Pentair

ter Wa

# Fleck 5600SXT Downflow

*Service Manual*



## TABLE OF CONTENTS


JOB SPECIFICATION SHEET .....1
INSTALLATION .....2
START-UP INSTRUCTIONS .....2
TIMER FEATURES .....3
TIMER OPERATION .....4
MASTER PROGRAMMING MODE CHART .....5
MASTER PROGRAMMING MODE .....6
USER PROGRAMMING MODE .....9
DIAGNOSTIC PROGRAMMING MODE .....10
CONTROL VALVE ASSEMBLY .....11
VALVE POWERHEAD ASSEMBLY .....12
3/4" TURBINE METER ASSEMBLY .....13
BYPASS VALVE ASSEMBLY (PLASTIC) .....14
BYPASS VALVE ASSEMBLY (METAL) .....15
2300 SAFETY BRINE VALVE .....16
2310 SAFETY BRINE VALVE .....17
TROUBLESHOOTING .....18
WATER CONDITIONER FLOW DIAGRAMS .....20
WIRING DIAGRAM .....21
SERVICE INSTRUCTIONS .....22
SERVICE ASSEMBLIES .....24


## JOB SPECIFICATION SHEET

Job Number: _____

Model Number: _____

Water Hardness: _____ ppm or gpg

Capacity Per Unit: _____

Mineral Tank Size: _____ Diameter: _____ Height: _____

Salt Setting per Regeneration: _____

**1. Type of Timer:**

A. 7 Day or 12 Day

B. Meter Initiated

**2. Downflow: Upflow Upflow Variable**

**3. Meter Size:**

A. 3/4" Std Range (125 - 2,100 gallon setting)

B. 3/4" Ext Range (625 - 10,625 gallon setting)

C. 1" Std Range (310 - 5,270 gallon setting)

D. 1" Ext Range (1,150 - 26,350 gallon setting)

E. 1-1/2" Std Range (625 - 10,625 gallon setting)

F. 1-1/2" Ext Range (3,125 - 53,125 gallon setting)

G. 2" Std Range (1,250 - 21,250 gallon setting)

H. 2" Ext Range (6,250 - 106,250 gallon setting)

I. 3" Std Range (3,750 - 63,750 gallon setting)

J. 3" Ext Range (18,750 - 318,750 gallon setting)

K. Electronic _____ Pulse Count _____ Meter Size _____

**4. System Type:**

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

B. System #4: Time Clock

C. System #4: Twin Tank

D. System #5: 2-5 Tanks, Interlock Mechanical
2-4 Tanks, Interlock Electronic
Meter per unit for Mechanical and Electronic

E. System #6: 2-5 Tanks, 1 Meter, Series Regeneration, Mechanical
2-4 Tanks, 1 Meter, Series Regeneration, Electronic

F. System #7: 2-5 Tanks, 1 Meter, Alternating Regeneration, Mechanical
2 Tanks only, 1 Meter, Alternating Regeneration, Electronic

G. System #9: Electronic Only, 2-4 Tanks, Meter per Valve, Alternating

H. System #14: Electronic Only, 2-4 Tanks, Meter per Valve. Brings

**5. Timer Program Settings:**

A. Backwash: _____ Minutes

B. Brine and Slow Rinse: _____ Minutes

C. Rapid Rinse: _____ Minutes

D. _____ Minutes

E. Pause Time: _____ Minutes

F. Second Backwash: _____ Minutes

**6. Drain Line Flow Control: _____ gpm**

**7. Brine Line Flow Controller: _____ gpm**

**8. Injector Size#:** _____

**9. Piston Type:**

A. Hard Water Bypass

B. No Hard Water Bypass

# INSTALLATION

**Water Pressure**

A minimum of 20 pounds (1.4 bar) 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

**Location Of Softener And Drain**

The softener should be located close to a drain to prevent air

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

**Installation Instructions**

1. Place the softener tank where you want to install the unit

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

   in excess of 7 gpm (26.5 Lpm) or length in excess of 20’ (6 m) require 3/4" (19 mm) drain line. Commercial drain

4. Refer to the dimensional drawing for cutting height of the distributor tube. If there is no dimensional drawing, cut the

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

   Leave at least 6" (15 cm) between the DLFC and solder joints when soldering pipes that are connected on the DLFC. Failure to do this could cause interior damage to the DLFC.

7.

   common line.

8.

## TIMER FEATURES

# TIMER OPERATION

**Meter Immediate Control**

A meter immediate control 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 (typically expressed in grains/unit volume) by the feedwater hardness and subtracting the reserve. Meter Immediate systems generally do not use a reserve volume. However, in twin tank systems with soft-water regeneration, the reserve capacity should be set to the volume of water used during regeneration to prevent hard water break-through. A Meter Immediate control will also start a regeneration cycle at the programmed regeneration time if a number of days equal to the regeneration day override pass before water usage depletes the calculated system capacity.

**Meter Delayed Control**

A Meter Delayed Control measures water usage and regenerates the system at the programmed regeneration time after the calculated system capacity is depleted. As with Meter Immediate systems, the control calculates the system capacity by dividing the unit capacity by the feedwater hardness and subtracting the reserve. The reserve should be set to insure that the system delivers treated water between the time the system capacity is depleted and the actual regeneration time. A Meter Delayed control will also start a regeneration cycle at the programmed regeneration time if a number of days equal to the regeneration day override pass before water usage depletes the calculated system capacity.

**Time Clock Delayed Control**

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

**Day of the Week Control**

This control regenerates the system on a weekly schedule.

each day to either “off” or “on.” The control will initiates a regeneration cycle on days that have been set to “on” at the

**Control Operation During Regeneration**

During regeneration, the control displays a special regeneration display. In this display, the control shows the current regeneration step number the valve is advancing to, or has reached, and the time remaining in that step. The step

to this regeneration step position. Once all regeneration steps are complete the valve returns to service and resumes normal operation.

Pressing the Extra Cycle button during a regeneration cycle immediately advances the valve to the next cycle step position and resumes normal step timing.

**Control Operation During Programming**

The control only enters the Program Mode with the valve in service. While in the Program Mode, the control continues to operate normally monitoring water usage and keeping all displays up to date. Control programming is stored in memory permanently, eliminating the need for battery backup power.

**Manually Initiating a Regeneration**

1. When timer is in service, press the Extra Cycle button for 5 seconds on the main screen.
2. The timer advances to Regeneration Cycle Step #1 (rapid rinse), and begins programmed time count down.
3. Press the Extra Cycle button once to advance valve to Regeneration Cycle Step #2 (backwash).
4. Press the Extra Cycle button once to advance valve to Regeneration Cycle Step #3 (brine draw & slow rinse).
5. Press the Extra Cycle button once to advance valve to

6. Press the Extra Cycle button once more to advance the valve back to in service.

**NOTE: If the unit is a filter or upflow, the cycle step order may change.**

**NOTE: A queued regeneration can be initiated by pressing the Extra Cycle button. To clear a queued regeneration, press the Extra Cycle button again to cancel. If regeneration occurs for any reason prior to the delayed regeneration time, the manual regeneration request shall be cleared.**

**Control Operation During A Power Failure**

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.

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

resulting from a power failure during regeneration.

The control will not start a new regeneration cycle without line 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

compensate for regeneration delays.

# MASTER PROGRAMMING MODE CHART

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

| Master Programming Options | | | |
|---|---|---|---|
| **Abbreviation** | **Parameter** | **Option Abbreviation** | **Options** |
| DF | Display Format | GAL | Gallons |
| | | Ltr | Liters |
| VT | Valve Type | dF1b | |
| | | dF2b | |
| | | Fltr | Filter |
| | | UFbd | |
| | | UFtr | |
| | | Othr | Other |
| CT | Control Type | Fd | Meter (Flow) Delayed |
| | | FI | 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 | U1 | 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 | SF | 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 | | The system's day override setting |
| RT | Regen Time | | The time of day the system will regenerate |
| BW, BD, RR, BF | Regen Cycle Step Times | | The time duration for each regeneration step. Adjustable from OFF and 0-199 minutes.<br>**NOTE: If "Othr" is chosen under "Valve Type", then R1, R2, R3, etc, will be displayed instead** |
| Ton for each regelCTs | Td7003.12 each re9C | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

# 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.

press and hold the Up and Down buttons together until the

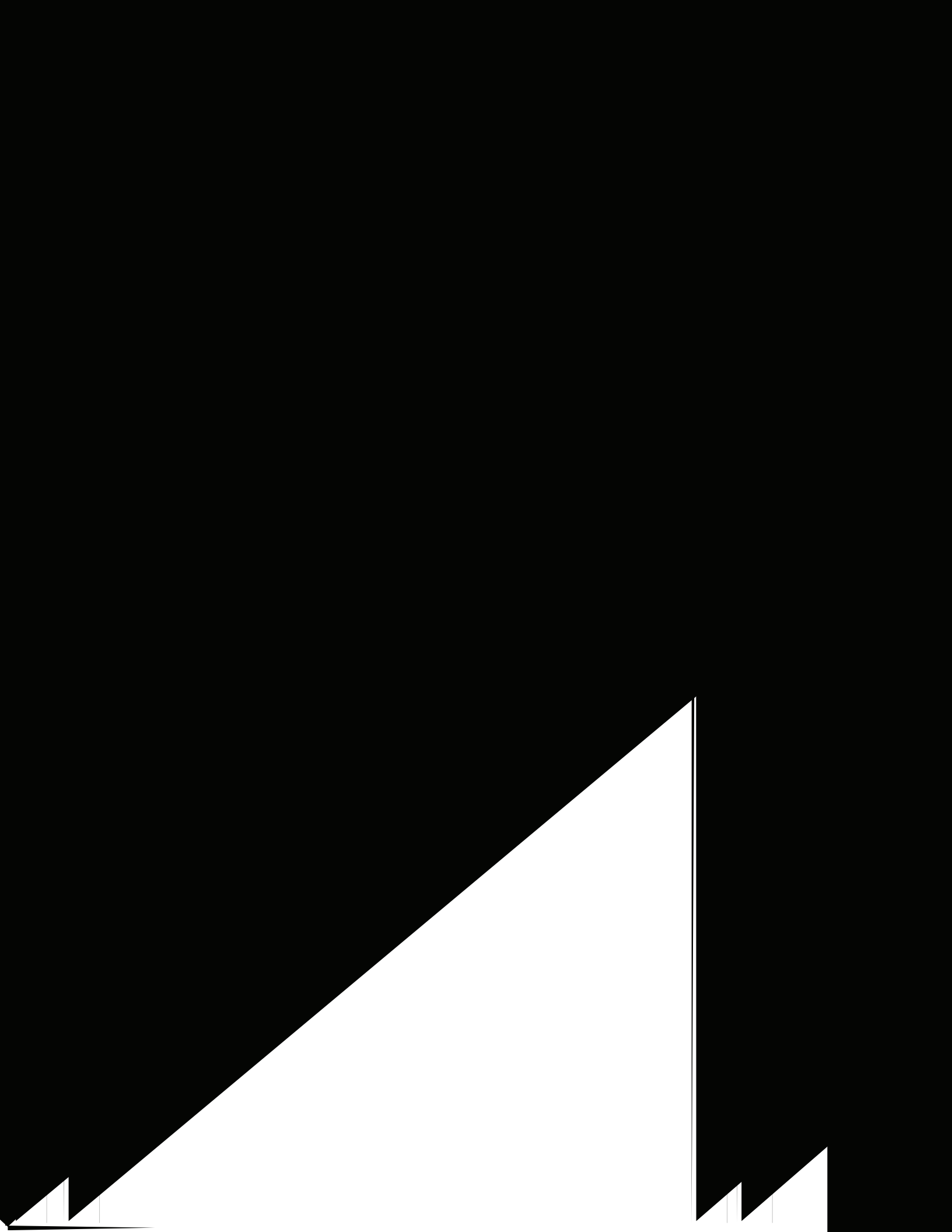
**Setting the Time of Day**

1. Press and hold either the Up or Down buttons until the programming icon replaces the service icon and the parameter display reads DO.
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.

Cycle button (to exit Setting Time of Day mode). Then

**Ent st ng Mod** Set the Time Of Day display to





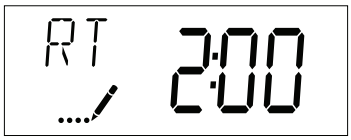
# MASTER PROGRAMMING MODE

### 12. Regeneration Time

Press the Extra Cycle button. Use this display to set the

control will initiate a delayed, manually queued, or day override

in the upper left hand corner of the screen. Use the Up and Down buttons to adjust the value as needed.



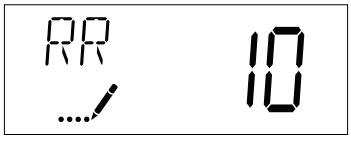

### 13. Regeneration Cycle Step Times

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

upper left-hand corner of the screen. The abbreviations used

as R1, R2, R3, R4, R5, and R6. Each cycle step time can be set from 0 to 199 minutes. 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.

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

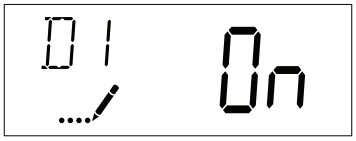



Range: 0-199 minutes

### 14. Day of Week Settings

Press the Extra Cycle button. Use this display to set the

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

corner of the screen. Use the Up and Down buttons to select from Day 1 through Day 7.



# USER 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 or SF | Reserve Capacity | |
| CD | Current Day | The current day of week |

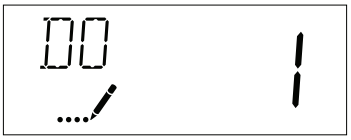
**NOTE: Some items may not be shown depending on timer con f guration. The timer will discard any changes and exit User Mode if any button is not pressed for sixty seconds.**

**User Programming Mode Steps**

1.
service, and the time of day is NOT set to 12:01 PM.

2. Use this display to adjust the Day Override. This option

the screen.




3. Press the Extra Cycle button. Use this display to adjust the

in the upper left hand corner of the screen.



# DIAGNOSTIC PROGRAMMING MODE

| Diagnostic Programming Mode Options | | |
|---|---|---|
| **Abbreviation** | **Parameter** | **Description** |
| FR | Flow Rate | |
| PF | Peak Flow Rate | rate measured since the last regeneration |
| HR | Hours in Service | Displays the total hours that the unit has been in service |
| VU | Volume Used | Displays the total volume of water treated by the unit |
| RC | Reserve Capacity | Displays the system's reserve capacity calculated from the system capacity, feedwater hardness, and safety factor |
| SV | Software Version | Displays the software version installed on the controller |

**NOTE: Some items may not be shown depending on timer con f guration. The timer will exit Diagnostic Mode after 60 seconds if no buttons are pressed. Press the Extra Cycle button to exit Diagnostic Mode at any time.**

**Diagnostic Programming Mode Steps**

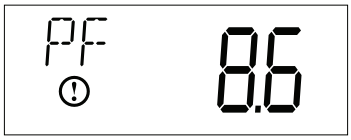
1.
   while in service.
2. Use this display to view the current Flow Rate. This option

   the screen.



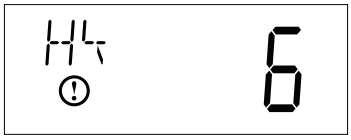

3. Press the Up button. Use this display to view the Peak Flow Rate since the last regeneration cycle. This option setting

   screen.

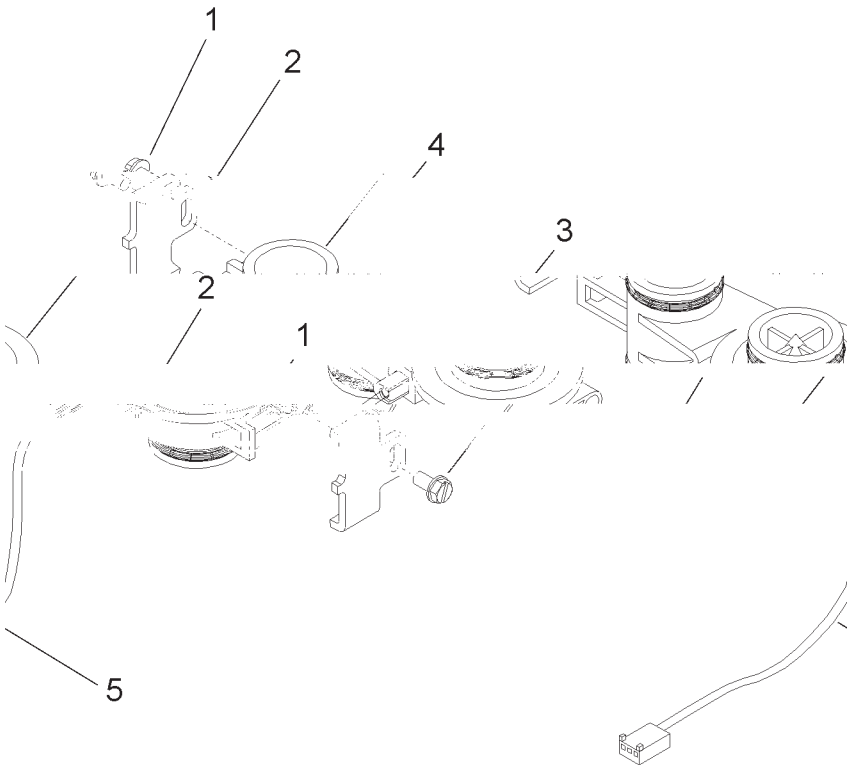



4. Press the Up button. Use this display to view the Hours in Service since the last regeneration cycle. This option

   the screen.



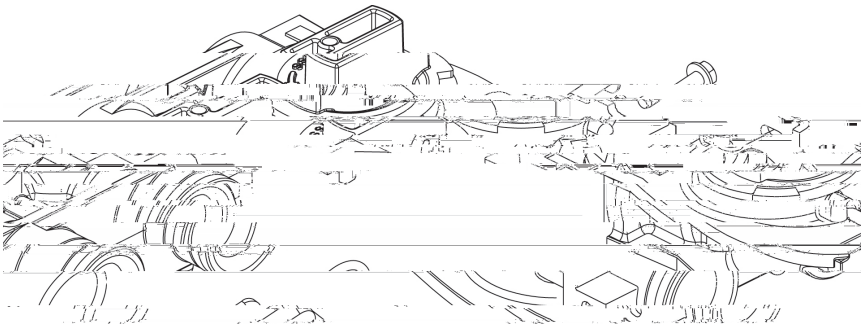
# 3/4" TURBINE METER ASSEMBLY




60626 Assy Rev A

| Item No. | QTY | 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 |
| 6 | 1 | 14613 | Flow Straightener (not shown) |

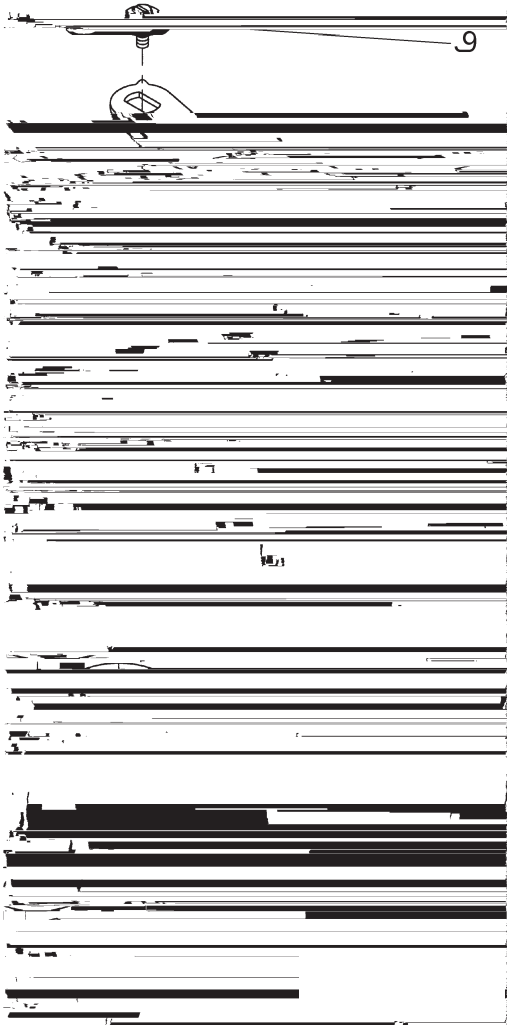
# BYPASS VALVE ASSEMBLY (PLASTIC)



60049 Rev G

| Item No. | QTY | Part No. | Description |
|---|---|---|---|
| 1 | 2 | 13305 | O-ring, -119 |
| 2 | 2 | 13255 | Clip, Mounting |
| 3 | 2 | 13314 | Screw, Hex Washer Head, 8-18 x 5/8 |
| 4A | 1 | 18706 | Yoke, Plastic, 1” NPT |
| | 1 | 18706-02 | Yoke, Plastic, 3/4” NPT |
| 4B | 1 | 13708 | Yoke, Brass, 3/4” NPT |
| | 1 | 13708NP | Yoke, 3/4” NPT Nickel Plated |
| | 1 | 13398 | Yoke, Brass, 1” NPT |
| | 1 | 13398NP | Yoke, 1” NPT Nickel Plated |
| | 1 | 40636 | Yoke, 1-1/4” NPT |
| | 1 | 40636-49 | Yoke, 1-1/4” Sweat |

# BYPASS VALVE ASSEMBLY (METAL)




60040SS Rev R
60041SS Rev T

| Item No. | QTY | Part No. | Description |
|---|---|---|---|
| 1 | 1 | 17290 | Bypass Valve Body, 3/4” |
| | 1 | 17290NP | Bypass Valve Body, 3/4” Nickel Plated |
| | 1 | 13399 | Bypass Valve Body, 1” |
| | 1 | 13399NP | Bypass Valve Body, 1”, Nickel Plated |
| 2 | 1 | 11726 | Seal, Bypass |
| 3 | 1 | 11972 | Plug, Bypass |
| 4 | 1 | 11978 | Side Cover |
| 5 | 1 | 13604-01 | Label |
| 6 | 8 | 15727 | Screw |
| 7 | 1 | 11986 | Side Cover |
| 8 | 1 | 11979 | Lever, Bypass |
| 9 | 1 | 11989 | Screw, Hex Head, 1/4-14 |

# 2300 SAFETY BRINE VALVE




60027 Rev D

| Item No. | QTY | Part No. | Description |
|---|---|---|---|
| 1 | 1 | 11942 | Brine Valve Body 1/4” NPT |
| 2 | 1 | 10138 | Ball, 3/8” |
| 3 | 1 | 11566 | Bull Stop |
| 4 | 1 | 10328 | Elbow, 1/4” x 1/4” T |
| 5 | 2 | 10332 | Insert, 3/8” |
| 6 | 2 | 10330 | Sleeve, 3/8” |
| 7 | 2 | 10329 | Tube Nut, 3/8” |
| 8 | 1 | 10186 | Nut, Hex, 10-32, Nylon |
| 9 | 1 | 60002 | #500 Air Check |
| 10 | 1 | 10149 | Float Rod, 30” |
| 11 | 1 | 10700 | Float Assembly, White |
| 12 | 4 | 10150 | Grommet |

# 2310 SAFETY BRINE VALVE



| Item No. | QTY | Part No. | Description |
|---|---|---|---|
| 1 | 1 | 19645 | Safety Brine Valve Body |
| 2 | 1 | 19803 | Safety Brine Valve Arm Assembly |
| 3 | 1 | 19804 | Stud, 10-24 |
| 4 | 1 | 19805 | Nut, 10-24 |
| 5 | 1 | 19652-01 | Poppet and Seal |
| 6 | 1 | 19649 | Flow Dispenser |
| 7 | 1 | 11183 | O-ring, 017 |
| 8 | 1 | 19647 | Elbow, Safety Brine Valve |
| 9 | 2 | 19625 | Nut Assembly, 3/8 |
| 10 | 1 | 18312 | Retaining Clip |
| 11 | 1 | 60014 | Safety BrineValve, 2310 (includes items 1-10) |
| 12 | 2 | 10150 | Grommet (included with item 13) |
| 13 | 1 | 60068-30 | Float Assembly, 2310, w/30” Rod |
| 14 | 1 | 60002-34 | Air Check, #500, 34” long |

| Problem | Cause | Correction |
|---|---|---|
| Water conditioner fails to regenerate. | Electrical service to unit has been interrupted | Assure permanent electrical service (check fuse, plug, pull chain, or switch) |
| | Timer is defective. | Replace timer. |
| | Power failure. | Reset time of day. |
| Hard water. | By-pass valve is open. | Close by-pass valve. |
| | No salt is in brine tank. | Add salt to brine tank and maintain salt level above water level. |
| | Injector screen plugged. | Clean injector screen. |
| | | control if plugged. |
| | Hot water tank hardness. | required. |
| | Leak at distributor tube. | Make sure distributor tube is not cracked. Check O-ring and tube pilot. |
| | Internal valve leak. | Replace seals and spacers and/or piston. |
| Unit used too much salt. | Improper salt setting. | Check salt usage and salt setting. |
| | Excessive water in brine tank. | See "Excessive water in brine tank". |
| Loss of water pressure. | Iron buildup in line to water conditioner. | Clean line to water conditioner. |
| | Iron buildup in water conditioner. | Clean control and add mineral cleaner to mineral bed. Increase frequency of regeneration. |
| | Inlet of control plugged due to foreign material broken loose from pipes by recent work done on plumbing system. | Remove piston and clean control. |
| Loss of mineral through drain line. | Air in water system. | Assure that well system has proper air eliminator |
| | | |
| | | |
| | |

# TROUBLESHOOTING

**Error Codes**

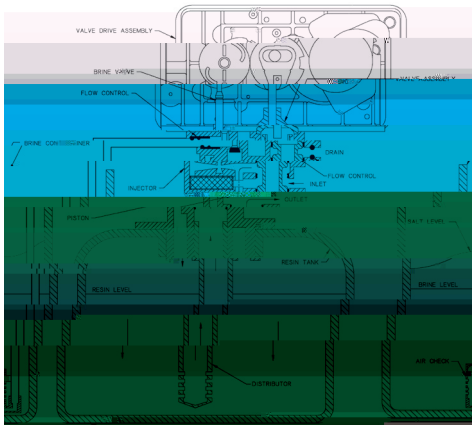
**NOTE: Error codes appear on the In Service display.**

| Error Code | Error Type | Cause | Reset and Recovery |
|---|---|---|---|
| 0 | Cam Sense Error | The valve drive took longer than 6 minutes to advance to the next regeneration position | Unplug the unit and examine the powerhead. Verify that all cam switches are connected to the circuit board and functioning properly. Verify that 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.<br><br>Plug the unit back in and observe its behavior. The unit should cycle to the next valve position and stop. If the error re-occurs, unplug the unit and contact technical support. |
| 1 | Cycle Step Error | The control experienced an unexpected cycle input | Unplug the unit and examine the powerhead. Verify that all cam switches are connected to the circuit board and functioning properly. Enter Master Programming mode and verify that the valve type and system type are set correctly with regard to the unit itself.<br><br>Step the unit through a manual regeneration and verify that it functions correctly. If the error re-occurs unplug the unit and contact technical support. |
| 2 | Regenhan Failure | The system has not regeneratedhan | |
| | | | |
| | | | |

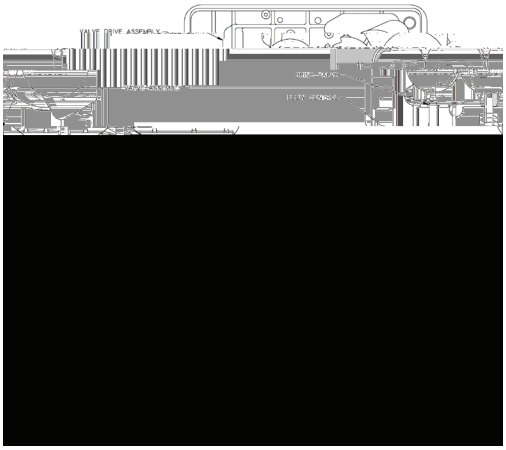
# WATER CONDITIONER FLOW DIAGRAMS

| Single Backwash Positions<br>Black Cycle Cam<br>(Part Number 17438) | Double Backwash Positions<br>Blue Cycle Cam<br>(Part Number 40609) |
|---|---|
| Service Position | Service Position |
| 1. Backwash Position | 1. First Backwash Position |
| 2. Brine/Slow Rinse Positon | 2. Brine/Slow Rinse Positon |
| 3. Rapid Rinse Position | 3. Second Backwash Position |
| 4. Brine Tank Fill Position | 4. Rapid Rinse Position |
| Service Postion | 5. Brine Tank Fill Position |
| | Service Postion |

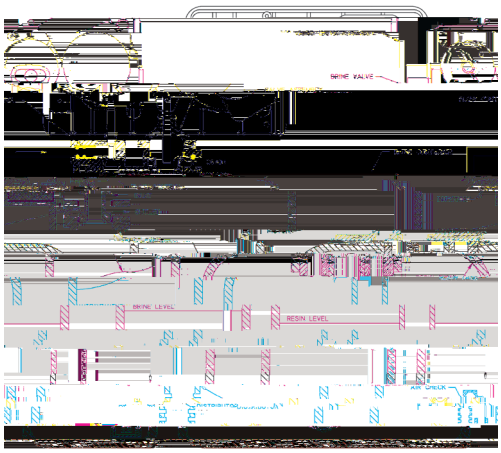
### Service Position



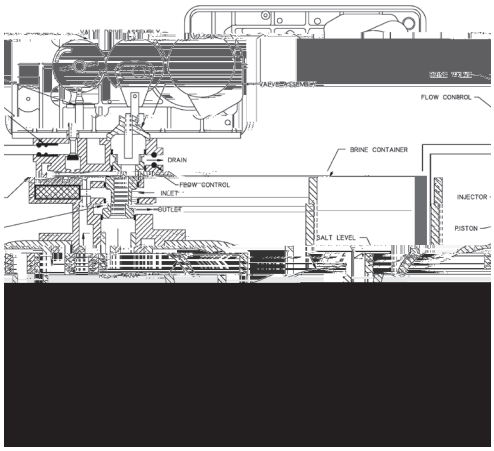

### Backwash Position



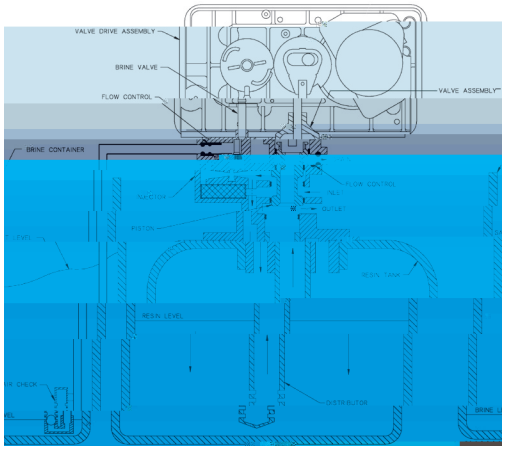
### Brine/Slow Rinse Position




### Second Backwash Position (Double Backwash Units Only)




### Rapid Rinse




### Brine Tank Fill Position



## WIRING DIAGRAM

# SERVICE INSTRUCTIONS

### Replacing Brine Valve, Injectors and Screen

1. Turn off water supply to conditioner:
   If the conditioner installation has a “three valve” bypass

   the valves at the conditioner inlet and outlet.
   If the conditioner has an integral bypass valve, put it in the Bypass position.
   If there is only a shut-off valve near the conditioner inlet, close it.
2. Relieve water pressure in the conditioner by stepping the control into the Backwash position momentarily. Return the control to the In Service position.
3. Unplug electrical cord from outlet.
4. Disconnect brine tube and drain line connections at the injector body.
5. Remove the two injector body mounting screws. The injector and brine module can now be removed from the control valve. Remove and discard brine body O-rings.

### Brine Valve Replacement

1. Pull brine valve from injector body. Also remove and discard O-ring at bottom of brine valve hole.
2. Apply silicone lubricant to new O-ring and reinstall at bottom of brine valve hole.
3. Apply silicone lubricant to O-ring on new valve assembly and press into brine valve hole. Be sure shoulder on

### Injectors/Screen Replacement

1. Remove injector cap and screen, discard O-ring. Unscrew injector nozzle and throat from injector body.
2. Screw in new injector throat and nozzle, be sure they are sealed tightly. Install a new screen.
3. Apply silicone lubricant to new O-ring and install around oval extension on injector cap.
4. Apply silicone lubricant to three new O-rings and install over three bosses on injector body.
5. Insert screws thorough injector cap and injector. Place this assembly thorough hole in timer housing and into mating holes in the valve body. Tighten screws.
6. Reconnect brine tube and drain line.
7. Return bypass or inlet valve to normal In Service position. Water pressure automatically builds in the conditioner

   **NOTE: Be sure to shut off any bypass line.**
8. Check for leaks at all seal areas. Check drain seal with the control in the Backwash position.
9. Plug electrical cord into outlet.
10. Set Time Of Day and cycle the control valve manually to assure proper function. Make sure control valve is returned to the In Service position.
11. Be sure there is enough salt in the brine tank.
12. Start regeneration cycle manually if water is hard.

### Timer Replacement

To replace timer refer to Replacing Brine Valve, Injectors and Screen, steps 1–3.

1. Remove the control valve back cover. Remove the control valve front cover. Disconnect the meter dome signal wire from the front cover and feed it back through the control.
2. Remove screw and washer at drive yoke. Remove timer mounting screws. The entire timer assembly then lifts off easily.
3. Put new timer on top of valve. Be sure drive pin on main gear engages slot in drive yoke.
4. Replace timer mounting screws. Replace screw and washer at drive yoke. Replace meter signal wire.
5. Return bypass or inlet valve to normal In Service position. Water pressure automatically builds in the conditioner.

   **NOTE: Be sure to shut off any bypass line.**
6. Replace the control valve back cover.
7. Follow Injectors/Screen Replacement, steps 9–12.

### Piston Assembly Replacement

To replace piston assembly refer to Replacing Brine Valve, Injectors and Screen, steps 1–3.

1. Remove the control valve back cover. Remove the control valve front cover. Disconnect the meter dome signal wire from the front cover and feed it back through the control.
2. Remove screw and washer at drive yoke. Remove timer mounting screws. The entire timer assembly will now lift off easily. Remove end plug retainer plate.
3. Pull upward on end of piston yoke until assembly is out of valve.
4. Inspect the inside of the valve to make sure that all spacers and seals are in place, and that there is no foreign matter that would interfere with the valve operation.
5. Take new piston assembly as furnished and push piston into valve by means of the end plug. Twist yoke carefully in a clockwise direction to properly align it with drive gear. Replace end plug retainer plate.
6. Place timer on top of valve. Be sure drive pin on main gear engages slot in drive yoke.
7. Replace timer mounting screws. Replace screw and washer at drive yoke.
8. Return bypass or inlet valve to normal In Service position. Water pressure automatically builds in the conditioner

   **NOTE: Be sure to shut off any bypass line.**
9. Replace the control valve back cover.
10. Follow Injectors/Screen Replacement, steps 9–12.

## SERVICE INSTRUCTIONS

**Seal and Spacer Replacement**

To replace seals and spacers, refer to Replacing Brine Valve, Injectors and Screen, steps 1–3.

1. Remove the control valve back cover. Remove the control valve front cover. Disconnect the meter dome signal wire from the front cover and feed it back through the control.
2. Remove screw and washer at drive yoke. Remove timer mounting screws. The entire timer assembly will now lift off easily. Remove end plug retainer plate.
3. Pull upward on end of piston rod yoke until assembly is out of valve. Remove and replace seals and spacers.
4. Take piston assembly and push piston into valve by means of the end plug. Twist yoke carefully in a clockwise direction to properly align it with drive gear. Replace end plug retainer plate.
5. Place timer on top of valve. Be sure drive pin on main gear engages slot in drive yoke.
6. Replace timer mounting screws. Replace screw and washer at drive yoke.
7. Return bypass or inlet valve to normal In Service position. Water pressure automatically builds in the conditioner.

   **NOTE: Be sure to shut off any bypass line.**
8. Replace the control valve back cover.
9. Follow Injectors/Screen Replacement, steps 9–12.

**Meter Replacement**

To replace meter refer to Replacing Brine Valve, Injectors and Screen, steps 1–3.

1. Remove two screws and clips at bypass valve or yoke. Pull resin tank away from plumbing connections.
2. Pull meter module out of control valve.
3. Remove signal wire from meter module, (snap tab on end opposite wire cable).
4. Apply silicone lubricant to four new O-rings and assemble to four ports on new meter module.
5. Install signal wire into new meter module.
6. Assemble meter to control valve. Note, meter portion of module must be assembled at valve outlet.
7. Push resin tank back to the plumbing connections and engage meter ports with bypass valve or yoke.
8. Attach two clips and screws at bypass valve or yoke. Be

9. Return bypass or inlet valve to normal In Service position. Water pressure automatically builds in the conditioner.

   **NOTE: Be sure to shut off any bypass line.**
10. Check for leaks at all seal areas.
11. Follow Injectors/Screen Replacement, steps 9–12.

## SERVICE ASSEMBLIES

**Air Check**
60002-34 .....Air Check #500 34”

**Brine Line Flow Controls**
60022-12 .....BLFC .125 gpm
60022-25 .....BLFC .25 gpm
60022-50 .....BLFC .50 gpm
60022-100 .....BLFC 1.0 gpm

**Brine Line Flow Control Washers**
17307.....Washer Flow .125 gpm
12094.....Washer Flow .25 gpm
12095.....Washer Flow .50 gpm
12097.....Washer Flow 1.0 gpm

**Brine ij aax ] Ƽ is**
.....**B ` aaxck**