Iron Boss™

Extreme

SERVICE MANUAL

Extreme

Extreme Plus pH

Manufactured by The LeverEdge

1423 Gunn Highway

Odessa, FL 33556

TABLE OF CONTENTS

JOB SPECIFICATION SHEET

Job Number: _____

Model Number: _____

Water: Iron: _____ Manganese: _____ Hydrogen Sulfide: _____ ppm or gpg

Calculated Total Oxygen Demand in gpG: See Box 1. _____ gpG

Capacity Per Unit: _____

Mineral Tank Size: _____ Diameter: _____ Height: _____

Regenerant Flow: Custom Downflow

1. **Meter Size:**
   A. 1-1/4" Turbine
2. **System Type:**
   A. System #4: 1 Tank, 1 Meter, Delayed Regeneration, Day override
   B. System #4: Time Clock
3. **Cycle Settings:**

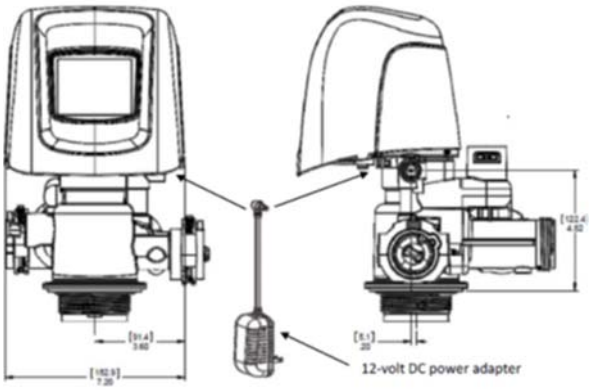
Step# 1. Backwash: _____ Minutes
Step# 2. Pause: _____ Minutes
Step# 3. Draw: _____ Minutes
Step# 4. Pause: _____ Minutes
Step# 5. Rapid Rinse: _____ Minutes
Relays: Aux 1: Off _____ Cycle based _____ Minutes
Aux 2: _____ Minutes

4. **Drain Line Flow Control: _____ gpm**
5. **Brine Line Flow Control: _____ gpm**
6. **Injector** _____

IMPORTANT PLEASE READ:

- The Iron Boss Extreme normally does not supply outside hose bibs or irrigation systems, unless outside faucets need iron free water. If the irrigation system is supplied by the Iron Boss Extreme, contact the factory before installation is began for assistance in proper sizing, flow design and application
- Start Iron Boss Extreme into service before starting up water softener so treated water from Iron Boss Extreme is used for softener start up.
- Do not sweat pipes while connected to the Bypass or control valve to prevent damaging rubber seals.
- This product must be installed in compliance with all state and municipal plumbing, building, and electrical codes. Permits may be required at the time of installation.
- If the Iron Boss Extreme is installed outdoors or in direct sun, the Environmental Cover Part# 61994 MUST be used.
- Always protect the Iron Boss Extreme from freezing temperatures Do not install the unit where temperatures may drop below 32°F or above 120°F.
- Untreated water is available during the regeneration of Iron Boss Extreme.
- See page 31 for Warranty details
- 10"X54" units have 3/4" DLFC 90. Run from drain insert fitting a minimum of 12" of 5/8" black polyethylene drain tubing, to prevent vibration before transitioning to rigid piping, to approved drain air gap following local plumbing codes. Always secure end of drain line! If drain line is over 10 feet in length or height, increase line to ¾" diameter.
- Correct and constant voltage must be supplied to the controller to maintain proper function.

Drawing 2
Dimensions with 12-volt power adapter



Iron Boss Extreme incorporates the 5810 base model with Custom Programing into the complete system.

Component

The 5810 & 5812 - 2.5" base models are Tested and Certified by the WQA to NSF/ANSI Std. 44 & 372 for material safety and structural integrity & lead free compliance and CSA B483.1.

CALIFORNIA PROPOSITION 65

⚠ WARNIN This product contains chemicals known to the State of California to cause cancer or birth defects or other reproductive harm.

Iron Boss Extreme Diamonite Installation Start Up

1. The Iron Boss Extreme normally does not supply outside hose bibs or irrigation systems, unless outside faucets need iron-free water. If the irrigation system is supplied by the Iron Boss, contact the factory before installation is began for assistance in proper sizing, flow design and application.
2. Install Iron Boss Extreme after neutralizing filters I.E. Calcite, Corosex (if correcting low pH consider using the Iron Boss Extreme Plus pH). Install before water softener and / or tannin filter.
3. 10"X54" units have 3/4" DLFC 90. Run from drain insert fitting a minimum of 12" of 5/8" black polyethylene drain tubing, to prevent vibration before transitioning to rigid piping, to approved drain air gap following local plumbing codes. Always secure end of drain line! If drain line is over 10 feet in length or height, increase line to ¾" diameter.
   13"X54" unit use a 1" straight mpt DLFC adapter.
4. Follow Drawing 1 to install Inlet and Outlet piping with valves required for proper startup and future servicing. After plumbing is complete, before turning on the water, place unit into bypass by turning handles clockwise to align arrows. (See Page 6 Figure 31). Turn on water. Bypass in off position.
5. Plug 12 vDC adapter into 120v outlet, non-switched with continuous power. **See Drawing 2 for location.**

IF Format displays go to 6a, IF Home displays go to 7a.

6 a. Format screen Displays. (**Set in step 12**) Press ✓
   b. Assistant Name Screen displays. Press ✓
   c. Assistant phone Screen displays. Press ✓
   d. Assistant /Mainten. Interval displays. Press ✓

7. If Home screen displays, go to 8b, if not, go to 8a

8 a. Press (Home) then
   b. Press Regeneration
   c. Regeneration screen displays, press **now**
   d. Backwash starts (time is 14m) unplug power to allow extended backwashing of media, mandatory for proper start up, failure to complete will lead to service issues.

9. Slightly open inlet of bypass, water begin filling tank, purging **all** air, open half way, verify **all** air is purged, **open** bypass fully. Run until drain water is clear. **Takes 30 minutes or more**. Plug in power.
10. Screen displays in backwash cycle, press » to advance through cycles, allowing motor to stop at each cycle, until Water Treatment Home displays.
11. Press , enter number of days in" day override/time driven" 3 d is default. Change regen time if needed 1200 am is default, set hardness to calculated total ppm of oxygen demand. See chart in Box 1 OR accept 4 gpG (default). Press ✓ Home screen displays
12. Unplug & plug in power. See pages 5 & 6, follow steps 1 to 5 to set: Assistance Name, Phone, and Interval and to Set Day and Time.
13. After settings and startup are complete, Open both inlet and outlet bypass handles. Press Regen, Press **Now**, advance through cycles to Draw. Verify air is drawing through Regulating Solenoid. Leave in draw cycle to allow media to acquire the initial oxygen charge This cycle is 45 minutes, so do this as the last step of the Iron Boss Extreme set up. During this time, install the refiner and Drinking Water Systems.

Box 1.

Calculate gpG to enter for hardness setting

Oxygen Demand required to treat:

- 3 ppm oxygen for each ppm of hydrogen sulfide (H2S) (sulfur).
- 2 ppm of oxygen for each ppm of manganese (Mn)
- 1 ppm of oxygen for each ppm of iron (Fe).

Round up test results (i.e. if 0.4, round to 1).

Example:

Treat water with 3 ppm iron, 1 ppm hydrogen sulfide, but 0 ppm manganese

Oxygen Demand of 4 ppm of Oxygen is required.

(1 ppm Fe) X (1 ppm Oxygen) = 1

(1 ppm H2S) X (3 ppm Oxygen) = 3

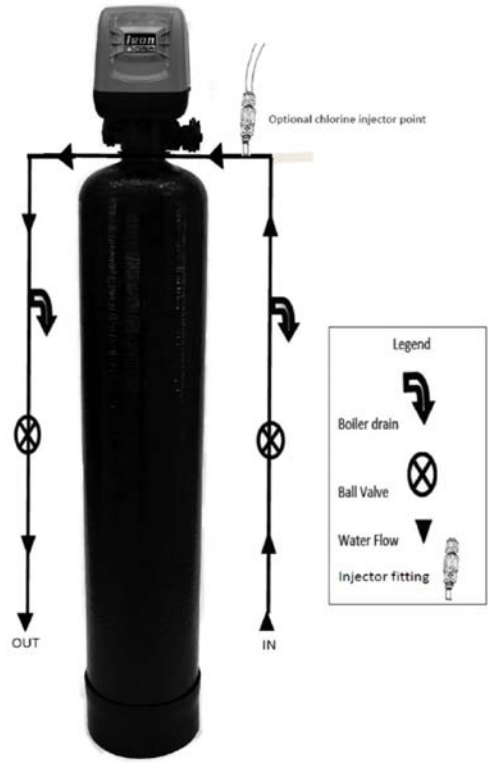
(0 ppm Mn) X (2 ppm Oxygen) = 0

Total Oxygen Demand = 4

In this water example, you would enter 4 gpG into the hardness setting.

The hardness setting in gpG always equal to the Total Oxygen Demand in ppm.

Iron Boss Extreme measures water usage and regenerates at the set Regeneration Time after the capacity (less a 20% reserve) is depleted or the day over ride is reached. *If your calculated gpG is over 4, you must set to actual calculated gpG level to function properly!!!*



Drawing 1

Flow diagram with valves for startup and servicing

Iron Boss Extreme Plus pH Installation Start Up

1. The Iron Boss Extreme Plus pH normally does not supply outside hose bibs or irrigation systems, unless outside faucets need iron-free water. Read ⚠ Page 2
2. Install before water softener / tannin filter. Start up unit first, so treated water is used for softener start up
3. 10"X54" units have 3/4" DLFC 90. Read ⚠ Page 2

4 a. Follow Drawing 1 to install Inlet and Outlet piping with valves required for proper startup and future servicing. After plumbing is complete, before turning on the water, place unit into bypass position by turning handles clockwise to align arrows. (Page 6 Figure 31). Turn on water supply. Caution, do not open bypass or allow water to build pressure in tank before proceeding.

b. In the box the Iron Boss Extreme Plus pH assembly with control, distributor installed, and gravel loaded in dome hole tank. **See Box 4:** Turn the dome hole Quick Lock plug left ¼ turn while lifting out. Insert funnel part# 3MTPFUNNELQLDOMEHOLE into dome hole. Load both 50 lbs bags (.55 cft) of calcite (shipped loose with the unit) into the tank. If needed, add Corosex with Calcite by either pre blending or alternating scoops of the two minerals. When media loading is complete, replace dome hole plug by turning right until marks line up. See Box 3. to determine proper ratio of media per pH reading. Note: load maximum of 3 lbs. Corosex before starting up and testing pH. You can add more Corosex but can't remove. Check hardness after unit to set softener

5. Plug 12 vDC adapter into 120v outlet, non-switched with continuous power. **See Drawing 2 for location.**

IF Format displays go to 6a, IF Home displays go to 7a.

6 a Format screen Displays. (**Set in step 12**) Press ✓
b. Assistant Name Screen displays. Press ✓
c. Assistant phone Screen displays. Press ✓
d. Assistant /Mainten. Interval displays. Press ✓

7 a. Home Screen displays. Press ⚙
b. Settings screen displays. Press ⚙
c. Master Settings warning screen displays. Press ✓
d. Password Screen displays. Enter 1201. Press ✓
e. Master Settings screen displays. Press regen
f. regen flow Displays custom downflow , Press ✓
g. Changing parameters warning. Press ✓
h. Press modify.
i. step # 1 backwash displays, Press ✓
j. Step # 2 pause displays. Press ✓
k. step# 3 draw 45 m. **See box 2,** Set time and Press ✓
l. step# 4 pause 4 m. **See box 2,** Set time and Press ✓
m. step # 5 rapid rinse 0 m, **See box 2,** Set time and Press ✓ If neutralizing **only** Go to 7 o. to set relay
o. Press relay Set auxiliary 1 cycle based to off ✓

8 a. Press ⌂ (Home), Press ↻ (Regeneration)
b. Regeneration screen displays, press now **(now)**
c. Backwash starts (time is 14m) unplug power, allowing extended backwashing of media, mandatory for proper start up, failure to complete will lead to service issues.

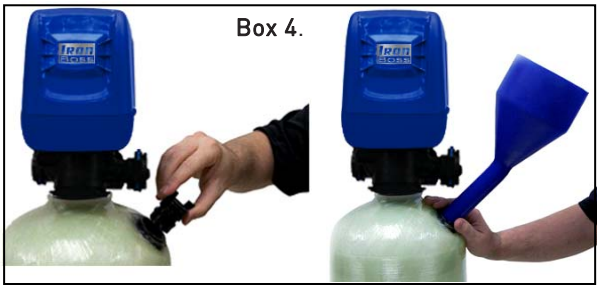
9. Slightly open inlet of bypass, begin filling tank, purging **all** air, open half way, verify all air is purged, then open bypass fully. Allow to run until drain water is clear. (Take 30 minutes or more). Plug in power.
10. Screen displays in backwash cycle, press » advance through cycles, allowing motor to stop at each cycle, until rapid rinse is reached. Unplug power.
11. Rinse until drain water is clear of all color, plug in power. Screen displays in rapid rinse cycle, press » Home Screen displays. Press ⚙ then ⚙, enter password 1201, press ✓ Master settings screen

11. Continued.
displays, Press save 💾, warning displays: current settings will be saved as the non-factory settings? Press ✓, Master Setting screen displays, press ⌂ (Home) Home screen displays.

12 a. Press ⚙, Settings screen displays
b. Press day overrie/ time-driven enter # days (3 default).
c. Press regen. time enter time (12:00am default)
d. Press hardness enter calculated gpG of total ppm of oxygen demand. See chart in Box 1 OR accept (4 gpG default). Press ✓ Home screen displays

13. Unplug & plug in power. See pages 5 & 6, follow steps 1 to 5 to set: Assistance Name, Phone, and Interval and to Set Day and Time.
14. After settings and start up is complete, Open both inlet and outlet bypass handles. Press Regen, Now, advance cycles to Draw. Verify air draw through Regulating Solenoid. Leave in draw cycle to allow media to acquire the initial oxygen charge. Last 45 min, so do last. Next install Refiner and Drinking Water System.

Box 4.



Box 2.

Setting cycle times in step 7

Determine Iron Boss Extreme Plus pH function

If unit is neutralizing pH and oxidizing iron, hydrogen sulfide, and / or manganese:

7 k. Step # 3 Set draw to 45 m (minute)
7 l. Step # 4 Set pause to 4m (minute)
7m. Step # 5 Set rapid rinse to 4 (minute)

If unit is neutralizing pH only:

7 k. Step # 3 Set draw to 0 m (minute)
7 l. Step # 4 Set pause to 0 m (minute)
7m. Step # 5 Set rapid rinse to10 m (minute)
7 o. Set Relay auxiliary 1 cycle based to off

Box 3.

Determining proper Media ratio

pH	10x54		ratio
	Calcite	Corosex	
6.2 -6.9	100 lbs		100 / 0
5.5 -6.1	100lbs	10lbs	90 / 10
5.0 - 6.0	100lbs	15lbs	85 / 15
4.0 - 4.9	100lbs	20lbs	80 / 20

Calcite weighs 50 lbs. with .55 ft^3 per bag
Corosex weighs 66 lbs. with .66 ft^3 per bag

Iron Boss Extreme Touch Screen Control Quick Start

The Iron Boss Extreme Touch Screen control is easy to set up and start using. Follow procedures to prepare the media bed, set up the system, and put unit into service.

NOTE: Steps 2, 3 and 4 are optional and are not required to start the system, but should be set after the unit is in service.

1. Plug in the AC adapter to power up the unit, the Format screen (Figure 3) is displayed.

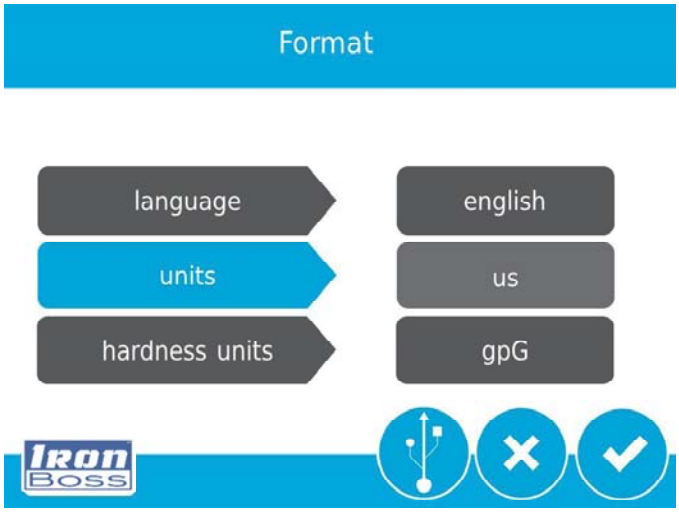


Figure 3 Format Screen

To assure the system works properly, press ✓ to Accept the defaults shown in Figure 3. (English is the only language available. Do not change the units or hardness units from US units).

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

2. After pressing ✓, the Assistance Name screen (Figure 4) is displayed.

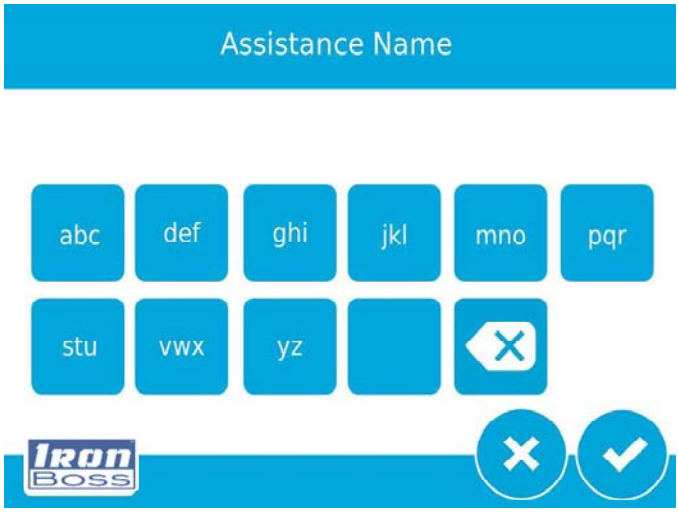


Figure 4 Assistance Name Screen

Using the keypad, type the name of the water treatment professional company that the homeowner can call for system service.

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 Phone screen (Figure 5) is displayed.

Figure 5 Assistance Phone Screen

Enter the phone number of the water treatment company that the homeowner can call for system service Press ✓ when finished.

4. After pressing ✓, the Assistance Interval screen (Figure 6) is displayed.

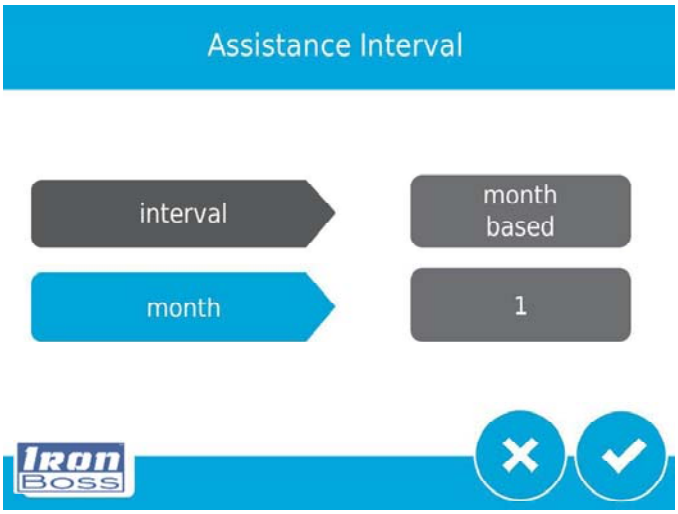


Figure 6 Assistance Interval Screen

Use the Assistance 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) 13 months is suggested.

Set 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 notified to call for service. Press ✓, Home Screen displays Fig 7.

Iron Boss Extreme Touchscreen Control Quick Start Information

5. Home screen (Figure 7) Information and Icon Symbols.

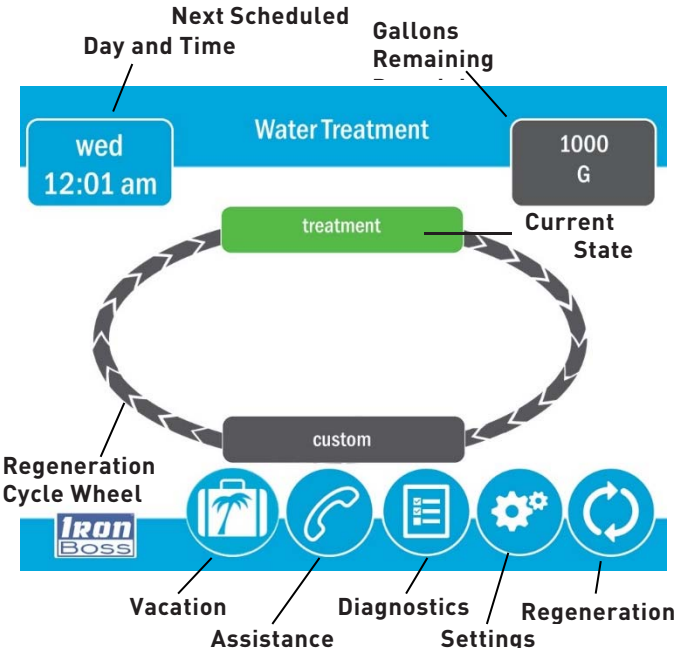


Figure 7 Home Screen

If the **Day and Time** button is flashing, it is 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 8) appears.

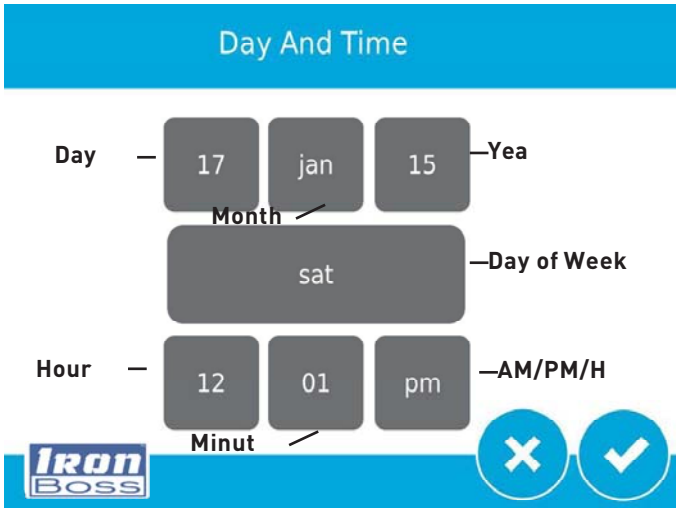


Figure 8 Day and Time Screen

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 date. Press the ✓ button when finished to return to the Home screen. Press ✕ to return to the Home screen without saving.

The Iron Boss Extreme starts regenerations at the time set by your dealer (usually 12:00 AM) on days initiated by the controller. Regeneration last up to 60 minutes. If the unit regenerates at wrong time, reset following above steps. If an immediate regeneration is needed, see next section

6. To start a regeneration, press the **Regeneration** button

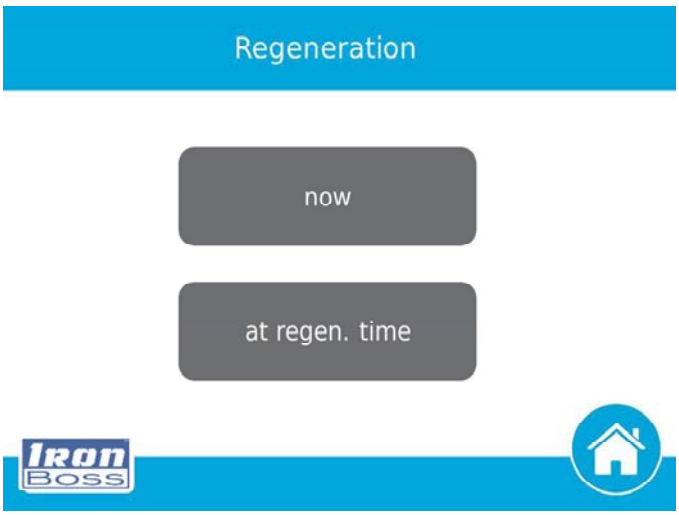


Figure 9 Regeneration Screen

Press the **now** button to begin regeneration immediately or Press **at regen time** to wait until 12:00 AM.

.

NOTE:

The Iron Boss Extreme Custom settings were programmed by your dealer to treat your specific water application. Except for instructions on this page, please do not attempt to adjust any other settings, and call your dealer.

If needed, you can bypass water flowing through the system by turning the handles clockwise aligning the arrows. The bypass pictured Figure 10 is located on the back of the system's control. In case of a leak in the system, turn handles to bypass and call your dealer for service.

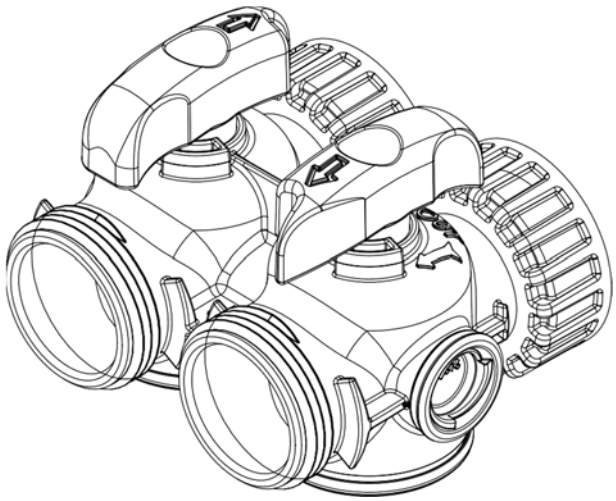


Figure 31 1.25" Bypass Assembly

TOUCHSCREEN CONTROL FEATURES

Iron Boss Extreme Touchscreen Control

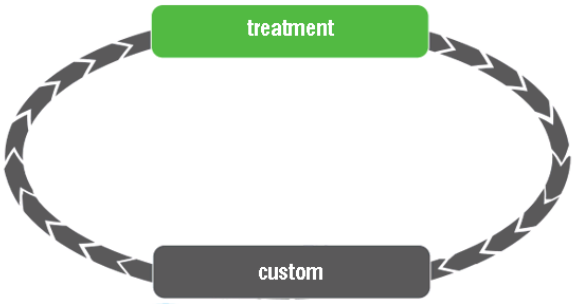
- Full-featured easy to use graphical touchscreen interface for programming, servicing, and diagnostics.
- Non-linear programming no longer requires cycling through every parameter when programming/servicing.

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 green label indicates the current cycle.



NOTE: The "Treatment" step on the Regeneration Cycle Wheel will flash when water is flowing through the Iron Boss Extreme.

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

Diagnostics

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

Brightness

- Displays the Brightness screen, which allows for adjustment of the touchscreen display backlight.

Vacation Mode

- Halts all scheduled regenerations when pressed; press again to resume normal operation.

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 not saved unless is pressed.**

Settings

- These arrows allow you to change the values of certain settings when programming the control.

Alar

- Displayed when an alarm has occurred; accompanied with an audible alarm. Press to silence the audible alarm.

Erro

- 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.

TOUCHSCREEN CONTROL FEATURES

continued

Screen Features

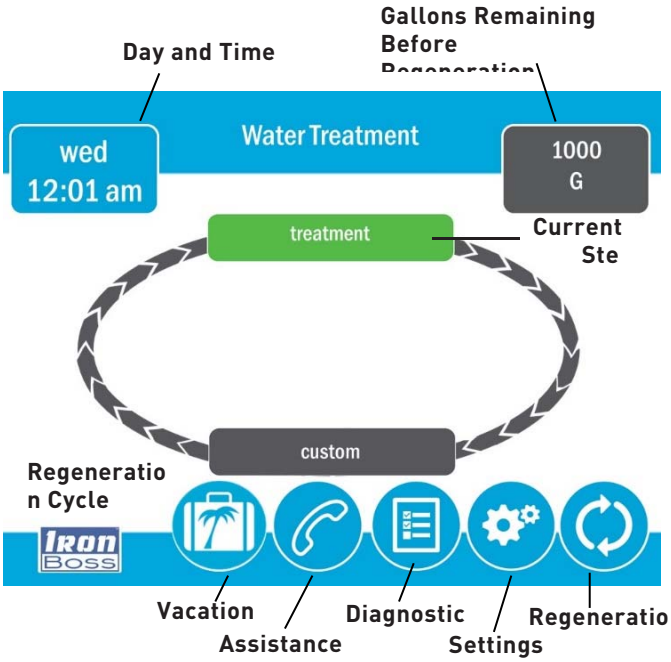


Figure 10 - Home Screen

The Home screen is always displayed unless the control settings are being configured or during regeneration. This screen displays general information about the system and allows you to start a manual regeneration or access control settings. Features of the screen are described below, followed by more detailed information about each feature.

NOTE: If no button is pushed for five minutes, the screen will enter a power save mode. The unit will continue to operate, but the screen will be blank. Touch anywhere on the screen to exit power save

- **Regeneration**: Press to start a manual regeneration.
- **Settings**: Press to access commonly used settings.
- **Diagnostics**: Press to view diagnostic data.
- **Assistance**: Press to display the name and phone number to call for service.
- **Vacation Mode**: Press to halt all scheduled regenerations; press again to resume normal operation.
- **Regeneration Cycle Wheel**: Displays the cycle steps the valve is currently in during a regeneration; the current cycle step is always at the top of the wheel.
  - **Treatment**: The unit is treating water
  - **Backwash**: Water flows from the bottom of the vessel to the top of the vessel to clean the media
  - **Draw**: Air is drawn into the tank through the media and then slowly empties the tank of water
  - **Fast Rinse**: Water flows from the top of the vessel to the bottom of the vessel to rinse the media
  - **Refill**: Never used on Iron Boss Extreme
- **Gallons Remaining before Regeneration**: Displays volume in gallons before next regeneration. Note system may regenerate sooner by day override.
- **Day and Time**: Displays the currently programmed day of the week and time. This button will flash if the control has been reset.

Regeneration

Regenerate the system on demand by pressing the Regeneration button on the home screen. Manual Regeneration can only be used while the valve is in the treatment position. From the Home screen, press **Regeneration** button . The Regeneration screen appears.

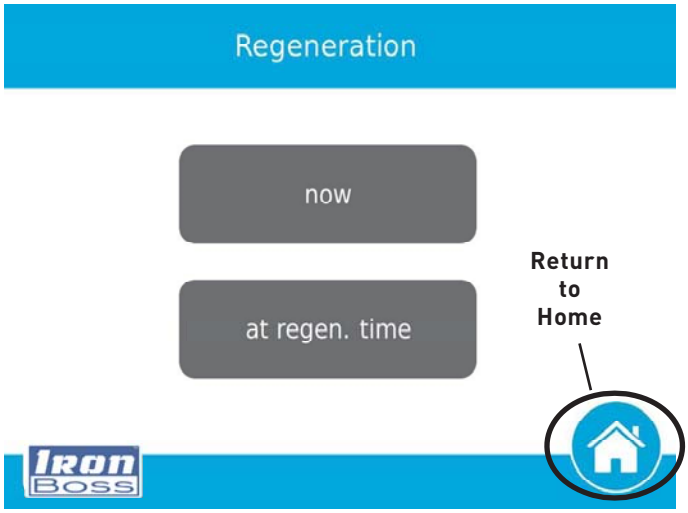


Figure 11 Regeneration Screen

- Press **now** to begin a regeneration immediately, or press **at regen. time** to queue the regeneration for the programmed regeneration time (12:00 AM default for Iron Boss Extreme). 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 time will be displayed below the button.

Day and Time

From the Home screen (displayed in Figure 10 above) press the Day and Time button. The Day and Time screen appears.

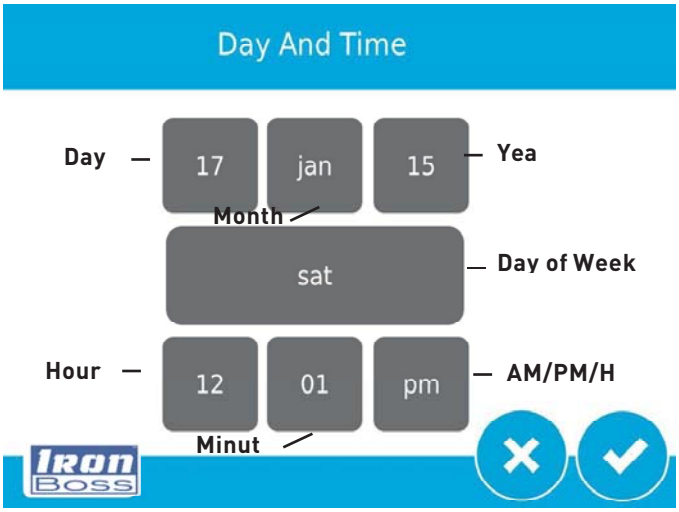


Figure 12 Day and Time Screen

- Press the **Day of Week**, **Hour**, **Minute**, and **AM/PM/HR** buttons to adjust the values to the correct day 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 Press the button when finished to return to the Home screen.

TOUCHSCREEN CONTROL FEATURES

continued

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.

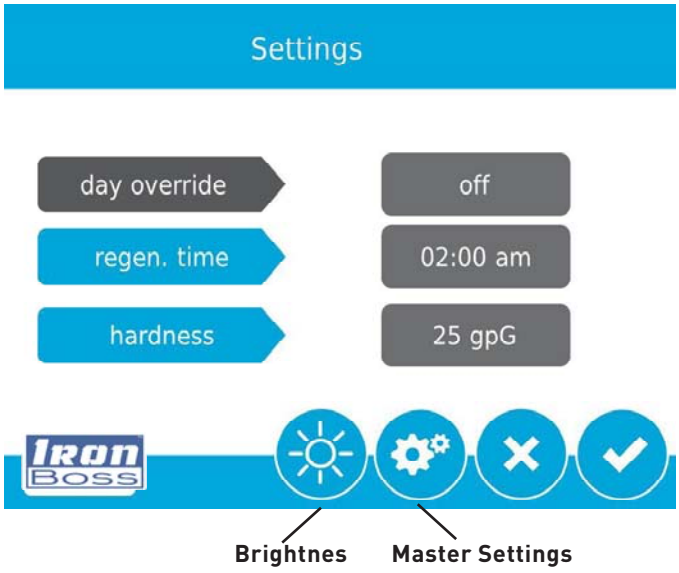


Figure 13 Settings Screen

- Press **day override** to adjust the number of days since last regeneration in which a new regeneration will automatically occur even if gallons remain to
- backwash and recharge the oxygen in the media.
  Press **regen time** to adjust the time of day the
- regeneration cycle will begin (default 12:00AM)
  Press **hardness** to adjust oxygen demand value to total PPM of iron, and hydrogen sulfide in the untreated water

NOTE: Changing the hardness setting recalculates treatment volume and regeneration interval. Change setting only on the advice of a professional.

- Press to save your changes or 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 13):

- **Master Settings**: Displays the Master Settings screen, which allows you to fully program the valve.
- **Brightness**: Displays the Brightness screen, which allows you to adjust the backlight brightness of the control screen.

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

NOTE: Settings cannot 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.

User Assistance

The Assistance screen displays the name and phone number that the homeowner may call for service of the unit. Press the **Assistance** button from the Master Settings or Home Screens to display the Assistance screen.

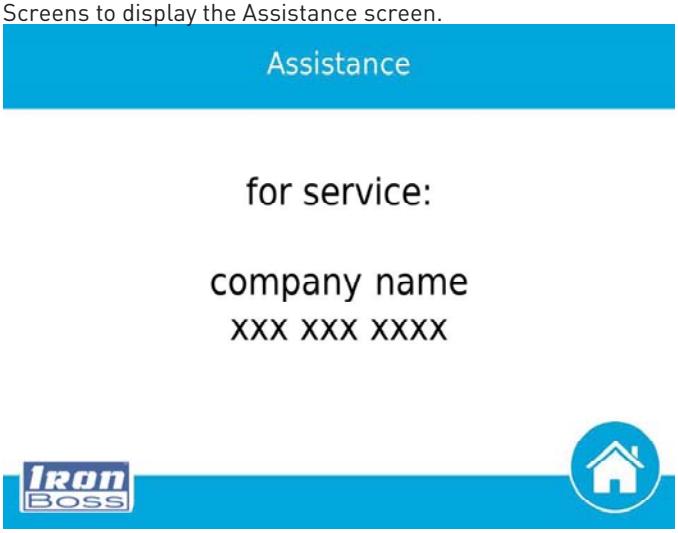


Figure 14 Assistance Screen

- This information is entered upon initial control startup (see TOUCHSCREEN CONTROL QUICK START) or changed in Master Settings.
- Press the **Home** to return to the Home screen.

NOTE: The Assistance screen is also displayed when the system reaches the programmed assistance interval. See TOUCHSCREEN CONTROL QUICK START.

Master Settings: Master Settings screens access all configurable parameters in the control.

CAUTION **Improperly adjusting master settings can 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 15 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.

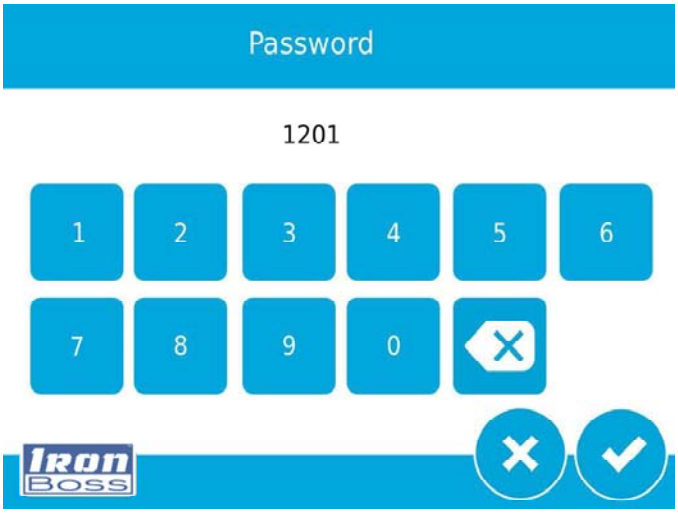


Figure 16 Password Screen

- 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.

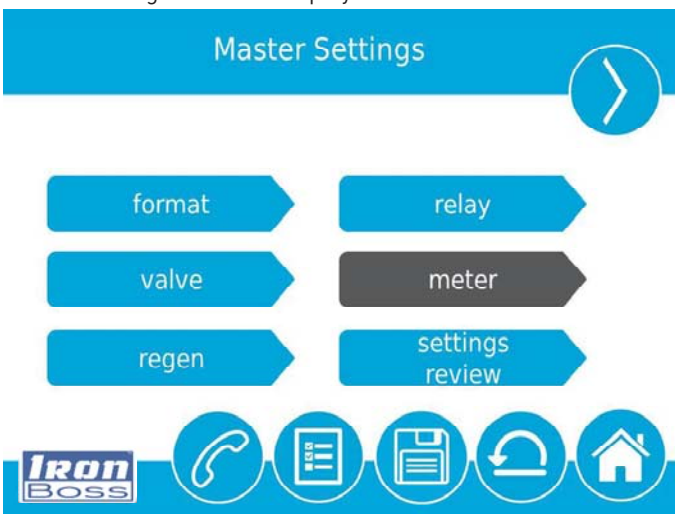


Figure 17 Main Master Settings Screen

While in the Master Settings screens, press to save all set parameters to a custom profile (see "NON-FACTORY SETTINGS" page 14) or press **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, Assistance Name, Assistance Phone, and Assistance Interval. See TOUCHSCREEN CONTROL QUICK START for more information about these settings.
- **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**: Contains settings for Meter Types.
- **settings review**: Displays a summary of all programmed settings.

Press the screen navigation arrow at the top right of the screen to navigate to the secondary Master Settings screen.

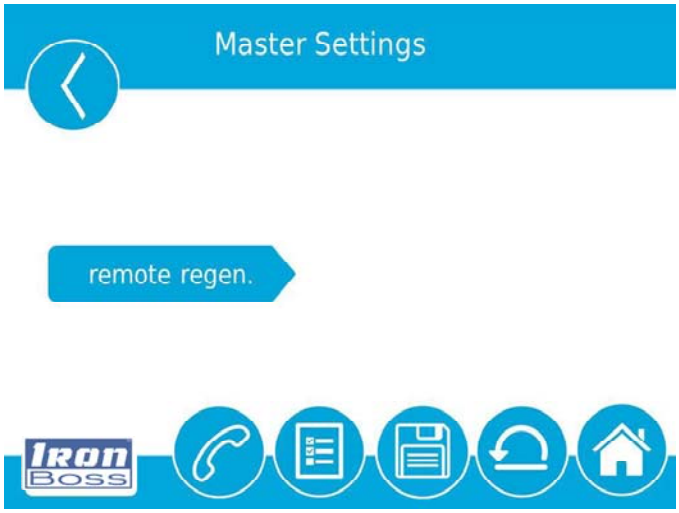


Figure 18 Secondary Master Settings Screen

- **remote regen:** Contains settings for triggering a regeneration via a remote input.

MASTER SETTINGS PROGRAMMING

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

NOTE: If a regeneration is scheduled to occur while in Master Settings, the scheduled regeneration will be cancelled.

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 17) press the **format** button to display the Format screen.

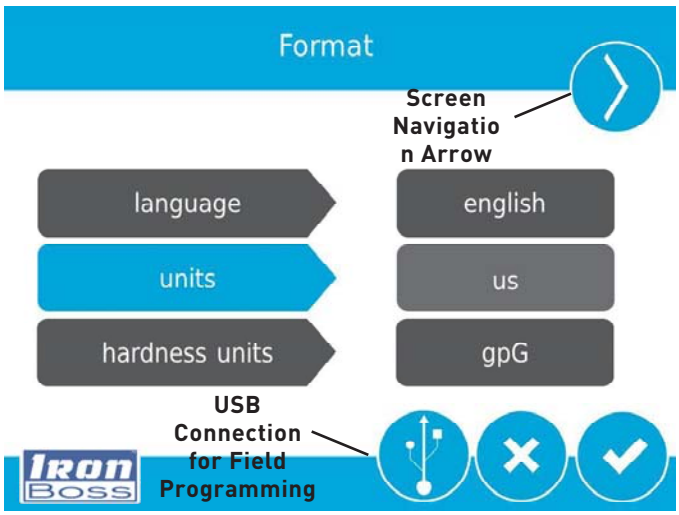


Figure 19 Format Screen

continued

- **language**: Displays the language used on the control (international version only): English, French, German, Italian, or Spanish.
- **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

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. See TOUCHSCREEN CONTROL QUICK START for more information about these settings.
- Press to save changes.

USB Connection for Field Programming

The XTR2 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 XTR2 Field Programmer Manual for more information on using the Field Programmer software.

Pressing on the Format screen displays the USB screen.

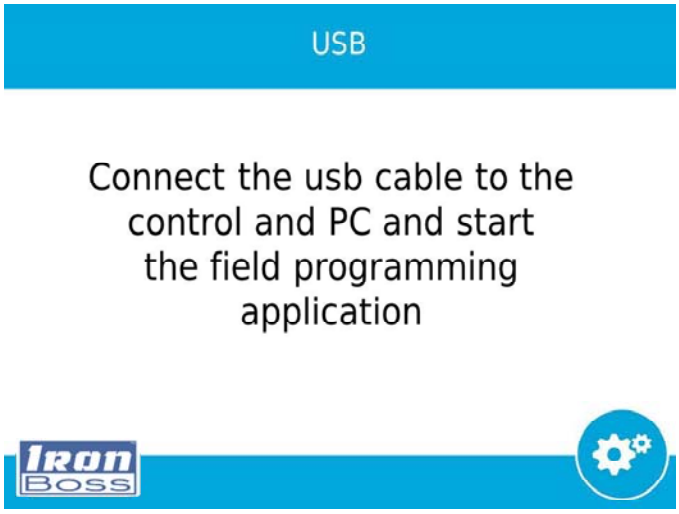


Figure 20 USB Screen

When the USB screen appears, connect a USB cable to the USB port on the control circuit board (see "WIRING DIAGRAM" on page 27 for location of USB port). connect the other end of the USB cable to a PC with the Field Programmer software installed and follow the directions in the XTR2 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 XTR2 Field Programmer manual for proper disconnection procedure.

Valve Screen

From the main Master Settings screen (Figure 17) press the **valve** button to display the Valve screen.

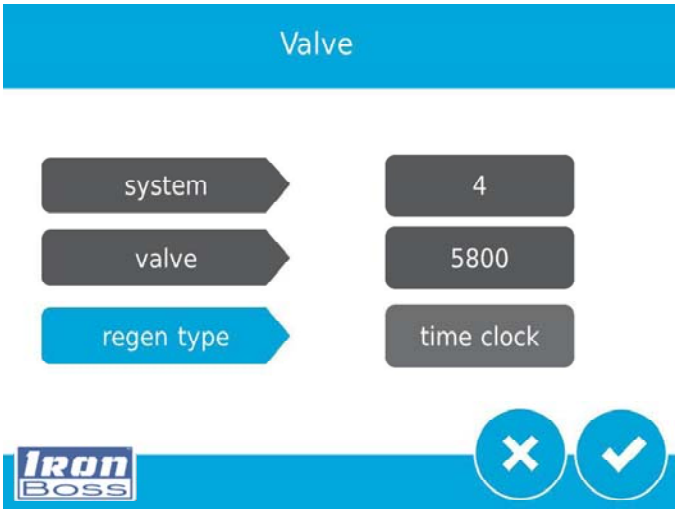


Figure 21 Valve Screen

- **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 Iron Boss Extreme control can utilize ONLY one Regeneration Type, "softener mtr. Delayed". To assure Iron Boss Extreme functions properly, the greyed out Regeneration Types below CAN NOT be used for Iron Boss programming, rather are defined below for informational purposes only. Each type of automatic regeneration method loaded in the control 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

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. See "TROUBLESHOOTING" on page 17 for more information.

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.

MASTER SETTINGS PROGRAMMING

continued

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 and Upflow Filter.

Regeneration Screen

From the main Master Settings screen (Figure 17) press the **regen** button to display the Regeneration screen.

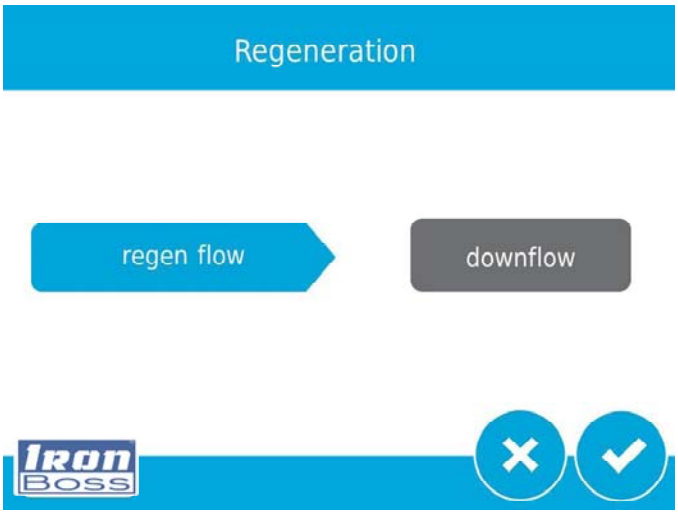


Figure 22 Regeneration Screen

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

- The Iron Boss Extreme control can utilize **ONLY** one Regeneration **regen flow, "custom downflow"**: To assure Iron Boss Extreme functions properly, the greyed out Regeneration flows below **CAN NOT** be used for Iron Boss programming, rather are defined below for informational purposes only.
  - upflow: Cycle steps are as follows: Draw, Backwash, Rinse, Refill
  - downflow: Cycle steps are as follows: Backwash, Draw, Rinse, Refill
  - downflow 2X backwash: Cycle steps are as follows: Backwash, Draw, Backwash, Rinse, Refill
  - filter / upflow filter : Cycle steps are as follows: Backwash, Rinse
  - **custom** upflow / **downflow**: Allows for up to 20 programmable cycle steps.
  - variable refill: Cycle steps are as follows: Refill, Pause, Draw, Backwash, Rinse. Variable refill calculates refill time based on salt dosage, media volume, and BLFC size.
  - downflow no hard water bypass: Cycle steps are as follows: Backwash, Draw, Rinse, Refill. This setting prevents hard water from flowing through the system during regeneration (5812 only).

Relay Output Screen

From the main Master Settings screen (Figure 17) press the **relay** button to display the Relay Outputs screen.

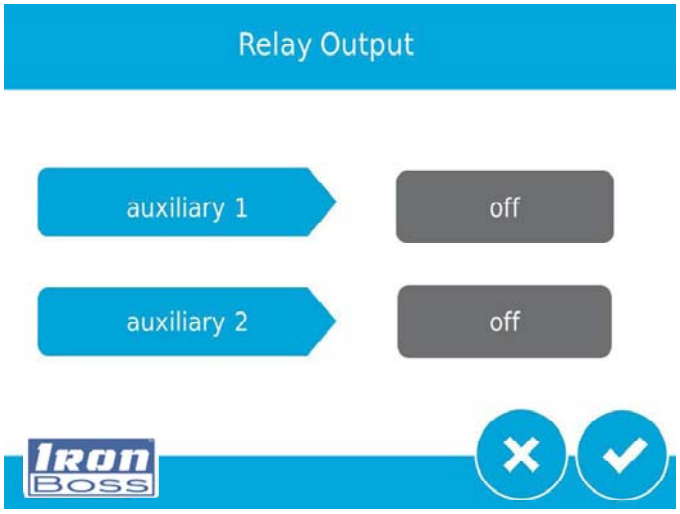


Figure 23 Relay Outputs Screen

- **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.
  - 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.

continued

Meter Screen

From the main Master Settings screen (Figure 17) press the **meter** button to display the Meter screen.

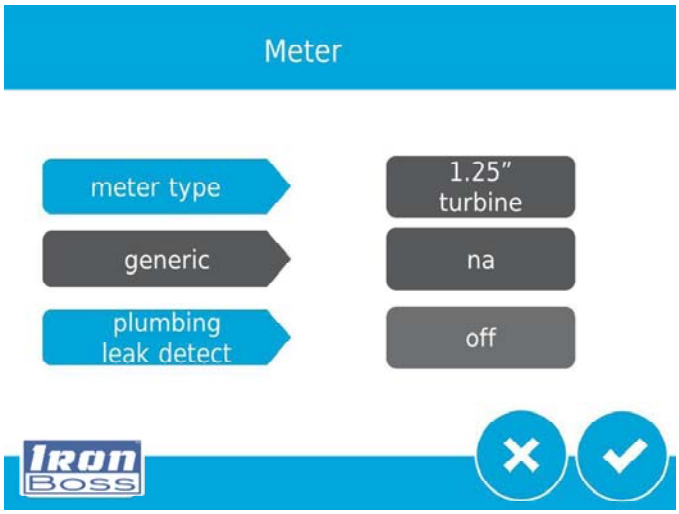


Figure 24 Meter Screen

- **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.
- **plumbing leak detect**: When active, triggers an alarm when continuous flow of .5 GPM or 1 LPM is detected by the flow meter over a 24 hour period.

Settings Review

From the main Master Settings screen (Figure 17) press the settings review button to display the Settings Review screens, which display a read-only summary of all programmed settings in the control.

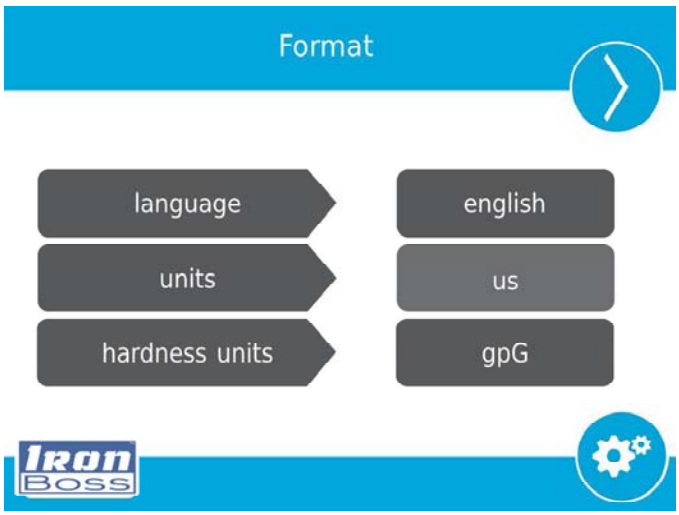


Figure 25 Format Settings Review Screen

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.

Remote Regen Screen

From the secondary Master Settings screen (Figure 18) press the remote regen button to display the Remote Regen screen.

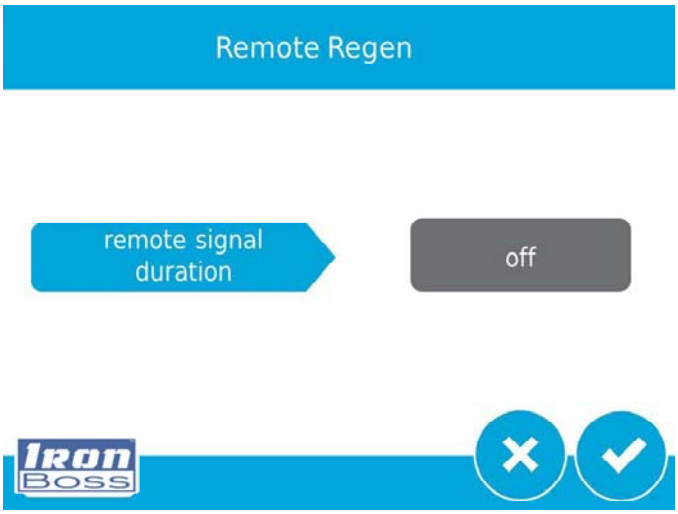


Figure 26 Remote Regen Screen

- remote regen 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 XTR2 control board. See "WIRING DIAGRAM" on page 27. 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.

continued

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 (see Figure 17 Master Settings Screen). After pressing , the Non-Factory Settings screen appears.

Figure 27 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 (see "MASTER RESET" on page 16). By performing a custom reset, any setting that is subsequently programmed without saving to non-factory settings will be reset to the previously saved non-factory settings in the control.

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** from the Master Settings or Home screens to view the Diagnostic screen.

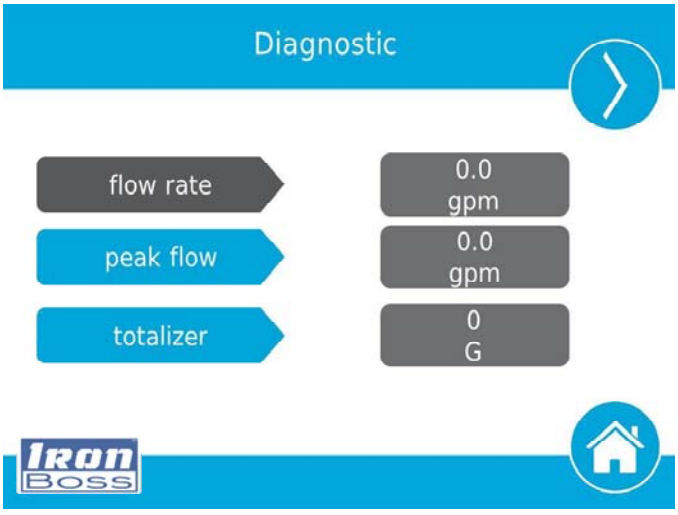


Figure 28 Diagnostic Screen

- Press the screen navigation arrows at the upper-right and left of the screen to view each diagnostic parameter.
- Press the **Home** 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 Ver	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.

MASTER SETTINGS REFERENCE CHART

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

Master Settings			
Screen Name	**Parameters**	**Values**	**Notes**
Format	Language	English French German Italian Spanish	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	5810 5812	Select the type of valve to be installed.
	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 Upflow Filter Custom Upflow Custom Downflow Variable Refill Downflow No Hard Water Bypass	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. Downflow No Hard Water Bypass is available for 5812 only.
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 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

MASTER RESET

Press the button while in the Master Settings main screen (Figure 17) to display the Reset screen.

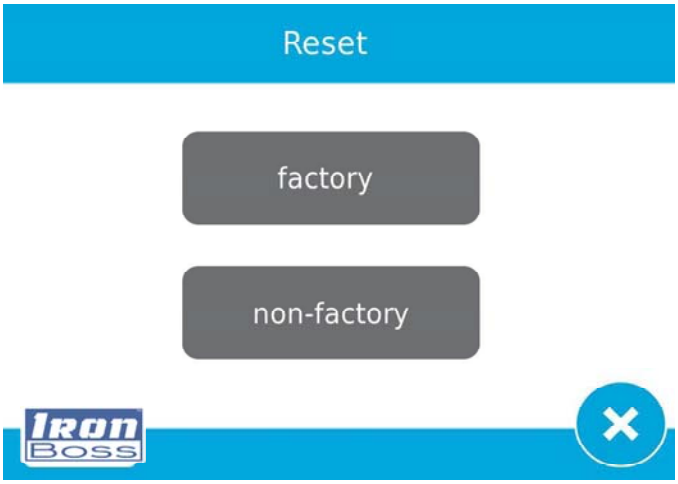


Figure 29 Reset Screen

Iron Boss Extreme's program is **Custom Downflow non-factory** settings, so press the **non-factory** button to reset control parameters to previously saved custom settings (see "NON-FACTORY SETTINGS" on page 14). A warning screen appears before parameters are reset. Press to confirm the reset or press to return to Master Settings.

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.

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 XTR2 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**

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 30.

Sleep Mode

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

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 .

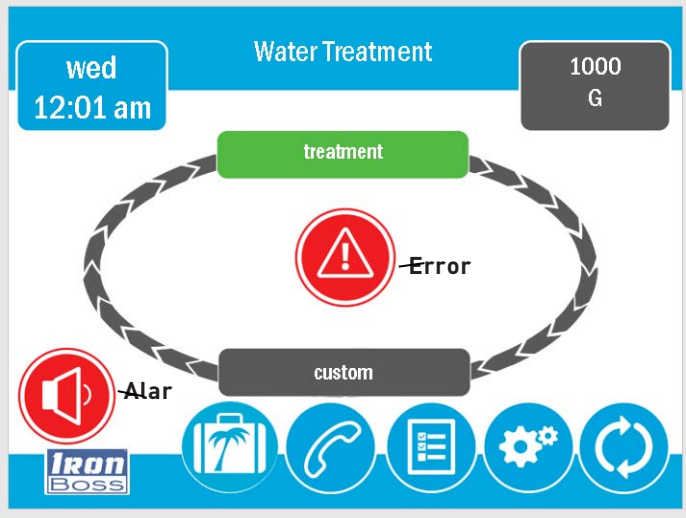


Figure 30 Alarm and Error Alert

- 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.

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 31 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

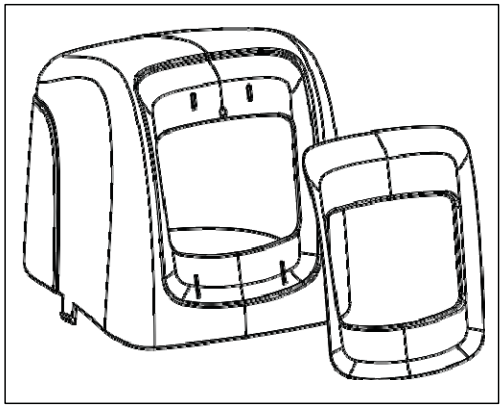
NOTE: An Error Alert appears on the Home screen if an error condition is detected. Press the Error Alert button to view the error message.

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.

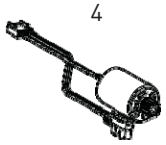
Error Screen Display	Cause	Reset and Recovery
Motor Stall Motor Run-On No changes detected in the optical sensor for 6 seconds	No state changes in the optical sensor are detected for six seconds.	Unplug the unit and plug back in. Allow the control to attempt to find position again. Verify the optical 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	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	The flow meter has reported continuous flow for more than 24 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	Motor drew too much current	Attempt to perform a manual regeneration. If error continues, call technical support.
Flow meter error No flow detected	No flow has been detected for 7 days.	Error will clear when a flow pulse is detected. Check meter cable is engaged and meter spins freely. Clear meter of debris if necessary. Alternatively, disable meter, .and set to time clock operation. See re-program to Time Clock
No regeneration for 100 days	The valve has not regenerated in more than 100 days.	Inititate a regeneration.
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. I.E.Months Based interval reset months.
Memory Corruption Error	Internal memory inconsistent or corrupted	1. Cycle power to XTR2 controller 2. Drain supercap and cycle power to XTR2 controller. 3. If error continues, call technical support.

POWERHEAD ASSEMBLY

1



4



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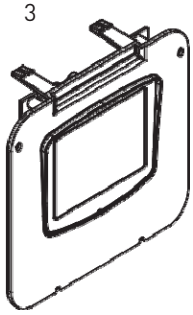

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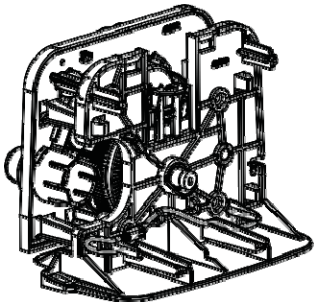

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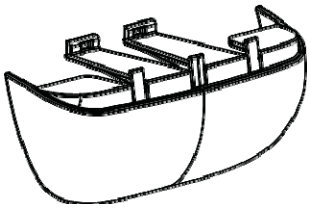

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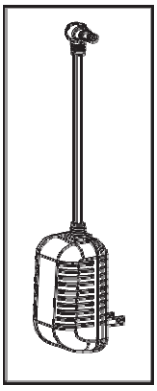

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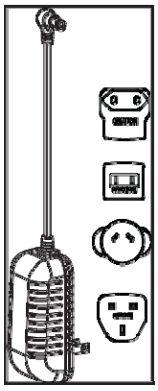
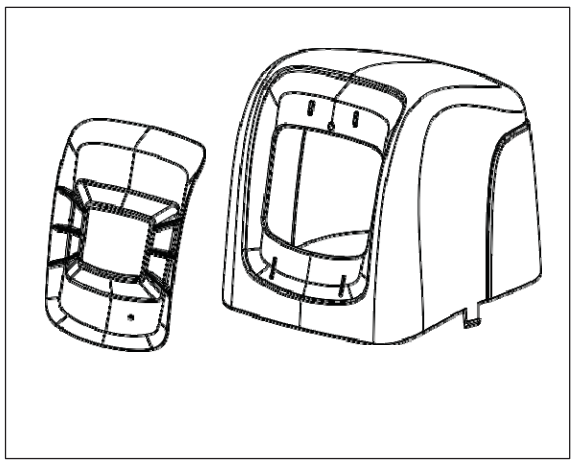


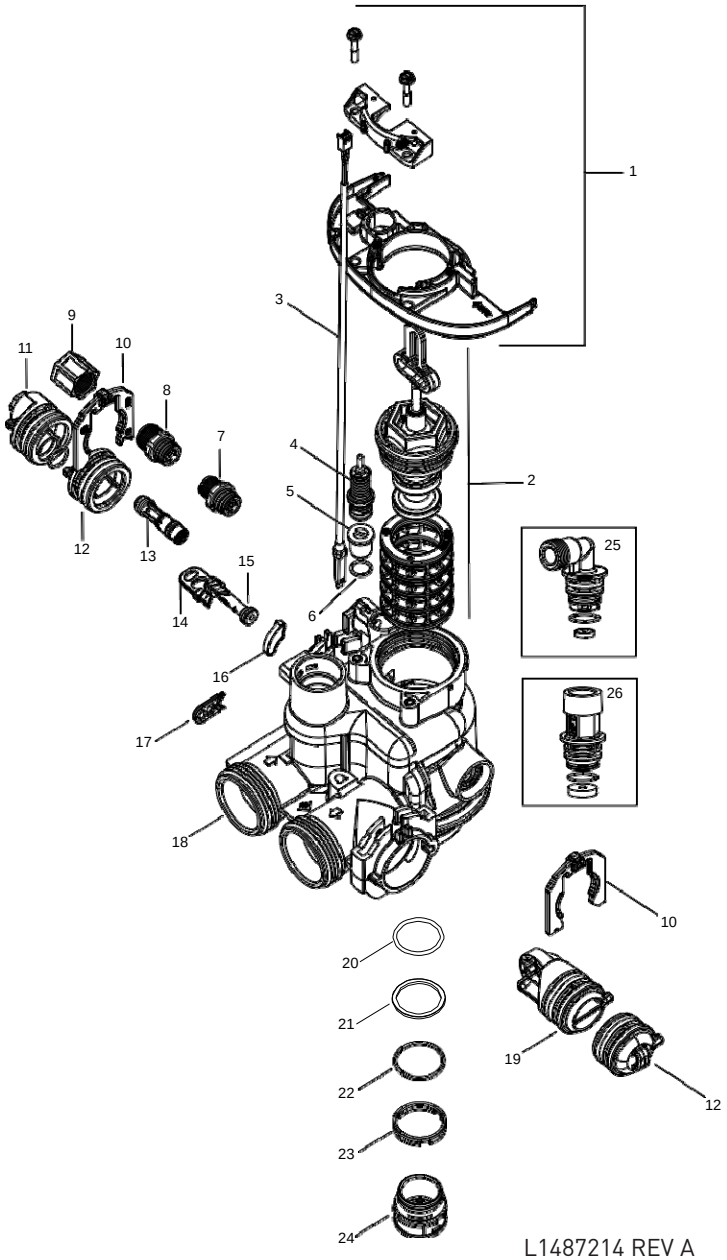
Item	QTY	Part	Descriptio
1	1	61832-01	Cover Assembly, Black/Black
2	1	61957-02SB	Panel Gear Assembly, Upflow/ Downflow
3	1	61931-01	Timer Assy, XTR2 Touch, w/ Logo
		61931-02	Timer Assy, XTR2 Touch, w/o Logo
4	1	61835	Motor Assembly
5	1	61994	Cover Assembly, Environmental
6	1	43291	Transformer 12V UL
7	1	43318	Transformer, Intl, 12V UL
8	1	43715	Cover, Lower, 5800 Series

5



5810 CONTROL VALVE ASSEMBLY

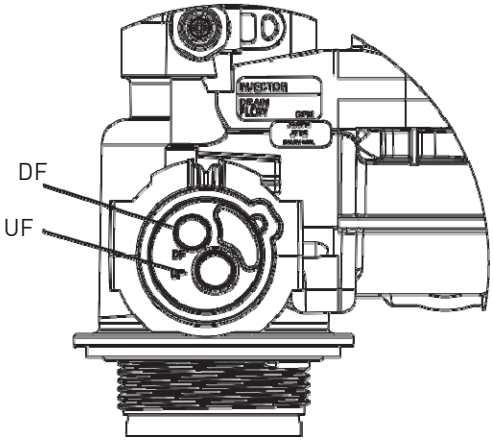
Item	QTY	Part	Descriptio
1	1	61961	Kit, Mounting, 5810/5812
2	1	61956-01	Kit, Piston, Seal, and Spacer, 5810/5812, Downflow
		61956-02	Kit, Piston, Seal, and Spacer, 5810/5812, Upflow
		61956-03	Kit, Piston, Seal, and Spacer, 5810/5812, Filter
3	1	19791-01	Assy, Meter Cable
4	1	60016	Brine Valve, 7000
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	41056	Nut Assy, 1/2"
10	2	40576	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	61454-00	Injector Assy, #00, Violet
		61454-0	Injector Assy, #0, Red
		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*
		61983-03	Valve Body Assy, 5810, AIO*
19	1	61919	Meter Assy, 1-1/4", 5810/5812
20	1	19054	O-ring, -124
21	1	40538	Retainer, 32mm, O-ring Dist, 7000
22	1	19877	O-ring, -027
23	1	43726	Retainer, 1" Dist Tube, O-ring
24	1	61419	Kit, 1.05" Distributor Adapter
25	1	61455-00	DLFC 3/4", Blank
		61455-17	DLFC 3/4", 1.7 gpm
		61455-20	DLFC 3/4", 2.0 gpm
		61455-24	DLFC 3/4", 2.4 gpm
		61455-30	DLFC 3/4", 3.0 gpm
		61455-35	DLFC 3/4", 3.5 gpm
		61455-40	DLFC 3/4", 4.0 gpm
		61455-45	DLFC 3/4", 4.5 gpm
		61455-50	DLFC 3/4", 5.0 gpm
		61455-60	DLFC 3/4", 6.0 gpm
		61455-70	DLFC 3/4", 7.0 gpm
26		61456-00	DLFC 1", Blank
		61456-8.0	DLFC 1", 8.0 gpm
		61456-9.0	DLFC 1", 9.0 gpm
		61456-10	DLFC 1", 10.0 gpm
		61456-12	DLFC 1", 12.0 gpm
		61456-15	DLFC 1", 15.0 gpm
		61456-20	DLFC 1", 20.0 gpm
		61456-25	DLFC 1", 25.0 gpm
		61456-30	DLFC 1", 30.0 gpm



L1487214 REV A

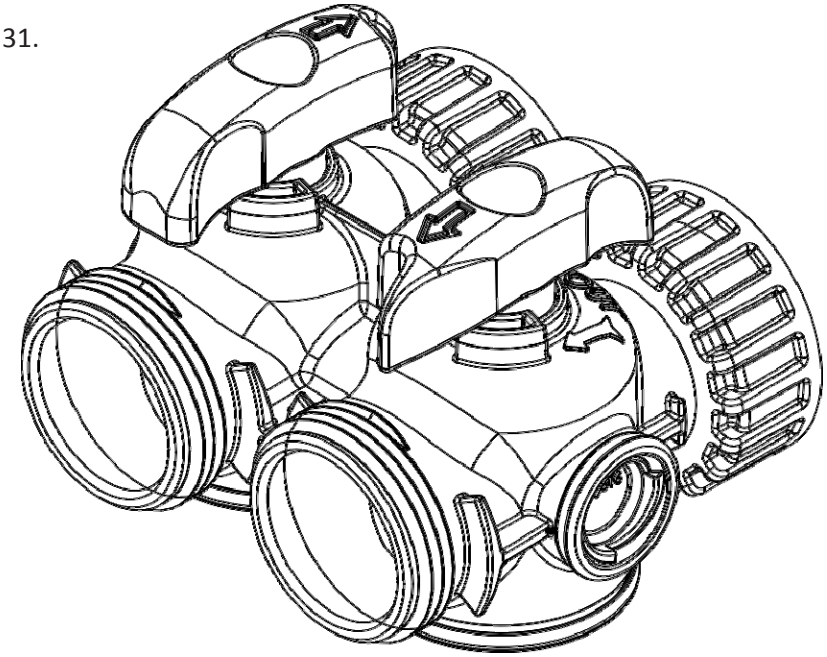
* Includes items 20, 21, 22, 23, and 24. Each valve body is packaged with distributor adapter kits for 32 mm (items 20 and 21), 1" (items 22 and 23), and 1.05" (item 24) distributors.

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.



BYPASS ASSEMBLY

Figure 31.
Item 1



43644 REV A

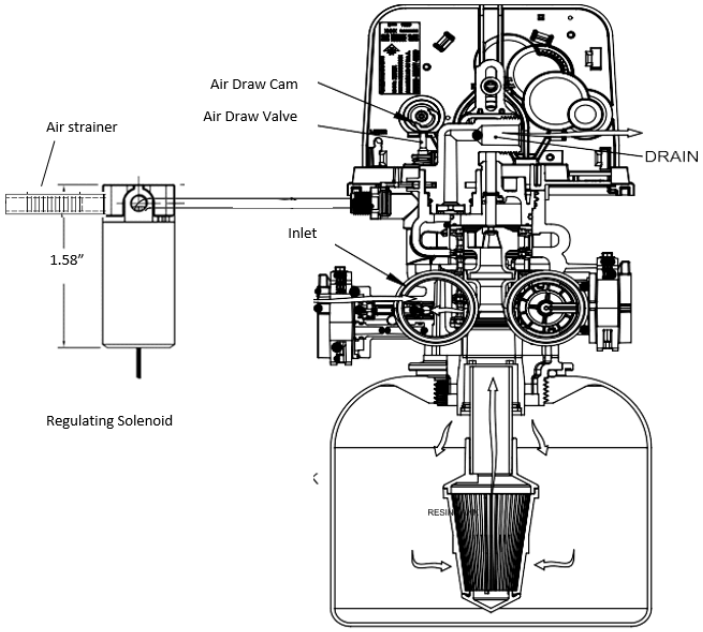
Item	QTY	Part	Descriptio
1	1	43644	Bypass Assembly, 1.25", 5810/12
Not Shown:			
	1	61991	Connector Assy
	1	61991-01	Connector Assy, 1" NPT
	1	61991-02	Connector Assy, 1" BSP
	1	61991-03	Connector Assy, 1-1/4" NPT
	1	61991-04	Connector Assy, 1-1/4" BSP
	1	61991-05	Connector Assy, 3/4" -1" Sweat
	1	61991-06	Connector Assy, 1" - 1-1/4" Sweat
	1	61991-07	Connector Assy, 1-1/4" - 1-1/2" Sweat
	1	61992	Connector Elbow Assy

NOTE: Each connector assembly contains two connectors, two O-rings, two retainer rings, and two connector nuts.

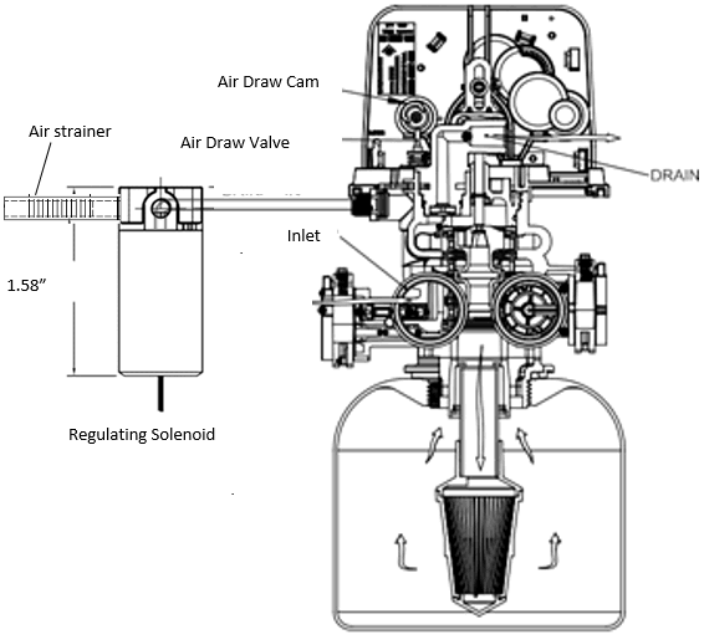
IRON BOSS EXTREME WATER CYCLE FLOW DIAGRAMS

5810 Custom Downflow

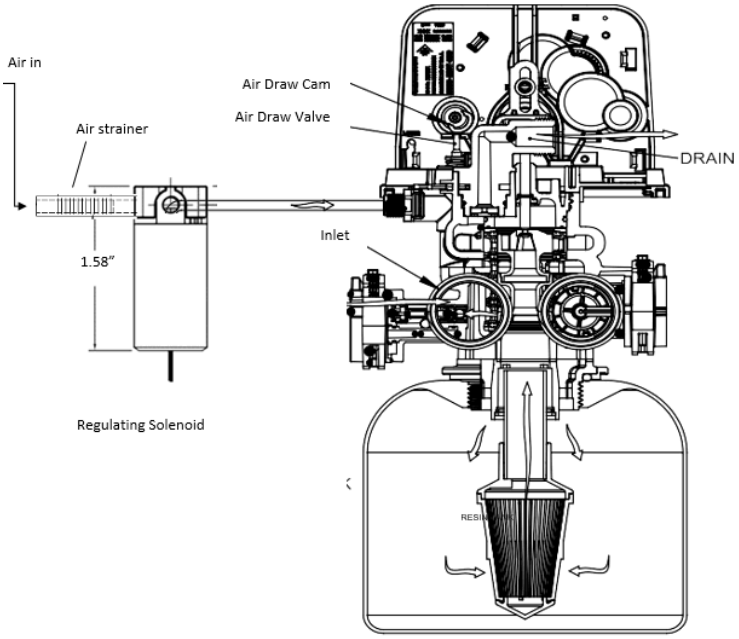
SERVICE POSITION (TREATMENT)



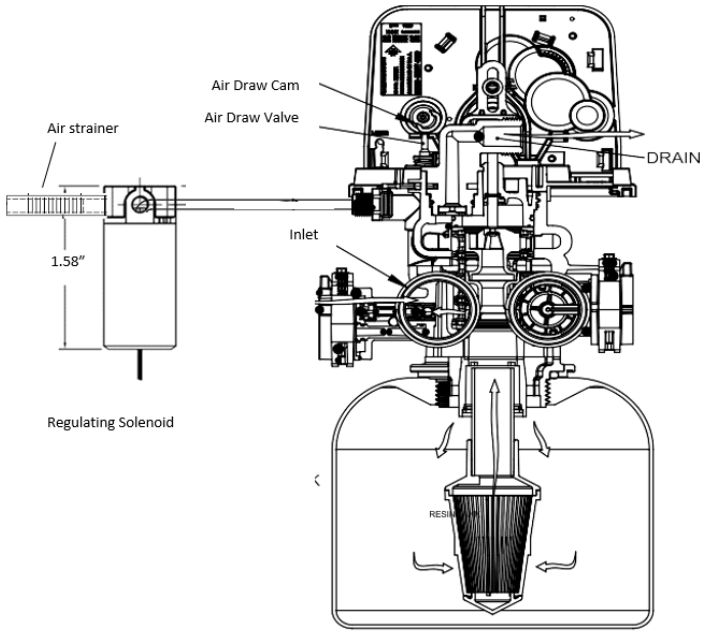
1. BACKWASH POSITION



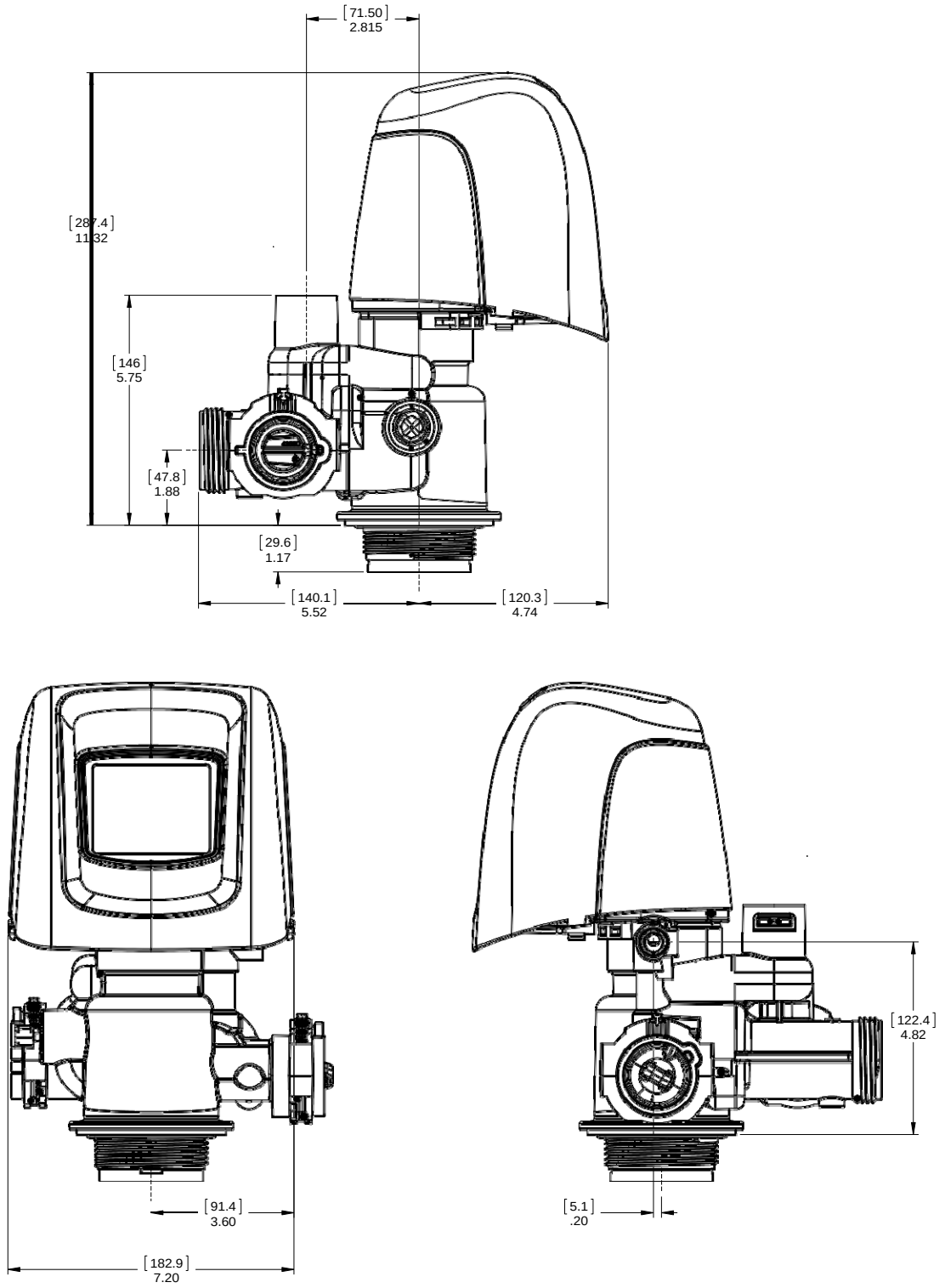
2. AIR DRAW POSITION



3. RAPID RINSE POSITION

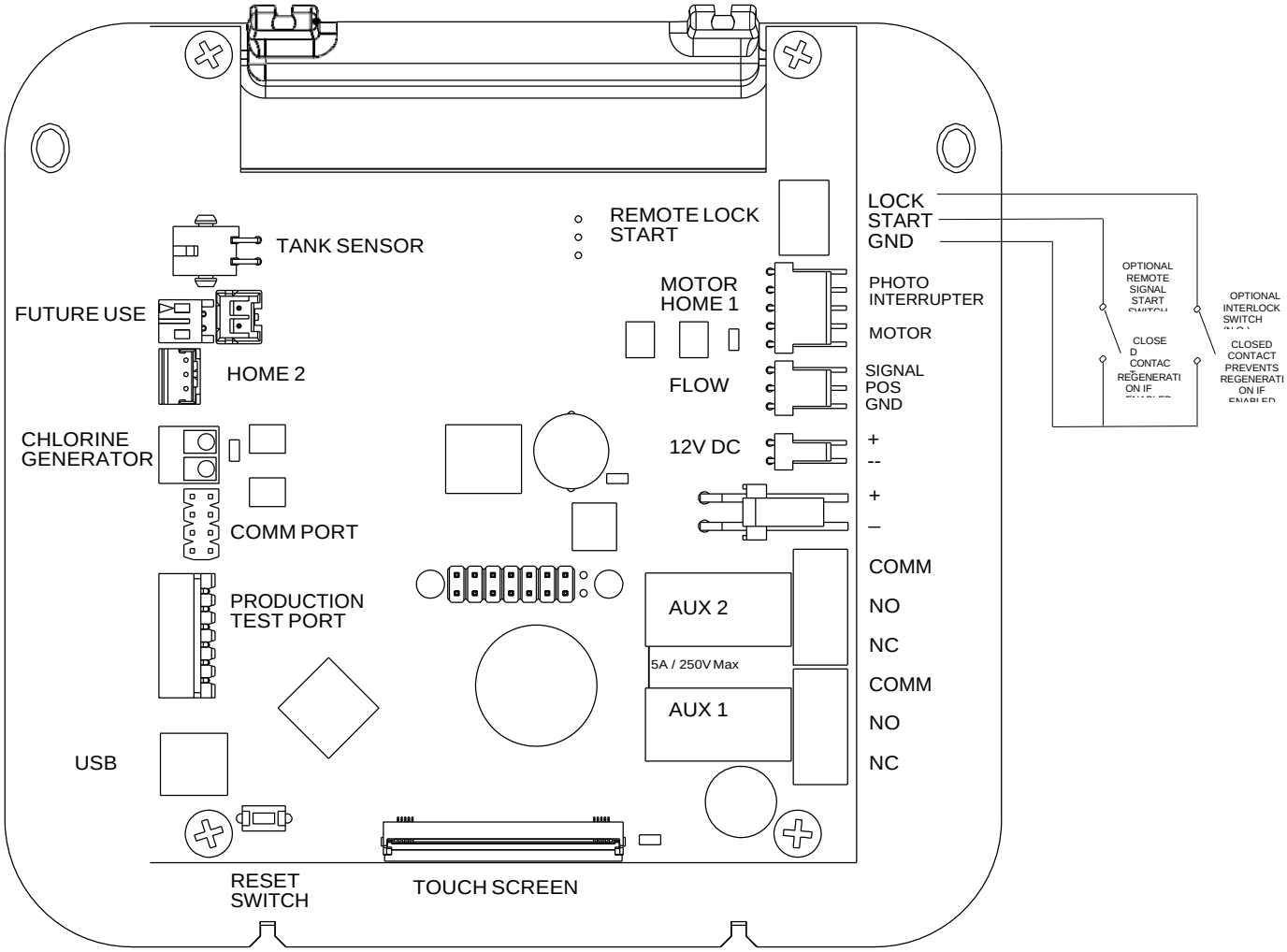


5810 DIMENSIONAL DRAWINGS



61500-5810LNE REV A

WIRING DIAGRAM



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

43745 Rev A

Iron Boss Water Treatment System
Lifetime Limited Warranty

The LeverEdge (hereinafter LE) warrants any Iron Boss brand water treatment system manufactured by LE and installed by a duly authorized Iron Boss dealer, to be free from defects in materials and workmanship to the original residential purchaser (hereinafter CONSUMER) from the date of purchase. All aspects of this Warranty are subject to the following limitations, terms, and conditions.

1. DURATION OF WARRANTY

If LE Equipment consisting of the Mineral and Storage Tanks, Controls and Valves, Pumps and Switches, Ion Exchange Resin and Treatment Media, Reverse Osmosis/Water Filters (excluding replacement cartridges) and Ultraviolet Lights (excluding bulbs and sleeves) is determined to have failed as a result of a manufacturing defect, LE will, at its sole discretion, repair or replace the defective part at NO CHARGE to the CONSUMER (excluding labor applicable shipping and handling costs) for the duration of the CONSUMER's ownership of the original equipment (hereinafter "LIFETIME").

2. LIMITATIONS OF COVERAGE

This Warranty extends only to the CONSUMER for product failure resulting from defects in materials and workmanship, and does not include renewable components. It does not extend to damage caused by the CONSUMER's neglect or abuse, or by accident, to damage caused by wind, hail, or abnormal weather conditions, or to damage caused by acts of God, civil insurrection, or extraordinary circumstances beyond the control of LE.

LE shall not be liable for any direct or indirect damage resulting from the use of the Equipment, and in no event shall the extent of this Warranty coverage exceed the purchase price of the Equipment.

LE cannot know the characteristics of a CONSUMER's water supply or the purpose for which one is purchasing Iron Boss Equipment. Also, water qualities vary seasonally and over time. Therefore, LE assumes no liability for the determination of the proper equipment necessary to meet a CONSUMER's requirements, nor does it authorize others to assume such obligations on its behalf.

This warranty excludes any Equipment which was not manufactured by LE and installed by an authorized Iron Boss dealer or on which the date code has been removed or altered. Any tampering or attempted repair performed by anyone other than an authorized dealer, including the CONSUMER, voids this Warranty.

3. MISCELLANEOUS

In order to be considered for validation, all claims for Warranty coverage must be accompanied by a copy of the purchase agreement indicating the date of initial installation, and a copy of the CONSUMER's current utility bill. LE reserves the right to inspect the Iron Boss Equipment prior to honoring any Warranty claim.

This Warranty gives you specific legal rights, and you may have other rights which may vary from state to state. Any and all inquiries or claims under this Warranty must be submitted in writing to The LeverEdge, Attn: Warranty Department, 1423 Gunn Highway, Odessa, FL, 33556.

The LeverEdge
1423 Gunn Highway
Odessa, FL 33556
Phone: (800) 929-3919 option 3,2
www.theleveredge.com

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