



PLUS pH

Dealer Manual Supplement



Iron Boss Plus pH **Installation & Startup**

Caution: Do not sweat pipes while connected to the By-pass or control valve to prevent damaging rubber seals

NOTE: Always protect the Iron Boss from freezing temperatures

*Warning: If the Iron Boss is installed in direct sun light, the blue translucent top portion of cover **MUST** be painted inside with any color plastic compatible paint to prevent electronics from overheating.*

1. The Iron Boss normally does not supply outside hose bibs or irrigation systems, unless outside faucets need treated 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 Plus pH in front of the water softener. Be sure to put Iron Boss Plus pH into service before starting up water softener so treated water from Iron Boss Plus pH is used for softener start up.
3. Run 5/8" OD polyethylene drain line tubing from drain insert fitting to an approved drain following air gap requirement of local plumbing codes. **Secure the end of drain line!** If drain line distance is longer than 10 feet, increase line to 1" diameter. A minimum of 12" of the 5/8" polyethylene drain tubing must be attached to drain fitting before transitioning to rigid piping to facilitate bypass clearance and prevent vibration during regeneration. If installation is outside, always use black drain line for UV protection.
4. Follow Drawings 1 to install Inlet/Outlet piping & valves required for proper startup & servicing. After unit plumbing is complete, before turning on the water, place unit into bypass position. Turn on water supply. But leave bypass in off position. CAUTION, do not open bypass or allow water to build pressure in tank before proceeding to next step.



5. In the box is the Iron Boss Plus pH assembled with control and distributor installed, and gravel loaded into a natural color dome hole tank. 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 chart below to determine proper ratio of media per pH reading.



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

A Bag of Calcite weighs 50 lbs and contains .55 ft³
 A Bag of Corosex weighs 66 lbs and contains .66 ft³

6. Plug power transformer into a standard 120v, non-switched outlet with continuous power. See **Entering Master Programming Mode, set REGENERATION CYCLE STEP 3: FAST RINSE** to 10 Minutes

7. When status LED is blue (in service), press the Extra Cycle button for 5 seconds until unit begins regeneration, motor stops in first cycle, Backwash. When the motor stops, unplug power cord. This leaves unit in backwash position (until plugged in again), allowing extended backwashing of the media. The backwashing and rinsing steps are mandatory to properly start up the Iron Boss Plus pH, failure to complete will lead to service issues. (Backwashing will help blend the Calcite and Corosex.)

Begin to fill unit slowly by slightly opening inlet knob on bypass allowing all air to purge, then open knob to ½ service flow rate, until you verify all air is out, then fully open to maximum flow. Backwash until water from drain line is free of media fines and all color. To aid in rinsing, turn water on and off quickly to spur water hammer, releasing more color. This procedure may take 15 to 30 minutes until drain water is clear.

9. After drain line runs clear of all color, plug in unit, push recycle button to advance to brine draw, when motor stops in brine draw, push recycle button again to advance to fast rinse. When motor stops, unplug

again, leaving unit in rinse position (until plugged in again), allowing extended rinsing of the media. As in step 8, to aid in rinsing, turn water on and off quickly to spur water hammer, releasing more color. After drain line runs clear of all color, plug in unit, push recycle button to advance to Service position.

10. Backwashing and rinsing again may be needed to ensure water at drain is free of media fines and all color.

11. See **Entering Master Programming Mode, set all 11 settings as shown on Flow Chart. Make sure to set REGENERATION CYCLE STEP 3: FAST RINSE to 10 Minutes.** (Set **REGENERATION DAY OVERRIDE** to every 3 days unless capacity required is greater.) If Iron Boss Plus pH is used for Neutralization only (no iron, hydrogen sulfide or manganese present) you may choose to set brine draw Cycle 2 to 0.00 Minutes, (OFF) since oxidation may not be needed **and Fast Rinse to 4 minutes.**

12. See **Setting the time of day, Set the time of day**, Press the Extra Cycle button for 5 seconds on the until unit begins regeneration, allow to complete regeneration (about 50 minutes) This allows media to absorb the oxygen from the air drawn in, which is necessary for media to achieve initial oxidizer charge. This is mandatory for proper start up before placing Iron Boss into service.

13. When regeneration is complete, turn the outlet bypass knob to open, open all ball valves allowing flow, rinse hose bibs clear. Put softener into service. Test Iron Boss Plus pH is producing pH neutral and contaminant free water. If lines in the home has hydrogen sulfide residue, run a chlorinated water solution through out all pipes and fixtures, allowing to stand at least 1 hour before rinsing out. Repeat for longer time if needed.

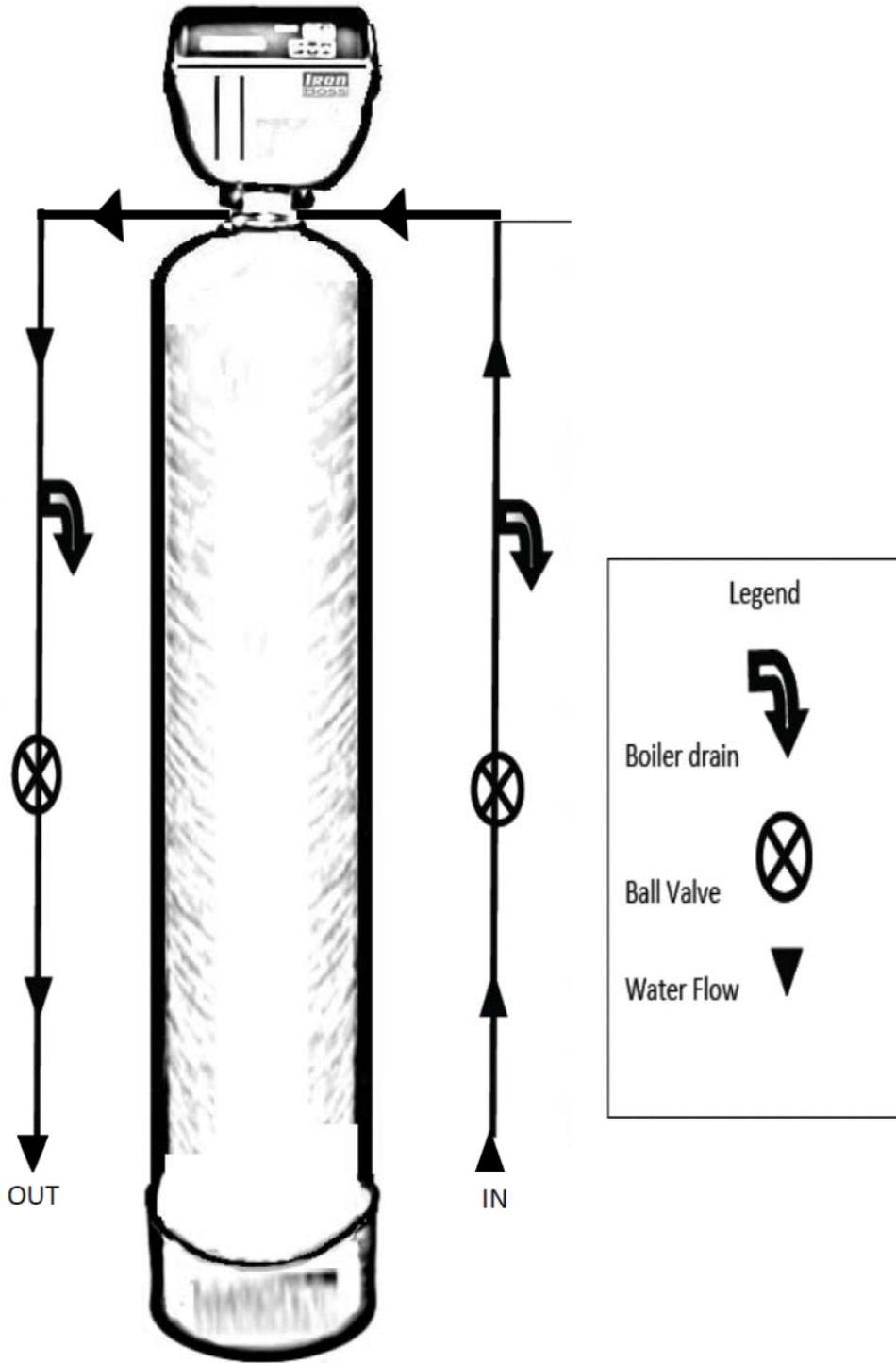
14. Once the Iron Boss Plus pH is in service, and the softener has been started up with conditioned water (approximately 100 to 150 gallons will have ran through the Iron Boss Plus pH in service cycle for softener startup) check pH before and after Iron Boss Plus pH unit from hose bibs, and after the softener. Desired final pH is 7.0 to 7.4. When ideal pH level is reached, record the ratio of media for future refilling in your records and Home Owner manual. Also, find media level in tank by shining a light though side wall and marking that level with black electrical tape wrapped around tank. Show the Home owner the mark and how to see media level with light, so they can monitor semi annually. Refill with proper mix annually to this line, but never allow media level to drop below one half of original bed level.

15. **After** step 14 is completed, check the water hardness **AFTER** the Iron Boss Plus pH **AND BEFORE** the water softener. Program this hardness level into the water softener and adjust salt accordingly.

Iron Boss Plus pH

Drawing 1

Typical Inlet/Outlet piping & valves for proper startup and servicing.



Iron Boss Plus pH Regeneration Cycles

The regeneration cycle is preset to occur at 12:00am every third day. This timing and frequency of regeneration can be modified as required. Make sure additional equipment does not regenerate at the same time as the Iron Boss Plus pH. Normal duration for the regeneration cycle is approximately 55 minutes and completes in 3 or 4 steps **varying by application.**

Untreated water is available during regeneration cycle.

Refer to Master Programming Master Flow Chart for details o varying applications.

1. Backwash cycle, 14 minute duration. Water flow is reversed inside the unit to lift and reclassify the filter media rinsing to drain captured precipitated iron, hydrogen sulfide, and / or manganese.

2. A) If unit is neutralizing pH and oxidizing iron, hydrogen sulfide, and / or manganese: Brine Draw (Oxygen refill), 40 minute duration. The unit empties of water and is filled with air. During this cycle water runs to drain. There is a slight delay at the start of the cycle while the pressure of the air within the tank reaches atmospheric pressure. During this time, no air is drawn into the tank. Once the pressure has equalized, you will hear as air is drawn into the unit.
 B) If unit is neutralizing pH only, Brine Draw (Oxygen refill) is turned off.

3. A) If unit is neutralizing pH and oxidizing iron, hydrogen sulfide, and / or manganese: Fast Rinse cycle, 4 minutes. Water flows down in service direction inside the unit to settle the filter media and rinse media fines to drain.
 B) If unit is neutralizing pH only: Fast Rinse cycle, 10 minutes. Water flows down in service direction inside the unit to settle the filter media and rinse media fines to drain.

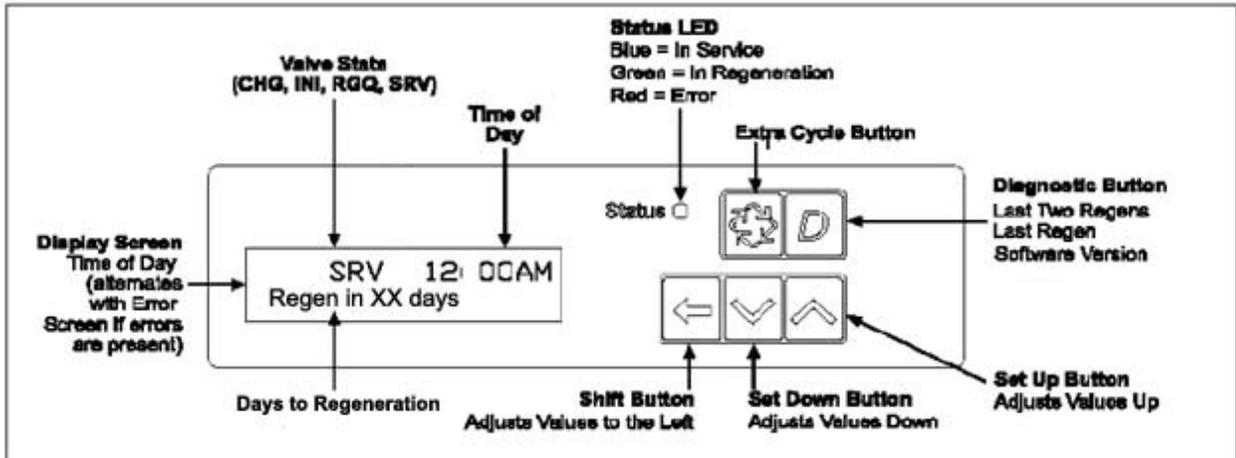
4. The unit returns to the Service position. When this happens, water continues to enter the tank, compressing the air into a bubble in the top portion of the tank. Air bubble volume will vary slightly with local conditions.

Determine pump flow in GPM @ 30 PSI to select properly sized Iron Boss Plus pH unit

Pump GPM Calculator			Iron Boss Units			To Determine flow in GPM:
At 30 PSI dynamic flow			Tank	Dome	Media	
Gallons	Seconds	GPM	Size	Hole	Cubic Ft	
5	60	5.00	10x54	Yes	1ft ³	1) Open a hose bibb closest to pump
5	42	7.14	12x52	NO	1.5 ft ³	2) Run to drain(or onto ground) until pump turns on
5	33	9.09	13x54	No	2 ft ³	3) Watch pressure gauge & Run water into a 5 gallon bucket
						4) Time seconds to fill bucket, maintaining minimum 30PSI
						5) Match seconds to chart @left

Flow rate requirements are critical for proper backwashing of media. (Iron Boss Plus pH requires less.)

NOTE: Always protect the Iron Boss from freezing temperatures



Setting the time of day

1. Press and hold the Up or Down button for 2 seconds.
2. Press the Shift button to select the digit you want to modify.
3. Press the Up or Down buttons to adjust the value. Set A.M. or P.M. to ensure unit operates correctly
4. Press the Extra Cycle button to return to the normal display screen, or after a 5 second timeout.

Note: The “D” button (Diagnostic) can be pressed to exit without saving.

The Iron Boss starts regeneration at the preset time set by your dealer (usually 12:00 AM) on days initiated by the Iron Boss Controller. Regeneration last up to 50 minutes. If the Iron Boss regenerates at other than the above time specified, check the time of day. If time of day is not accurate, follow step one to reset.

If an immediate regeneration is needed, you can start a manual regeneration. Press the Extra Cycle button for 5 seconds on the main screen until unit begins regeneration

OR

You can start an extra regeneration tonight at the normal preset time. Hold down the Extra Cycle button until “RGQ” displays and regeneration will occur at the preset time. (i.e. 12:00 a.m.)

MASTER PROGRAMMING MODE FLOW CHART (Iron Boss Plus pH operation)

Entering Master Programming Mode:

- Press and hold the Shift  and Set Up  buttons for 5 seconds. Extra Cycle () button moves to next screens.

1. SYSTEM TYPE: 4

Time Clock Delayed

2. VALVE TYPE:

Proprietary F

3. REGENERANT FLOW:

Down Flow

4. DISPLAY FORMAT:

Grains per Gallon – Default

5. REGENERATION DAY OVERRIDE:

Override On – 3 day

6. REGENERATION TIME: 12:00AM

7. REGENERATION CYCLE STEP 1:

BACK WASH: 14 MIN.

8. REGENERATION CYCLE STEP 2:

BRINE RINSE: 40 MIN. if Neutralizing **AND** oxidizing Iron, Hydrogen sulfide and / or Manganese

BRINE RINSE: 0 MIN. if Neutralizing **only**

9. REGENERATION CYCLE STEP 3:

FAST RINSE: 4 MIN. if Neutralizing **AND** oxidizing Iron, Hydrogen sulfide and / or Manganese

FAST RINSE: 10 MIN. if Neutralizing **only**

10. REGENERATION CYCLE STEP 4:

BRINE REFILL: 0 MIN.

11. AUXILIARY RELAY:

DISABLED