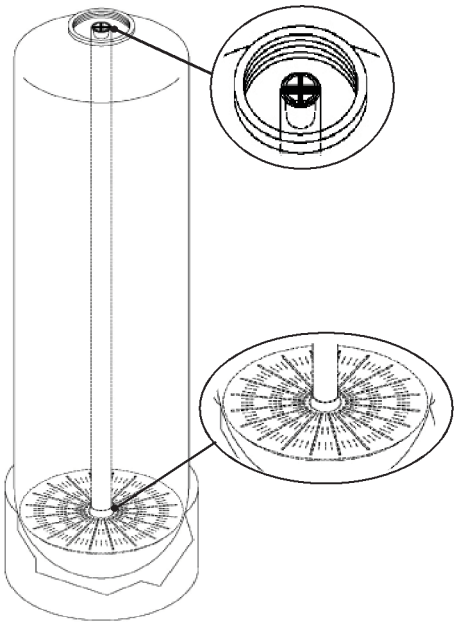
US Water Systems Prelude and Fusion Backwashing Filter

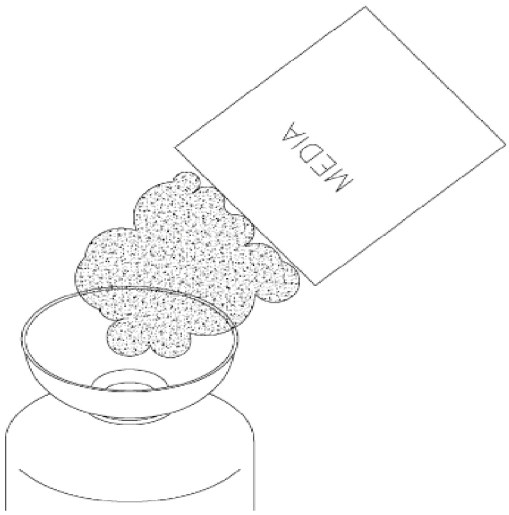
Installation Manual

Assembly Instructions

Media Installation

1) Remove the tank from carton.
2) Verify the riser is still fully engaged in the Vortech plate.
3) Place a piece of duct tape over the riser tube so no media enters the riser while filling.
4) Make sure the riser is centered to facilitate the valve installation after installation of the media.
5) Use the Funnel provided, to pour the media into the tank. Pour it evenly around the hole to ensure it is well distributed in the tank and pour slow enough, to keep from plugging the hole.
6) When media is installed move tank side to side to settle the media.





Valve Installation

1) Remove the tape from the riser and discard.

2) Fill the tank with water and allow the media to soak as long as possible prior to start up. This will dramatically reduce the rinse/flush time required to remove fines/debris from the filter and plumbing.
3) Lubricate the two o-rings with a light coat of Silicone.
4) Install the Upper Basket to the valve, twisting it to lock it in place.
5) Slip the Upper Basket over the Riser sliding it down into place and screw the valve on and tighten.
6) Follow the installation procedures in this manual and program accordingly.

Installation Instructions

WATER PRESSURE: A minimum of 20 pounds of water pressure is required for regeneration valve to operate effectively.

ELECTRICAL FACILITIES: An uninterrupted alternating current (A/C) supply is required. Note: Other voltages are available. Please make sure your voltage supply is compatible with your unit before installation.

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

LOCATION OF FILTER AND DRAIN: The filter should be located close to a drain to prevent air breaks and back flow. BY-

PASS VALVES: Always provide for the installation of a by-pass valve if unit is not equipped with one.

CAUTION: Water pressure is not to exceed 125 psi, water temperature is not to exceed 110°F, and the unit cannot be subjected to freezing conditions.

Installation Instructions

1. **Place the filter tank where you want to install the unit making sure the unit is level and on a firm base.**
2. **During cold weather, the installer should warm the valve to room temperature before operating.**
3. **All plumbing should be done in accordance with local plumbing codes. The pipe size for residential drain line should be a minimum of 1/2". Backwash flow rates in excess of 7 gpm or length in excess of 20' require 3/4" drain line. Commercial drain lines should be the same size as the drain line flow control.**
4. **Refer to the dimensional drawing for cutting height of the distributor tube. If there is no dimensional drawing, cut the distributor tube flush with the top of the tank (typically pre-cut).**
5. **Lubricate the distributor o-ring seal and tank "o" ring seal. Place the main control valve on tank. Note: Only use silicone lubricant.**
6. **Solder joints near the drain must be done prior to connecting the Drain Line Flow Control fitting (DLFC). Leave at least 6" between the DLFC and solder joints when soldering pipes that are connected on the DLFC. Failure to do this could cause interior damage to the DLFC.**
7. **Teflon tape is the only sealant to be used on the drain fitting.**
8. **On units with a by-pass, place in by-pass position. Turn on the main water supply. Open a cold water tap nearby and let run a few minutes or until the system is free from foreign material (usually solder) that may have resulted from the installation. Once clean, close the water tap.**
9. **Slowly place the by-pass in service position and let water flow into the media tank. When water flow stops.**
10. **Plug unit into an electrical outlet. Note: All electrical connections must be connected according to local codes. (Be certain the outlet is uninterrupted).**

CAUTION
- **Do not exceed 125 psi water pressure**
- **Do not exceed 110°F (43°C) water temperature**
- **Do not subject unit to freezing conditions**

WARNING

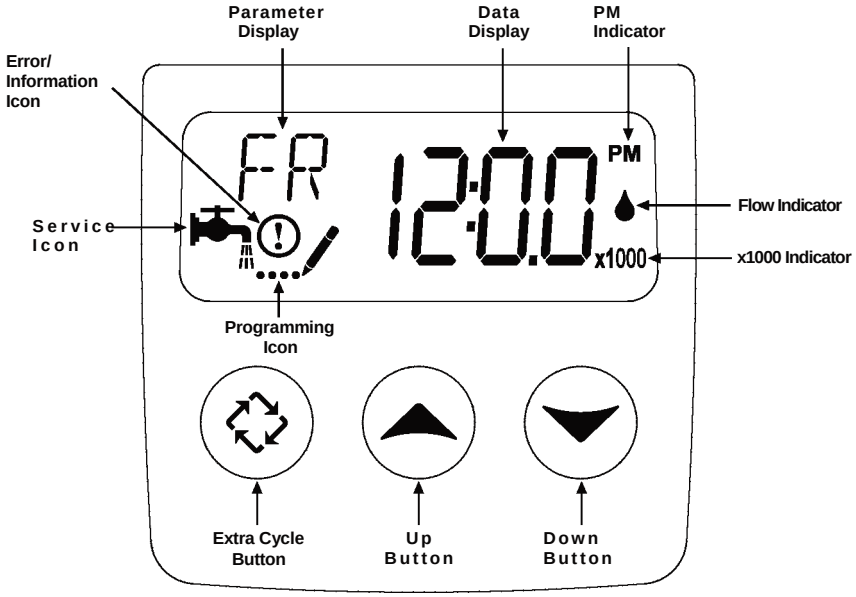
The system MUST be depressurized before removing any connections for servicing.

Start-Up Instructions

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

1. **Push and hold the “extra cycle” button (far left button with triangle shaped arrows on the button). This button will advance the valve to the next cycle if it is pushed and released.**
2. **This will position the valve to backwash. You will see BW and four dashes. The four dashes will change to a time value that will start to count down. Once the time begins to count down. Slowly open the bypass valve to the service position. Ensure the drain line flow remains steady for 10 minutes or until the water runs clear (see above).**
3. **After the backwash cycle, the valve will move to the rapid rinse position. Check the drain line flow, and run for 5-10 minutes or until the water runs clear.**
4. **The filter is now installed. Proceed to programming.**

Timer Features



Features of the SXT:

- **Power backup that continues to keep time and the passage of days for a minimum of 48 hours in the event of power failure. During a power outage, the control goes into a power-saving mode. It does not monitor water usage during a power failure, but it does store the days remaining at the time of power failure.**
- **Settings for both valve (basic system) and control type (method used to trigger a regeneration).**
- **Day-of-the-Week controls.**
- **While in service, the display alternates between time of day and days to regeneration.**
- **The Service Icon flashes if a backwash cycle has been queued.**
- **A backwash can be triggered immediately by pressing the Extra Cycle button for five seconds.**
- **The Parameter Display displays the current Cycle Step (BW, RR, etc) during backwash, and the data display counts down the time remaining for that cycle step. While the valve is transferring to a new cycle step, the display will flash. The parameter display will identify the destination cycle step (BW, RR, etc) and the data display will read "----". Once the valve reaches the cycle step, the display will stop flashing and the data display will change to the time remaining. During regeneration, the user can force the control to advance to the next cycle step immediately by pressing the extra cycle button.**

Timer Features

Setting the Time of Day

1. **Press and hold either the Up or Down buttons until the programming icon replaces the service icon and the parameter display reads TD.**
2. **Adjust the displayed time with the Up and Down buttons.**
3. **When the desired time is set, press the Extra Cycle button to resume normal operation. The unit will also return to normal operation after 5 seconds if no buttons are pressed.**

Queueing a Backwash

1. **Press the Extra Cycle button. The service icon will flash to indicate that a backwash is queued.**
2. **To cancel a queued backwash, press the Extra Cycle button.**

Backwashing Immediately

Press and hold the Extra Cycle button for five seconds.

Timer Operation

Time Clock Delayed Control

A Time Clock Delayed Control regenerates the system on a timed interval. The control will initiate a backwash cycle at the programmed backwash time when the number of days since the last backwash equals the backwash day override value.

Day of the Week Control

This control regenerates the system on a weekly schedule. The schedule is defined in Master Programming by setting each day to either "off" or "on." The control will initiates a regeneration cycle on days that have been set to "on" at the specified regeneration time.

Control Operation During Programming

The control only enters the Program Mode with the valve in service. Control programming is stored in memory permanently, eliminating the need for battery backup power.

Manually Initiating a Backwash

1. **When timer is in service, press the Extra Cycle button for 5 seconds on the main screen.**
2. **The timer advances to Backwash Cycle Step #1 (backwash), and begins programmed time count down.**
3. **Press the Extra Cycle button once to advance valve to Regeneration Cycle Step #2 (brine rapid rinse).**
4. **Press the Extra Cycle button once more to advance the valve back to in service.**
5. **NOTE: A queued backwash can be initiated by pressing the Extra Cycle button. To clear a queued regeneration, press the Extra Cycle button again to cancel. If backwash occurs for any reason prior to the delayed backwash time, the manual backwash request shall be cleared.**

Timer Operation

Control Operation During A Power Failure

The SXT includes integral power backup. In the event of power failure, the control shifts into a power-saving mode. The control stops monitoring water usage, and the display and motor shut down, but it continues to keep track of the time and day for a minimum of 48 hours.

The system configuration settings are stored in a non-volatile memory and are stored indefinitely with or without line power. The Time of Day flashes when there has been a power failure. Press any button to stop the Time of Day from flashing.

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. Note that if power fails during a regeneration cycle, the valve will remain in it's current position until power is restored. The valve system should include all required safety components to prevent overflows resulting from a power failure during regeneration.

The control will not start a new backwash cycle without line power.

SXT Filter Programming Chart

Master Programming Options			
Abbreviation	**Parameter**	**Option Abbreviation**	**Options**
DF	Display Format	GAL	Gallons
		Ur	Liters
		Cu	Cubic Meters
VT	Valve Type	dF1b	Standard Downflow/Upflow Single Backwash
		dF2b	Standard Downflow/Upflow Double Backwash
		Fltr	Filter
		UFbF	Upfiow Brine First
		Othr	Other
CT	Control Type	Fd	Meter (Flow) Delayed
		Fl	Meter (Flow) Immediate
		tc	Time Clock
		dAY	Day of Week
NT	Number of Tanks	1	Single Tank System
		2	Two Tank System
TS	Tank in Service	Ul	Tank 1 in Service
		U2	Tank 2 in Service
C	Unit Capacity		Unit Capacity (Grains)
H	Feedwater Hardness		Hardness of Inlet Water
RS	Reserve Selection		Percentage Safety Factor
		rc	Fixed Reserve Capacity
SF	Safety Factor		Percentage of the system capacity to be used as a reserve
RC	Fixed Reserve Capacity		Fixed volume to be used as a reserve
DO	Day Override	1-99	The system's day override setting
RT	Regen Time	**2:00**	The time of day the system will regenerate
BW, BD, RR, BF	Regen Cycle Step Times	No **Changes Here**	The time duration for each regeneration step. Adjust-able from OFF and 0-199 minutes. **NOTE: If "Othr" is chosen under "Valve Type", then RI, R2, R3, etc, will be displayed instead**
D1, 02, D3, D4, D5, 06, & D7	Day of Week Settings		Regeneration setting (On or OFF) for each day of the week on day-of-week systems
CD	Current Day		The Current day of the week

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

Master Programming Options			
FM	Flow Meter Type	t0.7	3/4” Turbine Meter
		P0.7	3/4” Paddle Wheel Meter
		t1.0	1” Turbine Meter
		P1.0	1” Paddle Wheel Meter
		t1.5	1.5” Turbine Meter
		P1.5	1.5” Paddle Wheel Meter
		Gen	Generic or Other Meter
K	Meter Pulse Setting		Meter pulses per gallon for generic/other flow meter

NOTES:
Some items may not be shown depending on timer configuration.
The timer will discard any changes and exit Master Programming Mode if any button is not pressed for sixty seconds.

Master Programming Mode

When the Master Programming Mode is entered, all available option setting displays may be viewed and set as needed. Depending on current option settings, some parameters cannot be viewed or set. Use the previous chart to program your filter. You will use the highlighted values. Items not highlighted either do not require a change or do not appear in filter mode.

Entering Master Programming Mode

Set the Time Of Day display to 12:01 P.M. Press the "extra cycle". Then press and hold the Up and Down buttons together until the programming icon replaces the service icon and the Display Format screen appears. The extra cycle button will serve as an "enter/save" button. The up and down arrows are used to change the value of each parameter and the extra cycle button saves the parameter changes and will move the control to the next programming parameter.

Exiting Master Programming Mode

Press the Extra Cycle button to accept the displayed settings and cycle to the next parameter. Press the Extra Cycle button at the last parameter to save all settings and return to normal operation. The control will automatically disregard any programming changes and return to normal operation if it is left in Master Programming mode for 5 minutes without any keypad input.

Resets:

Soft Reset: Press and hold the Extra Cycle and Down buttons for 25 seconds while in normal Service mode. This resets all parameters to the system default values, except the volume remaining in meter immediate or meter delayed systems and days since regeneration in the time clock system.

Master Reset: Hold the Extra Cycle button while powering up the unit. This resets all of the parameters in the unit. Check and verify the choices selected in Master Programming Mode.

Master Programming Mode

1. Display Format (Display Code DF)

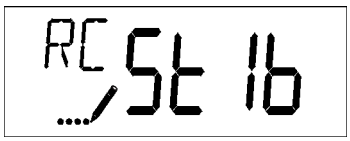
This is the first screen that appears when entering Master Programming Mode. The Display Format setting specifies the unit of measure that will be used for volume and how the control will display the Time of Day. This option setting is identified by "DF" in the upper left hand corner of the screen. There are three possible settings:

Display Format Setting	Unit of Volume	Time Display
GAL	U.S. Gallons	12-Hour AM/PM
Ltr	Liters	24-Hour
Cu	Cubic Meters	24-Hour

2. Valve Type (Display Code VT)

Press the Extra Cycle button. Use this display to set the Valve Type. The Valve Type setting specifies the type of cycle that the valve follows during regeneration. Note that some valve types require that the valve be built with specific subcomponents. Ensure the valve is configured properly before changing the Valve Type setting. This option setting is identified by "VT" in the upper left hand corner of the screen. There are 5 possible settings:

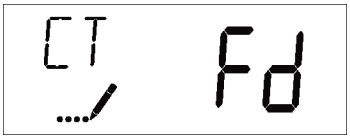
Abbreviation	Parameter
St1b	Standard Downflow/Upflow, Single Backwash
St2b	Standard Downflow/Upflow, Double Backwash
Fltr	Filter
UFbF	Upflow Brine First
Othr	Other



3. Control Type (Display Code CT)

Press the Extra Cycle button. Use this display to set the Control Type. This specifies how the control determines when to trigger a regeneration. For details on how the various options function, refer to the "Timer Operation" section of this service manual. This option setting is identified by "CT" in the upper left hand corner of the screen. There are four possible settings:

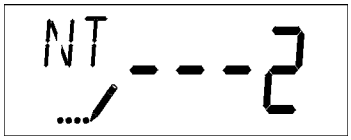
Meter Delayed: **Fd**
Meter Immediate: **FI**
Time Clock: **tc**
Day of Week: **dAY**



4. Number of Tanks (Display Code NT)

Press the Extra Cycle button. Use this display to set the Number of Tanks in your system. This option setting is identified by "NT" in the upper left hand corner of the screen. There are two possible settings:

Single Tank System: 1
Two-Tank System: 2



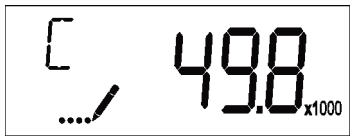
5. Tank in Service (Display Code TS)

Press the Extra Cycle button. Use this display to set whether tank one or tank two is in service. This option setting is identified by "TS" in the upper left hand corner of the screen. This parameter is only available if the number of tanks has been set to 2. There are two possible settings:

Tank One in Service: U1
Tank Two in Service: U2

6. Unit Capacity (Display Code C)

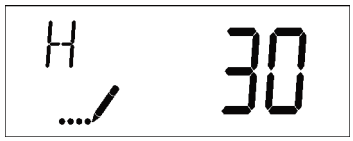
Press the Extra Cycle button. Use this display to set the Unit Capacity. This setting specifies the treatment capacity of the system media. Enter the capacity of the media bed in grains of hardness when configuring a softener system, and in the desired volume capacity when configuring a filter system. This option setting is identified by "C" in the upper left hand corner of the screen. The Unit Capacity parameter is only available if the control type has been set to one of the metered options. Use the Up and Down buttons to adjust the value as needed.



Range: 1-999,990 grain capacity

7. Feedwater Hardness (Display Code H)

Press the Extra Cycle button. Use this display to set the Feedwater Hardness. Enter the feedwater hardness in grains per unit volume for softener systems, or 1 for filter systems. This option setting is identified by "H" in the upper left hand corner of the screen. The feedwater hardness parameter is only available if the control type has been set to one of the metered options. Use the Up and Down buttons to adjust the value as needed.

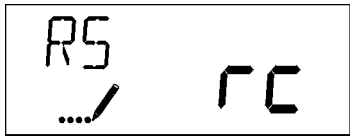


Range: 4-199 hardness

8. Reserve Selection (Display Code RS)

Press the Extra Cycle button. Use this display to set the Safety Factor. Use this display to select the type of reserve to be used in your system. This setting is identified by "RS" in the upper left-hand corner of the screen. The reserve selection parameter is only available if the control type has been set to one of the metered options. There are two possible settings.

FS	**Safety Fector**
rc	**Fixed Reserve Capacity**



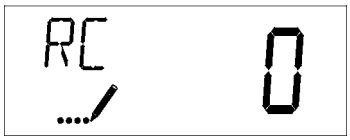
9. Safety Factor (Display Code SF)

Press the Extra Cycle button. Use this display to set the Safety Factor. This setting specifies what percentage of the system capacity will be held as a reserve. Since this value is expressed as a percentage, any change to the unit capacity or feedwater hardness that changes the calculated system capacity will result in a corresponding change to the reserve volume.This option setting is identified by "SF" in the upper left hand corner of the screen. Use the Up and Down buttons to adjust the value from 0 to 50% as needed.

Range: 0-50%

10. Fixed Reserve Capacity (Display Code RC)

Press the Extra Cycle button. Use this display to set the Reserve Capacity. This setting specifies a fixed volume that will be held as a reserve. The reserve capacity cannot be set to a value greater than one-half of the calculated system capacity. The reserve capacity is a fixed volume and does not change if the unit capacity or feedwater hardness are changed. This option setting is identified by "RC" in the upper left-hand corner of the screen. Use the Up and Down buttons to adjust the value as needed.

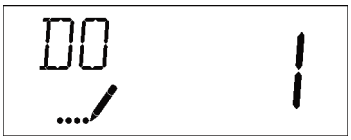


Range: 0- half the calculated capacity

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

11. Day Override (Display Code DO)

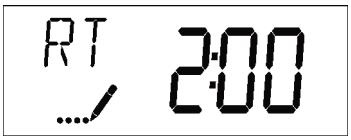
Press the Extra Cycle button. Use this display to set the Day Override. This setting specifies the maximum number of days between regeneration cycles. If the system is set to a timer-type control, the day override setting determines how often the system will regenerate. A metered system will regenerate regardless of usage if the days since last regeneration cycle equal the day override setting. Setting the day override value to "OFF" disables this function. This option setting is identified by "DO" in the upper left hand corner of the screen. Use the Up and Down buttons to adjust the value as needed.



Range: Off-99 days

12. Regeneration Time

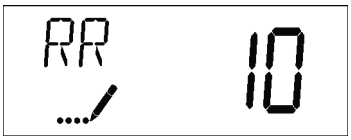
Press the Extra Cycle button. Use this display to set the Regeneration Time. This setting specifies the time of day the control will initiate a delayed, manually queued, or day override triggered regeneration. This option setting is identified by "RT" in the upper left hand corner of the screen. Use the Up and Down buttons to adjust the value as needed.



13. Regeneration Cycle Step Times

Press the Extra Cycle button. Use this display to set the Regeneration Cycle Step Times. The different regeneration cycles are listed in sequence based on the valve type selected for the system, and are identified by an abbreviation in the upper left-hand corner of the screen. The abbreviations used are listed below. If the system has been configured with the "OTHER" valve type, the regeneration cycles will be identified as R1, R2, R3, R4, R5, and R6. Each cycle step time can be set from 0 to 199 minutes, or "OFF." Setting a cycle step to "OFF" will disable all of the following steps. Setting a cycle step time to 0 will cause the control to skip that step during regeneration, but keeps the following steps available. Use the Up and Down buttons to adjust the value as needed. Press the Extra Cycle button to accept the current setting and move to the next parameter.

Cycle Step	Abbreviation
BD	Brine Draw
BF	Brine Fill
BW	Backwash
RR	Rapid Rinse
SV	Service



Range: 0-199 minutes

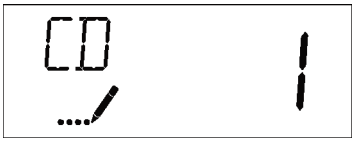
CAUTION: Before entering Master Programming, please contact your local professional water dealer.

14. Day of Week Settings

Press the Extra Cycle button. Use this display to set the regeneration schedule for a system configured as a Day of Week control. The different days of the week are identified as D1, D2, D3, D4, D5, D6, and D7 in the upper left-hand corner of the display. Set the value to "ON" to schedule a regeneration or "OFF" to skip regeneration for each day. Use the Up and Down buttons to adjust the setting as needed. Press the Extra Cycle button to accept the setting and move to the next day. Note that the control requires at least one day to be set to "ON." If all 7 days are set to "OFF", the unit will return to Day One until one or more days are set to "ON."

15. Current Day (Display Code CD)

Press the Extra Cycle button. Use this display to set the current day on systems that have been configured as Day of Week controls. This setting is identified by "CD" in the upper left-hand corner of the screen. Use the Up and Down buttons to select from Day 1 through Day 7.



16. Flow Meter Type (Display Code FM)

Press the Extra Cycle button. Use this display to set the type of flow meter connected to the control. This option setting is identified by "FM" in the upper left-hand corner of the screen. Use the Up and Down buttons to select one of the 7 available settings.

t0.7	**Fleck 3/4" Turbine Meter**
P0.7	**Fleck 3/4" Paddle Wheel Meter**
t1.0	**Fleck 1" Turbine Meter**
P1.0	**Fleck 1" Paddle Wheel Meter**
t1.5	**Fleck 1 1/2" Turbine Meter**
P1.5	**Fleck 1 1/2" Paddle Wheel Meter**
GEn	**Generic/Other Meter**

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

17. Meter Pulse Setting (Display Code K)

Press the Extra Cycle button. Use this display to specify the meter pulse setting for a non-standard flow meter. This option setting is identified by "K" in the upper left-hand corner of the screen. Use the Up and Down buttons to enter the meter constant in pulses per unit volume.

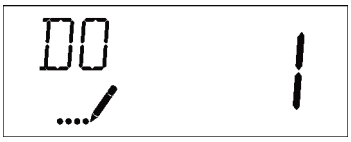
18. Press the Extra Cycle button to save all settings and exit Master Programming Mode.

User Programming Mode Options		
Abbreviation	**Parameter**	**Description**
DO	**Day Override**	**The timer's day override setting**
RT	**Regeneration Time**	**The time of day that the system will regenerate (meter delayed, timeclock, and day-of-week systems)**
H	**Feed Water Hardness**	**The hardness of the inlet water - used to calculate system capacity for metered systems**
RC	**Reserve Capacity**	**The fixed reserve capacity**
CD	**Current Day**	**The current day of week**

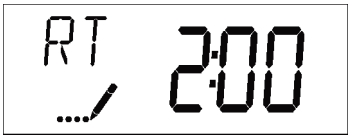
NOTES:
Some items may not be shown depending on timer configuration.
The timer will discard any changes and exit User Mode if any button is not pressed for sixty seconds.

User Programming Mode Steps

1. **Press the Up and Down buttons for five seconds while in service, and the time of day is NOT set to 12:01 PM.**
2. **Use this display to adjust the Day Override. This option setting is identified by "DO" in the upper left hand corner of the screen.**



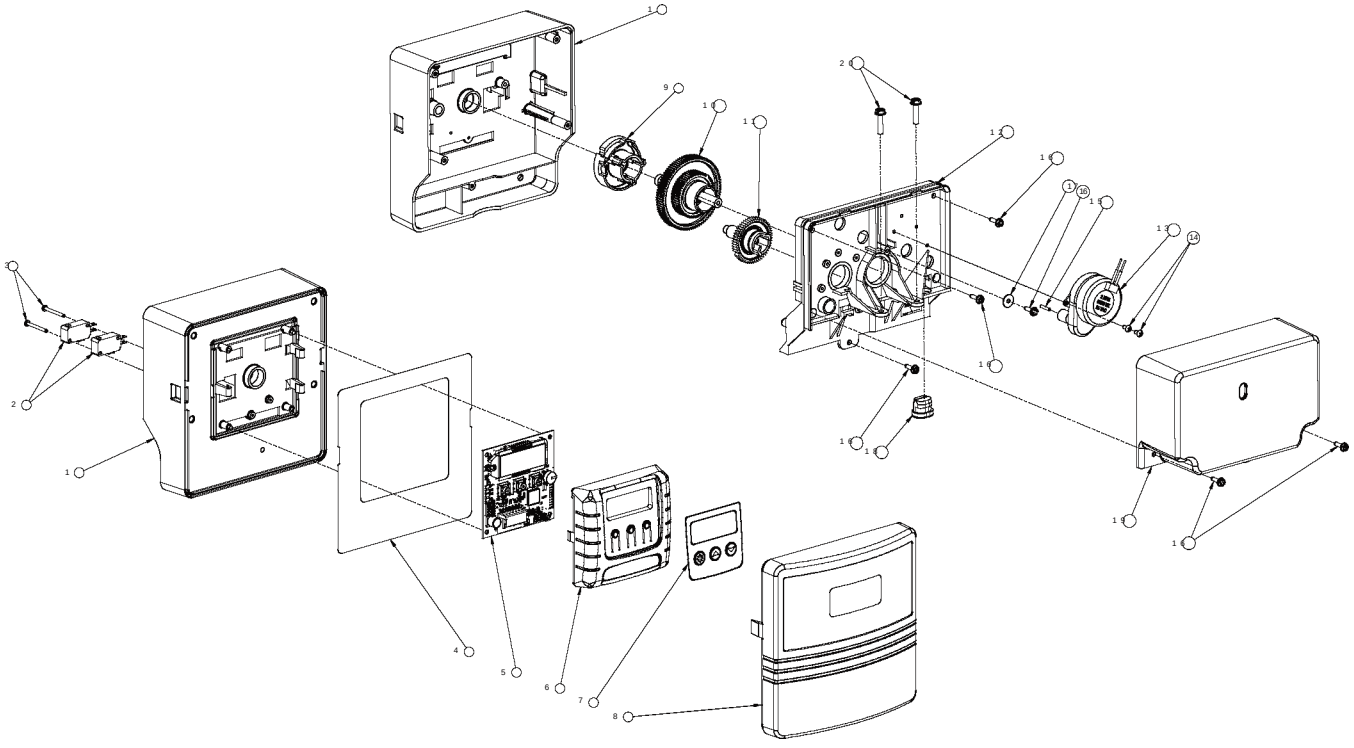
3. **Press the Extra Cycle button. Use this display to adjust the Regeneration Time. This option setting is identified by "RT" in the upper left hand corner of the screen.**



4. **Press the Extra Cycle button. Use this display to adjust the Feed Water Hardness. This option setting is identified by "FH" in the upper left hand corner of the screen.**

Notes

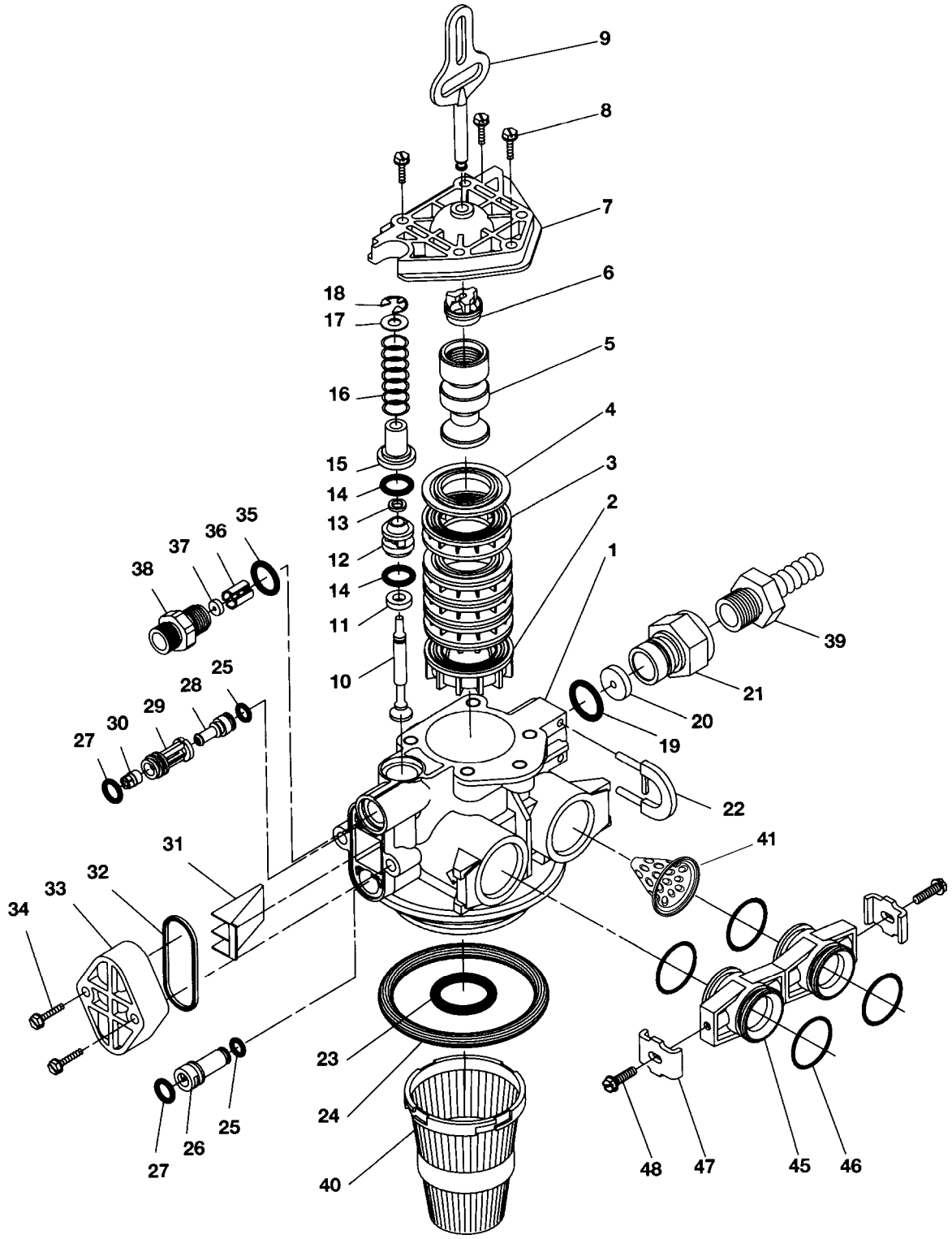
Powerhead Assembly



Item No.	Quantity	Part No.	Description
1	1	40269	PLATE, FRONT
2	2	10218	SWITCH, MICRO
3	2	17876	SCREW, PHIL PAN, 4-40 X 1-1/8"
4	1	40326	LABEL, COVER-UP, PROFLOSE
5	1	42196	CIRCUIT BOARD, SXT CONTROL
6	1	42635-01	FRONT COVER, SXT, SQUARE, BLACK
7	1	42637	LABEL, DISPLAY, SXT
8	1	18260	COVER, FRONT
9	1	19927	CAM, RAYNE, D/F, SE
10	1	18211-01	GEAR MAIN, DOWNFLOW, MACHD
11	1	18228	CAM, BRINE VALVE
12	1	18202	BACK PLATE
13	1	40251	MOTOR, 24V - 50/60HZ
14	2	13602	SCREW, PHIL RD HD, 6-32 X 5/16
15	1	18655	PIN, ROLL, 3/32 X 1/2
16	6	13296	SCREW, HEXWASHER, 6-20 X 1/2
17	1	13363	WASHER, PLAIN, .145 ID SS
18	1	13547	STRAIN RELIEF, ROUND CORD
19	1	18259-02	COVER, BACK, BLACK
20	2	18261	SCREW, HEXWASHER HEAD, #10-24 X .81

For Service Assembly Numbers, See the Back of this Manual

Control Valve Assembly



Item No.	Quantity	Part No.	Description
1	1	18815	Valve Body Assy, 5000, 1" Dist Down Flow
2	1	18264	Spacer, End, 5000
3	4	14241	Spacer, 5600
4	5	13242	Seal, 5600
5	1	18265	Piston, 5000, Downflow
6	1	14309	Retainer, Piston Rod
7	1	18268	End Plug Assy
8	3	18261	Screw, Hex Wsh Hd, 10-24 x 13/16
9	1	18267	Rod, Piston
10	1	17978	Brine Valve Stem, 5600, Plastic
11	1	18755	O-ring, Brine Seat
12	1	13167	Spacer, Brine Valve
13	1	12550	Quad Ring, -009
14	2	13302	O Ring, -014
15	1	13165	Cap, Brine Valve
16	1	11973	Spring, Brine Valve
17	1	16098	Washer, Nylon, Brine
18	1	11981-01	Ring, Retaining
19	1	11183	O-Ring, -017
20	1		Flow Washer (specify size)
21	1	11385-01	Housing, Flow Control, Plastic
22	1	18312	Retainer, Drain
23	1	13304	O-Ring, -121
24	1	18303	O-Ring, -336
25	2	10141	O-Ring, -010
26	1	18276	Plug, Injector
27	2	13771	O-Ring, -012
28	1	18275-X	Throat, Injector (specify size) 000, 00, 0, 1, 2, 3
29	1	18274-X	Nozzle, Injector (specify size) 000, 00, 0, 1, 2, 3
30	1	18273	Vortex, Generator
31	1	18271	Screen, Injector, 5000
32	1	18301	Seal, Injector, 4200
33	1	18277	Cap, Injector
34	2	18262	Screw, Hex Wsh Hd, 10-24 x 1
35	1	12977	O-Ring, -015
36	1	13245	Retainer, BLFC
37	1		Flow Washer (specify size)
38	1	13244	Adapter, BLFC
39	1	13308	Fitting, Hose Barb, Black
		12338	Fitting, Elbow, 90 Deg, 1/2 Black
40	1	18280	Collector, Top, 1" x .011 Gray Bayonet
		18280-01	Collector, Top, 1" x .020, White Wide Slot, Bayonet
		18280-02	Collector, Top, 1" x .008, Red Narow Slot, Bayonet
41	1	14613	Flow Straightener

Filter Only (Not Shown)

		13857	Injector Plug Assy, w/O-ring
		13918	Plug, BLFC Module
		18276-01	INJECTOR ASSY,PLUG,W/O-RINGS

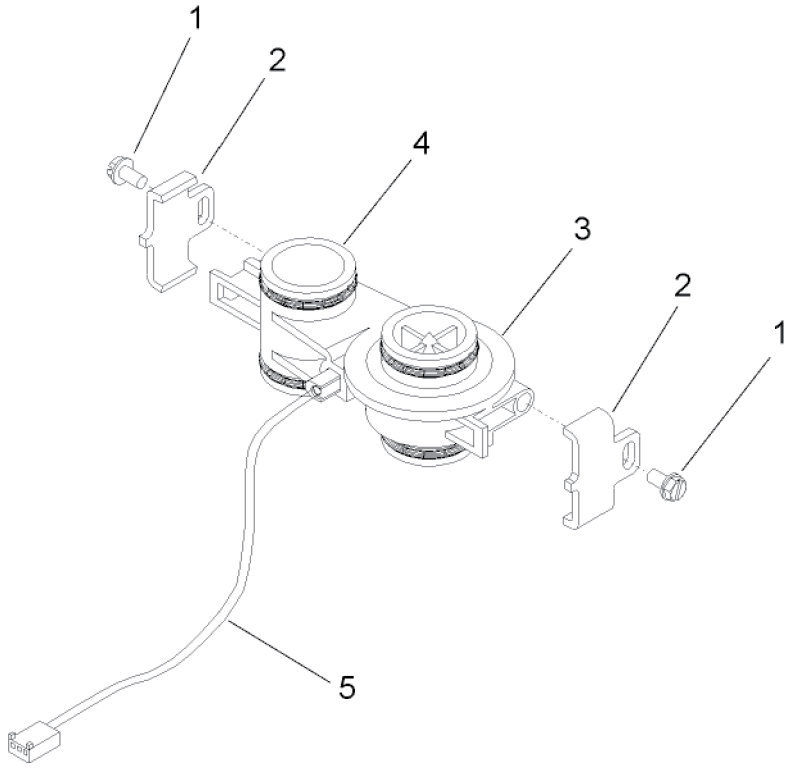
1

OPTION - Adapter Coupling Day Clock Only

45	2	19228	Coupling, Adapter
46	4	13305	O-Ring, -119
47	2	13255	Clip, Mounting
48	2	13314	Screw, Slot Ind Hex, 18-8 x .60

For Service Assembly Numbers, See the Back of this Manual

3/4" Turbine Meter Assembly



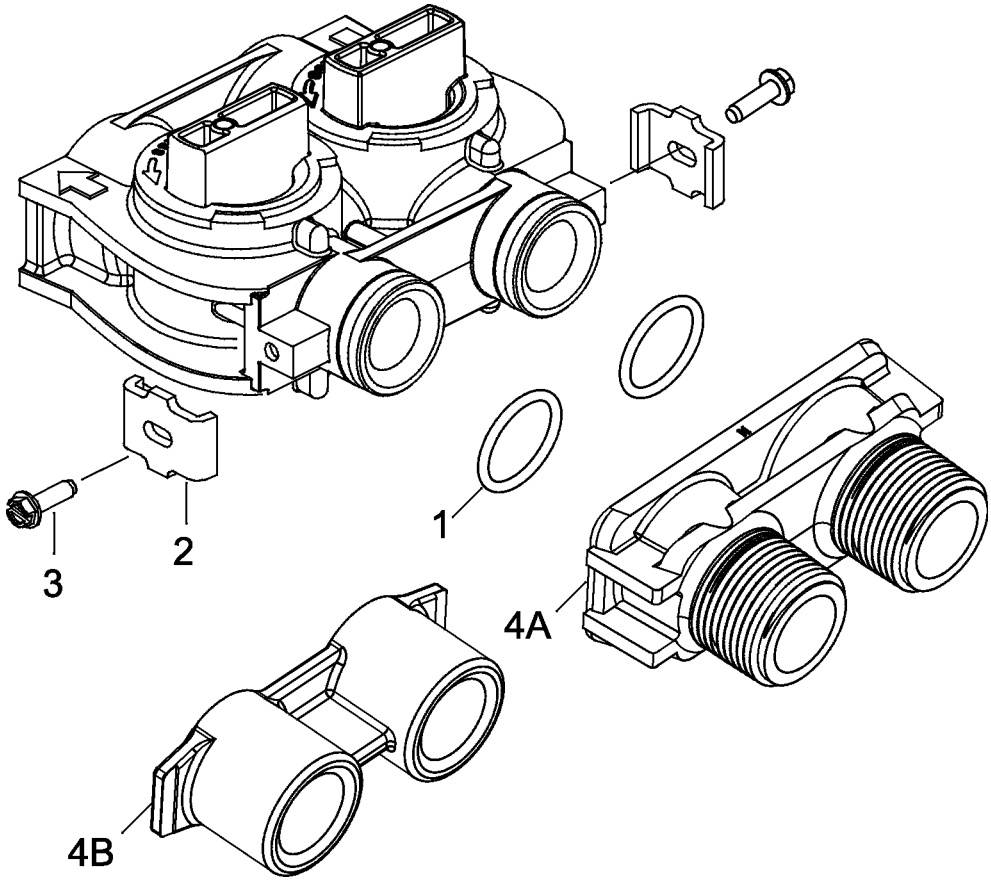
Item No.	Quantity	Part No.	Description
1	2	13314	Screw, Hex Washer, 8-18 x 5/8
2	2	19569	Clip, Flow Meter
3	1	19797	Meter Body Assembly, 3/4" Turbine
4	4	13305	O-ring, 119
5	1	19791-01	Harness Assembly, Flow Meter
.....	1	19791-02	Meter Cable Assy, 35"

Not Shown:

1	14613	Flow Straightener

For Service Assembly Numbers, See the Back of this Manual

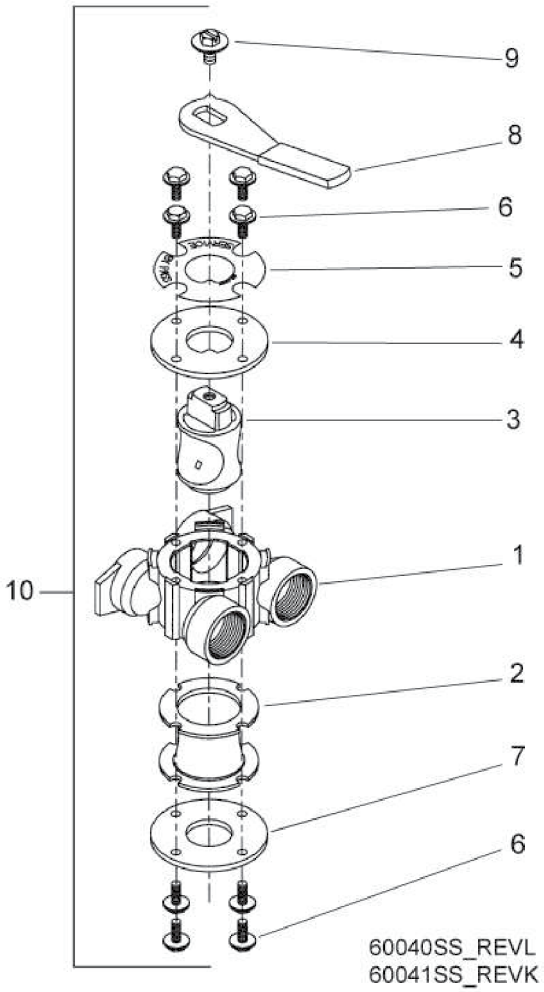
Bypass Valve Assembly (Plastic)



Item No.	Quantity	Part No.	Description
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
413 ...	1	13708-40	Yoke, 1", Sweat
.....	.....	13708-45	Yoke, 3/4", Sweat
.....	.....	19275	Yoke, Angle 90 Deg, 3/4", NPT
.....	.....	19275-45	Yoke, Angle 90 Deg, 3/4" Sweat
.....	.....	19620-01	Yoke Assy, 3/4", R/Angle, 90 Deg w/O-rings, Clips & screws
.....	.....	40636	Yoke, 1 1/4", NPT
.....	.....	40636-49	Yoke, 1 1/4", Sweat
.....	.....	41027-01	Yoke, 3/4", NPT, Cast, Machd
.....	.....	41026-01	Yoke, 1", NPT, Cast, Machd, SS

For Service Assembly Numbers, See the Back of this Manual

Bypass Valve Assembly (Metal)



Item No.	Quantity	Part No.	Description
1	1	40614	By-Pass Body, 3/4"
		40634	By-Pass Body, 1", SS
2	1	14105	Seal, By-Pass, 560CD
3	1	11972	Plug, Bypass, w/Wax
4	1	11978	Plate, Bypass, Top
5	1	13604-01	Label, Bypass, Standard Mount
6	8	15727	Screw, Hex Wsh Hd, 10-24 x 1/2
7	1	11986	Plate, Bypass, Bottom
8	1	11979	Lever, Bypass
9	1	11989	Screw, Sltd Indent, 1/4 - 14 x 1 1/2
10	1	60040SS	Bypass Valve, 5600, 3/4" NPT Blk Grip Lever, Stainless Steel
		60041SS	Bypass Valve, 5600, 1" NPT Blk Grip Lever, S

For Service Assembly Numbers, See the Back of this Manual

Problem	Cause	Correction
1. Water conditioner fails to backwash.	A. Electrical service to unit has been interrupted	A. Assure permanent electrical service (check fuse, plug, pull chain, or switch)
	B. Timer is defective.	B. Replace timer.
	C. Power failure.	C. Reset time of day.
	B. Excessive water in brine tank.	B. See problem 7.
2. Loss of water pressure.	A. Iron buildup in line to water conditioner.	A. Clean line to water conditioner.
	B. Iron buildup in water conditioner.	B. Clean control and add mineral cleaner to mineral bed. Increase frequency of regeneration.
	C. Inlet of control plugged due to foreign material broken loose from pipes by recent work done on plumbing system.	C. Remove piston and clean control.
3. Loss of mineral through drain line.	A. Air in water system. Internal Failure	A. Assure that well system has proper air eliminator control. Check for dry well condition. Check distributor.
	B. Improperly sized drain line flow control.	B. Check for proper drain rate.
4. Contaminant in conditioned water.	A. Fouled mineral bed.	A. Check backwash, brine draw, and brine tank fill. Increase frequency of regeneration. Increase backwash time.
5. Control cycles continuously.	A. Misadjusted, broken, or shorted switch.	A. Determine if switch or timer is faulty and replace it, or replace complete power head.
6. Drain flows continuously.	A. Valve is not programming correctly.	A. Check timer program and positioning of control. Replace power head assembly if not positioning
	B. Foreign material in control.	B. Remove power head assembly and inspect bore. Remove foreign material and check control in various
	C. Internal control leak.	C. Replace seals and piston assembly.

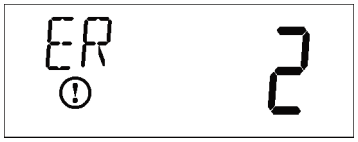
Troubleshooting

Error Codes

Note: Error codes appear on the In Service display.

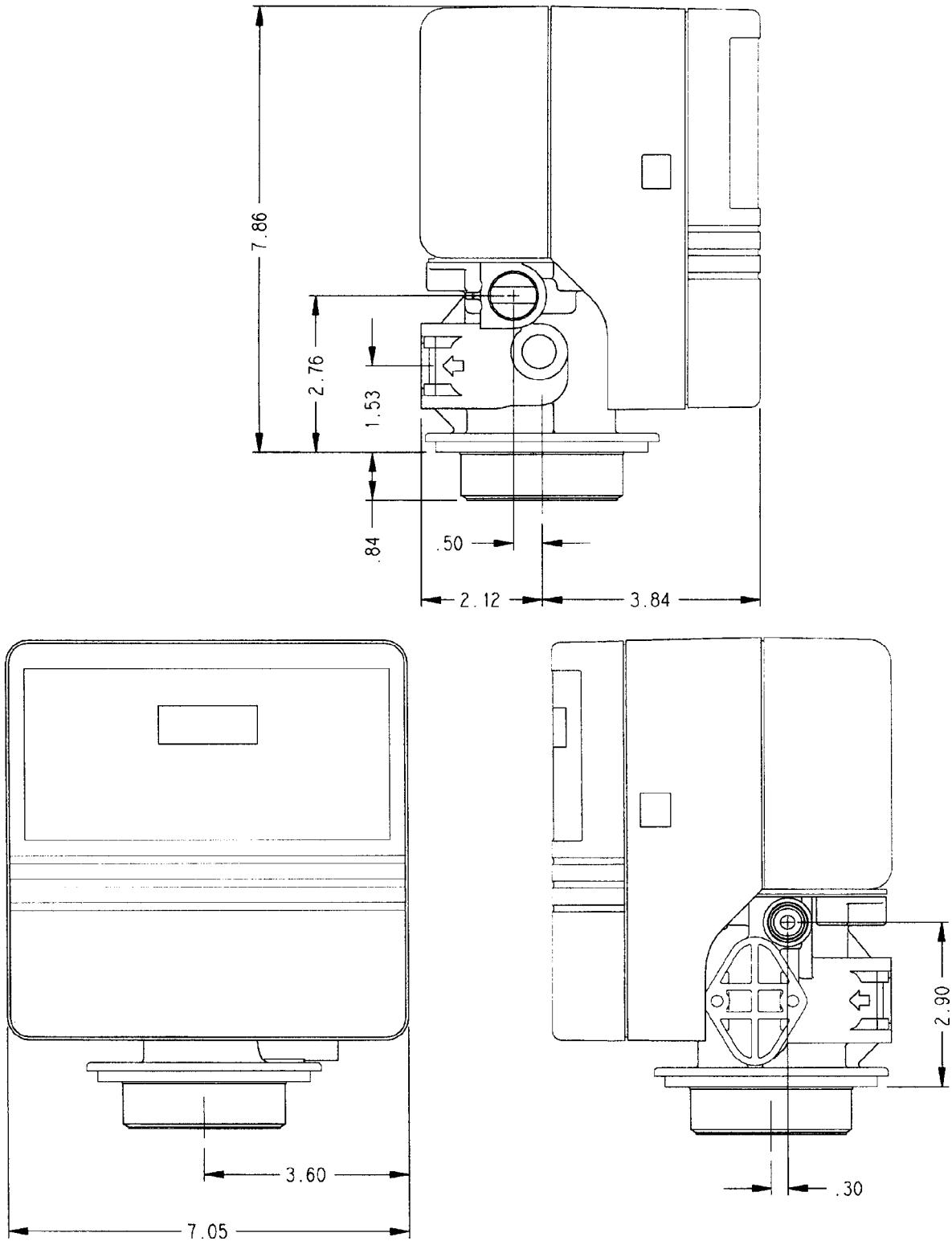
Error Code	Probable Cause	Recover and Resetting
[Err 0]	Drive motor is stalled	Unplug the unit from the power source
[Err 1]	Drive motor is running continuously	When power is restored to the unit, the Err _ display code clears. If the condition causing the error has not been resolved the Err _ code reappears in the four digit display. Do not attempt to troubleshoot this problem any further.
[Err 2]	There have been more than 99 days since the last Regeneration. If the Day of the Week mode of regeneration is selected and days since last regeneration exceeds 7 days. [7 - - 5]: There have been more than 7 days since the last regeneration. All individual settings (d1, d2, d3, d4, d5, d6, d7) are set to 0.	Regeneration must occur for the unit to recover, the display to clear and the valve to function normally. [7 - - 5]: To recover from [Err2], the user must initiate a regeneration or set at least one individual day to 1.
[Err 3]	Control board memory failure.	Perform a Master Reset. If the error returns, do not attempt to troubleshoot this problem any further.

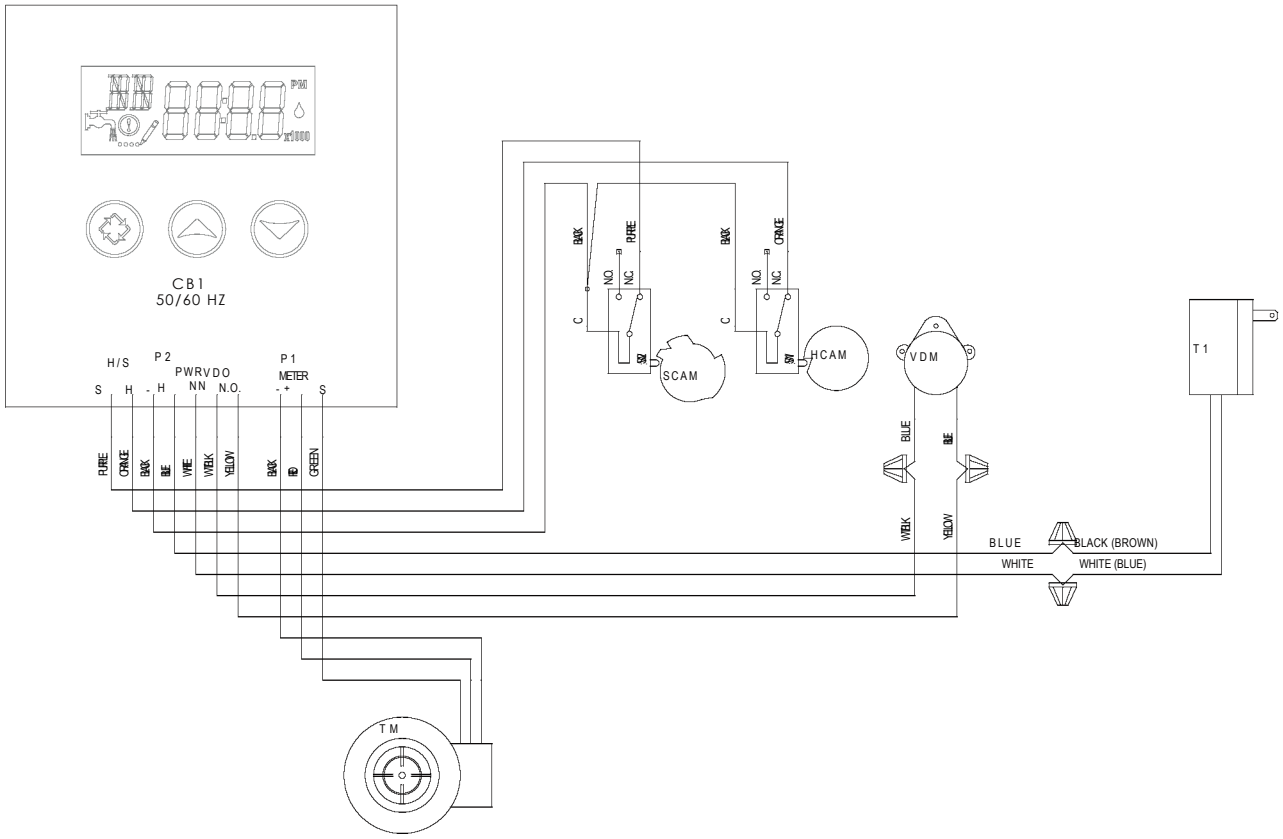
Error Display Example



NOTE: Unit will !ash when an error exists.

Dimensional Drawing





CB1 - SXT Timer
T1 - 24V Transformer
TM - 3/4" Turbine Flow Meter
(Optional) VDM - Valve Drive Motor
SW1 - Valve Homing Swith
SW2 - Valve Step Switch
HCAM - Valve Homing
SCAM - Valve Step