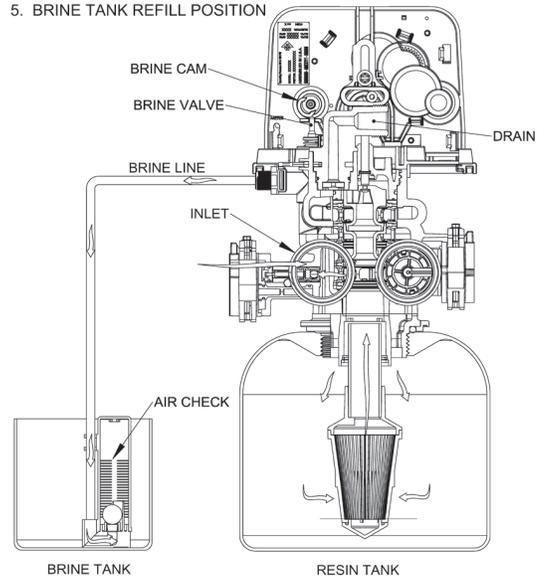
WATER CONDITIONER FLOW DIAGRAMS

5812 Upflow

1. SERVICE POSITION
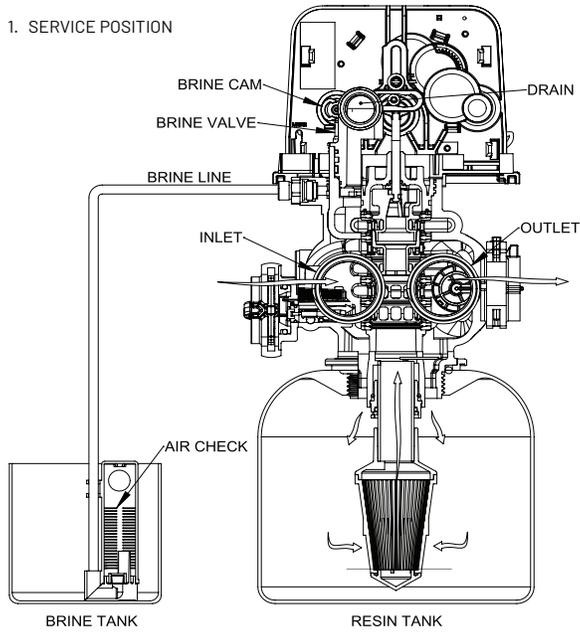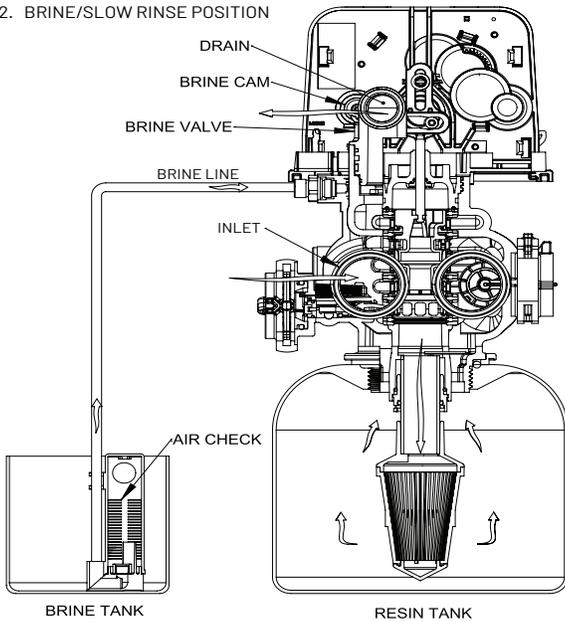
BRINE CAM
BRINE VALVE
BRINE LINE
INLET
OUTLET
DRAIN
AIR CHECK
BRINE TANK
RESIN TANK

2. BRINE/SLOW RINSE POSITION

DRAIN
BRINE CAM
BRINE VALVE
BRINE LINE
INLET
AIR CHECK
BRINE TANK
RESIN TANK

3. BACKWASH POSITION

DRAIN
BRINE CAM
BRINE VALVE
BRINE LINE
INLET
AIR CHECK
BRINE TANK
RESIN TANK

4. RAPID RINSE POSITION

DRAIN
BRINE CAM
BRINE VALVE
BRINE LINE
INLET
AIR CHECK
BRINE TANK
RESIN TANK

5. BRINE TANK REFILL POSITION

DRAIN
BRINE CAM
BRINE VALVE
BRINE LINE
INLET
AIR CHECK
BRINE TANK
RESIN TANK
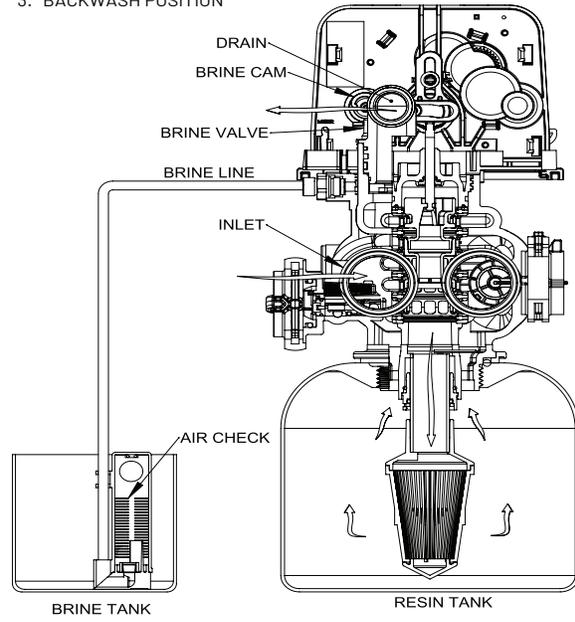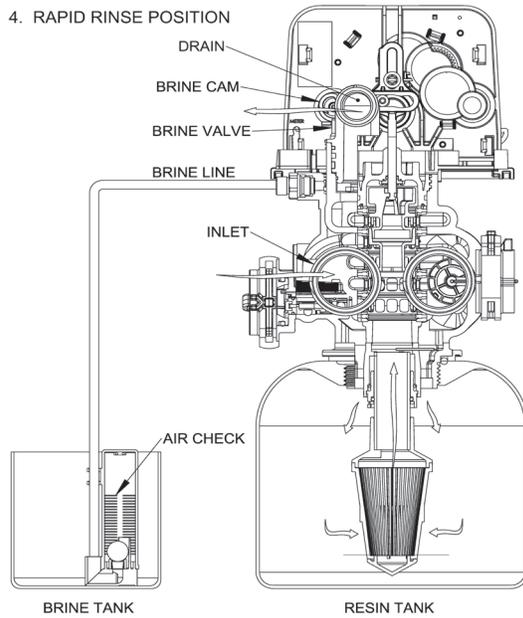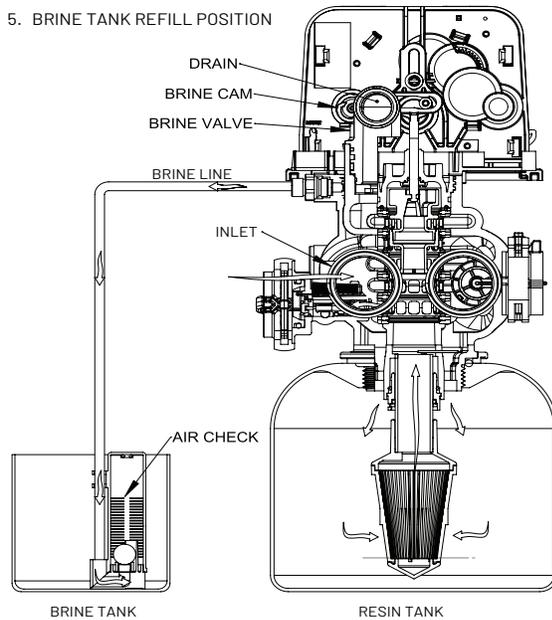
WATER CONDITIONER FLOW DIAGRAMS

5812 Downflow

1. SERVICE POSITION
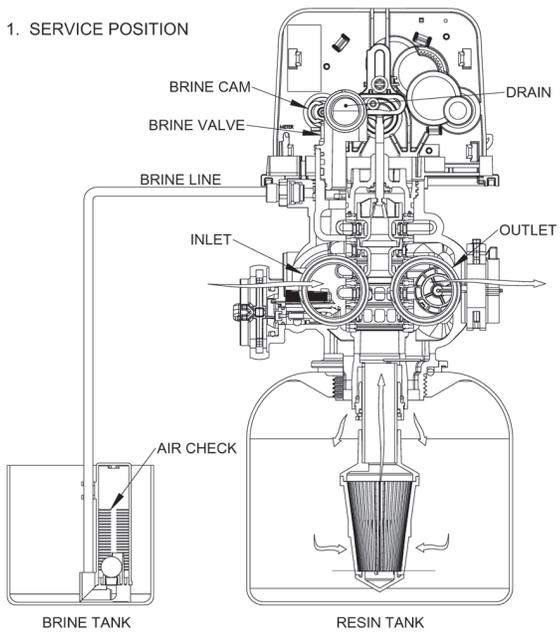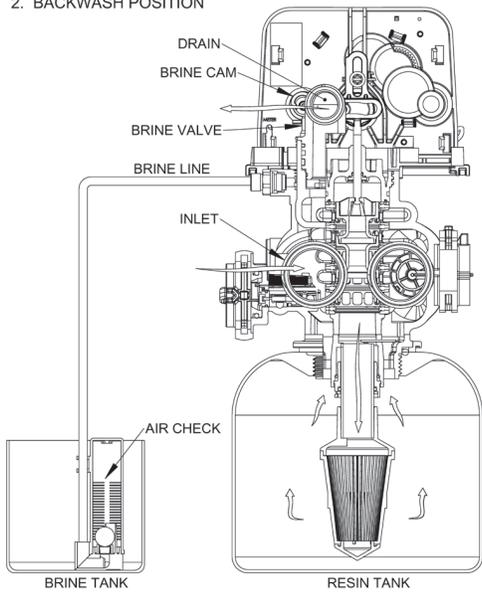
BRINE CAM
BRINE VALVE
BRINE LINE
INLET
DRAIN
OUTLET
AIR CHECK
BRINE TANK
RESIN TANK

2. BACKWASH POSITION

DRAIN
BRINE CAM
BRINE VALVE
BRINE LINE
INLET
AIR CHECK
BRINE TANK
RESIN TANK

3. BRINE/SLOW RINSE POSITION

DRAIN
BRINE CAM
BRINE VALVE
BRINE LINE
INLET
AIR CHECK
BRINE TANK
RESIN TANK

4. RAPID RINSE POSITION

DRAIN
BRINE CAM
BRINE VALVE
BRINE LINE
INLET
AIR CHECK
BRINE TANK
RESIN TANK

5. BRINE TANK REFILL POSITION

DRAIN
BRINE CAM
BRINE VALVE
BRINE LINE
INLET
AIR CHECK
BRINE TANK
RESIN TANK
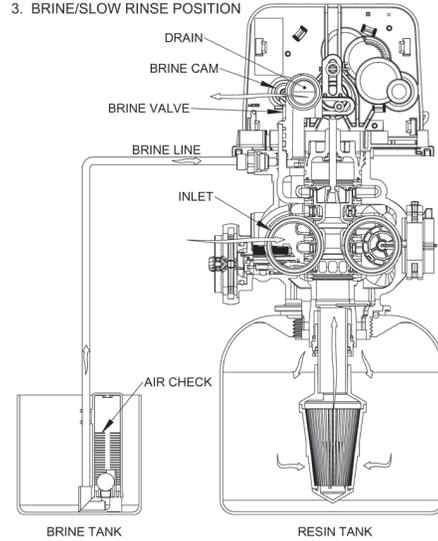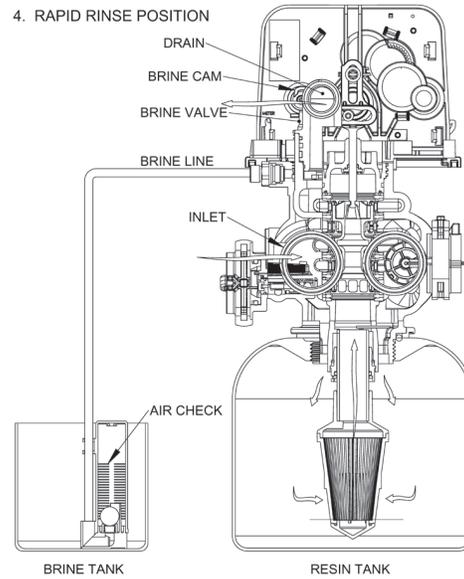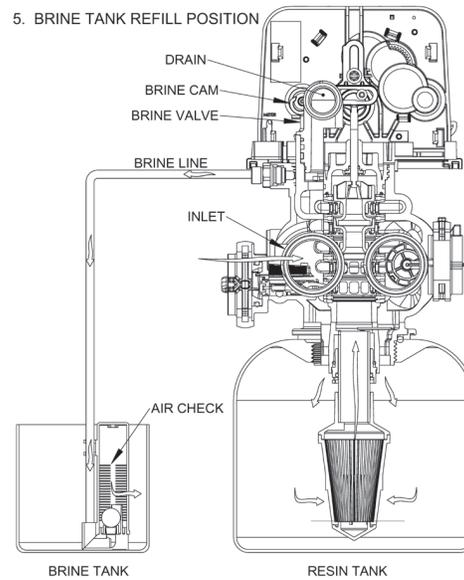
5800 DIMENSIONAL DRAWINGS

Measurements
[mm]
Inches

[232 3]
9 15

[70 2]
2 77

[38 7]
1 53

[21 5]
85

[127]
50

[53 8]
2 12

[111 3]
4 38

[91 4]
3 60

[182 9]
7 20

[26 7]
1 05

DISTRIBUTOR TUBE OD

[73 7]
2 90

[7 6]
30
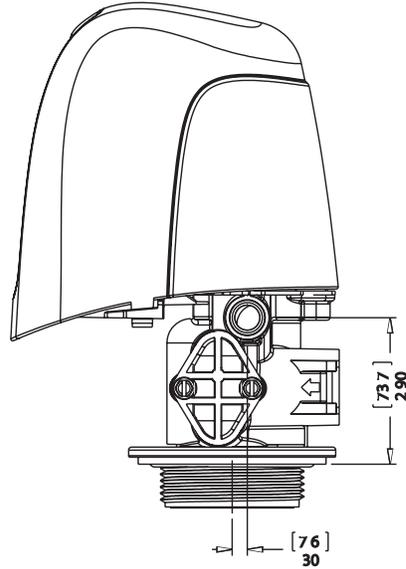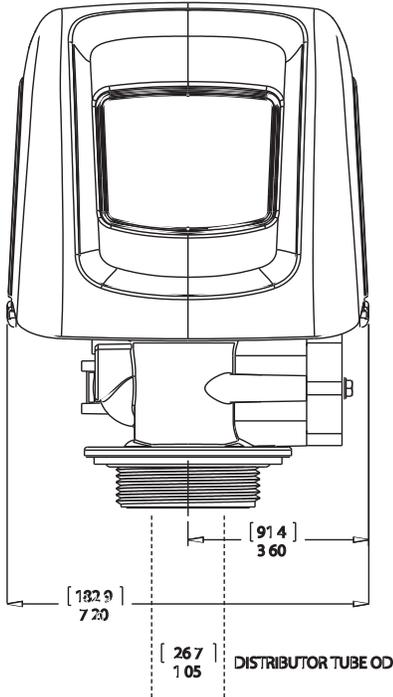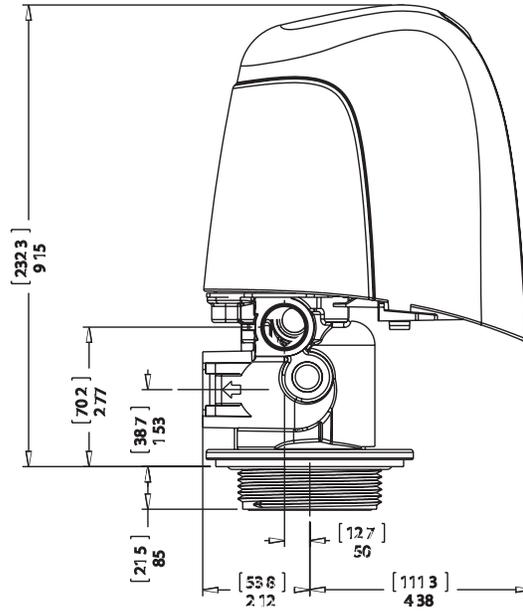
BR61500-5800LNE Rev A

5810 DIMENSIONAL DRAWINGS

[71.50]
2.815

[287.4]
11.32

[146]
5.75

[47.8]
1.88

[29.6]
1.17

[140.1]
5.52

[120.3]
4.74

[122.4]
4.82

[91.4]
3.60

[182.9]
7.20

[5.1]
.20
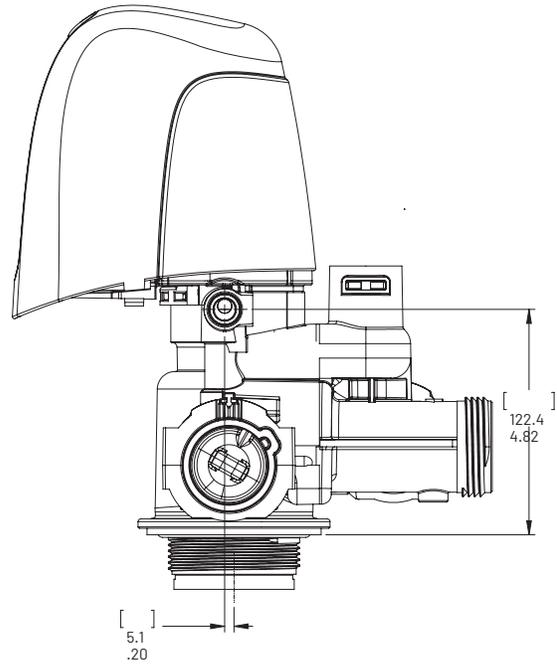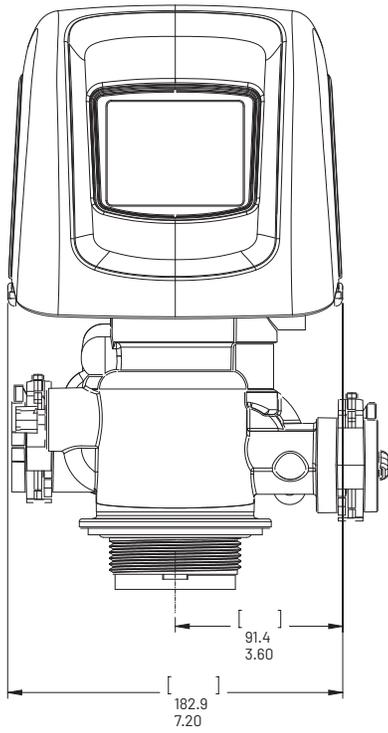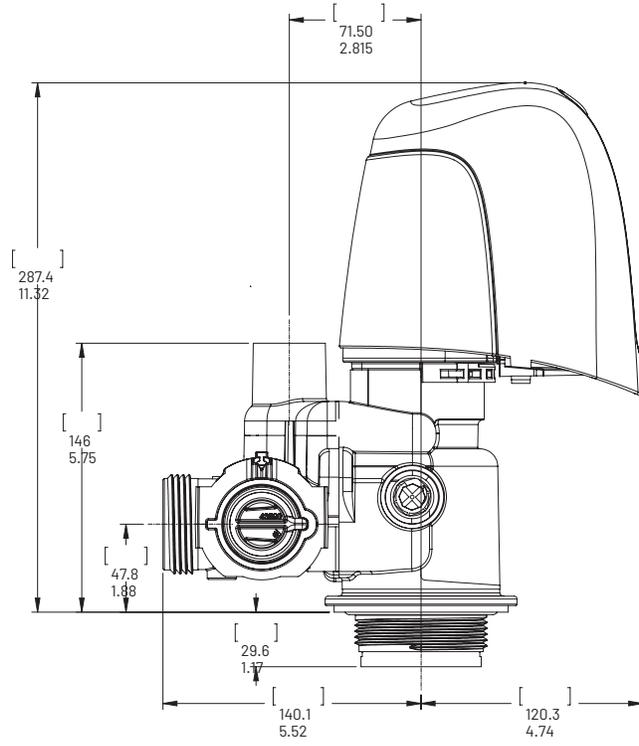
61500-5810LNE REV A

5812 DIMENSIONAL DRAWINGS

5812 2.5" BASE
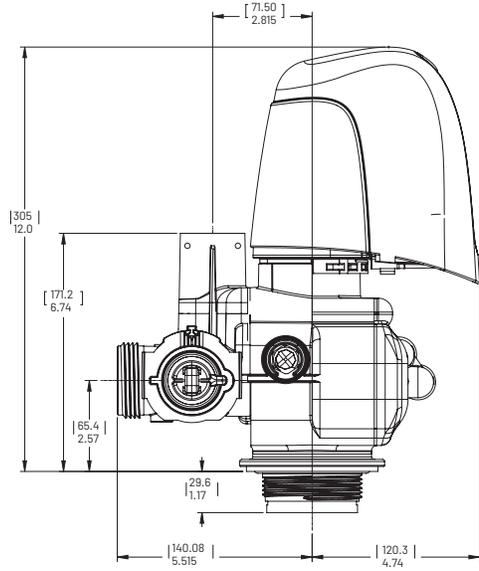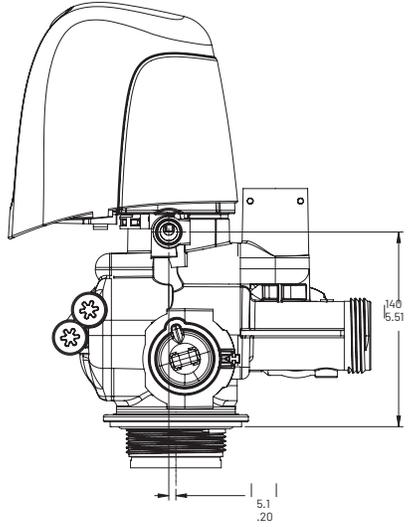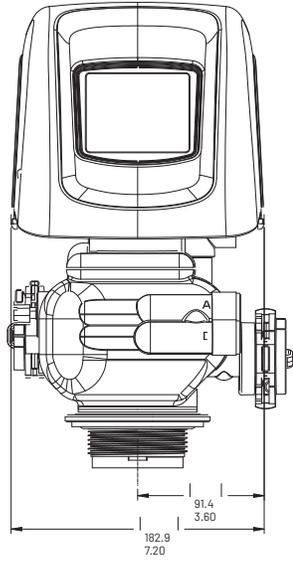
5812 4" BASE
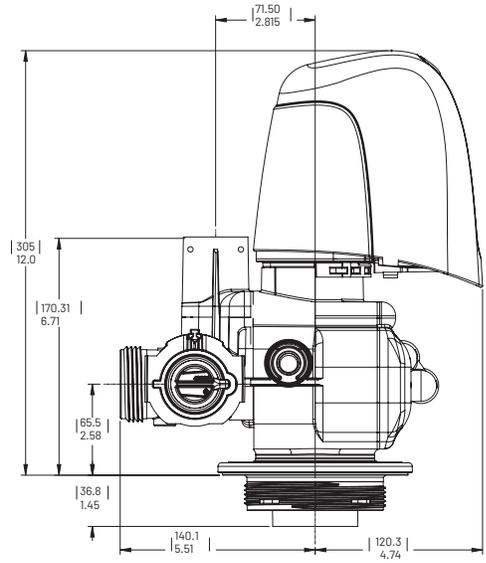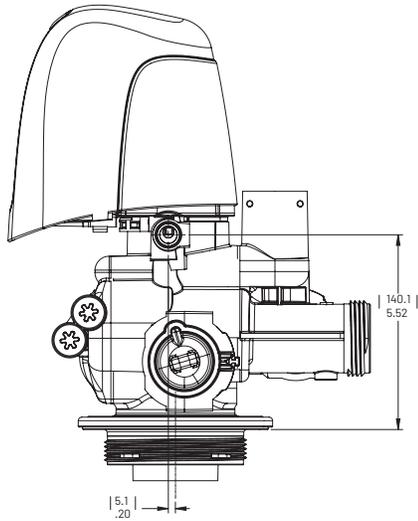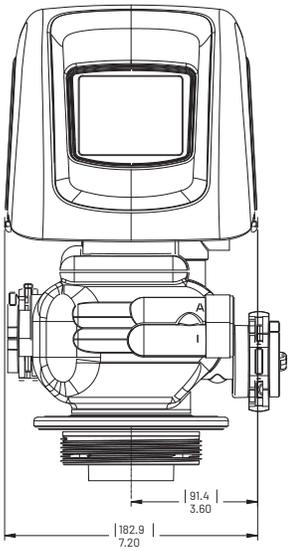
61500-5812LNE REV A

WIRING DIAGRAM

PRODUCTION
TEST PORT

REMOTE REGEN LOCK
REMOTE REGEN START
GND

MOTOR / OPTO. ENC.

FLOW METER

12VDC

24VDC

AUX2 CMN
AUX2 NO
AUX2 NC

AUX1 CMN
AUX1 NO
AUX1 NC

NAMEPLATE HERE

CHLORINE
GENERATOR

COMM PORT

USB

RESET
SWITCH

TOUCHSCREEN
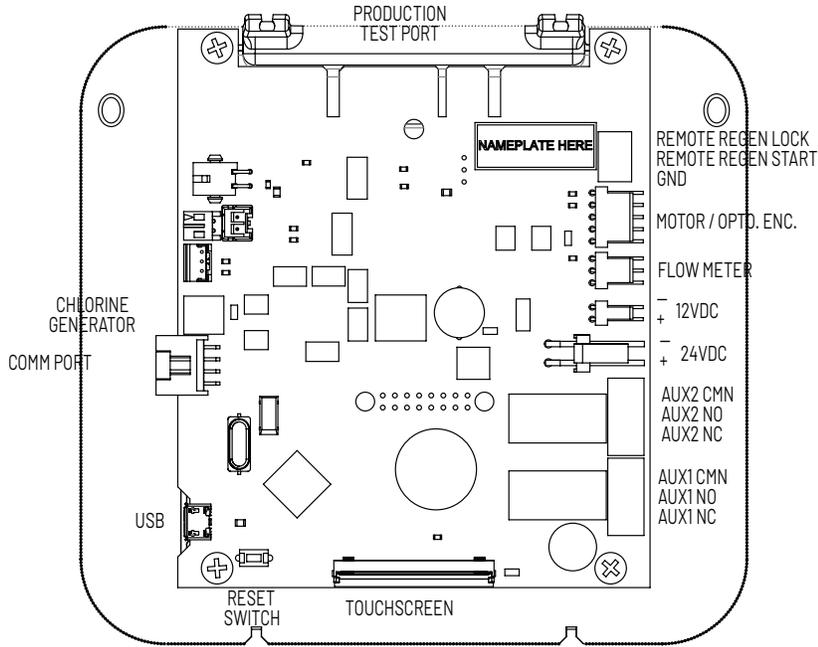
44459 Rev B

XTRi

NOTE: The reset switch discharges the super capacitor when power is removed from the control. The super capacitor retains the current time of day in the event of a power failure. Pressing the reset switch on the circuit board while power is applied to the control will have no effect on the control or stored settings.

Chlorine Generator can only be used with +12VDC power supply (international version only).

+12VDC power supply with 5800, 5810, 5812 valves only.

IOT

12VDC
+
−

ESP-WROOM-32

COMM PORT

12VDC
−
+
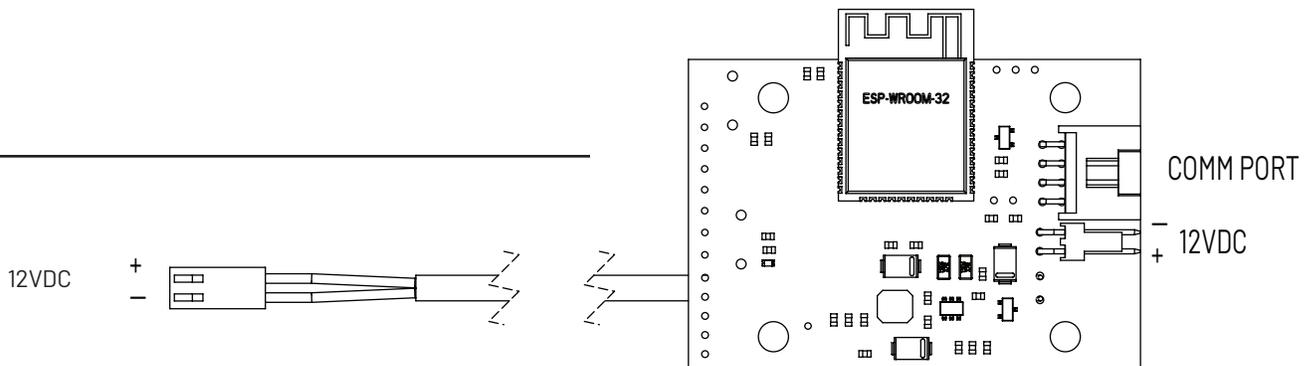
44452U Rev C

INJECTOR FLOW DATA

Injector #000

3/8" Brine System

Axes: Injector Flow (GPM) vs Pressure (PSI). Curves labeled Total, Rinse, Draw.

Injector #00

3/8" Brine System

Axes: Injector Flow (GPM) vs Pressure (PSI). Curves labeled Total, Rinse, Draw.

Injector #0

3/8" Brine System

Axes: Injector Flow (GPM) vs Pressure (PSI). Curves labeled Total, Rinse, Draw.

Injector #1

3/8" Brine System

Axes: Injector Flow (GPM) vs Pressure (PSI). Curves labeled Total, Rinse, Draw.

Injector #2

3/8" Brine System

Axes: Injector Flow (GPM) vs Pressure (PSI). Curves labeled Total, Rinse, Draw.

Injector #3

3/8" Brine System

Axes: Injector Flow (GPM) vs Pressure (PSI). Curves labeled Total, Rinse, Draw.

Injector #4

Axes: Injector Flow (GPM) vs Pressure (PSI). Curves labeled Total, Rinse, Draw with markers B, A, C, E, D.

Injector #5

Axes: Injector Flow (GPM) vs Pressure (PSI). Curves labeled Total, Rinse, Draw with markers B, A, C, E, D.

A) Total Flow, 3/8" Brine System   B) Total Flow, 1/2" Brine Line   C) Rinse   D) Brine Draw, 3/8" Brine System   E) Brine Draw, 1/2" Brine Line

NOTE: All data taken with 2310 Safety Brine Valve and 500 Air Check

TR18755 REV B

5800 PERFORMANCE DATA

Model Name: may include LXT, SXT, XTRi or XTR2	5800 - 0.75 ft³	5800 - 1.0 ft³ Test Model	5800 - 1.25 ft³	5800 - 1.5 ft³	5800 - 1.75 ft³	5800 - 2.0 ft³
"Rated Service Flow - gpm with an upper collector"	9	11	11	10.5	12.5	12
Pressure Drop at Rated Service Flow	15	15	15	15	15	15
"Rated Capacity (grains @ lbs. of salt)"	12,809 @ 2.81 21,051 @ 6.75 24,210 @ 11.25	17,930 @ 3.75 29,467 @ 9.0 33,889 @ 15.0	22,412 @ 4.7 36,833 @ 11.25 42,361 @ 18.75	26,895 @ 5.6 44,200 @ 13.5 50,833 @ 22.5	31,377 @ 6.6 51,567 @ 15.75 59,305 @ 26.25	35,860 @ 7.5 58,934 @ 18.0 67,778 @ 30.0
Rated Efficiency (grains/lb. Salt @ lbs. of salt)	4,550 @ 2.81	4,780 @ 3.75	4,780 @ 4.7	4,780 @ 5.6	4,780 @ 6.6	4,780 @ 7.5
Maximum Flow Rate During Regeneration (gpm)	1.7	2	2.4	2.4	3.5	3.5
Resin Volume - ft³ Resin Type - 8% strong acid cation	0.75	1	1.25	1.5	1.75	2
Tank size	8" x 44"	9" x 48"	10" x 47"	10" x 54"	12" x 48"	12" x 52"

Valve Cycle Time Settings (minutes)

	5800 - 0.75 ft³	5800 - 1.0 ft³	5800 - 1.25 ft³	5800 - 1.5 ft³	5800 - 1.75 ft³	5800 - 2.0 ft³
Backwash	8	8	8	8	8	8
Brine Draw & Slow Rinse @ lb of Salt	50 @ 3.0 62 @ 6.75 78 @ 11.25	52 @ 3.75 70 @ 9.0 90 @ 15.0	43 @ 4.7 54 @ 11.25 65 @ 18.75	54 @ 5.6 70 @ 13.5 87 @ 22.5	61 @ 6.6 80 @ 15.75 100 @ 26.25	70 @ 7.5 91 @ 18.0 115 @ 30.0
Rapid Rinse	6	6	6	6	5	5
Fill @ lb of Salt	8 @ 3.0 18 @ 6.75 30 @ 11.25	10 @ 3.75 24 @ 9.0 40 @ 15.0	7 @ 4.7 15 @ 11.25 25 @ 18.75	8 @ 5.6 18 @ 13.5 30 @ 22.5	9 @ 6.6 21 @ 15.75 35 @ 26.25	10 @ 7.5 24 @ 18.0 40 @ 30.0

Operating Pressure: 20 -125 psi or 1.4 – 8.8 kg/Centimeter2, Operating Temperature: 34 - 110° F or 1.1 – 43.3° C Acceptable Salt Type: Sodium Chloride
All Systems above tested at 35psi +/- 5 psi, pH of 7.5 +/- 0.5, Capacity Testing Flow Rate = 50% of the rated service flow rate for the various size systems

These water softener systems have been tested by WQA and conform to NSF/ANSI 44 for specific performance claims as verified and substantiated by test data. The rated salt efficiencies above were also determined in accordance with NSF/ANSI 44 and are only valid at the salt dosage referenced above. An efficiency rated water softener is a demand initiated regeneration (DIR) softener which also complies with specific performance specifications intended to minimize the amount of regenerant brine and water used in its operation. Efficiency rated water softeners shall have a rated salt efficiency of not less that 3350 grains of total hardness exchanged per pound of salt (based on NaCl equivalency)(477 grams of total hardness exchanged per kilogram of salt), and shall not deliver more salt than its listed rating. The rated efficiency of the water softener, the salt dosage at that efficiency, the capacity at that salt dosage and that of the efficiency is only valid at the stated salt dosage. Efficiency is measured by a laboratory test described in NSF/ANSI 44. The test represents the maximum possible efficiency the system can achieve. Operational efficiency is the actual efficiency achieved after the system has been installed. It is typically less than the efficiency due to individual application factors including water hardness, water usage, and other contaminants that reduce the water softener's capacity. These systems are not intended to be used for treating water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system. Refer to the system Installation and Service Manuals for set-up and programming instructions.

Contact your local dealer for parts and service. See your owner's manual for warranty information.

Tested and Certified by the WQA to NSF/ANSI Standard 44 & 372 for softener performance & lead free compliance and CSA B483.1

Pentair Residential Filtration, LLC
13845 Bishops Drive Suite 200
Brookfield, Wisconsin 53005
PHONE: (262)-238-4400

Rev. F OC23

5810 PERFORMANCE DATA

Model Name: may include SXT, XTRi or XTR2	5810 - 1.00 ft³	5810 - 1.25 ft³ test unit	5810 - 1.50 ft³	5810 - 2.0 ft³	5810 - 3.00 ft³
Maximum Rated Service Flow (gpm)(W/upper collector)	13.1	14.9	13.7	17.2	18.9
Pressure Drop at Rated Service Flow Rate (gpm)"	15	15	15	15	15
Rated Capacity (grains @ lbs. of salt)"	17,834 @ 4.0 27,949 @ 9.0 32,225 @ 15.0	22,918 @ 5.0 35,915 @ 11.25 41,410 @ 18.75	27,501 @ 6.0 43,098 @ 13.5 49,692 @ 22.5	36,668 @ 8.0 57,464 @ 18.0 66,256 @ 30.0	55,003 @ 12.0 86,196 @ 27.0 99,384 @ 45.0
Rated Efficiency (grains/lb. Salt @ lbs. of salt)"	4,460 @ 4.0	4,580 @ 5.0	4,580 @ 6.0	4,580 @ 8.0	4,580 @ 12.0
Maximum Flow Rate During Regeneration (gpm)	2.0	2.4	2.4	3.5	5
Resin Volume - ft3 Resin Type - 8% strong acid cation"	1	1.25	1.5	2	3
Tank size	9" x 48"	10" x 47"	10" x 54"	12" x 52"	14" x 65"

Valve Cycle Time Settings (minutes)		5810 - 1.00 ft³	5810 - 1.25 ft³	5810 - 1.50 ft³	5810 - 2.0 ft³	5810 - 3.00 ft³
	Backwash	8	8	8	8	8
	Brine Draw & Slow Rinse @ lb of Salt	58 @ 4.0 76 @ 9.0 95 @ 15.0	46 @ 5.0 58 @ 11.25 72 @ 18.75	54 @ 6.0 68 @ 13.5 86 @ 22.5	49 @ 8.0 62 @ 18.0 78 @ 30.0	58 @ 12.0 76 @ 27.0 98 @ 45.0
	Rapid Rinse	6	6	6	6	6
	Fill @ lb of Salt	11 @ 4.0 24 @ 9.0 40 @ 15.0	14 @ 5.0 30 @ 11.25 50 @ 18.75	16 @ 6.0 36 @ 13.5 60 @ 22.5	11 @ 8.0 24 @ 18.0 40 @ 30.0	8 @ 12.0 18 @ 27.0 30 @ 45.0

Operating Pressure: 20 -125 psi or 1.4 – 8.8 kg/Centimeter², Operating Temperature: 34 - 110° F or 1.1 – 43.3° C Acceptable Salt Type: Sodium Chloride
All Systems above tested at 35psi +/- 5 psi, pH of 7.5 +/- 0.5, Capacity Testing Flow Rate = 50% of the rated service flow rate for the various size systems

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Tested and Certified by the WQA to NSF/ANSI Standard 44 & 372 for softener performance & lead free compliance and CSA B483.1

Pentair Residential Filtration, LLC
13845 Bishops Drive Suite 200
Brookfield, Wisconsin 53005
PHONE: (262)-238-4400

Rev. F OC23

5812 PERFORMANCE DATA

Model Name: may include LXT, SXT, XTRi or XTR2	5812 - 1.25 ft³	5812 - 1.50 ft³	5812 - 2.0 ft³ test unit"	5812 - 3.0 ft³	5812 - 4.00 ft³
Maximum Rated Service Flow (gpm)(W/upper collector)	14.2	14.8	19	21.9	24.3
Pressure Drop at Rated Service Flow Rate (gpm)	13	15	15	15	15
"Rated Capacity (grains @ lbs. of salt)"	21,604 @ 5.0 33,518 @ 11.25 38,243 @ 18.75	28,111 @ 6.0 43,614 @ 13.5 49,761 @ 22.5	37,482 @ 8.0 58,153 @ 18.0 66,349 @ 30.0	56,233 @ 12.0 87,229 @ 27.0 99,523 @ 45.0	74,964 @ 16.0 116,306 @ 36.0 132,698 @ 60.0
Rated Efficiency (grains/lb. Salt @ lbs. of salt)	4,320 @ 5.0	4,690 @ 6.0	4,690 @ 8.0	4,690 @ 12.0	4,690 @ 16.0
Maximum Flow Rate During Regeneration (gpm)	2.4	2.4	3.5	5	7
Resin Volume - ft³ ResinType - 8% strong acid cation	1.25	1.5	2	3	4
Tank size	10" x 47"	10" x 54"	12" x 52"	14" x 65"	16" x 65"

Valve Cycle Time Settings (minutes)

	5812 - 1.25 ft³	5812 - 1.50 ft³	5812 - 2.0 ft³ test unit"	5812 - 3.0 ft³	5812 - 4.00 ft³
Backwash	8	8	8	8	8
Brine Draw & Slow Rinse @ lb of Salt	46 @ 5.0 58 @ 9.0 72 @ 18.75"	54 @ 6.0 68 @ 13.5 86 @ 22.5"	48 @ 8.0 62 @ 18.0 78 @ 30.0"	58 @ 12.0 76 @ 27.0 98 @ 45.0"	70 @ 16.0 84 @ 36.0 96 @ 60.0"
Rapid Rinse	6	6	6	6	6
Fill @ lb of Salt	14 @ 5.0 30 @ 11.25 50 @ 18.75"	16 @ 6.0 36 @ 13.5 60 @ 22.5"	11 @ 8.0 24 @ 18.0 40 @ 30.0"	8 @ 12.0 18 @ 27.0 30 @ 45.0"	11 @ 16.0 24 @ 36.0 40 @ 60.0"

Operating Pressure: 20 -125 psi or 1.4 – 8.8 kg/Centimeter2, Operating Temperature: 34 - 110° F or 1.1 – 43.3° C Acceptable Salt Type: Sodium Chloride All Systems above tested at 35psi +/- 5 psi, pH of 7.5 +/- 0.5, Capacity Testing Flow Rate = 50% of the rated service flow rate for the various size systems

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Rev. F OC23

FCC Regulatory Notice – 47 CFR Part 15, Subpart C.

Instruction To User – This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Industry Canada (IC) Regulatory Notice – RSS210:

Instruction To User – This device complies with RSS210 of Industry Canada. (1999). Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication. This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante. Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

For Pentair Fleck Product Warranties visit: **pentair.com/assets/residential-filtration-warranty**

◈ PENTAIR

44514 REV E OC23