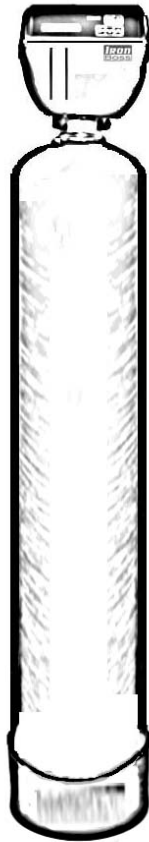




# Dealer Manual



*Manufactured by The LeverEdge 1423 Gunn Highway, Odessa, FL 33556*

## **Table Of Contents**

Introduction	3
Iron Boss Typical Inlet/Outlet Diagram	4
Iron Boss Parallel Flow Diagram	5
Iron Boss Installation	6
Iron Boss Regeneration Cycles	7
Master Programming Mode Flow Chart (Standard Operation)	9
Master Programming Mode Flow Chart (with chemical feeder pump and auxiliary pump switch)	10
Bypass Valve Assembly, Non-Metallic	11
Power Head Assembly	12
Control Valve Assembly	14
Troubleshooting	16
Notes	17
Lifetime Limited Warranty	20

# IRON BOSS

## Introduction

The Iron Boss is a green technology to reduce iron and hydrogen sulfide odors from water. The LeverEdge manufactures the Iron Boss under a licensed, unique patented<sup>1</sup> process. The Iron Boss will greatly reduce iron and hydrogen sulfide odors effectively and economically without the need for costly dangerous chemicals, troublesome pumps or external ventureries. The Iron Boss can be used whenever iron or hydrogen sulfide odor is a problem. Experience with the Iron Boss technology has shown it will reduce iron up to 10 parts per million and best operates with a neutral PH.



Diamonite is a unique blend of filtration media that greatly enhances the ability of Iron Boss to remove troublesome iron and hydrogen sulfide from your water. Diamonite is made up of millions of multi-faceted, highly porous beads that create tiny caverns to hold oxygen molecules, and allow it to act as a natural filter.

## How does it work?

The Iron Boss adds oxygen to the Diamonite filter media during the draw cycle. The water then passes through the Diamonite filter media which oxidizes and removes the iron and hydrogen sulfide. (All in the same tank) Eventually water passing through the Iron Boss will deplete the oxygen and the unit will need to regenerate. During regeneration the iron and hydrogen sulfide are backwashed out. The tank then empties the water, replenishing the Diamonite filter media with oxygen from the atmosphere, then refills with water when it cycles back into service.

## Specifications

System Type	Time Clock Delay	
Valve Type	Proprietary F	
Regenerate Flow	Down Flow	
Auxiliary Relay	Disabled	
PH Range (Media Dependent)	6.8 – 7.8	
Tank Size	10"x54"	13"x54"
Media Cu. Ft	1cft	2cft
Continuous Flow Rate @ 30PSI(*1)	3 gpm	6gpm
Peak Flow Rate @30PSI(*2)	5-6 gpm	11-12 gpm
(Do not exceed 10 minutes		
Back Wash @30PSI	7 gpm	11 gpm
Capacity	5000 PPM	10000 PPM
Family of 4 typical regeneration frequency	every 3 days	every 6 days
Weight	110lbs	202lbs

\*1 A minimum of 7 gpm @30psi pressure is required for 10"x54" systems.

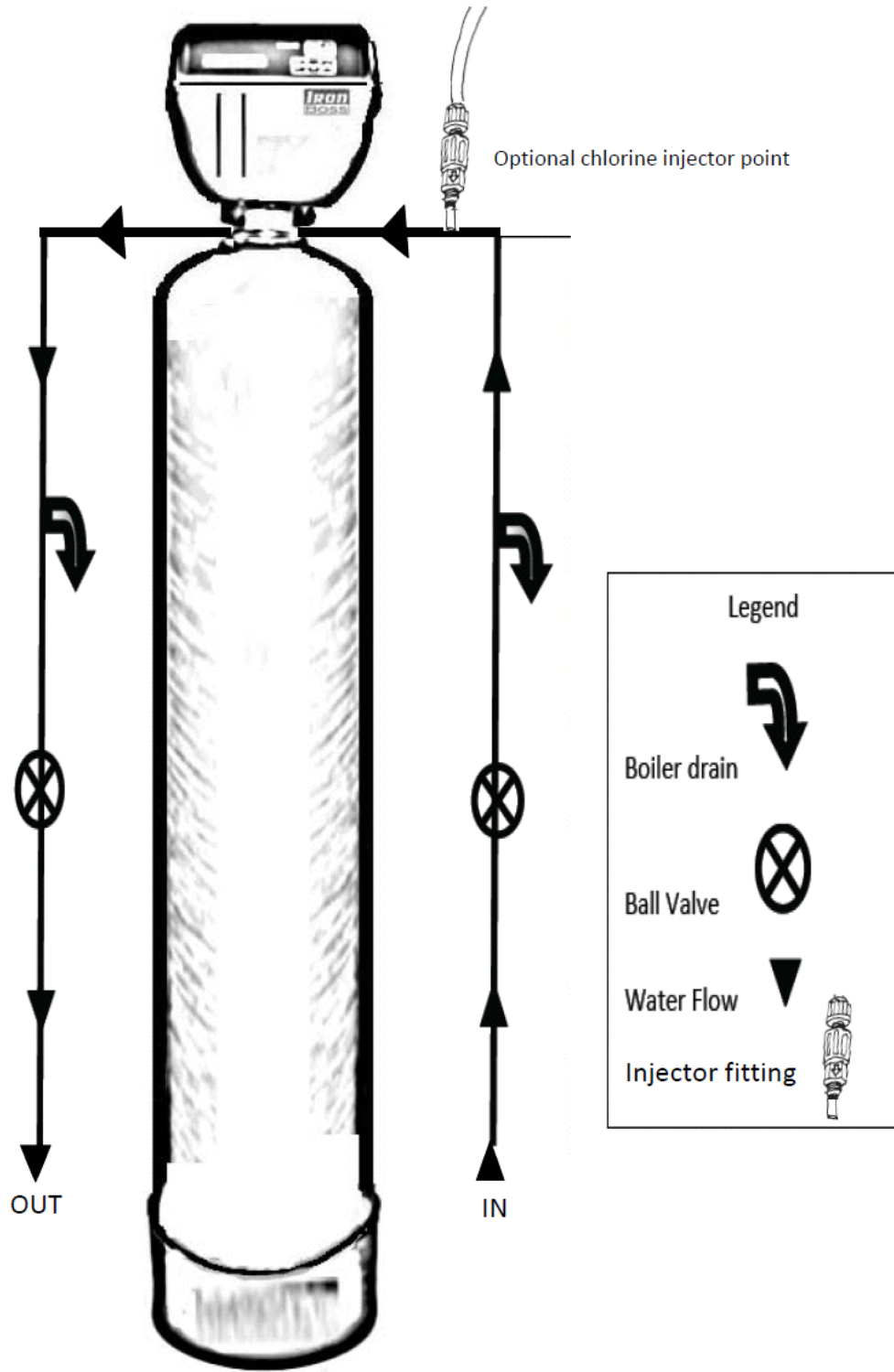
\*2 A minimum of 11gpm @30psi pressure is required for the 13"x54" systems.

<sup>1</sup>U.S. Patent Number 5,919,373

### Iron Boss Typical Inlet/Outlet Diagram

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

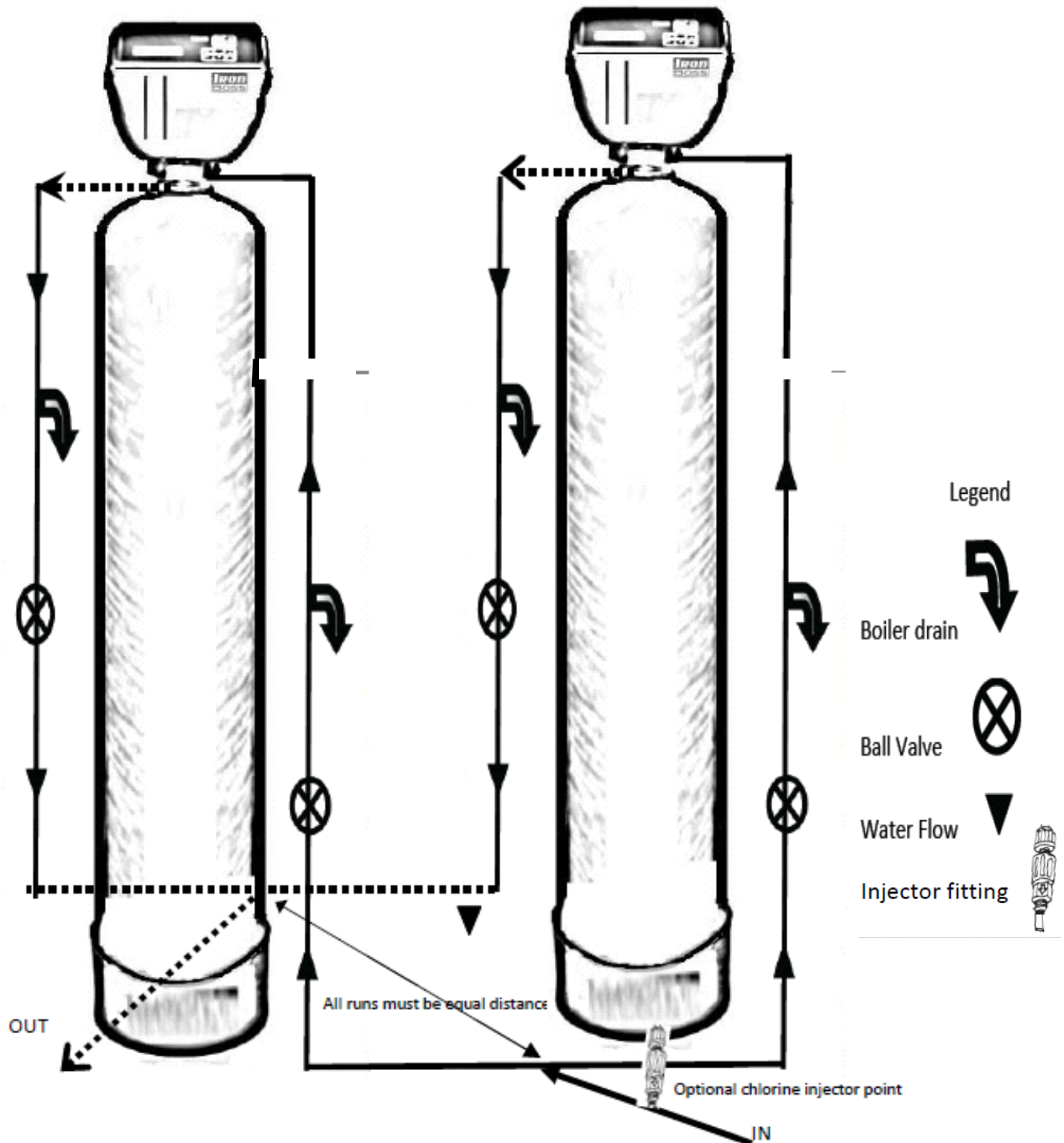
Drawing 1



### Iron Boss Parallel Flow Diagram

Drawing 2

Inlet and Outlet Pipe runs must be equal lengths to both units



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

## Iron Boss Installation

*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 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 after neutralizing filter I.E. Calcite, Corosex (if needed) and before water softener.
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 1or2 to plumb Inlet/Outlet piping & valves that 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 postion.
5. Plug power cord into a standard 120v, non-switched outlet with continuous power.
6. See **Entering Master Programming Mode, set REGENERATION CYCLE STEP 3: FAST RINSE** from 0 to 5 Minutes (this you will set back to 0 after start up is complete)
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 Diamonite media. The backwashing and rinsing steps are mandatory to properly start up the Iron Boss, failure to complete will lead to service issues.
8. 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 30 minutes until drain water is clear.
9. After drain line is 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 Diamonite 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 is clear of all color, plug in unit, push recycle button to advance to Service position.
10. Steps 8 and 9 should be repeated 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** back from 5 to 0 Minutes. (Set **REGENERATION DAY OVERRIDE** to every 3 days for a 10" system and every 6 days for a 13" system unless capacity required is greater.)
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 is producing contaminant free water. If lines in the home has hydrogen sulfide residue, run a chlorine solution to clean out.

### Iron Boss 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. Normal duration for the regeneration cycle is approximately 55 minutes and completes in 3 steps.

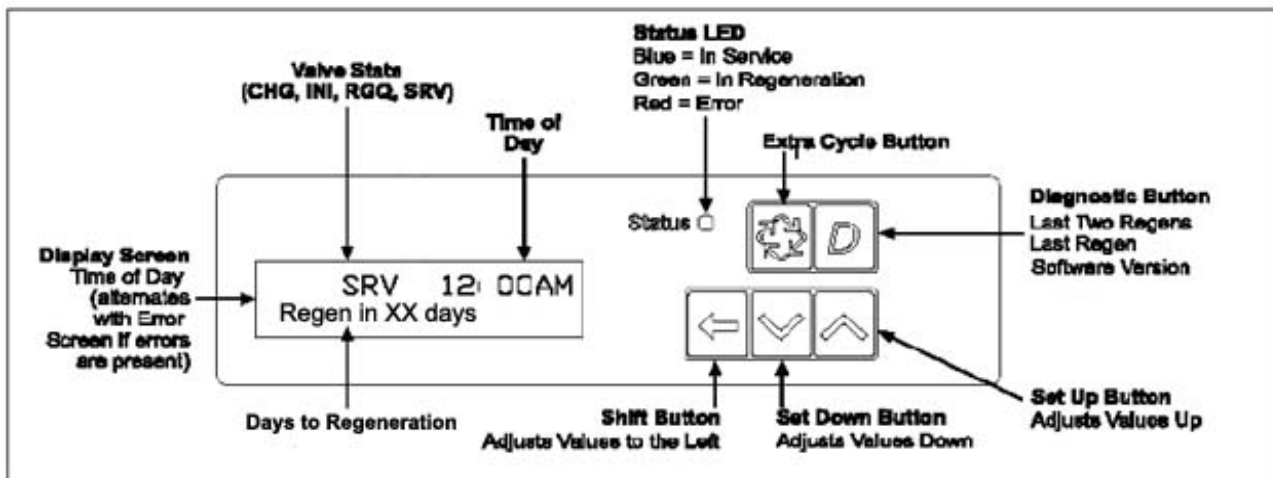
1. Backwash cycle, 14 minute duration. Water flow is reversed inside the unit to lift and reclassify the filter media rinsing accumulation iron from the beginning.
2. Oxygen refill, 40 minute duration. The unit empties of water and is filled with air. During this cycle water will run to drain. There 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.
3. The unit returns to the In-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.

**Untreated water is available during regeneration cycle.**

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

Pump GPM Calculator			Iron Boss Units		To Determine flow in GPM:
At 30 PSI dynamic flow			Tank	Media	
Gallons	Seconds	GPM	Size	Cubic Ft	
5	42	7.14	10x54	1ft <sup>3</sup>	1) Open a hose bibb closest to pump 2) Run to drain(or onto ground) until pump turns on 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
5	33	9.09	12x52	1.5 ft <sup>3</sup>	
5	27	11.11	13x54	2 ft <sup>3</sup>	

**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 (standard 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.

#### 9. REGENERATION CYCLE STEP 3:

FAST RINSE: 0 MIN.

#### 10. REGENERATION CYCLE STEP 4:

BRINE REFILL: 0 MIN.

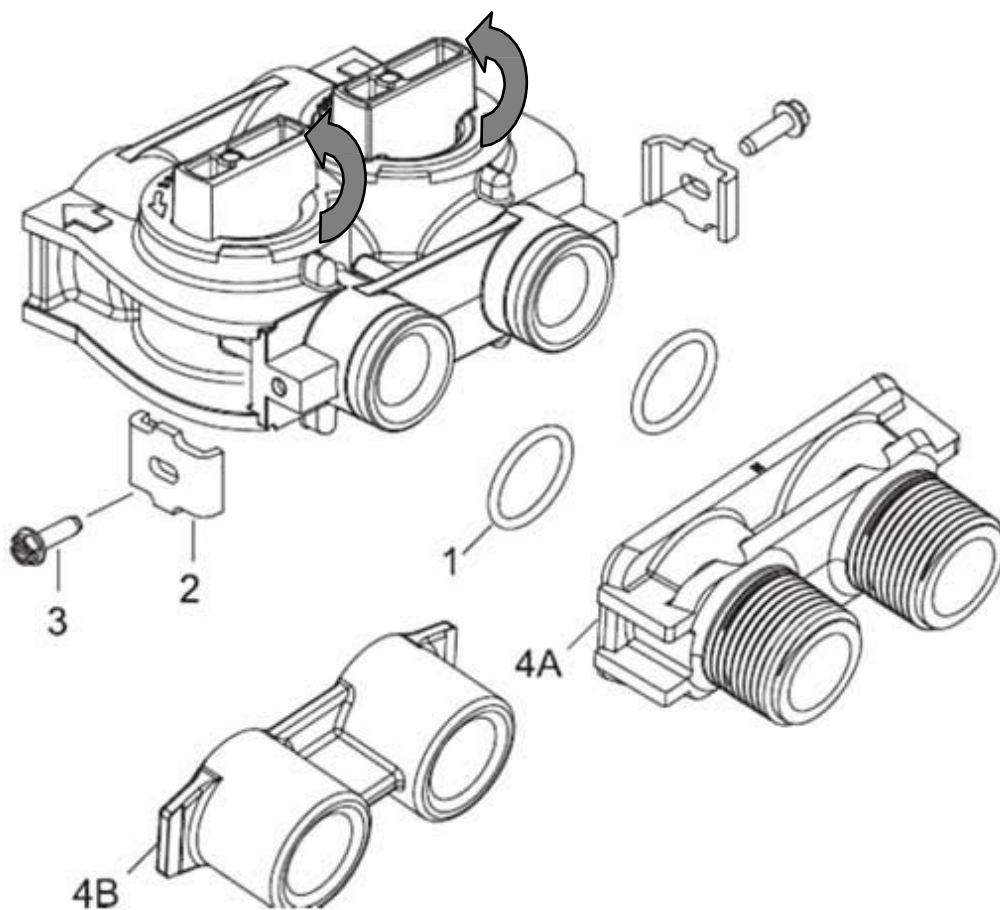
#### 11. AUXILIARY RELAY:

DISABLED



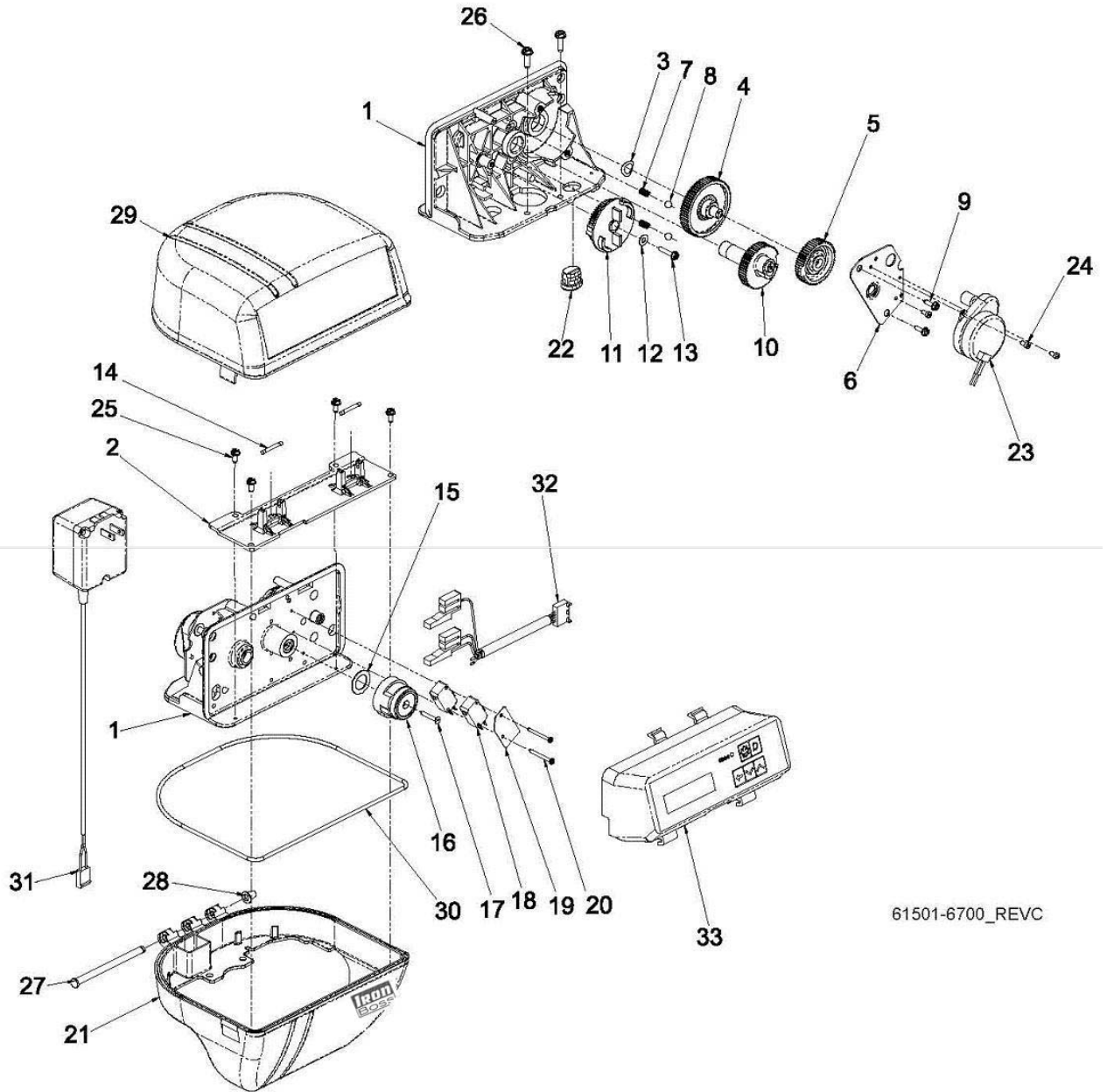
### Bypass Valve Assembly, Non-Metallic

To put Iron Boss system in bypass position, turn knobs counter-clockwise as shown in picture below.



Item Number	Quantity	Part#	Descriptions
1	2	13305	O-ring, -119
2	2	13255	Clip, Mounting
3	2	13314	Screw, Slot Ind Hex, 8-18 x .60
4A	1	18706	Yoke, 1", NPT, Plastic
		18706-02	Yoke, 3/4", NPT, Plastic
4B	1	41027-01	Yoke, 3/4", NPT, Cast, Machd
		41026-01	Yoke, 1", NPT, Cast, Machd, SS
5	1	60049	Bypass, Plastic Assembly

# Iron Boss Power Head Assembly

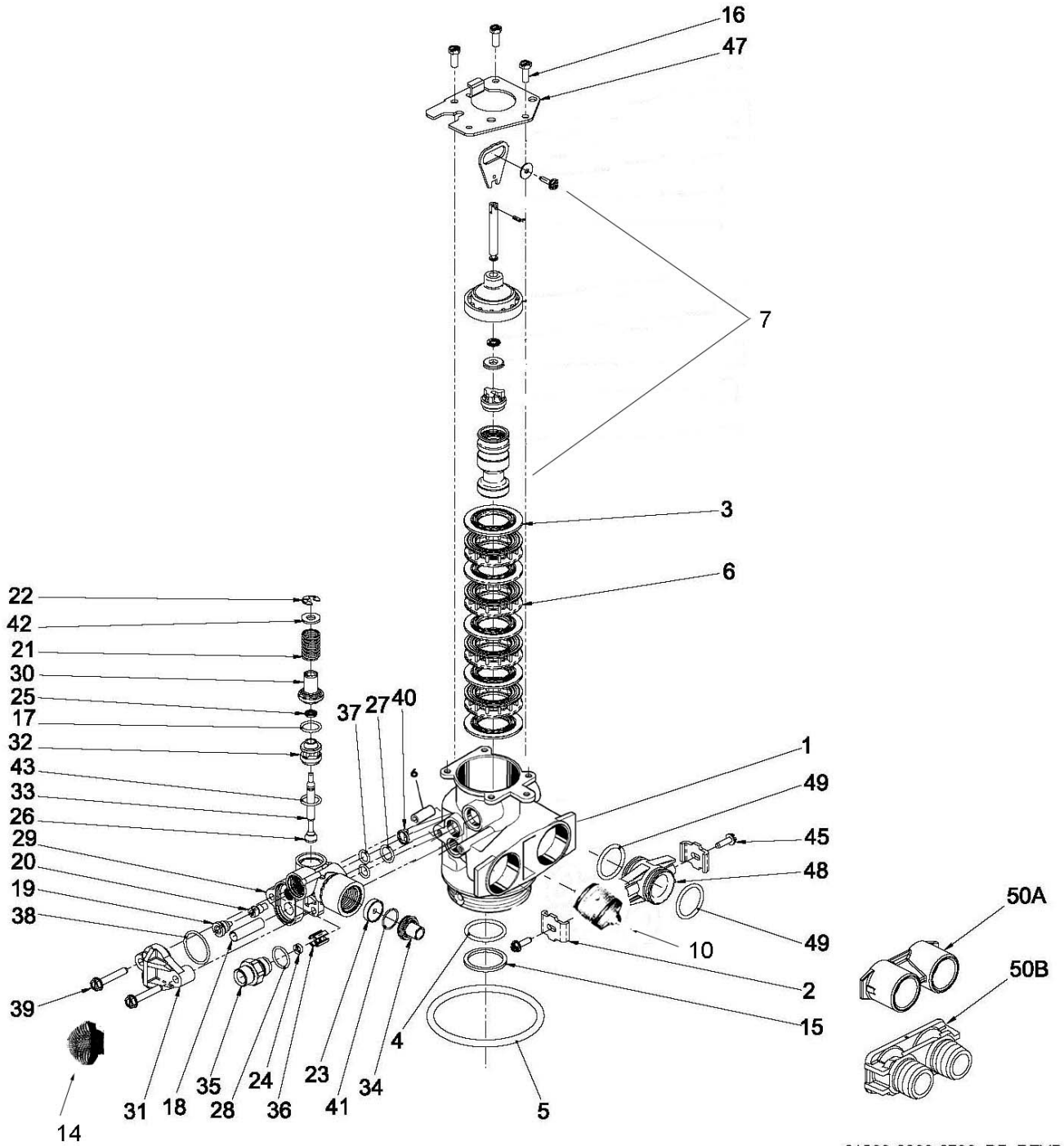


61501-6700\_REVC

**Iron Boss Power Head Assembly**

<b>Item Number</b>	<b>Quantity</b>	<b>Part#</b>	<b>Descriptions</b>
1	1	15494-04	Drive Panel Assy
2	1	17844	Bracket, Support
3	1	13299	Washer, Spring 3/8
4	1	13017	Gear, Idler
5	1	23045	Gear, Drive
6	1	13175	Plate, Motor Mounting
7	2	19080	Spring, Compression
8	2	13300	Ball, ¼ " SS
9	2	13296	Screw, Hex Wsh, 6-20 x ½
10	1	25005-10	Gear, Main Drive, ET, SE
11	1		Iron Boss Cam, Brine Valve, Blk
		19025	Cam, Brine Valve, Variable
12	1	12037	Washer, Plain, #10
13	1	40214	Screw, Hex Wsh, 6-20 x 3/4
14	2	18754	Pin
15	1	19079	Washer, Friction
16	1	17438	Cam, Downflow
		40609	Cam, Double Backwash, D/F
		17919	Cam, Variable Brining, Gray
17	1	15151	Screw, Flat Head St, 6-20 x 3/4
18	2	10218	Switch, Micro
19	1	10302	Insulator, Limit Switch
20	2	17876	Screw, Phil Pan, 4-4 0 x 1 1/8
21	1	17841-XXX	Cover Bottom
22	1	13547	Strain Relief, Flat Cord
23	1	16944	Motor Drive, 24V, 60 Hz, 2RPM
24	3	11384	Screw, Phil, 6-32 x 1/4
25	4	17798	Screw, Slot Hex Hd
26	2	12473	Screw, Hex Wsh, 10-24x 5/8
27	1	17845	Pin, Hinge
28	1	18679	Cap, Tapered, Black
29	1	17842-XX	Cover, Top
30	1	18615	Seal, Neoprene, .125
31	1	19674	Transformer, 24V, 9.6VA, Residential Valves
		41475	Transformer, 24V, 9.6VA, European
32	1	42115	Harness Assy
33	1	19313-XX	Circuit Board Housing Assy

# Iron Boss Control Valve Assembly



61500-6600-6700\_DF\_REV B

**Control Valve Assembly**

<b>Item Number</b>	<b>Quantity</b>	<b>Part#</b>	<b>Descriptions</b>
1	1	40319	Valve Body, Downflow
2	2	13255	Clip, Mounting
3	5	13242	Seal, 5600
4	1	13304	O-ring, -121
5	1	12281	O-ring, -338
6	4	14241	Spacer, 5600
6A	1	13361	Stand Off
7	1		Iron Boss Piston Assembly
10	1	19856	Inlet Screen
14	1	300-038WW	Brass Inlet Check Valve
15	1	13030	Retainer, Dist Tube O-ring
16	3	12112	Screw, Hex Hd Mach, 10-24x 1/2
18	1	10227	Screen, Injector
19	1	10913-XX	Nozzle, Injector
20	1	10914-XX	Throat, Injector
21	1	11973	Spring, Brine, Valve
22	1	11981-01	Ring, Retaining
23	1	12088	Washer, Flow, 2.4 GPM
24	1	12094	Washer, Flow, .25 GPM
25	1	12550	Quad Ring, -009
26	1	12626	Seat, Brine Valve
27	1	12638	O-ring, -013, Injector
28	1	12977	O-ring, -015
29	1	13163	Body, Injector
30	1	13165	Cap, Brine Valve
31	1	13166	Cap, Injector, 5600
32	1	13167	Spacer, Brine Valve
33	1	13172	Brine Valve Stem
34	1	13173	Retainer, DLFC Button
35	1	13244	Adapter, BLFC
36	1	13245	Retainer, BLFC
37	2	13301	O-ring, -011, Injector
38	1	13303	O-ring, -021
39	2	13315	Screw, Hex Wsh Hd, 10-24 x 13/16
40	1	13497	Disperser, Air, 5600
41	1	15348	O-ring, -563
42	1	16098	Washer, Nylon Brine
43	1	13302	O-ring, -014
45	2	13314	Screw, Slot Ind Hex, 8-18 x .60
47	1	13546	Retainer, End Plug
48	2	19228	Coupling, Adapter
49	4	13305	O-ring, -119
50A	1	41026-01	Yoke, 1", NPT, Cast, Machd
		41027-01	Yoke, 3/4", NPT, Cast, Machd
50B	1	18706	Yoke, 1", NPT, Plastic
		18706-02	Yoke, 3/4", NPT, Plastic

**Troubleshooting**

If an error is detected, an error screen will alternate with the main display screen every few seconds, and the LED light will be red.

During an error condition, the unit continues to monitor the flow meter and update the remaining capacity. Once an error condition is corrected, the unit returns to the operating status it was in prior to the error and regeneration resumes according to normal programming. If an error is cleared by reprogramming the unit in the Master Programming Mode, the volume remaining may be reset to the full unit capacity (as though it had just regenerated). If an error is present, a regeneration can only occur manually by pressing and holding the Extra Cycle button for 5 seconds. If the unit was in regeneration when the error occurred, it will complete the regeneration cycle and go into service.

When the problem is corrected, and the error no longer displays (it may take several seconds for the unit to stop displaying the error message), the unit will return to normal operation. The LED light will no longer be **Red**, and will turn **Green** if the unit is regenerating, or **Blue** if the unit is in service.

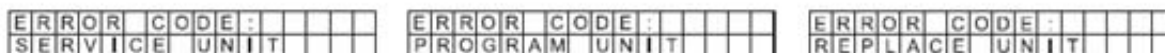
Problem	Correction
A. Flashing/blinking display	A. Power outage has occurred. Either wait 5 minutes for blinking to stop, or press any key on the keypad.
B. Unit not responding after going into regeneration	B. Verify the unit is configured correctly (ex: wiring valve type). Perform a Master Reset by holding the Extra Cycle button and cycling power. Check and verify the choices selected in Master Programming Mode.
C. Unit displays "ERROR CODE: REPLACE UNIT" (corrupted UAP)	C. Contact your local water treatment professional.

**Error Codes**

Error Code	Display Message	Correction
01	ERROR CODE: PROGRAM UNIT	Go through all screens in Master Programming Mode.
02	ERROR CODE: PROGRAM UNIT	Go through all screens in Master Programming Mode.
03	ERROR CODE: SERVICE UNIT	Perform a Master Reset by holding the Extra Cycle button and cycling power. Go through all screens in Master Programming Mode. Manually initiate a regeneration cycle by pressing the Extra Cycle button for 5 seconds.
04	ERROR CODE: SERVICE UNIT	Perform a Master Reset by holding the Extra Cycle button and cycling power. Go through all screens in Master Programming Mode. Manually initiate a regeneration cycle by pressing the Extra Cycle button for 5 seconds.
05	ERROR CODE: SERVICE UNIT	Call your local water treatment professional as soon as possible. Leave the unit running (do not unplug).

**NOTE: If the above corrections do not work, please contact your local weather treatment professional.**

**Error Display Screen Samples**



Problem:	Possible Cause:
Unit does not go through Refill Sequence	Improper programming
Unit doesn't draw air in air in draw cycle.	Line to drain is kinked Low water pressure Drain flow control is obstructed. Injectors or screen is plugged Internal leak in Control.
Water flows to drain continuously	Timer motor stopped or jammed. Foreign material jammed inside control. Internal leak Worn Drive Gear.
Air in pipes blows out when Faucet is opened.	Iron Boss is regenerating at the same time as Softener or other equipment is Regenerating. Distributor o-ring is damaged Worn seal.

NOTES

NOTES

NOTES

# 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, and 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 damage 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 product failure 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.