



FLECK 2900S
SERVICE MANUAL

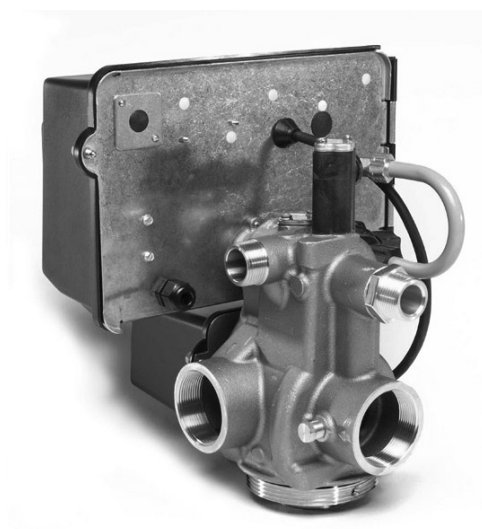


TABLE OF CONTENTS

JOB SPECIFICATION SHEET	3
INSTALLATION	3
SYSTEM DISINFECTION	5
START-UP INSTRUCTIONS	5
3200 TIMER SETTING PROCEDURE	6
3210 & 3220 TIMER SETTING PROCEDURE	6
3200, 3210, 3220, 3230 REGENERATION CYCLE SETTING PROCEDURE	7
3200 TIME CLOCK TIMER ASSEMBLY	8
3210 METER DELAYED TIMER ASSEMBLY	10
3220 METER IMMEDIATE TIMER ASSEMBLY	12
3230 REMOTE START TIMER ASSEMBLY	14
UPPER ENVIRONMENTAL POWERHEAD ASSEMBLY	16
LOWER ENVIRONMENTAL POWERHEAD ASSEMBLY	18
CONTROL VALVE ASSEMBLY	20
CONTROL VALVE SIDE MOUNT ADAPTER	23
1600 SERIES BRINE SYSTEM	24
1650 BRINE SYSTEM ASSEMBLY	26
1700 BRINE SYSTEM ASSEMBLY	28
1710 BRINE SYSTEM ASSEMBLY	30
2" BRASS METER ASSEMBLY	31
2" STAINLESS STEEL METER ASSEMBLY	32
2" PLASTIC METER ASSEMBLY	33
1600 SERVICE VALVE OPERATOR (NEW STYLE)	34
2300 SAFETY BRINE VALVE	35
2310 SAFETY BRINE VALVE	36
2350 SAFETY BRINE VALVE	37
GENERAL SERVICE HINTS FOR METER CONTROL	38
TROUBLESHOOTING	39
WATER CONDITIONER FLOW DIAGRAMS - DOWNFLOW	40
WATER CONDITIONER FLOW DIAGRAMS - UPFLOW	41
FLOW DATA & INJECTOR DRAW RATES - DOWNFLOW	42
ENVIRONMENTAL BACKPLATE DIMENSIONS	43
SYSTEM #4	44
SYSTEM #5 INTERLOCK	44
SYSTEM #6 & #7	45
SYSTEM #4 WIRING	46
SYSTEM #5 WIRING	48
SYSTEM #6 WIRING	49
SYSTEM #7 WIRING	50
1600/1700 SYSTEM NOZZLE & THROAT CHART	52
SERVICE ASSEMBLIES	53

IMPORTANT PLEASE READ:

- The information, specifications and illustrations in this manual are based on the latest information available at the time of release. The manufacturer reserves the right to make changes at any time without notice.
- This manual is intended as a guide for service of the valve only. System installation requires information from a number of suppliers not known at the time of manufacture. This product should be installed by a plumbing professional.
- This unit is designed to be installed on a potable water system only and is not intended to treat water that is microbiologically unsafe or of unknown quality without adequate disinfection before and after the system.
- This product must be installed in compliance with all state and municipal plumbing and electrical codes. Permits may be required at the time of installation.
- It is established that when daytime water pressure exceeds 80 psi (5.5 bar), the maximum pressure rating of 125 psi (8.6 bar) can be exceeded. A pressure regulator must be installed on this system or warranty is voided.
- Do not install the unit where temperatures may drop below 32°F (0°C) or above 120°F (52°C).
- Do not place the unit in direct sunlight. Black units will absorb radiant heat increasing internal temperatures.
- Do not strike the valve or any of the components.
- Warranty of this product extends to manufacturing defects. Misapplication of this product may result in failure to properly condition water, damage to product, or personal injury.
- A prefilter should be used on installations in which free solids are present.
- In some applications local municipalities treat water with Chloramines. High Chloramine levels may damage valve components.
- Correct and constant voltage must be supplied to the controller to maintain proper function.
- The system is intended to treat only potable quality water. It is not intended as the permanent primary treatment of water from a source that is contaminated, such as from radon, pesticides, insecticides, sewage or wastewater.
- This system is not intended for use by persons (including children) with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
- Children shall not play with the system.
- Cleaning shall not be made by children without supervision.
- Periodic cleaning and maintenance may be required to function properly. See disinfection instructions on page 5.

CALIFORNIA PROPOSITION 65 WARNING

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

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-inch Std Range (125 - 2,100 gallon setting)
- B. 3/4-inch Ext Range (625 - 10,625 gallon setting)
- C. 1-inch Std Range (310 - 5,270 gallon setting)
- D. 1-inch Ext Range (1,150 - 26,350 gallon setting)
- E. 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 units on and offline based on flow.

5. Valve Operating Parameters: 3150

Minimum operating pressure:	20 psi / 1.4 bar / 138 kPa
Maximum operating pressure:	125 psi / 8.61 bar / 861 kPa
Minimum water temperature:	34° F / 1° C
Maximum water temperature:	110° F / 43° C
Maximum Ambient temperature:	120° F / 52° C
Maximum humidity:	75%
Input Voltage:	120 Volts AC / 60 Hz
Maximum Watts:	58 watts
Maximum altitude:	2000 meters

6. Timer Program Settings:

- A. Backwash: Minutes
- B. Brine and Slow Rinse: _____ Minutes
- C. Rapid Rinse: _____ Minutes
- D. Brine Tank Refill: _____ Minutes
- E. Pause Time: _____ Minutes
- F. Second Backwash: _____ Minutes

7. Drain Line Flow Control: gpm

8. Brine Line Flow Controller: gpm

9. Injector Size#:

10. 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 Warnings & Caution Statement

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.

Grounding Instructions

This appliance must be grounded. In the event of a malfunction or breakdown, grounding will reduce the risk of electric shock by providing a path of least resistance for electric current. This appliance is equipped with a cord having an appliance-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is installed and grounded in accordance with all local codes and ordinances.

⚠ WARNING: Improper connection of the appliance-grounding conductor can result in a risk of electric shock. Check with a qualified electrician or service representative if you are in doubt whether the appliance is properly grounded. Do not modify the plug provided with the appliance; if it will not fit the outlet, have a proper outlet installed by a qualified technician.

⚠ WARNING: Risk of electric shock. Disconnect power before servicing.

FOR DRY LOCATIONS USE ONLY.

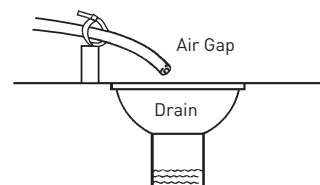
The cover should only be removed during installation set-up and maintenance by a qualified service person.

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 ahead of the water softener.

Location of Softener and Drain

The softener should be located close to the drain to prevent air breaks and back flow. You must have an air gap on the drain line to prevent back flow of drain water into the system. The air gap should be two (2) times the diameter of the drain line pipe but must be at least 1-inch.



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 *CONTINUED*

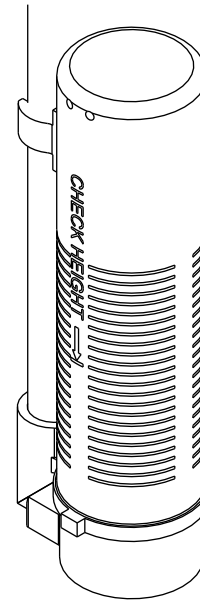
Installation Instructions

1. Place the softener 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-inch (13 mm). Backwash flow rates in excess of 7 gpm (26.5 Lpm) or length in excess of 20 feet (6 m) require 3/4-inch (19 mm) 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.
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. **⚠ IMPORTANT:** For valves equipped with electromechanical timers and stainless steel meters, refer to the Meter Dome and Union Orientation section.
7. Solder joints near the drain must be done prior to connecting the Drain Line Flow Control fitting (DLFC). Leave at least 6 inches (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.
8. Plumber tape is the only sealant to be used on the drain fitting. The drain from twin tank units may be run through a common line.
9. Make sure that the floor is clean beneath the salt storage tank and that it is level.
10. Place approximately 1 inch (25 mm) of water above the grid plate. If a grid is not utilized, fill to the top of the air check (Figure 1) in the salt tank. Do not add salt to the brine tank at this time.
11. On units with a by-pass, place in by-pass position. Turn on the main water supply. Open a cold soft 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.
12. Slowly place the by-pass in service position and let water flow into the mineral tank. When water flow stops, slowly open a cold water tap nearby and let run until the air is purged from the unit.
13. Plug unit into an electrical outlet.

NOTE: All electrical connections must be connected according to local codes. Be certain the outlet is uninterrupted.



60002 Rev E

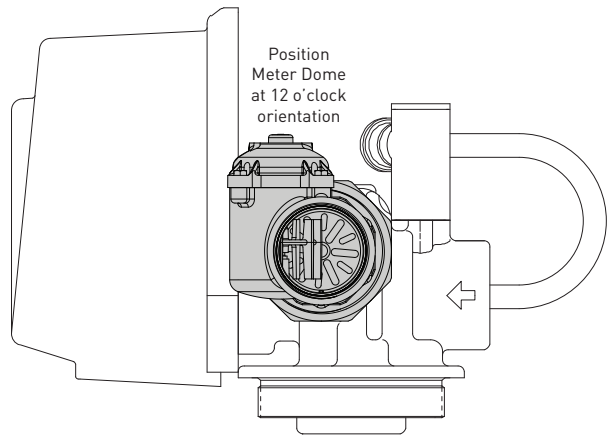
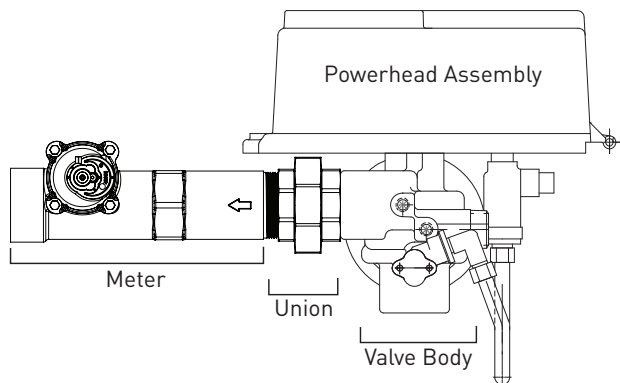
Figure 1 Residential Air Check Valve

Meter Dome and Union Orientation

Control valves outfitted with an electromechanical timer and stainless steel water meter include a special male x female threaded stainless steel union to insure proper installation and operation of the water meter.

⚠ WARNING: The location of this union in relation to the control valve and water meter is critical for proper operation. DO NOT omit or substitute this special union; it positions the meter dome at the correct distance from the control valve and allows re-positioning the water meter dome for proper operation.

1. Apply a suitable thread sealant to the male threads of the union and meter body.
2. Thread the union into the OUTLET port of the control valve, then thread the meter into the union. See illustrations on page 5.
3. Rotate the water meter body so the meter dome is at the 12 o'clock position. Loosen the nut on the union to facilitate this if required. Once in position, tighten the union nut.
4. Connect the meter cable to the open port in the center of the meter dome.
5. Continue with the installation of the control valve.



SYSTEM DISINFECTION

The system is not intended to be used for treating the water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

Disinfection of Water Softeners

The materials of construction of the modern water softener will not support bacterial growth, nor will these materials contaminate a water supply. During normal use, a softener may become fouled with organic matter, or in some cases with bacteria from the water supply. This may result in an off-taste or odor in the water.

Some softeners may need to be disinfected after installation and some softeners will require periodic disinfection during their normal life.

Depending upon the conditions of use, the style of softener, the type of ion exchanger, and the disinfectant available, a choice can be made among the following methods.

Sodium or Calcium Hypochlorite

Application

These materials are satisfactory for use with polystyrene resins, synthetic gel zeolite, greensand and bentonites.

5.25% Sodium Hypochlorite

These solutions are available under brand names of household bleach. If stronger solutions are used, such as those sold for commercial laundries, adjust the dosage accordingly.

1. Dosage
 - A. Polystyrene resin; 1.2 fluid ounce (35.5 ml) per cubic foot.
 - B. Non-resinous exchangers; 0.8 fluid ounce (23.7 ml) per cubic foot.

2. Salt tank softeners
 - A. Backwash the softener and add the required amount of hypochlorite solution to the well of the salt tank. The salt tank should have water in it to permit the solution to be carried into the softener.
 - B. Proceed with the normal recharge.

Calcium Hypochlorite

Calcium hypochlorite, 70% available chlorine, is available in several forms including tablets and granules. These solid materials may be used directly without dissolving before use.

1. Dosage
 - A. Two grains (approximately 0.1 ounce [3 ml]) per cubic foot.
2. Salt tank softeners
 - A. Backwash the softener and add the required amount of hypochlorite to the well of the salt tank. The salt tank should have water in it to permit the chlorine solution to be carried into the softener.
 - B. Proceed with the normal recharge.

START-UP INSTRUCTIONS

The water softener 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. Turn the manual regeneration knob slowly in a clockwise direction until the program micro switch lifts on top of the first set of pins. Allow the drive motor to move the piston to the first regeneration step and stop. Each time the program switch position changes, the valve will advance to the next regeneration step. Always allow the motor to stop before moving to the next set of pins or spaces.

NOTE: For electronic valves, please refer to the manual regeneration part of the timer operation section. If the valve came with a separate electronic timer service manual, refer to the timer operation section of the electronic timer service manual.

2. Position the valve to backwash. Ensure the drain line flow remains steady for 10 minutes or until the water runs clear (see above).
3. Position the valve to the brine / slow rinse position. Ensure the unit is drawing water from the brine tank (this step may need to be repeated).
4. Position the valve to the rapid rinse position. Check the drain line flow, and run for 5 minutes or until the water runs clear.
5. Position the valve to the start of the brine tank fill cycle. Ensure water goes into the brine tank at the desired rate. The brine valve drive cam will hold the valve in this position to fill the brine tank for the first regeneration.
6. Replace control box cover.
7. Put salt in the brine tank.

NOTE: Do not use granulated or rock salt.

3200 TIMER SETTING PROCEDURE

How To Set Days On Which Water Conditioner Is To Regenerate (Figure 2)

Rotate the skipper wheel until the number "1" is at the red pointer. Set the days that regeneration is to occur by sliding tabs on the skipper wheel outward to expose trip fingers. Each tab is one day. Finger at red pointer is tonight. Moving clockwise from the red pointer, extend or retract fingers to obtain the desired regeneration schedule.

How To Set The Time Of Day

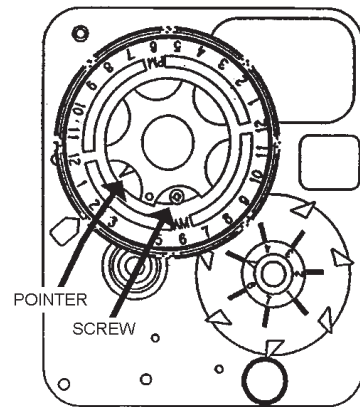
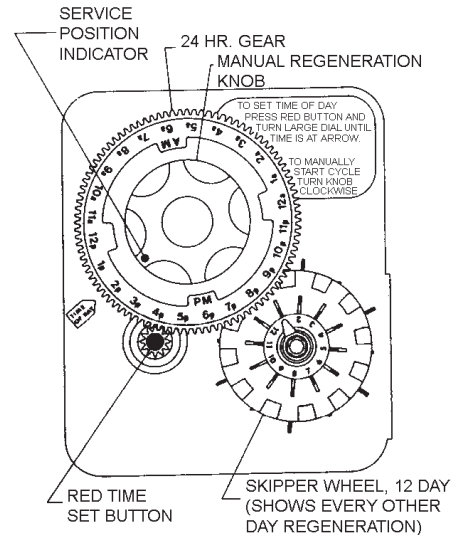
1. Press and hold the red button in to disengage the drive gear.
2. Turn the large gear until the actual time of day is at the time of day pointer.
3. Release the red button to again engage the drive gear.

How To Manually Regenerate Your Water Conditioner At Any Time

1. Turn the manual regeneration knob clockwise.
2. This slight movement of the manual regeneration knob engages the program wheel and starts the regeneration program.
3. The black center knob will make one revolution in the following approximately three hours and stop in the position shown in the drawing.
4. Even though it takes three hours for this center knob to complete one revolution, the regeneration cycle of your unit might be set for only one half of this time.
5. In any event, conditioned water may be drawn after rinse water stops flowing from the water conditioner drain line.

How to Adjust Regeneration Time

1. Disconnect the power source.
2. Locate the three screws behind the manual regeneration knob by pushing the red button in and rotating the 24 hour dial until each screw appears in the cut out portion of the manual regeneration knob.
3. Loosen each screw slightly to release the pressure on the time plate from the 24-hour gear.
4. Locate the regeneration time pointer on the inside of the 24 hour dial in the cut out.
5. Turn the time plate so the desired regeneration time aligns next to the raised arrow.
6. Push the red button in and rotate the 24 hour dial. Tighten each of the three screws.
7. Push the red button and locate the pointer one more time to ensure the desired regeneration time is correct.
8. Reset the time of day and restore power to the unit.



3200 ADJUSTABLE REGENERATION TIMER

IMPORTANT!
SALT LEVEL MUST ALWAYS BE ABOVE
WATER LEVEL IN BRINE TANK

61502-3200 Rev A

Figure 2

3210 & 3220 TIMER SETTING PROCEDURE

Typical Programming Procedure

Calculate the gallon capacity of the system, subtract the necessary reserve requirement and set the gallons available opposite the small white dot on the program wheel gear (Figure 3).

NOTE: Drawing shows 8,750 gallon setting. The capacity (gallons) arrow (15) shows zero gallons remaining. The unit will regenerate tonight at the set regeneration time.

How To Set The Time Of Day

1. Press and hold the red button in to disengage the drive gear.
2. Turn the large gear until the actual time of day is opposite the time of day pointer.
3. Release the red button to again engage the drive gear.

How To Manually Regenerate Your Water Conditioner At Any Time

1. Turn the manual regeneration knob clockwise.
2. This slight movement of the manual regeneration knob engages the program wheel and starts the regeneration program.

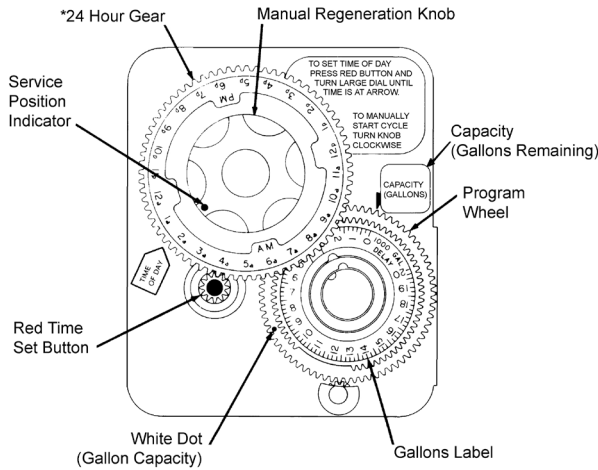
- The black center knob will make one revolution in the following approximately three hours and stop in the position shown in the drawing.
- Even though it takes three hours for this center knob to complete one revolution, the regeneration cycle of your unit might be set for only one half of this time.
- In any event, conditioned water may be drawn after rinse water stops flowing from the water conditioner drain line.

Immediate Regeneration Timers

These timers do not have a 24 hour gear. Setting the gallons on the program wheel and manual regeneration procedure are the same as previous instructions. The timer will regenerate as soon as the capacity gallons reaches zero.

NOTE: The program wheel to the left may be different than the program wheel on the product.

NOTE: To set meter capacity rotate manual knob one - 360° revolution to set gallonage.



*Immediate regeneration timers do not have a 24-hour gear. No time of day can be set.

61502-3200 Rev A

Figure 3

3200, 3210, 3220, 3230 REGENERATION CYCLE SETTING PROCEDURE

How To Set The Regeneration Cycle Program

The regeneration cycle program on your water conditioner has been factory preset, however, portions of the cycle or program may be lengthened or shortened in time to suit local conditions.

3200 Series Timers (Figure 4)

- To expose cycle program wheel, grasp timer in upper left-hand corner and pull, releasing snap retainer and swinging timer to the right.
- To change the regeneration cycle program, the program wheel must be removed. Grasp program wheel and squeeze protruding lugs toward center, lift program wheel off timer. Switch arms may require movement to facilitate removal.
- Return timer to closed position engaging snap retainer in back plate. Make certain all electrical wires locate above snap retainer post.

Timer Setting Procedure

How To Change The Length Of The Backwash Time

The program wheel as shown in the drawing is in the service position. As you look at the numbered side of the program wheel, the group of pins starting at zero determines the length of time your unit will backwash.

For example, if there are six pins in this section, the time of backwash will be 12 min. (2 min. per pin). To change the length of backwash time, add or remove pins as required. The number of pins times two equals the backwash time in minutes.

How To Change The Length Of Brine And Rinse Time

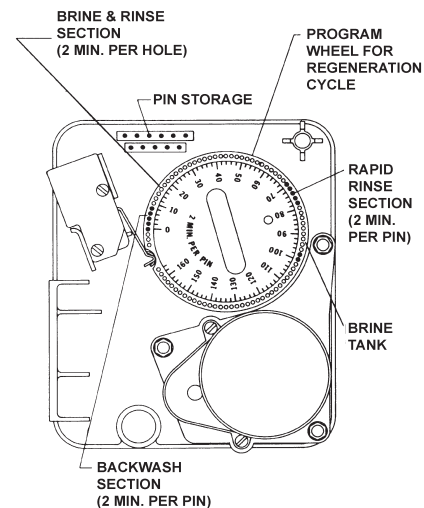
- The group of holes between the last pin in the backwash section and the second group of pins determines the length of time that your unit will brine and rinse (2 min. per hole).
- To change the length of brine and rinse time, move the rapid rinse group of pins to give more or fewer holes in the brine and rinse section. Number of holes times two equals brine and rinse time in minutes.

How To Change The Length Of Rapid Rinse

- The second group of pins on the program wheel determines the length of time that your water conditioner will rapid rinse (2 min. per pin).
- To change the length of rapid rinse time, add or remove pins at the higher numbered end of this section as required. The number of pins times two equals the rapid rinse time in minutes.

How To Change The Length Of Brine Tank Refill Time

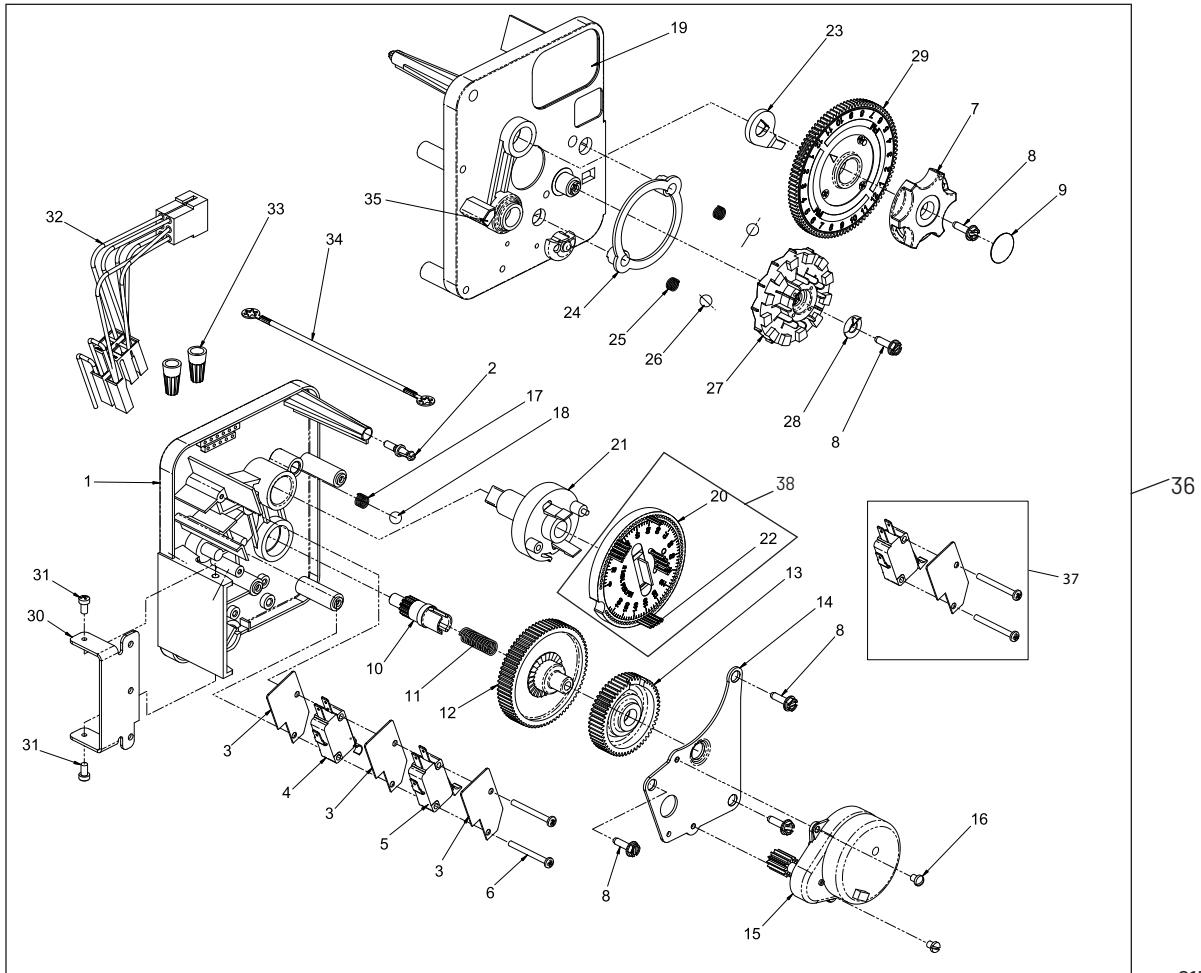
- The second group of holes in the program wheel determines the length of time that your water conditioner will refill the brine tank (2 min. per hole).
- To change the length of refill time, move the two pins at the end of the second group of holes as required.
- The regeneration cycle is complete when the outer microswitch is tripped by the two pin set at end of the brine tank refill section.
- The program wheel, however, will continue to rotate until the inner micro switch drops into the notch on the program wheel.



61502-3210 Rev A

Figure 4

3200 TIME CLOCK TIMER ASSEMBLY



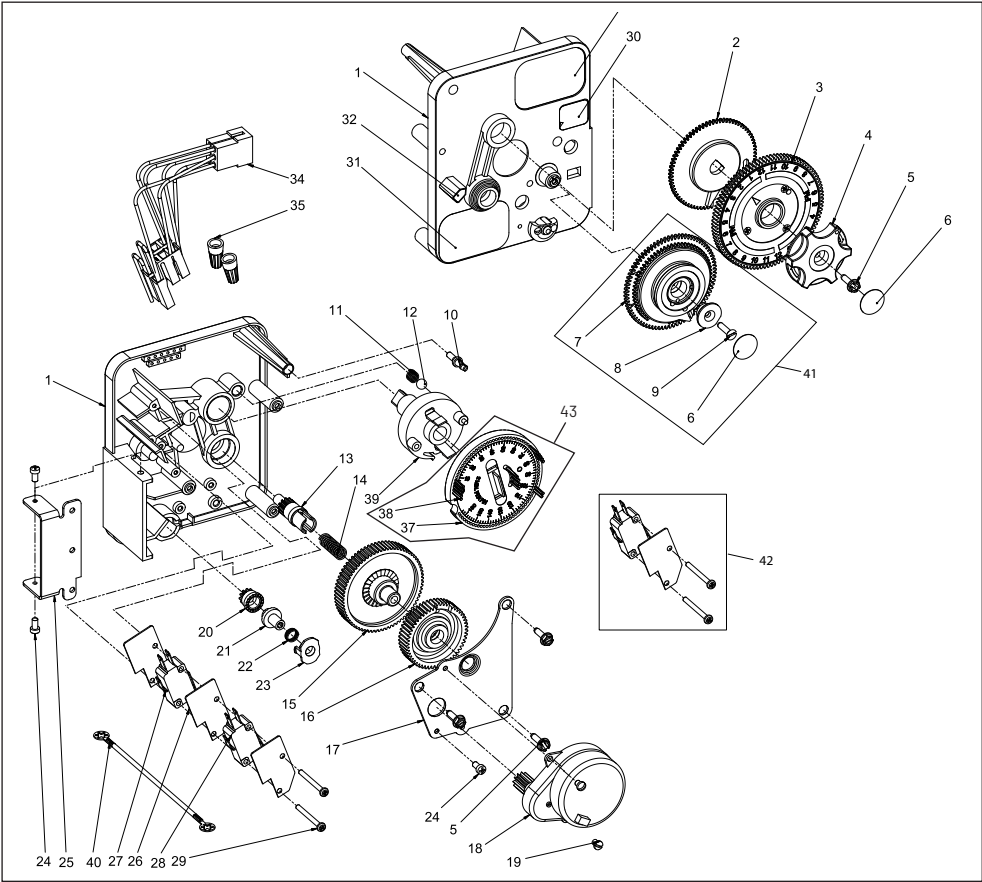
615023200 Rev A

3200 TIME CLOCK TIMER ASSEMBLY *CONTINUED*

Item No.	QTY	Part No.	Description	Item No.	QTY	Part No.	Description
1	1	13870	Housing, Timer, 3200	27	1	14381	Skipper Wheel Assy, 12 Day
2	1	14265	Clip, Spring		1	14860	Skipper Wheel Assy, 7 Day
3	3	14087	Insulator	28	1	13014	Pointer, Regeneration
4	1	10896	Switch, Micro	29	1	40096-24	Dial, 12 AM Regen Assy, Black
5	1	15320	Switch, Micro, Timer			40096-02	Dial, 2 AM Regen Assy, Black
6	2	11413	Screw, Pan Hd Mach, 4-40 x 1-1/8	30	1	13881	Bracket, Hinger Timer
7	1	13886	Knob, 3200	31	2	11384	Screw, Phil, 6-32 x 1/4 Zinc
8	5	13296	Screw, Hex Wsh, 6-20 x 1/2	32	1	13902	Harness, 3200
9	1	11999	Label, Button	33	2	40422	Nut, Wire, Tan
10	1	13018	Pinion, Idler	34	1	15354-01	Wire, Ground, 4 inches
11	1	13312	Spring, Idler Shaft	35	1	14007	Label, Time of Day
12	1	13017	Gear, Idler	36	1	*	Complete 3200 Time Clock Timer Assembly
13	1	13164	Gear, Drive	37		60320-02	Switch Kit, 3200/9000 Timer Auxiliary, Optional
14	1	13887	Plate, Motor Mounting	38		61420-03	Program Wheel, Gear Assy, Filter 2 Min Per Pin
15	1	18743-1	Motor, 120V, 60Hz, 1/30 RPM			61420-04	Program Wheel, Gear Assy, Softener, 2 Min Per Pin
		18752-1	Motor, 100V, 50Hz, 1/30 RPM				
		18824-1	Motor, 230V, 50Hz, 1/30 RPM				
		18826-1	Motor, 24V, 50Hz, 1/30 RPM				
		19659-1	Motor, 24V, 60Hz, 1/30 RPM				
		19660-1	Motor, 230V, 60Hz, 1/30 RPM				
16	2	13278	Screw, Slt'd Fillister Hd 6-32 x .156				
17	1	15424	Spring, Detent, Timer				
18	1	15066	Ball, 1/4-inch, Delrin				
19	1	15465	Label, Caution				
20	1	19210	Program Wheel Assy				
21	1	13911	Gear, Main Drive, Timer				
22	17	41754	Pin, Spring, 1/16 x 5/8 SS, Timer				
23	1	13011	Arm, Cycle Actuator				
24	1	13864	Ring, Skipper Wheel				
25	2	13311	Spring, Detent, Timer				
26	2	13300	Ball, 1/4-inch, SS				

*Call your distributor for Part Number

3210 METER DELAYED TIMER ASSEMBLY



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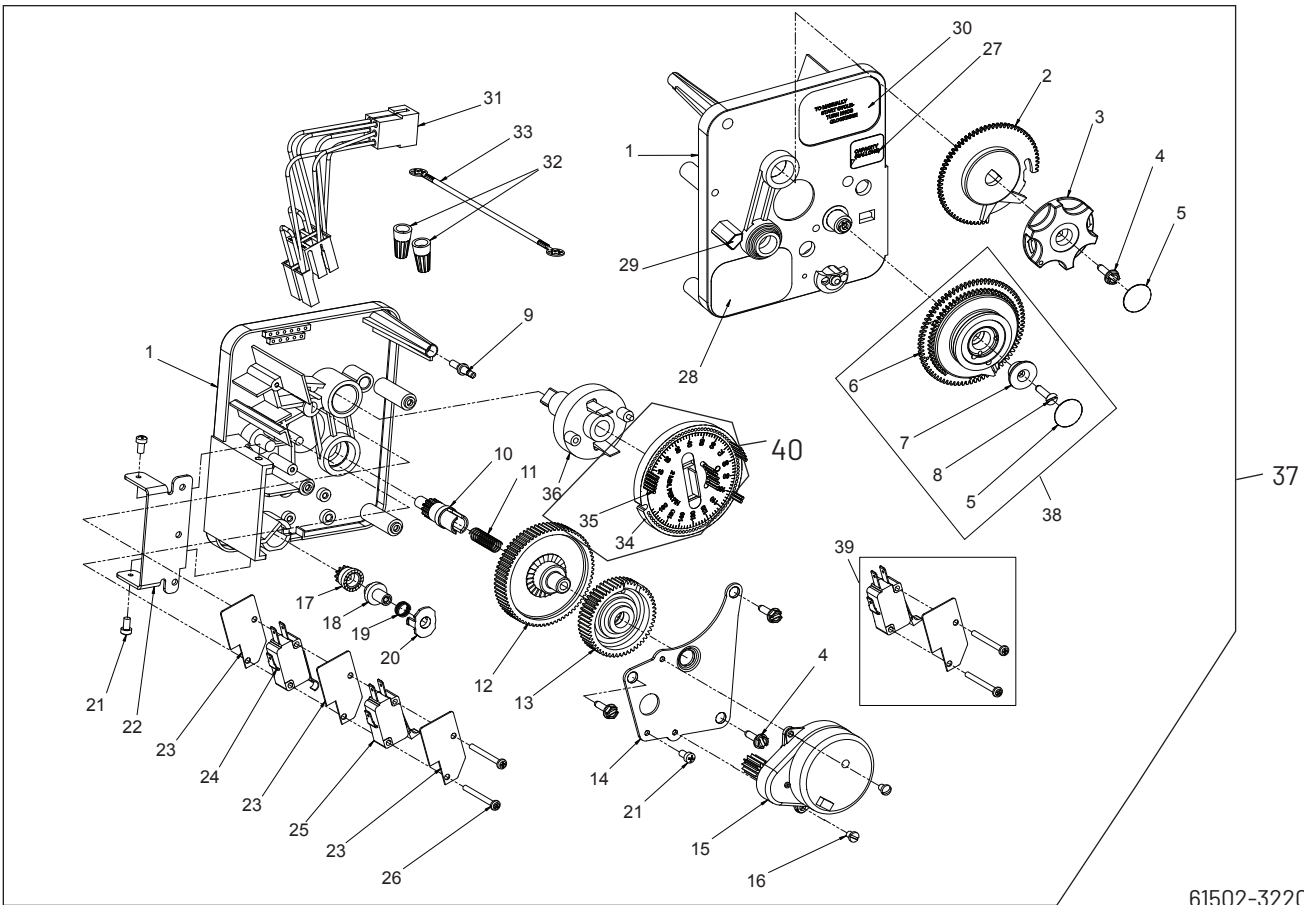
61502-3210 Rev A

3210 METER DELAYED TIMER ASSEMBLY *CONTINUED*

Item No.	QTY	Part No.	Description	Item No.	QTY	Part No.	Description
1	1	13870	Housing, Timer, 3200	32	1	14007	Label, Time of Day
2	1	13802	Gear, Cycle Actuator	33	1	14045	Label, Instruction
3	1	40096-02	Dial 2 AM Regen Assy, Black	34	1	13902	Harness, 3200
4	1	13886	Knob, 3200	35	2	40422	Nut, Wire, Tan
5	4	13296	Screw, Hex Wsh, 6-20 x 1/2	36	1	15354-01	Wire, Ground, 4 inches
6	2	11999	Label, Button	37	1	19210	Program Wheel Assy
7	1	13803	Gear, Program Drive Wheel	38	17	41754	Pin, Spring, 1/16 x 5/8 SS, Timer
8	1	13806	Retainer, Program Wheel	39	1	13911	Gear, Main Drive, Timer
9	1	13748	Screw, Flat Head St, 6-20 x 1/2	40	1	*	Complete 3210 Meter Delayed Timer Assembly
10	1	14265	Clip, Spring	41		60405-50	Program Wheel, w/2-inch STD Label 0-21,000 gal
11	1	15424	Spring, Detent, Timer			60405-60	Program Wheel, w/2-inch EXT Label 0-100,000 gal
12	1	15066	Ball, 1/4-inch Delrin			60405-61	Program Wheel, w/2-inch EXT Range 375 m3
13	1	13018	Pinion, Idler	42		60320-02	Switch Kit, 3200/9000 Timer Auxiliary, Optional
14	1	13312	Spring, Idler Shaft	43		61420-03	Program Wheel, Gear Assy, Filter 2 Min Per Pin
15	1	13017	Gear, Idler			61420-04	Program Wheel, Gear Assy, Softener, 2 Min Per Pin
16	1	13164	Gear, Drive				
17	1	13887	Plate, Motor Mounting				
18	1	18743-1	Motor, 120V, 60Hz 1/30 RPM				
		18752-1	Motor, 100V, 50Hz, 1/30 RPM				
		18824-1	Motor, 230V, 50Hz, 1/30 RPM				
		18826-1	Motor, 24V, 50Hz, 1/30 RPM				
		19659-1	Motor, 24V, 60Hz, 1/30 RPM				
		19660-1	Motor, 230V, 60Hz, 1/30 RPM				
19	1	13278	Screw, Fillister Hd, 6-32 x .156				
20	1	13830	Pinion, Program Wheel Drive				
21	1	13831	Clutch, Drive Pinion				
22	1	14276	Spring, Meter, Clutch				
23	1	14253	Retainer, Clutch Spring				
24	3	11384	Screw, Phil, 6-32 x 1/4				
25	1	13881	Bracket, Hinge Timer				
26	3	14087	Insulator				
27	1	10896	Switch, Micro				
28	1	15320	Switch, Micro, Timer				
29	2	11413	Screw, Pan Hd Mach, 4-40 x 11/8				
30	1	14198	Label, Indicator				
31	1	15465	Label, Caution				

*Call your distributor for Part Number

3220 METER IMMEDIATE TIMER ASSEMBLY

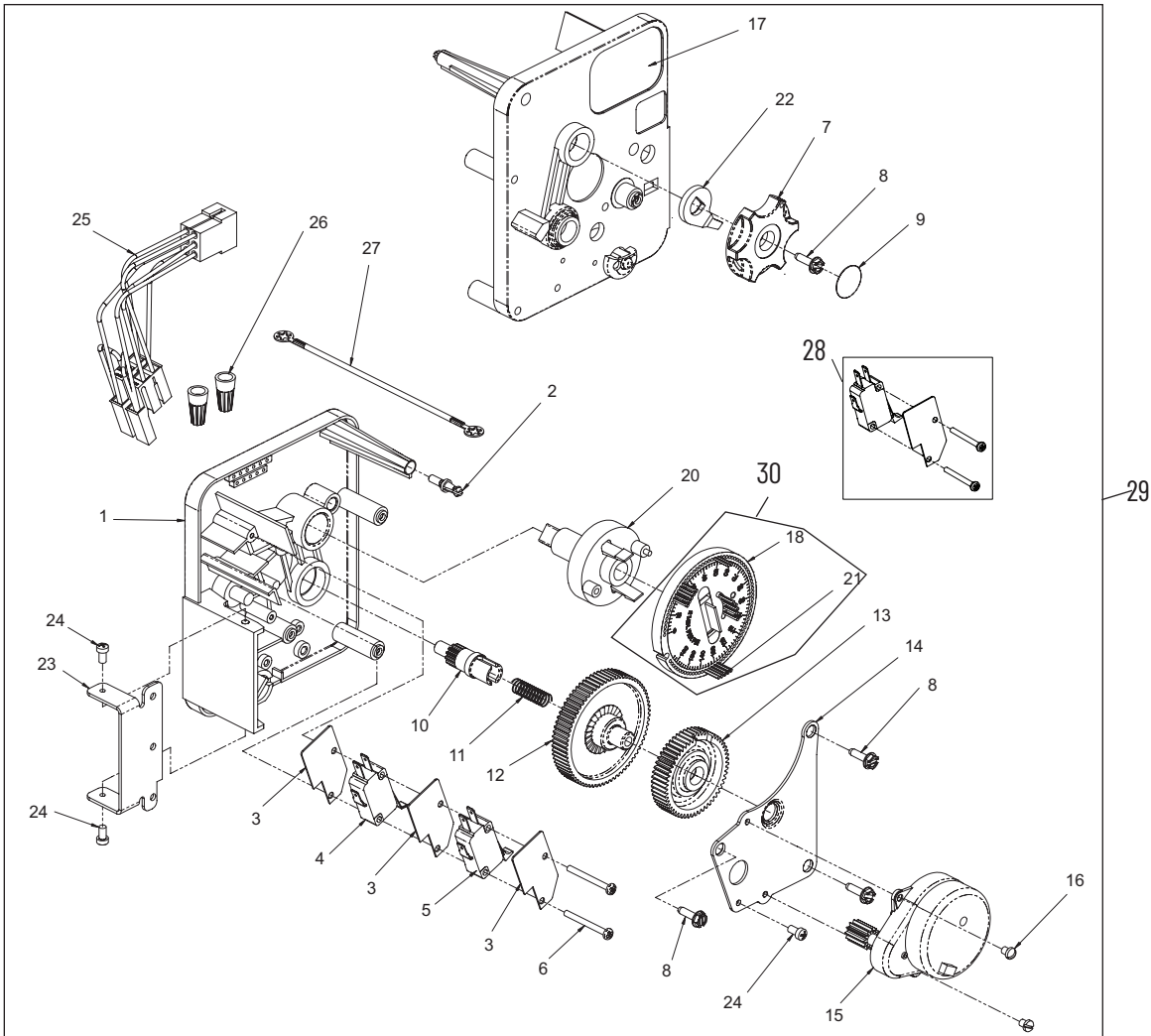


61502-3220 Rev B

3220 METER IMMEDIATE TIMER ASSEMBLY *CONTINUED*

Item No.	QTY	Part No.	Description	Item No.	QTY	Part No.	Description
1	1	13870	Housing, Timer	30	1	15148	Label, Instruction
2	1	15431	Gear, Cycle Actuator, System #5	31	1	40617	Harness, 3220
3	1	13886	Knob, 3200	32	2	40422	Nut, Wire, Tan
4	4	13296	Screw, Hex Wsh, 6-20 x 1/2	33	1	15354-01	Wire, Ground, 4 inches
5	2	11999	Label, Button	34	1	19210-05	Program Wheel Assembly, 9000/3230
6	1	13807	Gear, Program Drive Wheel	35	17	41754	Pin, Spring, 1/16 x 5/8 Stainless Steel, Timer
7	1	13806	Retainer, Program Wheel	36	1	15055	Gear, Main Drive
8	1	13748	Screw, Flt Hd St, 6-20 x 1/2	37	1	*	Complete 3220 Meter Immediate Timer Assy
9	1	14265	Spring Clip	38		60405-50	Program Wheel, w/2-inch STD Label 0-21,000 gal
10	1	13018	Pinion, Idler			60405-60	Program Wheel, w/2-inch EXT Label 0-100,000 gal
11	1	18563	Idler Shaft Spring			60405-61	Program Wheel, w/2-inch EXT Range 375 m3
12	1	13017	Gear, Idler	39		60320-02	Switch Kit, 3200/9000 Timer Auxiliary, Optional
13	1	13164	Drive Gear	40		61420-06	Program Wheel, Gear Assy, Softener Immediate 2 Min Per Pin
14	1	13887	Plate, Motor Mounting			61420-42	Program Wheel, Gear Assy, Filter Immediate 2 Min Per Pin
15	1	18743-1	Motor, 120V, 60 Hz, 1/30 RPM	*Call your distributor for Part Number			
		18752-1	Motor, 100V, 50Hz, 1/30 RPM				
		18824-1	Motor, 230V, 50Hz, 1/30 RPM				
		18826-1	Motor, 24V, 50Hz, 1/30 RPM				
		19659-1	Motor, 24V, 60Hz, 1/30 RPM				
		19660-1	Motor, 230V, 60Hz, 1/30 RPM				
16	2	13278	Screw, Slt'd Fillister Hd				
17	1	14502	Pinion, Program Wheel				
18	1	14501	Clutch, Drive Pinion				
19	1	14276	Meter Clutch Spring				
20	1	14253	Retainer, Clutch Spring				
21	3	11384	Screw, Phil, 6-32 x 1/4 Zinc				
22	1	13881	Bracket, Hinge Timer				
23	3	14087	Insulator				
24	1	15414-00	Micro Switch				
25	1	15320	Switch, Micro, Timer				
26	2	11413	Screw, Pan Hd Mach, 4-40 x 1-1/8				
27	1	14198	Label, Indicator				
28	1	15465	Label, Caution				
29	1	14007	Label, Time of Day				

3230 REMOTE START TIMER ASSEMBLY



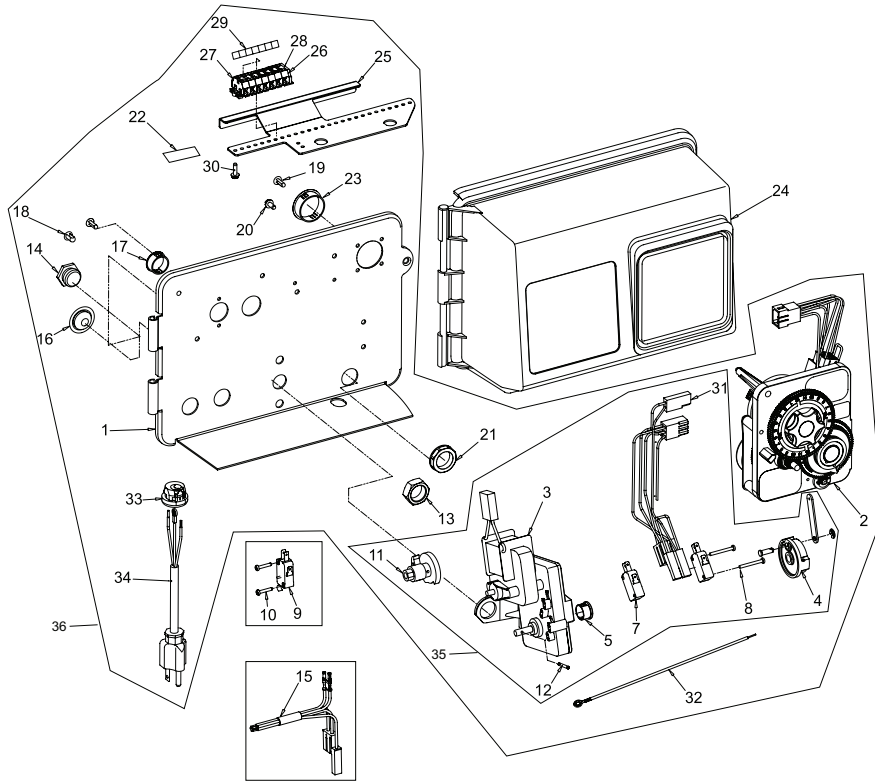
61502-3230R REV A

3230 REMOTE START TIMER ASSEMBLY *CONTINUED*

Item No.	QTY	Part No.	Description	Item No.	QTY	Part No.	Description
1.....	1.....	13870	Housing, Timer	18	1.....	19210-05	Program Wheel Assembly, 3200
2	1.....	14265	Spring Clip	20	1.....	15055	Main Drive Gear
3	3.....	14087	Insulator	21	17	41754.....	Pin, Spring, 1/16 x 5/8 Stainless Steel, Timer
4	1.....	15314	Micro Switch	22	1.....	13011.....	Cycle Actuator Arm
5	1.....	15320	Switch, Micro, Timer	23	1.....	13881	Bracket, Hinge Timer
6	2.....	11413.....	Screw, Pan Hd Mach, 4-40 x 1-1/8	24	3.....	11384.....	Screw, Phil, 6-32 x 1/4 Zinc
7	1.....	13886	Knob, 3200	25	1.....	16336	Harness, 3230R
8	4.....	13296	Screw, Hex Wsh, 6-20 x 1/2	26	2.....	40422	Nut, Wire, Tan
9	1.....	11999	Label, Button	27	1.....	15354-01.....	Wire, Ground, 4 inches
10.....	1.....	13018	Pinion, Idler	28		60320-02.....	Switch Kit, 3200/9000 Timer Auxiliary, Optional
11.....	1.....	18563	Idler Shaft Spring	29		*	3230 Timer Assy
12.....	1.....	13017	Gear, Idler	30		61420-06.....	Program Wheel, Gear Assy, Softener Immediate 2 Min Per Pin
13.....	1.....	15055	Drive Gear			..... 61420-42.....	Program Wheel, Gear Assy, Filter Immediate 2 Min Per Pin
14.....	1.....	13887	Plate, Motor Mounting				
15.....	1.....	18743-1.....	Motor, 120V, 60 Hz, 1/30 RPM				
		..... 18752-1.....	Motor, 100V, 50Hz, 1/30 RPM				
		..... 18824-1	Motor, 23V, 50Hz, 1/30 RPM				
		..... 18826-1.....	Motor, 24V, 50Hz, 1/30 RPM				
		..... 19659-1.....	Motor, 24V, 60Hz, 1/30 RPM				
		..... 19660-1	Motor, 230V, 60Hz, 1/30 RPM				
16.....	2.....	13278	Screw, Slt'd Fillister Hd				
17	1.....	15313	Label, Caution				

*Call your distributor for Part Number

UPPER ENVIRONMENTAL POWERHEAD ASSEMBLY

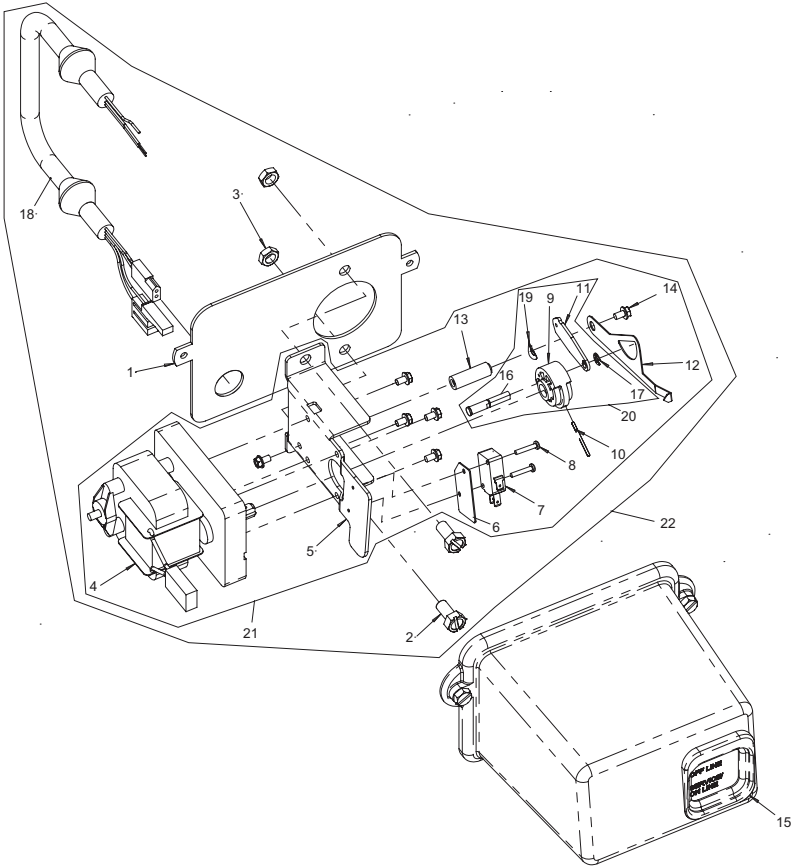


61501-2900 Rev G

UPPER ENVIRONMENTAL POWERHEAD ASSEMBLY *CONTINUED*

Item No.	QTY	Part No.	Description	Item No.	QTY	Part No.	Description
1	1	18697-15	Backplate, Hinged	27	6	41084	Terminal Block, Segment, Gray
2	1		3200 Clock Timer Assembly	28	1	41085	Endplate, Terminal Block, Gray
			3200 Meter Timer Assembly	29	2	15250	Label, Terminal Strip
3	1	41543	Motor, Drive, 115V, 50/60 Hz	30	2	13296	Screw, Hex Wsh, 6-20 6-20 x 1/2 Type 25 Steel Zinc
		42579	Motor, Drive, 24VAC/DC, 50/60 Hz	31	1	40400	Harness, Drive, Designer/ Environmental
		41545	Motor, Drive, 230V, 50/60 Hz	32	1	40175-01	Wire, Ground, Commercial Valves
4	1	60160-15	Drive Cam Assembly, STF, Blue, 2900	33	1	13547	Strain Relief, Flat Cord Heyco #30-1
		60160-30*	Drive Cam Assembly, Upflow			13547-01	Strain Relief, Euro Round Cord
		60160-31*	Drive Cam Assembly, Upflow, Variable			13547-02	Strain Relief, U.S. Round
5	1	17904	Bushing, Heyco 1/2, Heyco #2073	34	1	11545	Powercord, 4-foot European, Black
7	2	10218	Switch, Micro			19303	Powercord, 8-foot, Australian
8	2	14923	Screw, Pan Hd Mach, 4-40 X 1 MS Steel Zinc			40084-12	Powercord, 12-foot US, Round, 120V, Sys 5,6,7&2900/3150/3900
9	1	10896	Switch, Micro			40085-12	Powercord, 12-foot US, Round, 240V
10	2	11805	Screw, Rd Hd, 4-40 X 5/8 TYPE 1 Steel Zinc	35		60050-23	Drive Assy, 2750, STF, 24V 50/60 Hz, Downflow Less Lower Drive Brine Cam Switch, Item 9 & 10
11	1	12472	Cam Assy, Tri-Stack, After RR			60050-22	Drive Assy, 2750, STF, 220V 50/60 Hz, Downflow Less Lower Drive Brine Cam Switch, Item 9 & 10
		12777	Cam, Shut-Off Valve			60052-21	Upper Drive Assy, 2900, STF 120V, Downflow
		15770	Cam Assy, Special Tri-Stack, After Brine Fill			60052-217	Upper Drive Assy, 2900, STF 120V, System 7, Downflow
		15805	Cam, SVO	36		**	Upper Powerhead Assembly
		19887*	Cam, Brine, 2750 U/F, Std	Not Shown:			
12	2	10338	Pin, Roll 3/32 x 7/8	1		15216	Meter Cable Assembly, 15.25 inch long, 2 inch Brass Meter
13	1	10269	Nut, Jam, 3/4-16	1		15513	Meter Cable Assembly, 17.5 inch long 2 inch Stainless Steel Meter
14	1	43560	Fitting, Brine Valve	1		15879	Cable Guide Assembly, 2900
15	1	14822	Harness, 2900	*Upflow Only			
16	2	19691	Plug, .750 Dia Recessed, Black	**Call your distributor for Part Number			
17	1	15806	Plug, Hole, Heyco #2693				
18	1	19801	Plug, .190 Dia, White Heyco 0307				
19	7	19800	Plug, .140 Dia, White Heyco 0304				
20	4	10300	Screw, Slot Hex Wsh, 8-18 X 3/8 Type "B" RC 44-47				
21	1	18691-02	Nut, Conduit Fitting 1/2-inch				
22	1	40038-03	Label, Voltage, 120V, 3200ET				
23	1	17421	Plug, 1.20 Hole Heyco #2733				
24	1	60219-02	Cover Assembly, Environmental, Black w/ Clear Window				
25	1	19772	Bracket, Terminal Block				
26	1	40174	Terminal Block, Green/ Yellow Commercial, 809-260/141				

LOWER ENVIRONMENTAL POWERHEAD ASSEMBLY



61501-2900 Rev G

LOWER ENVIRONMENTAL POWERHEAD ASSEMBLY *CONTINUED*

Item No.	QTY	Part No.	Description
1	1	18709	Backplate, Lower
2	2	11224	Screw, Slotted Hex Head
3	2	16346	Nut, Hex, Jam, 5/16-18, 18-8-SS (only used for shipping)
4	1	40387	Motor, Drive, 115V, 60 Hz, SP FAM
		42580	Motor, Drive, 24 Vac/Dc, 50-60 Hz, Fam 2
		40389	Motor, Drive, 220V, 50/60 Hz, SP
5	1	14769	Bracket, Motor, 2900
6	1	10302	Insulator, Limit Switch
7	1	10218	Switch, Micro
8	2	19849	Screw, Pan HD, 4-40 x 5/8
9	1	14775	Cam, Main Drive, 2900 Lower
10	1	41022	Pin, Roll 2900 Lower
11	1	14759	Link, Piston Rod
12	1	18725	Indicator, Service/Standby
13	1	18726	Spacer, Indicator
14	6	10872	Screw, Hex WSH, 8-32 x 5/16
15	1	60217-02	Cover Assy, 2900, Lower, Black
16	1	42979	Bearing, Connecting Rod
17	1	42980	Ring, Retaining
18	1	42446	Harness, Lower Drive SYS4, ENV
		40405	Harness, Lower Drive, Sys 4 Remote Start
		40406	Harness, Lower Drive, Sys 5 & 6, Duplex, Environmental
		40405	Harness, Lower Drive Syst 5 Multiple, Environmental
		40405	Harness, Lower Drive Syst 6 Multiple, Lead, Environmental
		40406	Harness, Lower Drive, Sys 6, Multiple, Middle/Lag, Environmental
		40407	Harness, Lower Drive, Syst #7, Duplex, Lead, Environmental
		40408	Harness, Lower Drive, Syst 7, Duplex, Lag, Environmental
		40398	Harness, Lower Drive, Syst #7, Multiple, Environmental

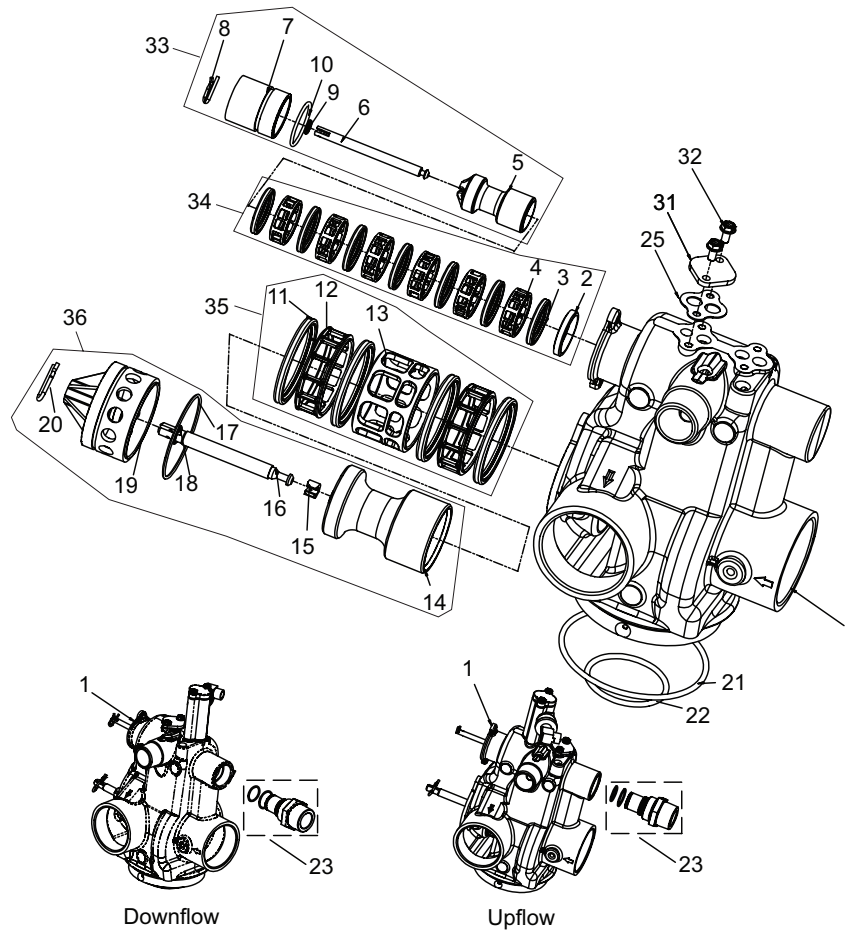
Item No.	QTY	Part No.	Description
19	1	18727	Washer, Curved Spring, /265 ID
20		60160-22	Drive Cam Assy, Link, Environmental, 2900 Lower Drive
21		60055-53	Lower Drive Assy, 2900, 24/60, System #4
		60055-51	Lower Drive Assy, 2900, 120, System #4
		60055-52	Lower Drive Assy, 2900, 220, System #4
		60255-51	Lower Drive Assy, 2900, 120, System #5 and #6, Lead/Lag
		60056-51	Lower Drive Assy, 2900, 120, System #7, Lead
		60056-61	Lower Drive Assy, 2900, 120, System #7, Lag
22		*	2900 Lower Powerhead Assembly

Not Shown:

1		14044	Tie, Cable, HeyCo VNT # 4-18
1		43062	Grease, Lubriplate, 630-2
		60320-11	Switch Kit, 2900 Lower Drive, Adding Second Switch
		60320-08	Switch Kit, 2900 Lower Drive, Adding Third Switch

*Call your distributor for Part Number

CONTROL VALVE ASSEMBLY



61500-2900 Rev F

Item No.	QTY	Part No.	Description
1	1	41428-01	Valve Body, 2900s, Machd, NPT U.S. Tap
		41428-09	Valve Body, 2900s, Machined, w/Soft Water Adapter
		41428-01NP	Valve Body, 2900s, MCHD, NPT, NP, U.S. Tap, Top Coll
		41428-03	Valve Body, 2900s, MACHD, NPT, U.S. Tap, Aux Tap, Top Coll
		41428-03NP	Valve Body, 2900s, MCHD, NPT, NP, U.S. Tap, Aux Tap, Top Coll
		41428-05	Valve Body, 2900s, NPT, U.S. Tap, SVO, Top Coll
		41428-07	Valve Body, 2900s, MACHD, NPT, U.S. Tap, Aux Tap, SVO, Top Coll
		41428-09	Valve Body, 2900s, MACHD, NPT, U.S. Tap, Soft ADAPT, Top Coll
		41428-09NP	Valve Body, 2900S, MCHD,

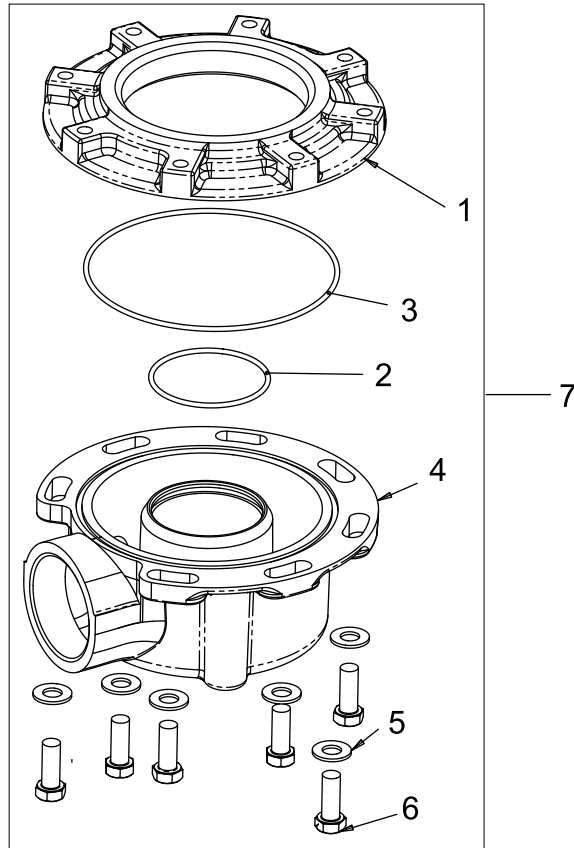
Item No.	QTY	Part No.	Description
		41428-11	Valve Body, 2900S, NPT, U.S. Tap, Aux Tap, SFT ADPT, Top Coll
		41428-13	Valve Body, 2900S, MACHD, NPT, U.S. Tap, SVO, Soft ADAPT, Top Coll
		41428-15	Valve Body, 2900S, MACHD, NPT, U.S. Tap, SVO, SFT ADPT, AX TP Top
		41428-21	Valve Body, 2900S, MACHD, BSP, Metric Tap, Top Coll
		41428-21NP	Valve Body, 2900S, MCHD, BSP, NP, Metric Tap, Top Coll
2	1	10757	Spacer, End
		10757B	Spacer, End, Brass, HW
3	7	10545	Seal, Piston
		10545-01	Seal, Piston, Viton
		10545-02	Seal, Piston, Silicone
4	6	11451	Spacer, 12 Hole

CONTROL VALVE ASSEMBLY *CONTINUED*

Item No.	QTY	Part No.	Description	Item No.	QTY	Part No.	Description
Not Shown (continued)							
		..... 60366-60	..... DLFC, 1-inch F x 3/4-inch F, NPT, 6.0 gpm			..... 60721-35	..... DLFC, 1-inch F x 1-inch F, NPTF, 3.5 gpm
		..... 60366-70	..... DLFC, 1-inch F x 3/4-inch F, NPT, 7.0 gpm			..... 60721-40	..... DLFC, 1-inch F x 1-inch F, NPTF, 4.0 gpm
		..... 60708-00	..... DLFC, 1-inch F x 3/4-inch F, NPT, No Button			..... 60721-45	..... DLFC, 1-inch F x 1-inch F, NPTF, 4.5 gpm
		..... 60708-8.0	..... DLFC, 1-inch F x 3/4-inch F, NPT, 8.0 gpm			..... 60721-50	..... DLFC, 1-inch F x 1-inch F, NPTF, 5.0 gpm
		..... 60708-9.0	..... DLFC, 1-inch F x 3/4-inch F, NPT, 9.0 gpm			..... 60721-60	..... DLFC, 1-inch F x 1-inch F, NPTF, 6.0 gpm
		..... 60708-10	..... DLFC, 1-inch F x 3/4-inch F, NPT, 10.0 gpm			..... 60721-70	..... DLFC, 1-inch F x 1-inch F, NPTF, 7.0 gpm
		..... 60708-12	..... DLFC, 1-inch F x 3/4-inch F, NPT, 12.0 gpm			..... 60702-00	..... DLFC, 1-inch M x 1-inch F, NPT, Brass, No Button
		..... 60708-15	..... DLFC, 1-inch F x 3/4-inch F, NPT, 15.0 gpm			..... 60702-8.0	..... DLFC, 1-inch M x 1-inch F, NPT, 8.0 gpm
		..... 60708-20	..... DLFC, 1-inch F x 3/4-inch F, NPT, 20.0 gpm			..... 60702-9.0	..... DLFC, 1-inch M x 1-inch F, NPT, 9.0 gpm
		..... 60708-25	..... DLFC, 1-inch F x 3/4-inch F, NPT, 25.0 gpm			..... 60702-10	..... DLFC, 1-inch M x 1-inch F, NPT, 10 gpm
		..... 60721-00	..... DLFC, 1-inch F x 1-inch F, NPT, No Button			..... 60702-12	..... DLFC, 1-inch M x 1-inch F, NPT, 12 gpm
		..... 60721-06	..... DLFC, 1-inch F x 1-inch F, NPT, 0.06 gpm			..... 60702-15	..... DLFC, 1-inch M x 1-inch F, NPT, 15 gpm
		..... 60721-08	..... DLFC, 1-inch F x 1-inch F, NPT, 0.08 gpm			..... 60702-20	..... DLFC, 1-inch M x 1-inch F, NPT, 20 gpm
		..... 60721-10	..... DLFC, 1-inch F x 1-inch F, NPT, 1.0 gpm			..... 60702-25	..... DLFC, 1-inch M x 1-inch F, NPT, 25 gpm
		..... 60721-12	..... DLFC, 1-inch F x 1-inch F, NPT, 1.2 gpm			..... 13640	..... Flow Control, Dole, 30 gpm
		..... 60721-13	..... DLFC, 1-inch F x 1-inch F, NPT, 1.3 gpm			..... 60711-35	..... DLFC, 2-inch NPT, 35 gpm
		..... 60721-15	..... DLFC, 1-inch F x 1-inch F, NPT, 1.5 gpm				
		..... 60721-00	..... DLFC, 1-inch F x 1-inch F, NPTF, No Button				
		..... 60721-17	..... DLFC, 1-inch F x 1-inch F, NPTF, 1.7 gpm				
		..... 60721-20	..... DLFC, 1-inch F x 1-inch F, NPTF, 2.0 gpm				
		..... 60721-24	..... DLFC, 1-inch F x 1-inch F, NPTF, 2.4 gpm				
		..... 60721-30	..... DLFC, 1-inch F x 1-inch F, NPTF, 3.0 gpm				

*Upflow Only

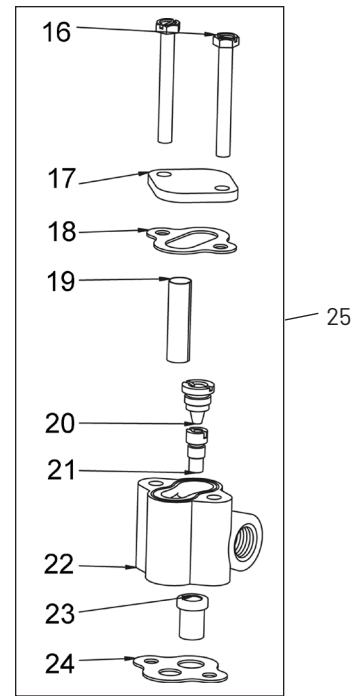
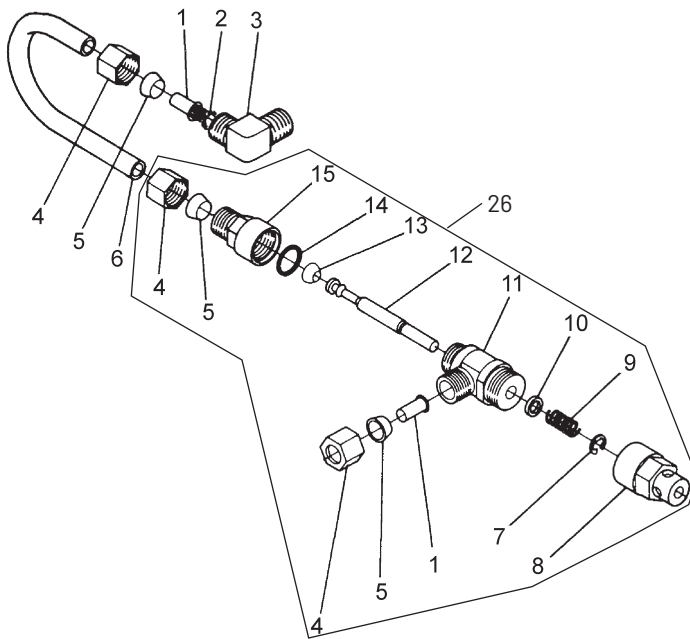
CONTROL VALVE SIDE MOUNT ADAPTER



61415 Rev B

Item No.	QTY	Part No.	Description
1	1	40316	Adapter, Sidemount
2	1	40372	O-ring - 142
3	1	40368	O-ring - 160, Sidemount, Flange
4	1	40310	Base, 2850/2900/3930, Rotating
5	7	40375	Washer, Flat, 3/8, Type A, N-SERS
6	7	19768	Screw, Hex Hd, 3/8 - 16 x 1, Cap 18-8
7	1	61415	Adapter Assy, Sidemount 2850/2900/2930
		61415NP	Adapter Assy, Sidemount, NP 2850/2900/2930
		61415-20	Adapter Assy, Sidemount, BSP/MTC 2850/2900/2930
		61415-20NP	Adapter Assy, Sidemount, BSP/NP 2850/2900/2930

1600 SERIES BRINE SYSTEM



60029 Rev C

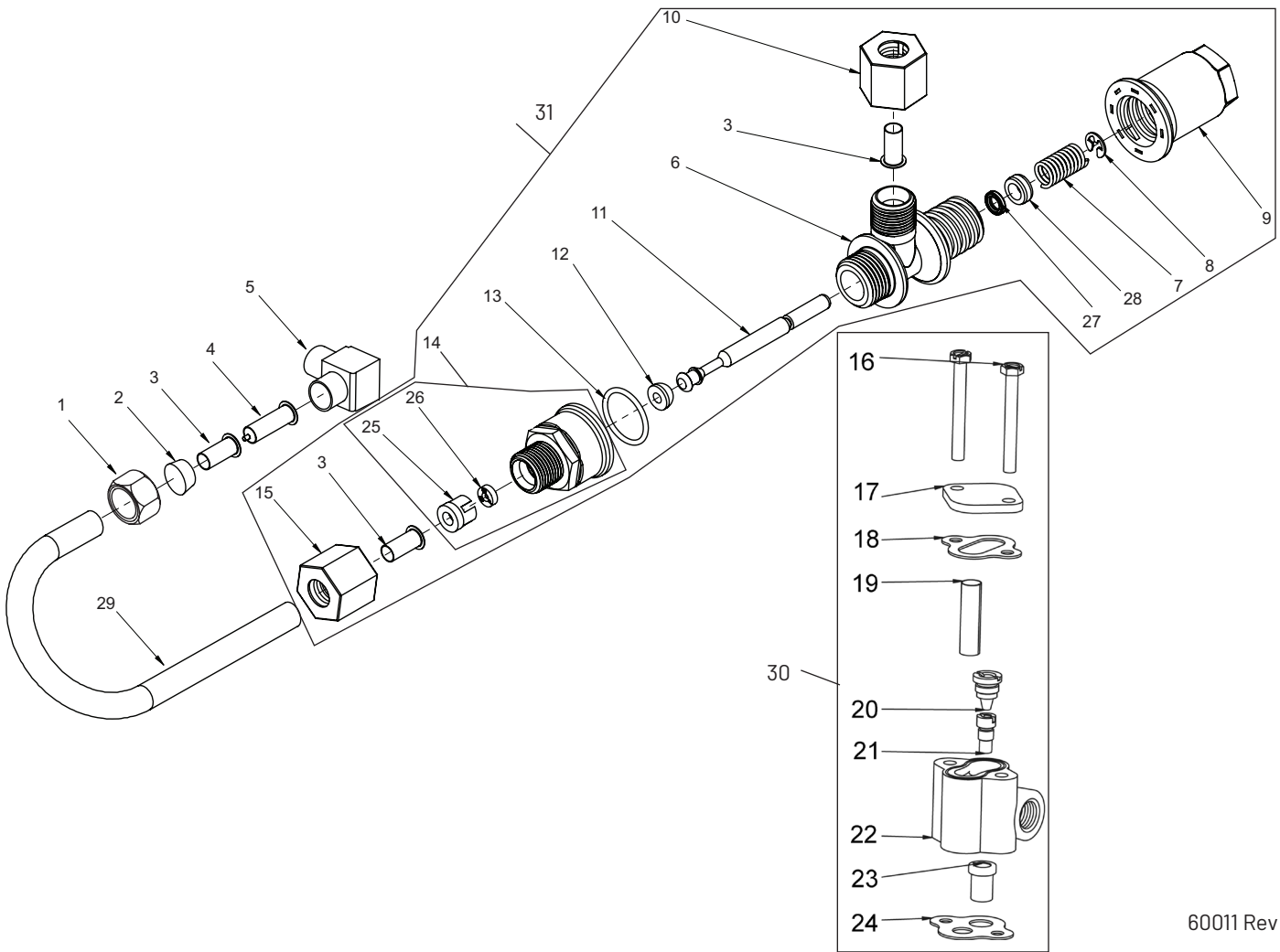
Item No.	QTY	Part No.	Description	Item No.	QTY	Part No.	Description
1	2	10332	Fitting, Insert, 3/8	18	1	10229	Gasket, Injector Cap, 1600
2	1	12767	Screen, Brine	19	1	10227	Screen, Injector
3	1	10328	Fitting, Elbow, 90 Deg. 1/4 PT x 3/8 Tube	20	1	10913-000	Nozzle, Injector #000, Brown
4	3	10329	Fitting, Tube, 3/8 Nut, Brass			10913-00	Nozzle, Injector #00, Violet
5	3	10330	Fitting, Sleeve, 3/8 Celcon			10913-0	Nozzle, Injector #0, Red
6	1	16508	Tube, Brine, 1600, PVC			10913-1	Nozzle, Injector #1, White
	1	16508-01	Tube, Brine Valve, 2850/2900s			10913-2	Nozzle, Injector #2, Blue
	1	12774	Tube, Brine Valve, 1500			10913-3	Nozzle, Injector #3, Yellow
	1	40027	Tube, Brine Valve, 2510			10913-4	Nozzle, Injector #4, Green
	1	15221	Tube, Brine Valve, 2750/2900			12973-0	Nozzle, Injector #0, PVC, Grey
	1	42184	Tube, Brine Valve, 2850s			12973-1	Nozzle, Injector #1, PVC, Grey
	1	41683*	Tube, Brine Valve, UF, 1600/1650			12973-2	Nozzle, Injector #2, PVC, Grey
7	1	10250	Ring, Retaining			12973-3	Nozzle, Injector #3, PVC, Grey
8	1	11749	Guide, Brine Valve Stem			12973-4	Nozzle, Injector #4, PVC, Grey
9	1	10249	Spring, Brine Valve			10225-0	Nozzle, Injector #0, Stainless Steel
10	1	12550	Quad Ring, -009			10225-1	Nozzle, Injector #1, Stainless Steel
11	1	12748	Brine Valve Body Assy, 1600 w/ Quad Ring			10225-2	Nozzle, Injector #2, Stainless Steel
12	1	12552-02	Brine Valve Stem, 1600, with Seat			10225-3	Nozzle, Injector #3, Stainless Steel
13	1	12626	Seat, Brine Valve			10225-4	Nozzle, Injector #4, Stainless Steel
14	1	11982	O-ring, -016	21	1	10914-000	Throat, Injector #000, Brown
15	1	60020-25	BLFC, .25 GPM, 1600			10914-00	Throat, Injector #00, Violet
	1	60020-50	BLFC, .50 GPM, 1600			10914-0	Throat, Injector #0, Red
	1	60020-100	BLFC, 1.0 GPM, 1600			10914-1	Throat, Injector #1, White
16	2	10692	Screw, Slot Hex Hd, 10 - 24X 18-8 Stainless Steel			10914-2	Throat, Injector #2, Blue
17	1	11893	Cap, Injector, SS				

1600 SERIES BRINE SYSTEM *CONTINUED*

Item No.	QTY	Part No.	Description	Item No.	QTY	Part No.	Description
		.....10914-3	.....Throat, Injector #3, Yellow			.....60480-04	.....Injector Assy, 1600, #4, Plastic
		.....10914-4	.....Throat, Injector #4, Green			.....60481-21	.....Injector Assy, 1600, #1, S.S. Brass
		.....12974-0	.....Throat, Injector #0, PVC, Grey			.....60481-22	.....Injector Assy, 1600, #2, S.S. Brass
		.....12974-1	.....Throat, Injector #1, PVC, Grey			.....60481-23	.....Injector Assy, 1600, #3, S.S. Brass
		.....12974-2	.....Throat, Injector #2, PVC, Grey			.....60080-11	.....Injector Assy, 1600, #1, PVC
		.....12974-3	.....Throat, Injector #3, PVC, Grey			.....60080-12	.....Injector Assy, 1600, #2, PVC
		.....12974-4	.....Throat, Injector #4, PVC, Grey			.....60080-14	.....Injector Assy, 1600, #4, PVC
		.....10226-0	.....Throat, Injector #0, Stainless Steel			.....60485-003	.....Injector Assy, 2900/1600, Upflow, #0, w/Reg Cap, 20 psi
		.....10226-1	.....Throat, Injector #1, Stainless Steel			.....60485-012	.....Injector Assy, 2900/1600, Upflow, #1, w/Reg Cap, 20 psi
		.....10226-2	.....Throat, Injector #2, Stainless Steel			.....60485-022	.....Injector Assy, 2900/1600, Upflow, #2, w/Reg Cap, 20 psi
		.....10226-3	.....Throat, Injector #3, Stainless Steel			.....60485-032	.....Injector Assy, 2900/1600, Upflow, #3, w/Reg Cap, 20 psi
		.....10226-4	.....Throat, Injector #4, Stainless Steel			.....60485-043	.....Injector Assy, 2900/1600, Upflow, #4, w/Reg Cap, 20 psi
22	.....1	.....17776	.....Body, Injector, 1600	26	.....	.....60029-010	.....Brine Valve, 1600, 0.25 gpm
	1	.....17776-02*	.....Body, Injector, 1600 Upflow			.....60029-020	.....Brine Valve, 1600, 0.50 gpm
23	.....1	.....16221	.....Dispenser, Air			.....60029-030	.....Brine Valve, 1600, 1.0 gpm
24	.....1	.....14805	.....Gasket, Injector Body, 1600/1700				
25	.....	.....60480-01	.....Injector Assy, 1600, #1, Plastic				
		.....60480-02	.....Injector Assy, 1600, #2, Plastic				
		.....60480-03	.....Injector Assy, 1600, #3, Plastic				

*Upflow Only

1650 BRINE SYSTEM ASSEMBLY



60011 Rev D

Item No.	QTY	Part No.	Description
1	1	10329	Fitting, Tube, 3/8 Nut, Brass
2	1	10330	Fitting, Sleeve, 3/8 Celcon
3	3	10332	Fitting, Insert, 3/8
4	1	12767	Screen, Brine
5	1	10328	Fitting, Elbow, 90 Deg 1/4 NPT x 3/8T
6	1	17884	Brine Valve Body Assy, 1650
7	1	10249	Spring, Brine Valve
8	1	10250	Ring, Retaining
9	1	17906	Guide, Brine Valve Stem
10	1	19625	Nut Assy, 3/8-inch, Plastic
11	1	12552-02	Brine Valve Stem, 1600
12	1	12626	Seat, Brine Valve
13	1	16924	O-ring, -018
14	1	60010-25	BLFC, 1650, .25 GPM, Plastic (Includes items 25 and 26)
	1	60010-50	BLFC, 1650, .50 GPM, Plastic
	1	60010-100	BLFC, 1650, 1.0 GPM, Plastic
15	1	19625	Nut Assy, 3/8-inch, Plastic

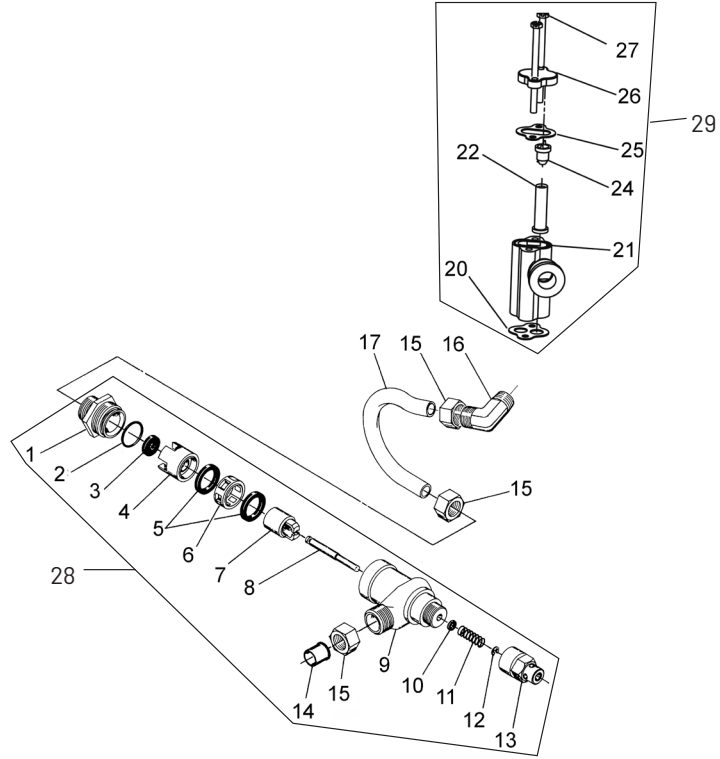
Item No.	QTY	Part No.	Description
16	2	10692	Screw, Slot Hex Hd, 10 - 24X 18-8 Stainless Steel
17	1	11893	Cap, Injector, Stainless Steel
18	1	10229	Gasket, Injector Cap, 1600
19	1	10227	Screen, Injector
20	1	10913-000	Nozzle, Injector #000, Brown
		10913-00	Nozzle, Injector #00, Violet
		10913-0	Nozzle, Injector #0, Red
		10913-1	Nozzle, Injector #1, White
		10913-2	Nozzle, Injector #2, Blue
		10913-3	Nozzle, Injector #3, Yellow
		10913-4	Nozzle, Injector #4, Green
		12973-0	Nozzle, Injector #0, PVC, Grey
		12973-1	Nozzle, Injector #1, PVC, Grey
		12973-2	Nozzle, Injector #2, PVC, Grey
		12973-3	Nozzle, Injector #3, PVC, Grey
		12973-4	Nozzle, Injector #4, PVC, Grey
		10225-0	Nozzle, Injector #0, Stainless Steel

1650 BRINE SYSTEM ASSEMBLY *CONTINUED*

Item No.	QTY	Part No.	Description	Item No.	QTY	Part No.	Description
		10225-1	Nozzle, Injector #1, Stainless Steel	28	1	17908	Sleeve, Brine Valve Stem
		10225-2	Nozzle, Injector #2, Stainless Steel	29	1	16508-01	Tube, Brine Valve, 2850/1600
		10225-3	Nozzle, Injector #3, Stainless Steel		1	40027	Tube, Brine Valve, 2510
		10225-4	Nozzle, Injector #4, Stainless Steel		1	42184	Tube, Brine Valve, 2850s
21	1	10914-000	Throat, Injector #000, Brown		1	12774	Tube, Brine Valve, 1500
		10914-00	Throat, Injector #00, Violet		1	15221	Tube, Brine Valve, 2750
		10914-0	Throat, Injector #0, Red		1	41683*	Tube, Brine Valve, UF, 1600/1650
		10914-1	Throat, Injector #1, White	30		60480-01	Injector Assy, 1600, #1, Plastic
		10914-2	Throat, Injector #2, Blue			60480-02	Injector Assy, 1600, #2, Plastic
		10914-3	Throat, Injector #3, Yellow			60480-03	Injector Assy, 1600, #3, Plastic
		10914-4	Throat, Injector #4, Green			60480-04	Injector Assy, 1600, #4, Plastic
		12974-0	Throat, Injector #0, PVC, Grey			60481-21	Injector Assy, 1600, #1, S.S. Brass
		12974-1	Throat, Injector #1, PVC, Grey			60481-22	Injector Assy, 1600, #2, S.S. Brass
		12974-2	Throat, Injector #2, PVC, Grey			60481-23	Injector Assy, 1600, #3, S.S. Brass
		12974-3	Throat, Injector #3, PVC, Grey			60080-11	Injector Assy, 1600, #1, PVC
		12974-4	Throat, Injector #4, PVC, Grey			60080-12	Injector Assy, 1600, #2, PVC
		10226-0	Throat, Injector #0, Stainless Steel			60080-14	Injector Assy, 1600, #4, PVC
		10226-1	Throat, Injector #1, Stainless Steel			60485-003	Injector Assy, 2900/1600, Upflow, #0, w/Reg Cap, 20 psi
		10226-2	Throat, Injector #2, Stainless Steel			60485-012	Injector Assy, 2900/1600, Upflow, #1, w/Reg Cap, 20 psi
		10226-3	Throat, Injector #3, Stainless Steel			60485-022	Injector Assy, 2900/1600, Upflow, #2, w/Reg Cap, 20 psi
		10226-4	Throat, Injector #4, Stainless Steel			60485-032	Injector Assy, 2900/1600, Upflow, #3, w/Reg Cap, 20 psi
22	1	17776	Body, Injector, 1600			60485-043	Injector Assy, 2900/1600, Upflow, #4, w/Reg Cap, 20 psi
	1	17776-02*	Body, Injector, 1600 Upflow	31		60011-010	Brine Valve, 1650, 0.25 gpm
23	1	16221	Dispenser, Air			60011-020	Brine Valve, 1650, 0.50 gpm
24	1	14805	Gasket, Injector Body, 1600/1700			60011-030	Brine Valve, 1650, 1.0 gpm
25	1	12098	Retainer, Flow Control				
26	1	12095	Washer, Flow Control .50 GPM				
	1	12094	Washer, Flow Control .25 GPM				
	1	12097	Washer, Flow Control 1.0 GPM				
27	1	12550	Quad Ring -009				
	1	12550-01	Quad Ring -009 560CD				

*Upflow Only

1700 BRINE SYSTEM ASSEMBLY



60034 Rev D

1700 BRINE SYSTEM ASSEMBLY *CONTINUED*

Item No.	QTY	Part No.	Description
1	1	14792	Plug, End, Brine Valve
2	1	13201	Quad Ring, -020
3	1	12085	Washer, Flow, 1.2 GPM
	1	12086	Washer, Flow, 1.5 GPM
	1	12087	Washer, Flow, 2.0 GPM
	1	12088	Washer, Flow, 2.4 GPM
	1	12089	Washer, Flow, 3.0 GPM
	1	12090	Washer, Flow, 3.5 GPM
	1	12091	Washer, Flow, 4.0 GPM
	1	12092	Washer, Flow, 5.0 GPM
4	1	14785	Retainer, Flow Control
5	3	14811	O-ring, -210, 560CD, Brine
6	1	14798	Spacer, 1700, Brine
7	1	14795	Piston, Brine Valve
8	1	14797	Brine Valve Stem
9	1	14790	Brine Valve Body
10	1	12550	Quad Ring, -009
11	1	15310	Spring, Brine Valve
12	1	10250	Retaining Ring
13	1	15517	Guide, Stem
14	1	15415	Fitting, Insert, 1/2-inch, Tube
15	3	15414	Nut, 2900, w/Sleeve
16	1	15413	Fitting, Elbow, Male, 1/2T x 3/8 NPT
17	1	15416	Tube, Brine, 2900/2750
	1	16460	Tube, Brine, 2850/2900s
	1	41447*	Tube, Brine, 2900s, U/F
	1	42183	Tube, Brine, 1700, 2850s
20	1	14805	Gasket, Injector Body 1600/1700
21	1	17777	Body, Injector, 1700
	1	17777-02*	Body, Injector, 1700 U/F
22	1	14802-03c	Throat, Injector, #3c, Yellow
		14802-04c	Throat, Injector, #4c, Green
		14802-05c	Throat, Injector, #5c, White
		14802-06c	Throat, Injector, #6c, Red
24		14801-03c	Nozzle, Injector, #3c, Yellow
		14801-04c	Nozzle, Injector, #4c, Green
		14801-05c	Nozzle, Injector, #5c, White
		14801-06c	Nozzle, Injector, #6c, Red

Item No.	QTY	Part No.	Description
25	1	10229	Gasket, Injector Cap, 1600
26	1	11893	Cap, Injector, Stainless Steel
	1	10228	Cap, Injector
27	2	14804	Screw, Hex Hd Mach, 10 - 24 x 2-3/4-inch 18-8 Stainless Steel
28	1	60034-00	Brine Valve, 1700, Blank
		60034-10	Brine Valve, 1700, 1.0 gpm
		60034-12	Brine Valve, 1700, 1.2 gpm
		60034-15	Brine Valve, 1700, 1.5 gpm
		60034-20	Brine Valve, 1700, 2.0 gpm
		60034-24	Brine Valve, 1700, 2.4 gpm
		60034-30	Brine Valve, 1700, 3.0 gpm
		60034-40	Brine Valve, 1700, 4.0 gpm
		60034-50	Brine Valve, 1700, 5.0 gpm
29	1	60381-03	Injector Assy, 1700, #3c, Complete
		60381-04	Injector Assy, 1700, #4c, Complete
		60381-05	Injector Assy, 1700, #5c, Complete
		60381-06	Injector Assy, 1700, #6c, Complete

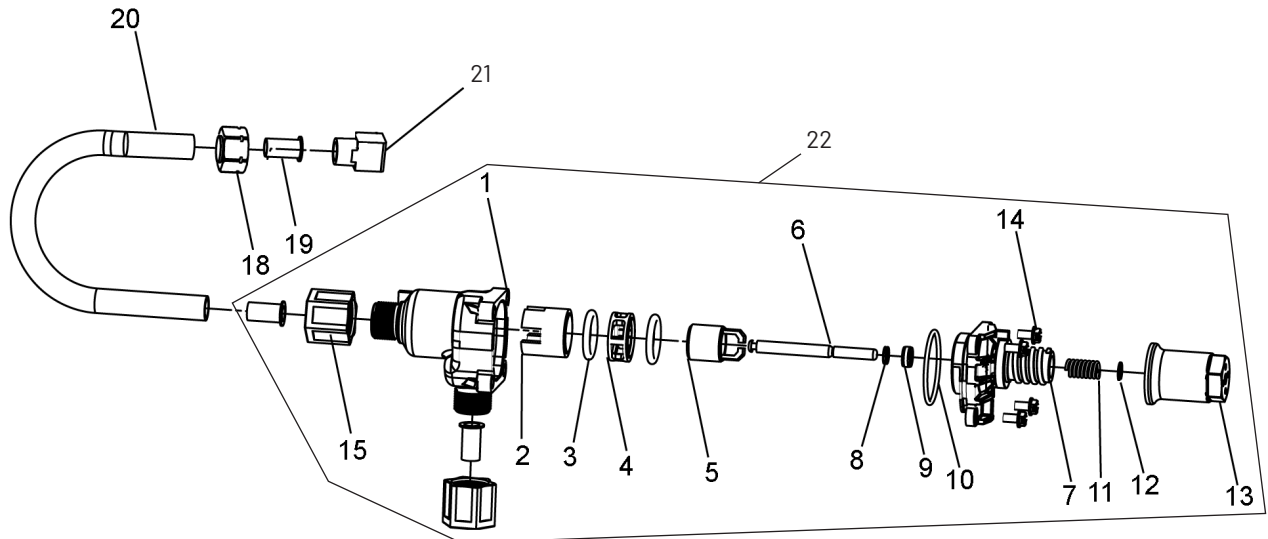
Not Shown:

- 1..... 16974Fitting, Plastic, Female,
3/4 x 3/4 Slip
- 1..... 17996Dispenser, Air, Injector

*Upflow Only

NOTE: Item number 26 (11893) is used on injector sizes 2 through 5C. Part number 10228 is used on injector sizes 6C.

1710 BRINE SYSTEM ASSEMBLY



60604 Rev F

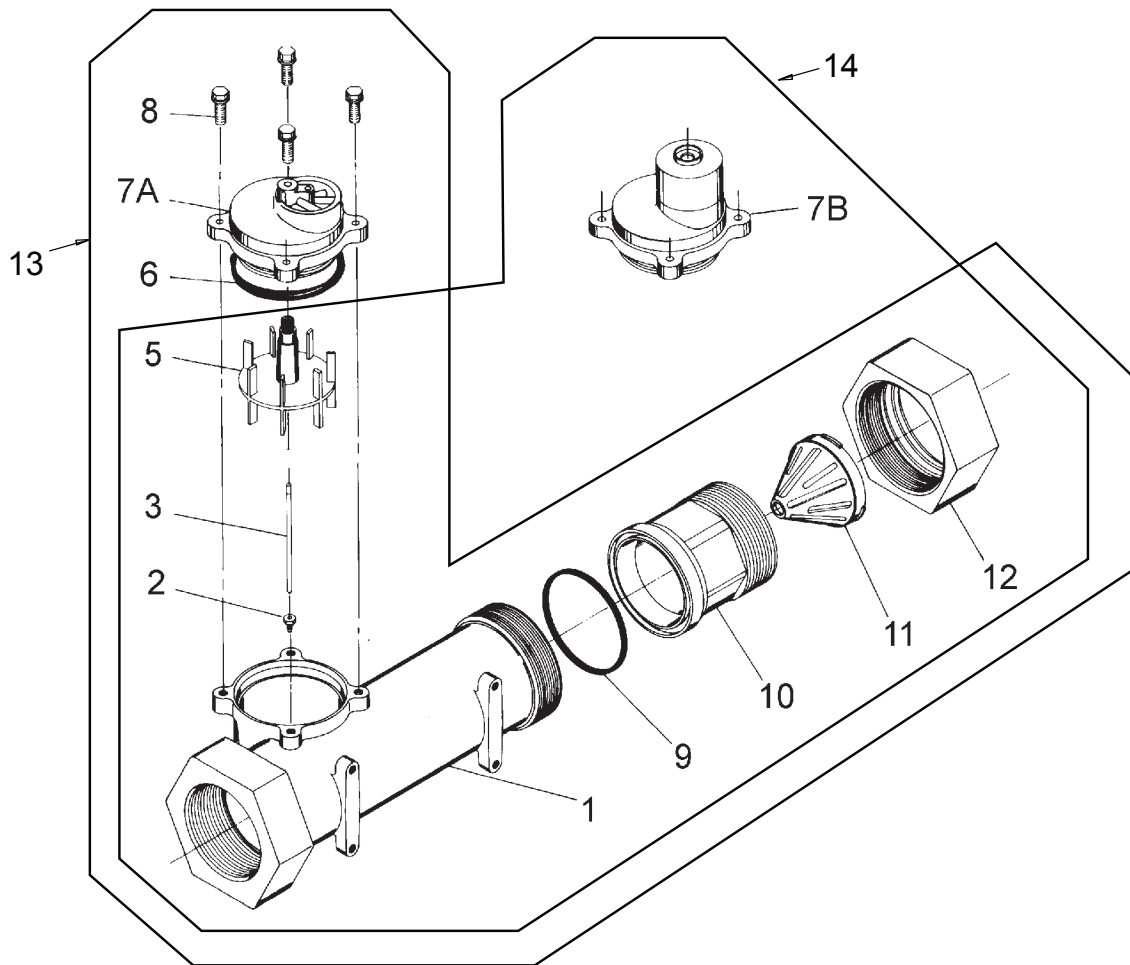
Item No.	QTY	Part No.	Description
1	1	41202	Brine Valve, 1700, Plastic, Top
2	1	14785-01	Retainer, Flow Control
3	1	14811	O-Ring, -210, 560CD, Brine
4	1	14798	Spacer, 1700, Brine
5	1	14795	Piston, Brine Valve
6	1	41203	Stem, Brine, 1710, Plastic, 2900
7	1	41201	Brine Valve, 1700, Plastic, Bottom
8	5	17908	Sleeve, Brine Valve Stem
9	1	12550	Quad Ring, -009
10	3	41547	O-Ring, 2mmx35mm
11	2	15310	Spring, Brine Valve
12	2	10250	Ring, Retaining
13	1	17906	Guide, Brine Valve Stem
14	2	14202-01	Screw, Hex Wsh Mach, 8-32 X 5/16
15	2	41056	Nut Assembly, 1/2-inch Plastic
18	1	15414	Nut, 2900, w/Sleeve
19	1	15415	Fitting, Insert, 1/2-inch, Tube
20	1	16460	Tube, Brine, 2850, 2900s
	1	42183	Tube, Brine, 1700/2850s
	1	15416	Tube, Brine, 2900/2750
	1	41447*	Tube, Brine, 2900s U/F
21	1	15413	Fitting, Elbow, Male, 1/2T X 3/8NPT

Item No.	QTY	Part No.	Description
22		60605-00	Brine Valve, 1710, 2750, Blank
		60605-10	Brine Valve, 1710, 2750, 1.0 gpm
		60605-12	Brine Valve, 1710, 2750, 1.2 gpm
		60605-15	Brine Valve, 1710, 2750, 1.5 gpm
		60605-20	Brine Valve, 1710, 2750, 2.0 gpm
		60605-24	Brine Valve, 1710, 2750, 2.4 gpm
		60605-30	Brine Valve, 1710, 2750, 3.0 gpm
		60605-40	Brine Valve, 1710, 2750, 4.0 gpm
		60605-50	Brine Valve, 1710, 2750, 5.0 gpm

Not Shown

1		19151	Washer, Flow, 1.0 gpm
1		17996	Dispenser, Air, Injector
1		414193-00	Label, Blank, BLFC, 1710

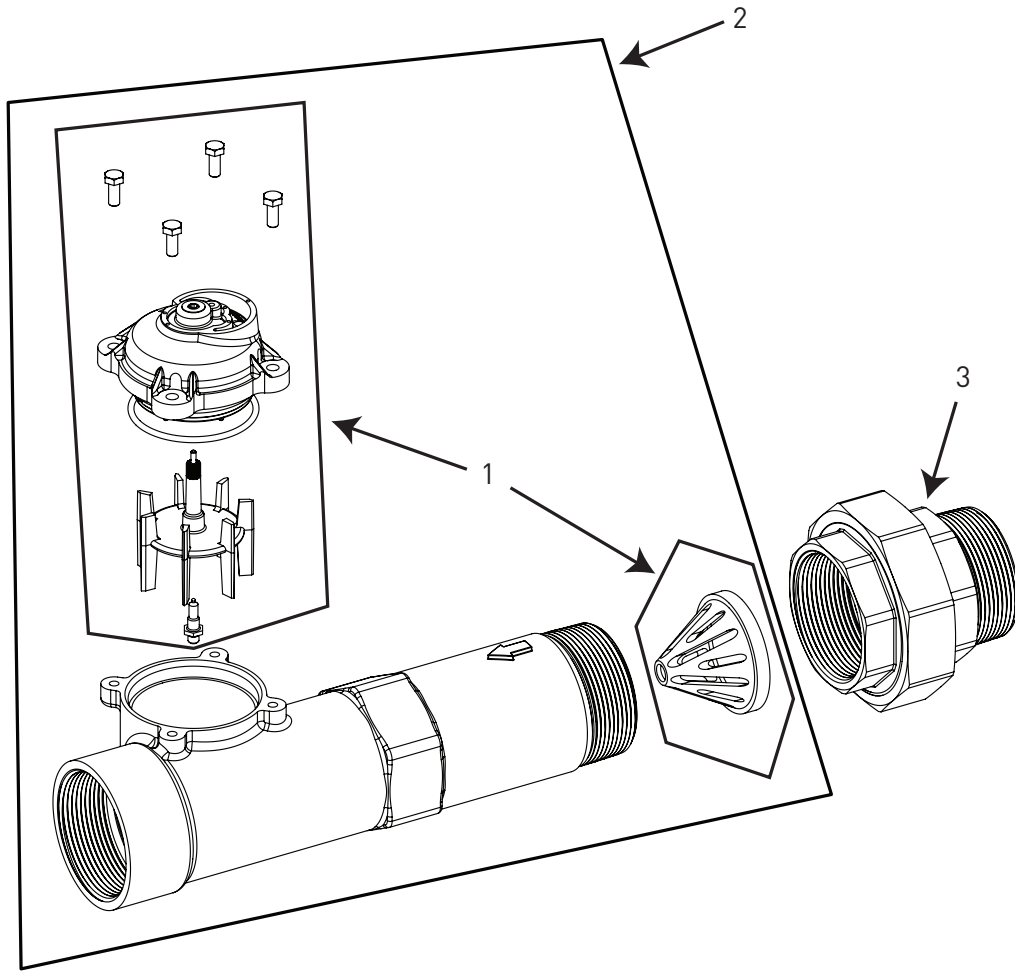
2-INCH BRASS METER ASSEMBLY



Item No.	QTY	Part No.	Description
1	1	14456	Body, Meter, 2-inch
		14456-20	Body, Meter, 2-inch, BSP, Metric
2	1	15532	Seat, Impeller Shaft, Hex
3	1	15432	Shaft
5	1	15374	Impeller Assy, 2-inch Meter
6	1	13847	O-ring, -137, Std/560CD, Meter
7A	1	14038	Meter Cap Assembly, Std, Plastic
7B	1	15150	Meter Cap Assembly, 3/4-inch to 2-inch, Ext Plastic, Pdl
8	4	12112	Screw, Hex Hd Mach, 10-24 x 1/2 18-8 Stainless Steel
		15886	Screw, Hex Hd, M5 x 12 SS, Metric
9	1	14679	O-ring, -227, Meter
10	1	14568	Fitting, Nipple, 2-inch
		14568-10	Fitting, Nipple, 2-inch BSP, Brass

Item No.	QTY	Part No.	Description
11	1	14680	Flow Straightener
12	1	14569	Nut, 2900 Meter
13			Meter Assy, 2-inch Inline, NPT, STD, Brass, Paddlewheel
			Meter Assy, 2-inch Inline, BSP, STD, Brass, Paddlewheel
14			Meter Assy, 2-inch Inline, NPT, EXT, Brass Paddlewheel
			Meter Assy, 2-inch Inline, BSP, EXT, Brass, Paddlewheel
Not Shown			
		61439	Meter Sleeve w/O-rings, 1-1/2 inch

2-INCH STAINLESS STEEL METER ASSEMBLY

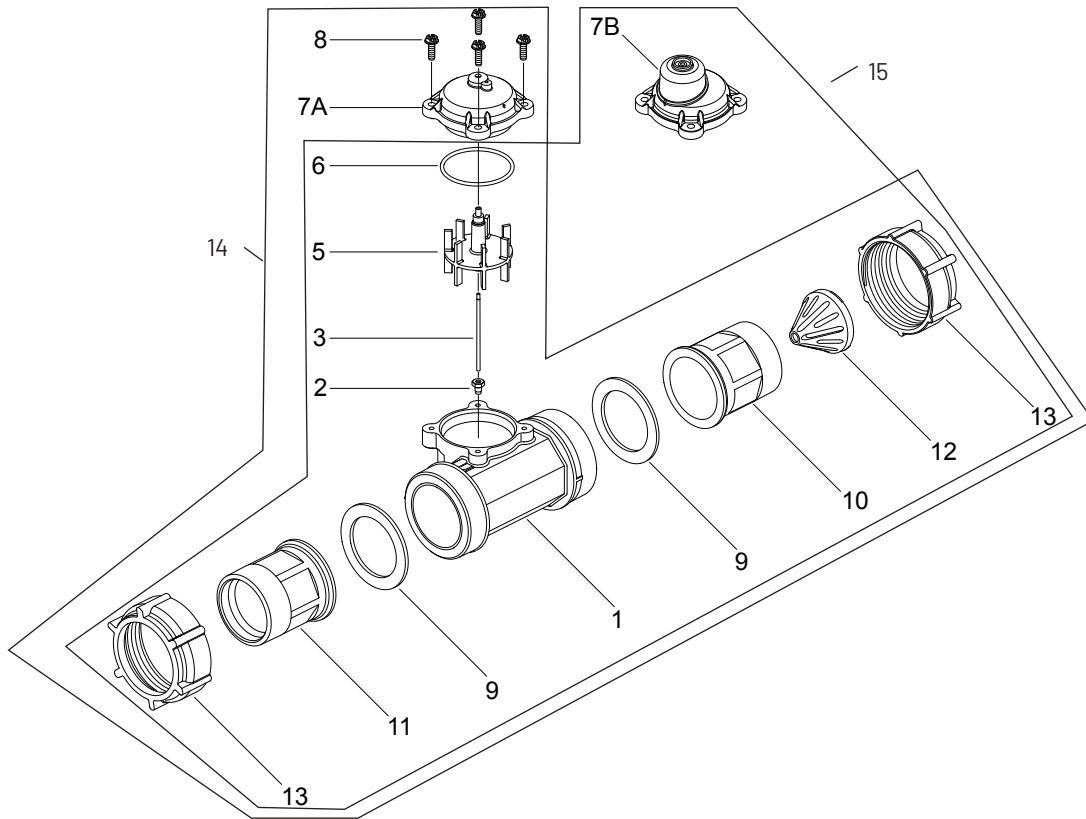


⚠ IMPORTANT: For valves equipped with electromechanical timers and stainless steel meters, refer to the Meter Dome and Union Orientation section.

Item No.	QTY	Part No.	Description
1	1	62048-01	Service Kit, 2 inch Meter, Standard Range
1	1	62048-02	Service Kit, 2 inch Meter, Extended Range
2	1	61934-10	Meter Assy, 2 inch, Inline, Stainless Steel, NPT Standard Range
1	1	61934-11	Meter Assy, 2 inch, Inline, Stainless Steel, NPT Extended Range
1	1	61934-20	Meter Assy, 2 inch, Inline, Stainless Steel, BSP Standard Range
1	1	61934-21	Meter Assy, 2 inch, Inline, Stainless Steel, BSP Extended Range
3	1	44026	Union, 2 inch, NPT (Optional on models with electronic controls)
1	1	44027	Union, 2 inch, BSP (Optional on models with electronic controls)

Item No.	QTY	Part No.	Description
Not Shown (optional)			
1	1	62073	Meter Sleeve, 2 inch to 1-1/2 inch (optional)

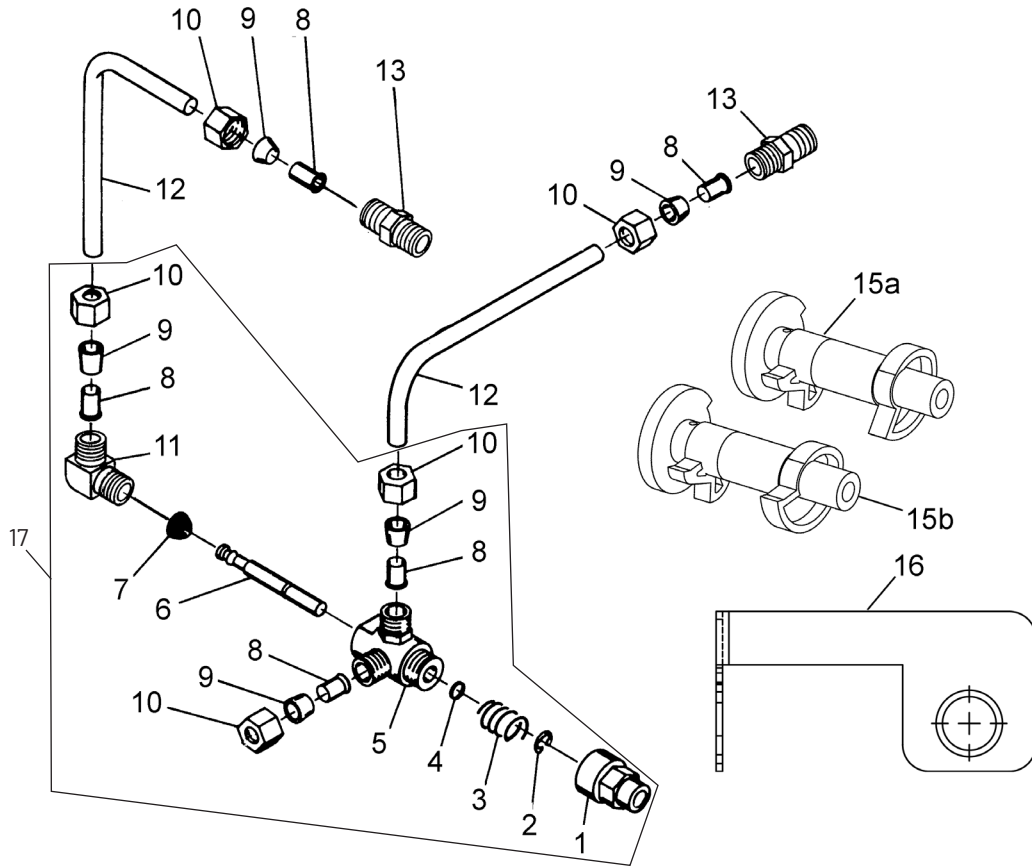
2-INCH PLASTIC METER ASSEMBLY



60621 Rev D

Item No.	QTY	Part No.	Description	Item No.	QTY	Part No.	Description
1	1	17689	Body, Meter, 2-inch Plastic w/Impeller Shaft Seat	12	1	14680	Flow Straightener
2	1	15532	Seat, Impeller Shaft, Hex	13	2	17988	Nut, 2-inch Meter
3	1	15432	Shaft, Impeller, Stainless Steel	14		60620	Meter Assy, 2-inch, Inline, NPT, STD, Plastic, w/Plastic Nipples, Paddlewheel
5	1	15374	Impeller Assy, 2-inch Meter			60620-01	Meter Assy, 2-inch, Inline, NPT, STD, Plastic, w/Brass Nipples, Paddlewheel
6	1	13847	O-ring, -137, Std/560CD, Meter			60620-10	Meter Assy, 2-inch Inline, BSP, STD, Plastic, Plastic Nipples, Paddlewheel
7A	1	14038	Meter Cap Assembly			60620-11	Meter Assy, 2-inch, Inline, BSP, STD, Plastic, Brass Nipples, Paddlewheel
7B		15150	Meter Cap Assembly, EXT	15		60621	Meter Assy, 2-inch, Inline, NPT, EXT, Plastic, w/Plastic Nipples, Paddlewheel
8	4	12473	Screw, Hex Wsh, 10-24 x 5/8 18-8 Stainless Steel			60621-01	Meter Assy, 2-inch, Inline, NPT, EXT, Plastic, w/Brass Nipples, Paddlewheel
9	2	40666	Seal, Face, 2-inch, Plastic Meter			60621-10	Meter Assy, 2-inch Inline, BSP, EXT, Plastic, Plastic Nipples, Paddlewheel
10A	1	17987-001	Fitting, Nipple, 2-inch, Plastic, NPT, Machined, Flow Straightener			60621-11	Meter Assy, 2-inch, Inline, BSP, EXT, Plastic, Brass Nipples, Paddlewheel
10B	1	17987-101	Fitting, Nipple, 2-inch, Plastic, BSP, Machined, Flow Straightener				
11A	1	17987-000	Fitting, Nipple, 2-inch, Plastic, NPT				
11B	1	17987-100	Fitting, Nipple, 2-inch, Plastic, BSP				

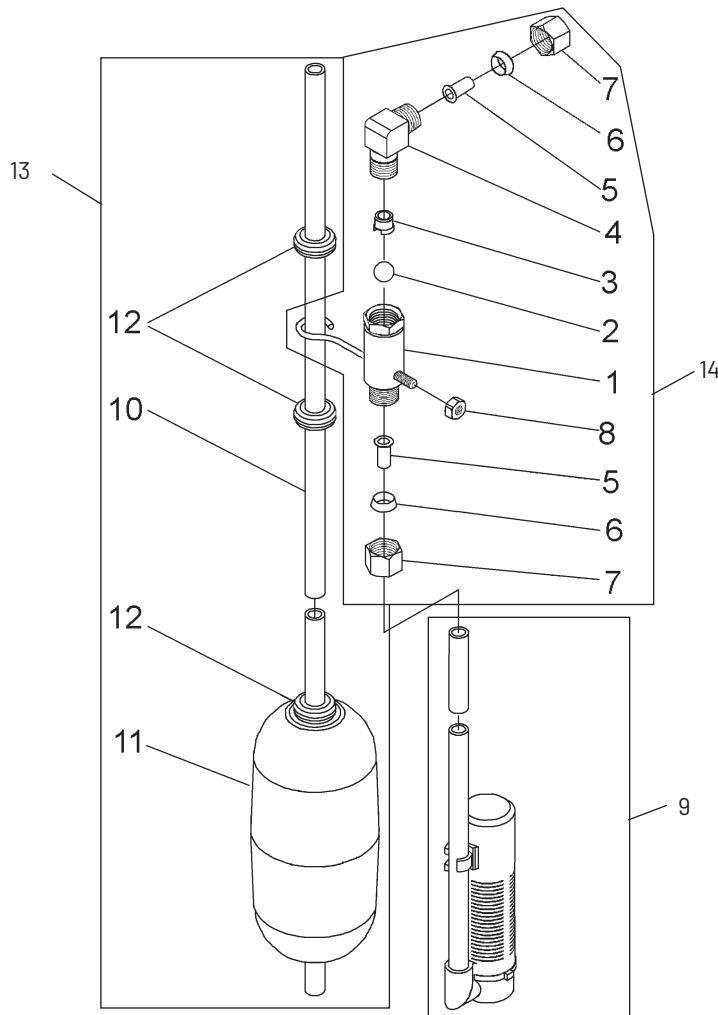
1600 SERVICE VALVE OPERATOR (NEW STYLE)



60150 Rev A

Item No.	QTY	Part No.	Description	Item No.	QTY	Part No.	Description
1	1	11749	Guide, Brine Valve Stem	14	2	15415	Fitting, Insert, 1/2-inch Tube
2	1	10250	Ring, Retaining	15a	1	12472	Cam Assembly, Tri-Stack, After RR
3	1	10249	Spring, Brine Valve	15b	1	15770	Cam Assembly, Special Tri-Stack After Brine Fill
4	1	12550	Quad Ring, -009	16	1	12114	Bracket, Motor Outboard, Coated
5	2	10785	SVO Body Assy Brass Valves	17	1	60150-01	Service Valve Operator Assembly, 1600, New Style, Item No's 1-11
6	1	12552	Brine Valve Stem, 1600				
7	1	12626	Seat, Brine Valve				
8	5	10332	Fitting, Insert, 3/8-inch				
9	5	10330	Fitting, Sleeve, 3/8-inch Celcon				
10	5	10329	Fitting, Tube, 3/8 Nut, Brass				
11	1	10328	Fitting, Elbow, 90 Deg 1/4 NPT x 3/8 Tube				
12	2	12897	Tube, Fitting, 3/8 x 9 3/4				
13	1	16730	Fitting, Male, 1/4 x 1				

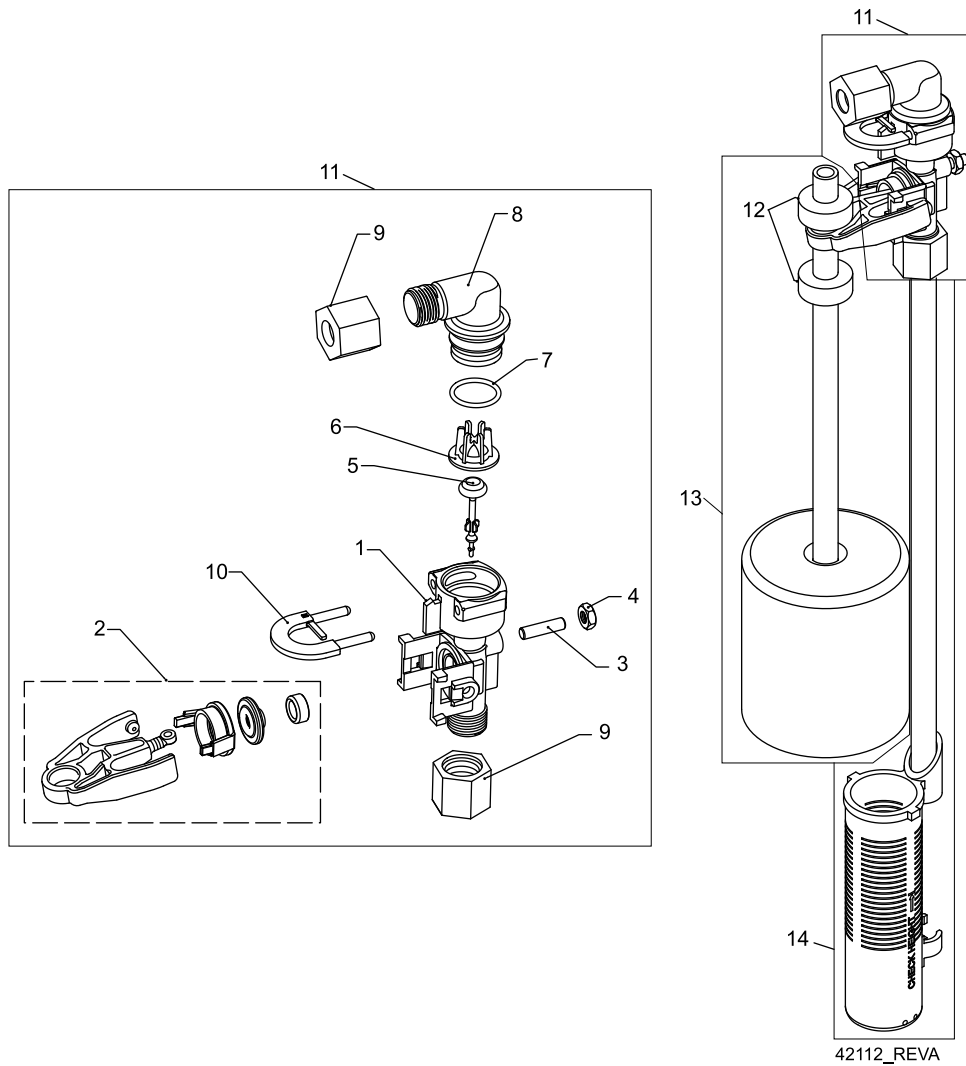
2300 SAFETY BRINE VALVE



60027 Rev D

Item No.	QTY	Part No.	Description	Item No.	QTY	Part No.	Description
1	1	60027-00	Safety Brine Valve, 2300, Less Elbow	.....	1	60002-36	Air Check, #500, 36 inches Long
2	1	10138	Ball, 3/8-inch, Brass	.....	1	60002-48	Air Check, #500, 48 inches Long
3	1	11566	Ball Stop, Slow Fill	.....	1	60002-26.25	Air Check, #500, 26.25 inches Long
4	1	10328	Fitting, Elbow, 90 Deg. 1/4 NPT x 3/8 Tube	.....	1	60002-33.25	Air Check, #500, 33.25 inches Long
5	1	10332	Fitting, Insert, 3/8	10	1	10149	Rod, Float, 30-inch
6	1	10330	Fitting, Sleeve, 3/8 Celcon	11	1	10700	Float Assy, White
7	1	10329	Fitting, Tube, 3/8 Nut, Brass	12	3	10150	Grommet, .30 Dia
8	1	10186	Nut, Hex, 10-32	13	1	60028-30	Float Assy, 2300, 30-inch White
9	1	60002-10	Air Check, #500, American Hydro	14	1	60027-FFA	Safety Brine Valve, 2300, Fitting Facing Arm
.....	1	60002-11.38	Air Check, #500, 11.38 inches Long	1	1	60027-FFS	Safety Brine Valve, 2300 Fitting Facing Stud
.....	1	60002-24	Air Check, #500, 24 inches Long				
.....	1	60002-27	Air Check, #500, 27 inches Long				
.....	1	60002-32	Air Check, #500, 32 inches Long				
.....	1	60002-34	Air Check, #500, 34 inches Long				

2310 SAFETY BRINE VALVE

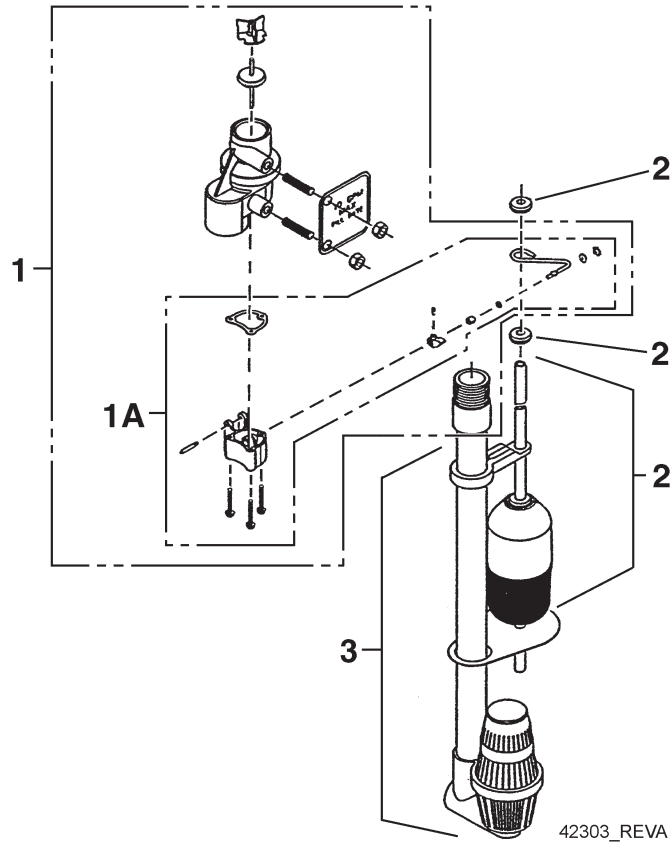


42112_REVA

Item No.	QTY	Part No.	Description
1	1	19645	Body, Safety Brine Valve, 2310
2	1	19803	Safety Brine Valve Assy
3	1	19804	Screw, Sckt Hd, Set, 10-24 x .75
4	1	19805	Nut, Hex, 10-24, Nylon Black
5	1	19652-01	Poppet Assy, SBV w/O-ring
6	1	19649	Flow Dispenser
7	1	11183	O-ring, -017
8	1	19647	Elbow, Safety Brine Valve
9	2	19625	Nut Assy, 3/8-inch Plastic
10	1	18312	Retainer, Drain
11	1	60014	Safety Brine Valve Assy, 2310
12	2	10150	Grommet, .30 Dia
13	1	60068-8.06	Float Assy, 2310, w/8.06-inch Rod
		60068-10.5	Float Assy, 2310, w/10.5-inch Rod
		60068-11.5	Float Assy, 2310, w/11.5-inch Rod

Item No.	QTY	Part No.	Description
		60068-20	Float Assy, 2310, w/20-inch Rod
		60068-30	Float Assy, 2310, w/30-inch Rod
14	1	60002-10	Air Check, #500, American Hydro
		60002-11.38	Air Check, #500, 11.38-inch Long
		60002-24	Air Check, #500, 24-inch Long
		60002-27	Air Check, #500, 27-inch Long
		60002-32	Air Check, #500, 32-inch Long
		60002-34	Air Check, #500, 34-inch Long
		60002-36	Air Check, #500, 36-inch Long
		60002-48	Air Check, #500, 48-inch Long
		60002-26.25	Air Check, #500, 26.25-inch Long
		60002-33.25	Air Check, #500, 33.25-inch Long

2350 SAFETY BRINE VALVE



Item No.	QTY	Part No.	Description
1	1	60038	Safety Brine Valve, 2350
1A	1	61024	Actuator Assy, 2350 Brine
2	1	60028-30	Float Assy, 2350, 30-inch Wht
	1	60026-30SAN	Float Assy, 2350, 30-inch Hot Water
3	1	60009-00	Air Check, #900, Commercial Less Fittings
	1	60009-01	Air Check, #900, Commercial, Hot Water Less Fittings

Not Shown

	1	18603	Fitting Assy, 900 Air Check 2350
	1	18602	Fitting Assy, 900 Air Check

GENERAL SERVICE HINTS FOR METER CONTROL

Problem: Softener delivers hard water

Reason: Reserve capacity has been exceeded.

Correction: Check salt dosage requirements and reset program wheel to provide additional reserve.

Reason: Program wheel is not rotating with meter output.

Correction: Pull cable out of meter cover and rotate manually. Program wheel must move without binding and clutch must give positive clicks when program wheel strikes regeneration stop. If it does not, replace timer.

Reason: Meter is not measuring flow.

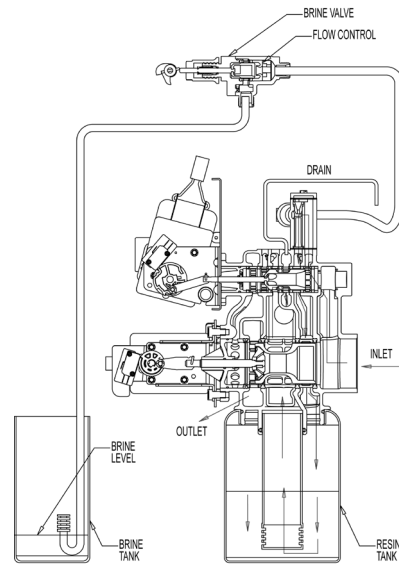
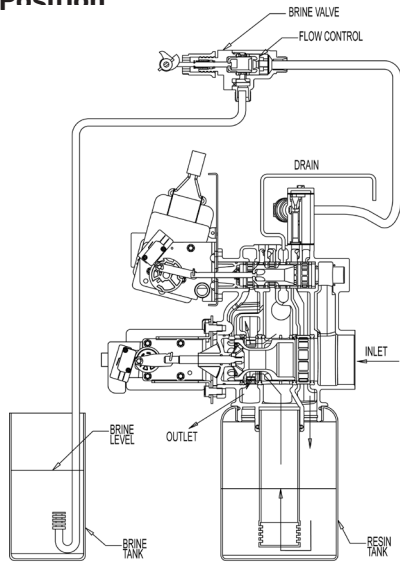
Correction: Check meter with meter checker.

TROUBLESHOOTING

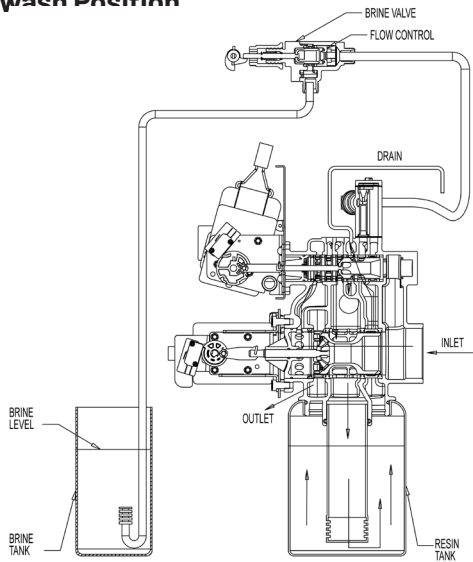
Problem	Cause	Correction
Water conditioner fails to regenerate.	Electrical service to unit has been interrupted	Assure permanent electrical service (check fuse, plug, pull chain, or switch)
	Timer is defective.	Replace timer.
	Power failure.	Reset time of day.
Hard water.	By-pass valve is open.	Close 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.
	Insufficient water flowing into brine tank.	Check brine tank fill time and clean brine line flow control if plugged.
	Hot water tank hardness.	Repeated flushings of the hot water tank is 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 control. Check for dry well condition.
	Improperly sized drain line flow control.	Check for proper drain rate.
Iron in conditioned water.	Fouled mineral bed.	Check backwash, brine draw, and brine tank fill. Increase frequency of regeneration. Increase backwash time.
Excessive water in brine tank.	Plugged drain line flow control.	Clean flow control.
	Plugged injector system.	Clean injector and screen.
	Timer not cycling.	Replace timer.
	Foreign material in brine valve.	Replace brine valve seat and clean valve.
	Foreign material in brine line flow control.	Clean brine line flow control.
Softener fails to draw brine.	Drain line flow control is plugged.	Clean drain line flow control.
	Injector is plugged.	Clean injector
	Injector screen plugged.	Clean screen.
	Line pressure is too low.	Increase line pressure to 20 psi
	Internal control leak	Change seals, spacers, and piston assembly.
	Service adapter did not cycle.	Check drive motor and switches.
Control cycles continuously.	Misadjusted, broken, or shorted switch.	Determine if switch or timer is faulty and replace it, or replace complete power head.
Drain flows continuously.	Valve is not programming correctly.	Check timer program and positioning of control. Replace power head assembly if not positioning properly.
	Foreign material in control.	Remove power head assembly and inspect bore. Remove foreign material and check control in various regeneration positions.
	Internal control leak.	Replace seals and piston assembly.

WATER CONDITIONER FLOW DIAGRAMS - DOWNFLOW

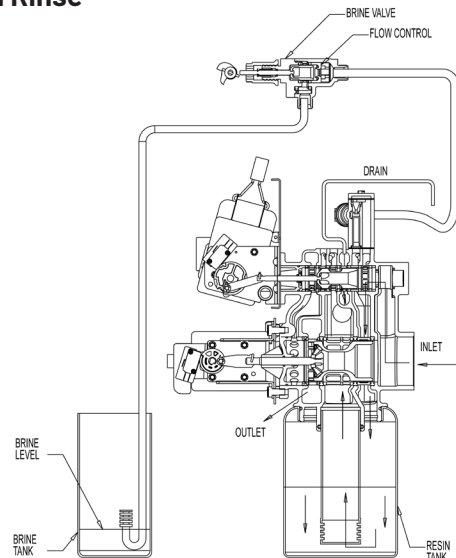
1 Service Position



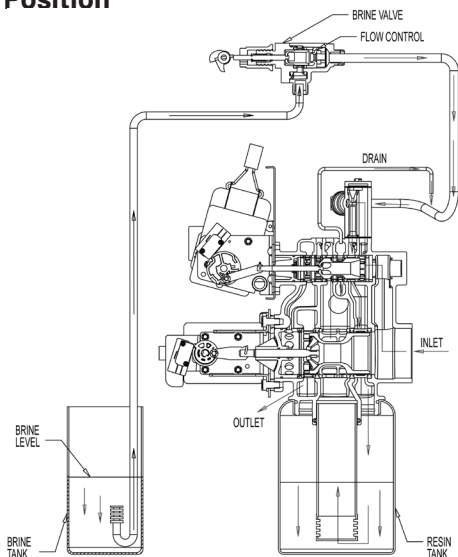
2 Backwash Position



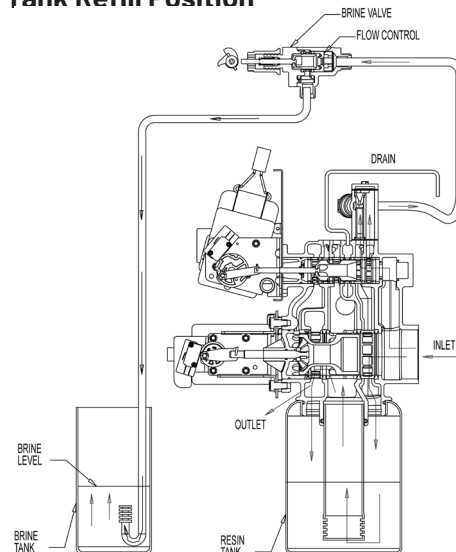
5 Rapid Rinse



3 Brine Position



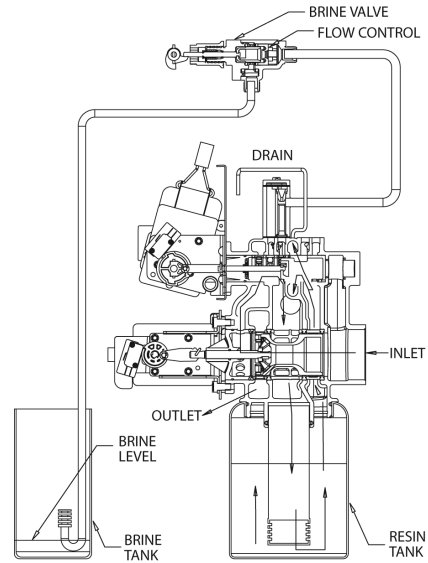
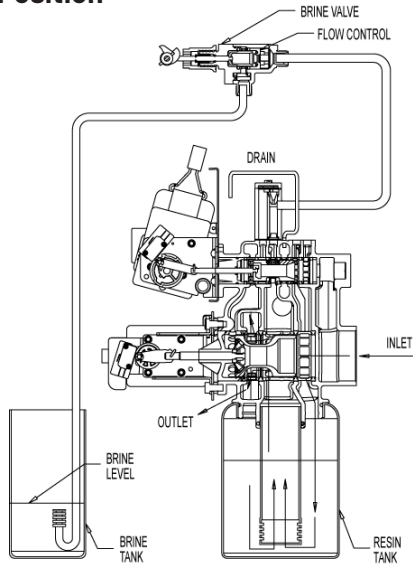
6 Brine Tank Refill Position



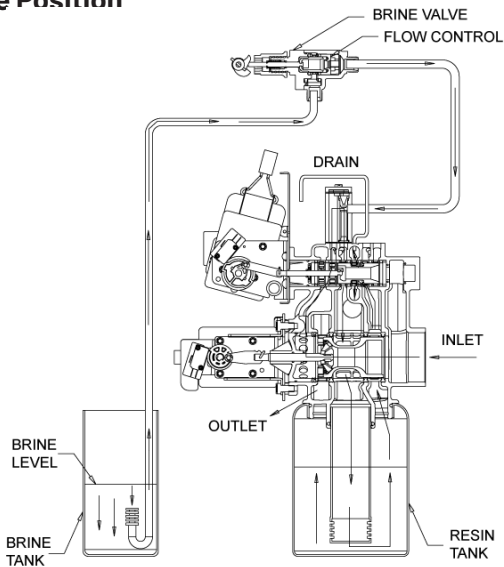
4 Slow Rinse Position

WATER CONDITIONER FLOW DIAGRAMS - UPFLOW

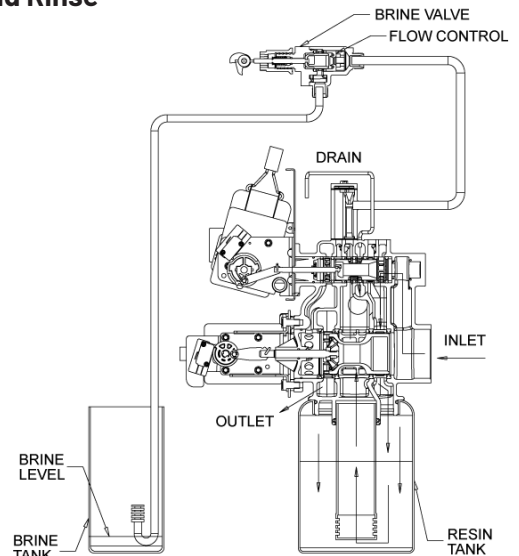
1 Service Position



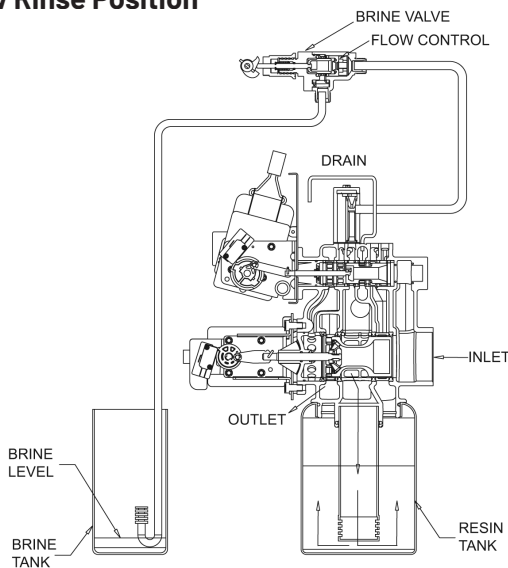
2 Brine Position



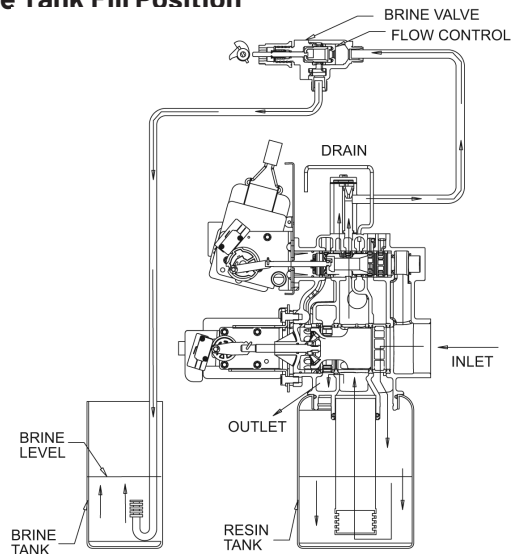
5 Rapid Rinse



3 Slow Rinse Position

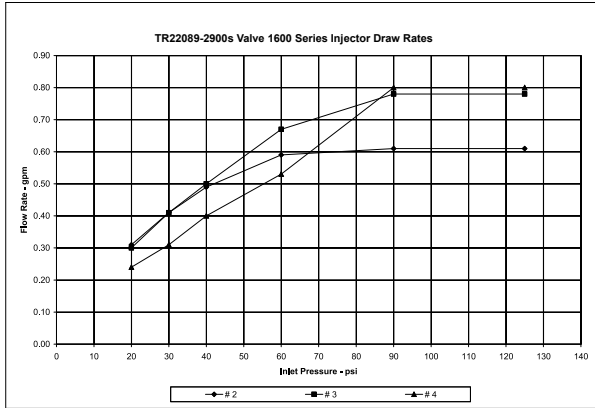


6 Brine Tank Fill Position



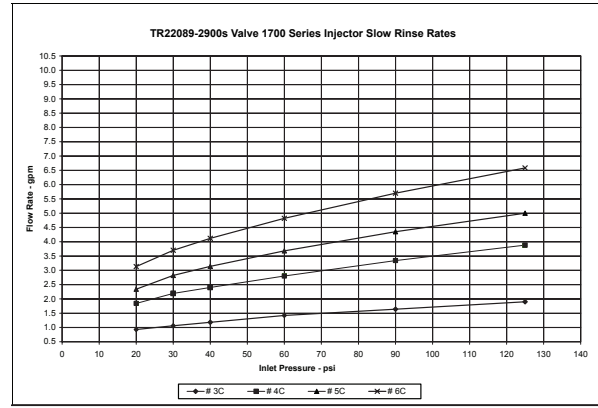
4 Back Wash Position

FLOW DATA & INJECTOR DRAW RATES - DOWNFLOW



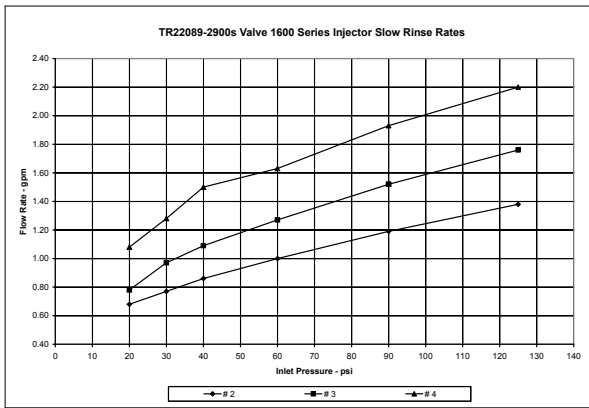
1600 series injectors		Draw Rate - gpm		
pressure	# 2	# 3	# 4	
20	0.31	0.30	0.24	
30	0.41	0.41	0.31	
40	0.49	0.50	0.40	
60	0.59	0.67	0.53	
90	0.61	0.78	0.80	
125	0.61	0.78	0.80	

all injectors used the steel cap and an air disperser



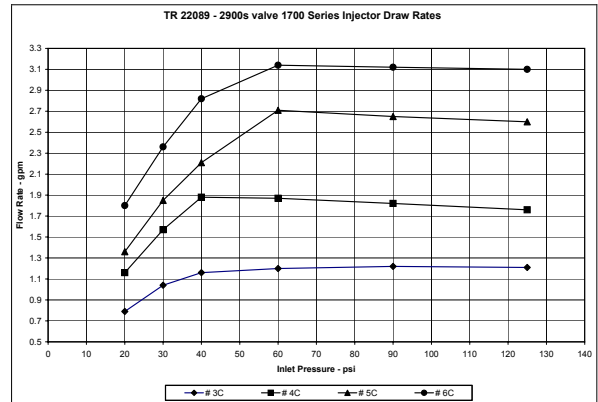
1700 series injectors		Slow Rinse - gpm			
pressure	# 3C	# 4C	# 5C	# 6C	
20	0.93	1.84	2.34	3.13	
30	1.06	2.19	2.82	3.70	
40	1.18	2.40	3.14	4.12	
60	1.42	2.80	3.68	4.82	
90	1.64	3.34	4.35	5.70	
125	1.90	3.88	5.00	6.58	

3C - steel cap, no o-ring, air disperser
 # 4C & 5C - steel cap, o-ring, air disperser
 # 6C & 7C - brass cap, o-ring, no air disperser



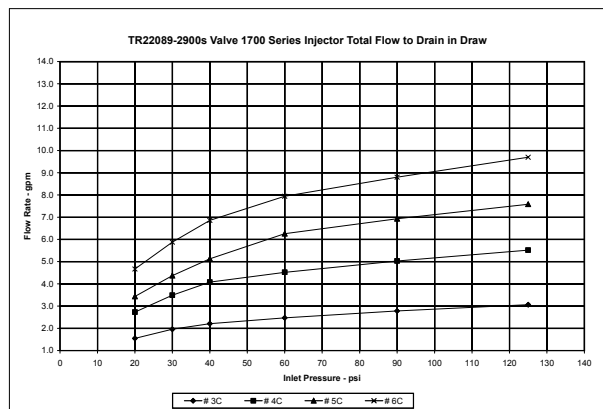
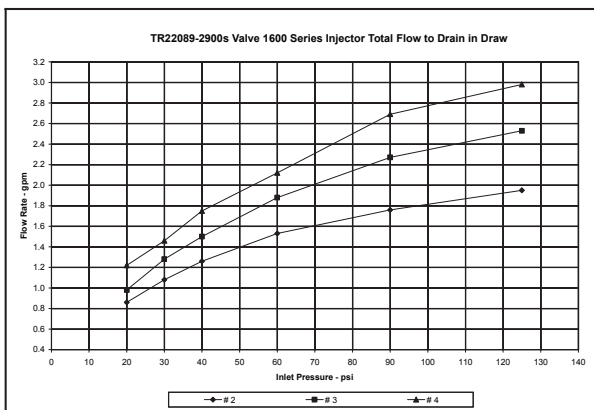
1600 series injectors		Slow Rinse Rates - gpm		
pressure	# 2	# 3	# 4	
20	0.68	0.78	1.08	
30	0.77	0.97	1.28	
40	0.86	1.09	1.50	
60	1.00	1.27	1.83	
90	1.19	1.52	1.93	
125	1.38	1.76	2.20	

all injectors used the steel cap and an air disperser

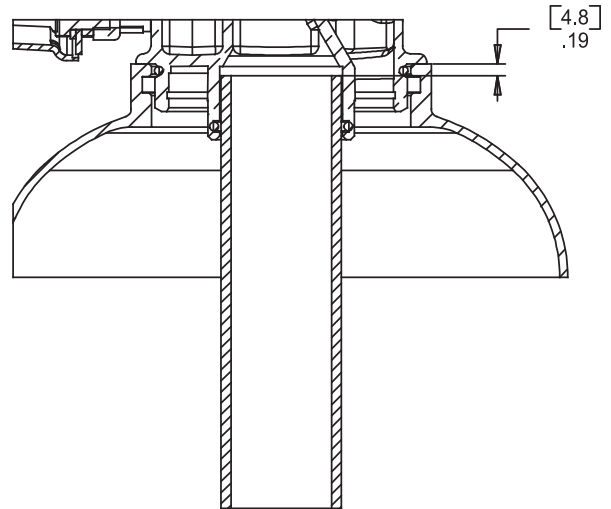
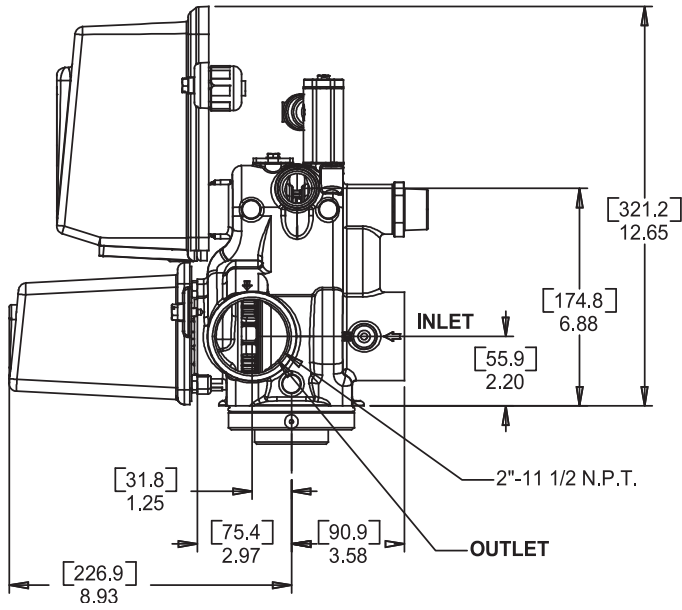
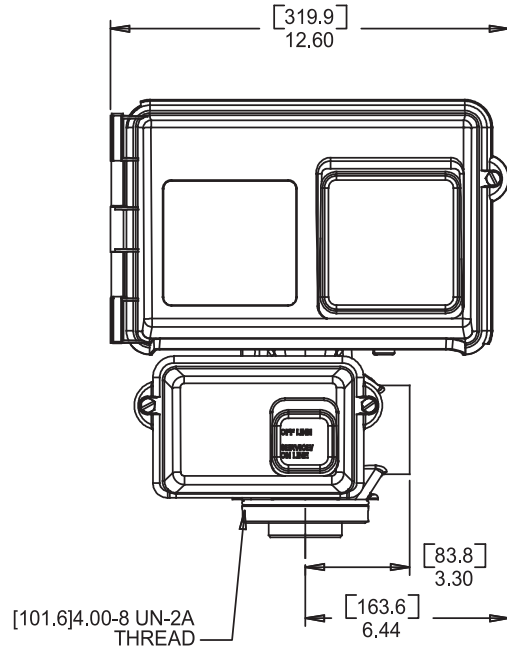
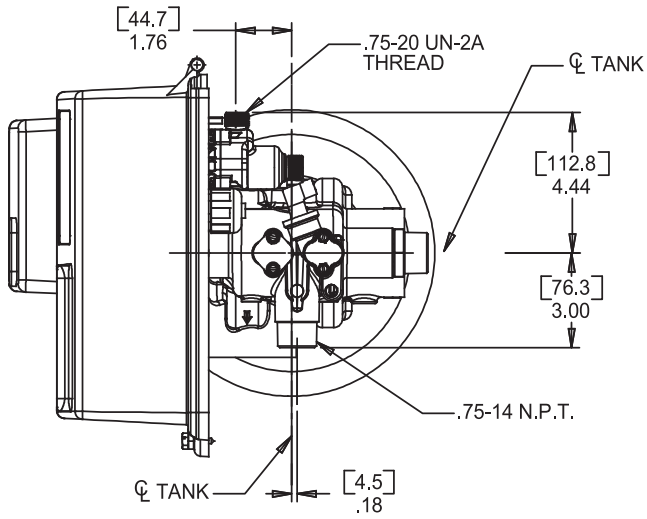


1700 series injectors		Draw Rate - gpm			
pressure	# 3C	# 4C	# 5C	# 6C	
20	0.79	1.16	1.36	1.80	
30	1.04	1.57	1.85	2.36	
40	1.16	1.88	2.21	2.82	
60	1.20	1.87	2.71	3.14	
90	1.22	1.82	2.65	3.12	
125	1.21	1.76	2.60	3.10	

3C - steel cap, no o-ring, air disperser
 # 4C & 5C - steel cap, o-ring, air disperser
 # 6C - brass cap, o-ring, no air disperser



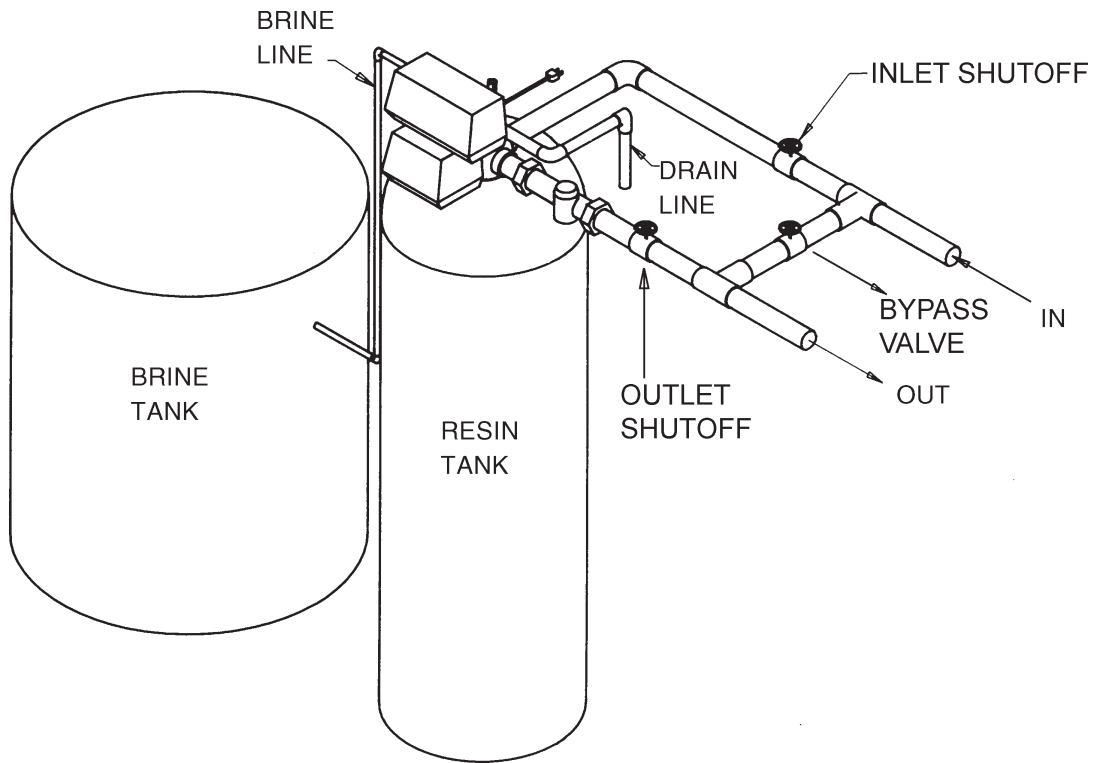
ENVIRONMENTAL BACKPLATE DIMENSIONS



61500-2900LNE Rev B

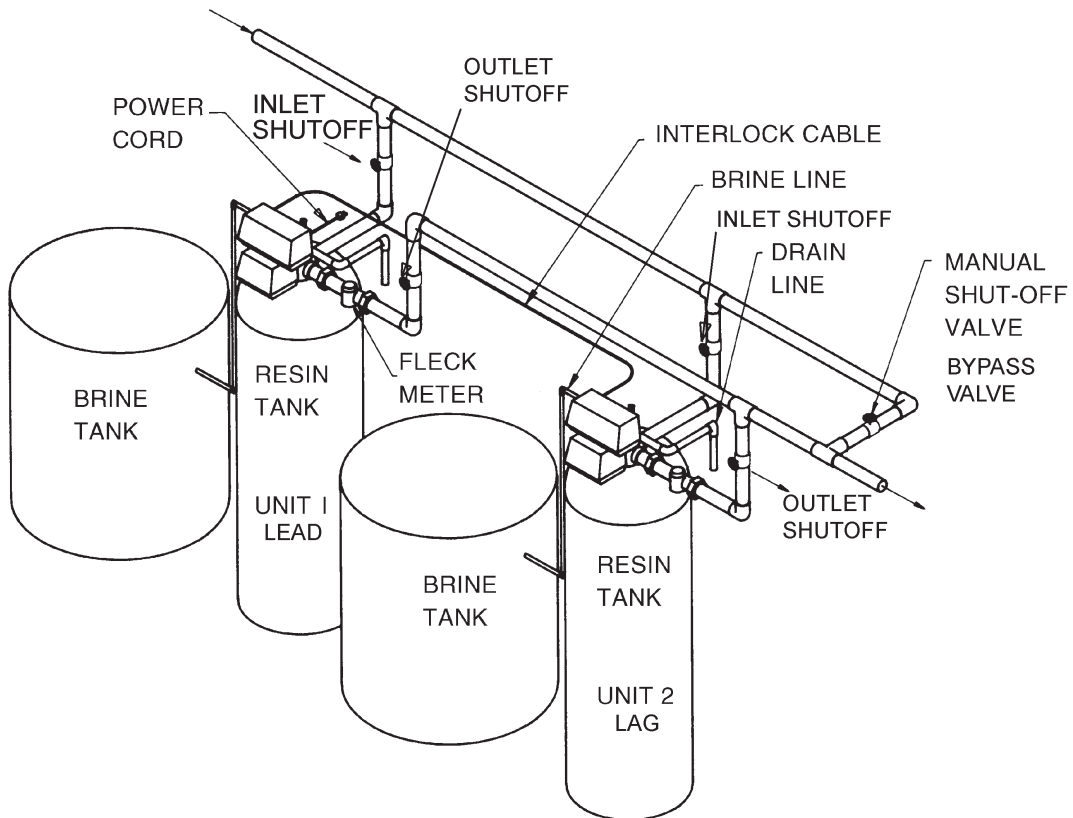
SYSTEM #4

Typical Single Tank Installation with Optional Meter



SYSTEM #5 INTERLOCK

Typical Twin Tank Installation with Optional Meter Interlock and No Hard Water Bypass

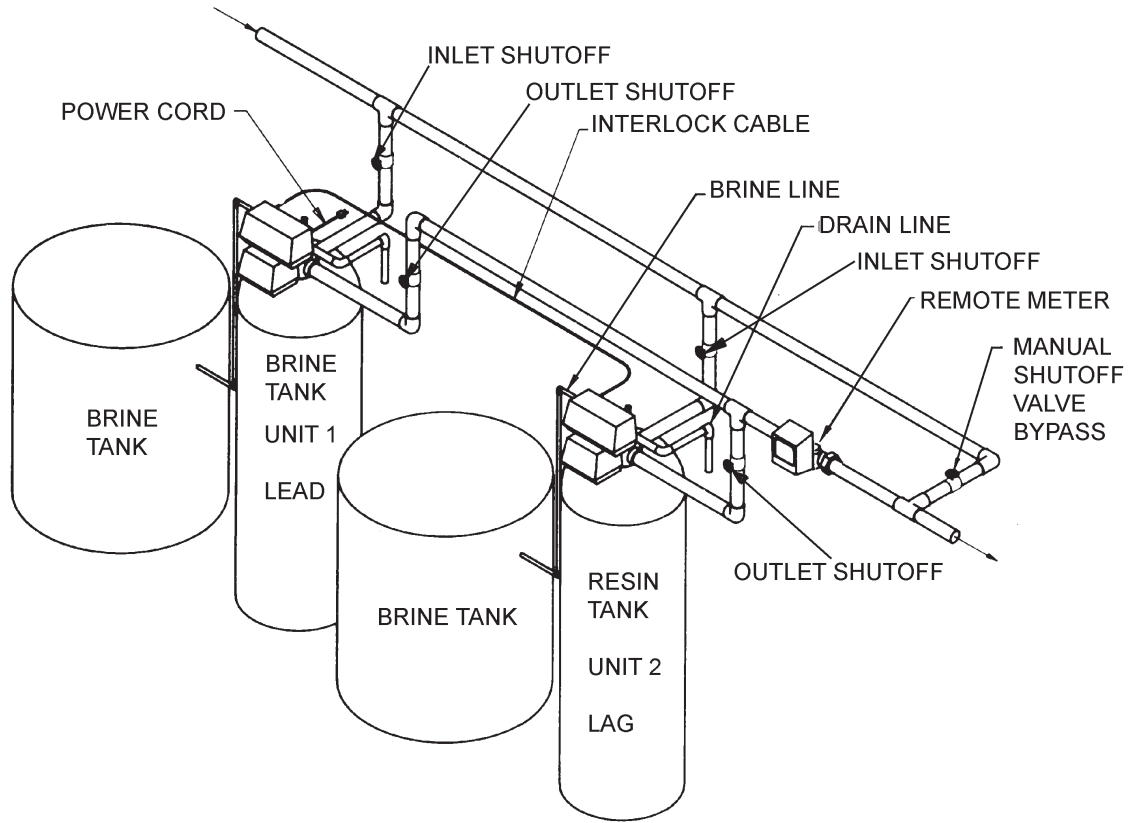


SYSTEM #6 & #7

Twin Series Regeneration Installation with a Remote Meter

Twin Alternator Installation

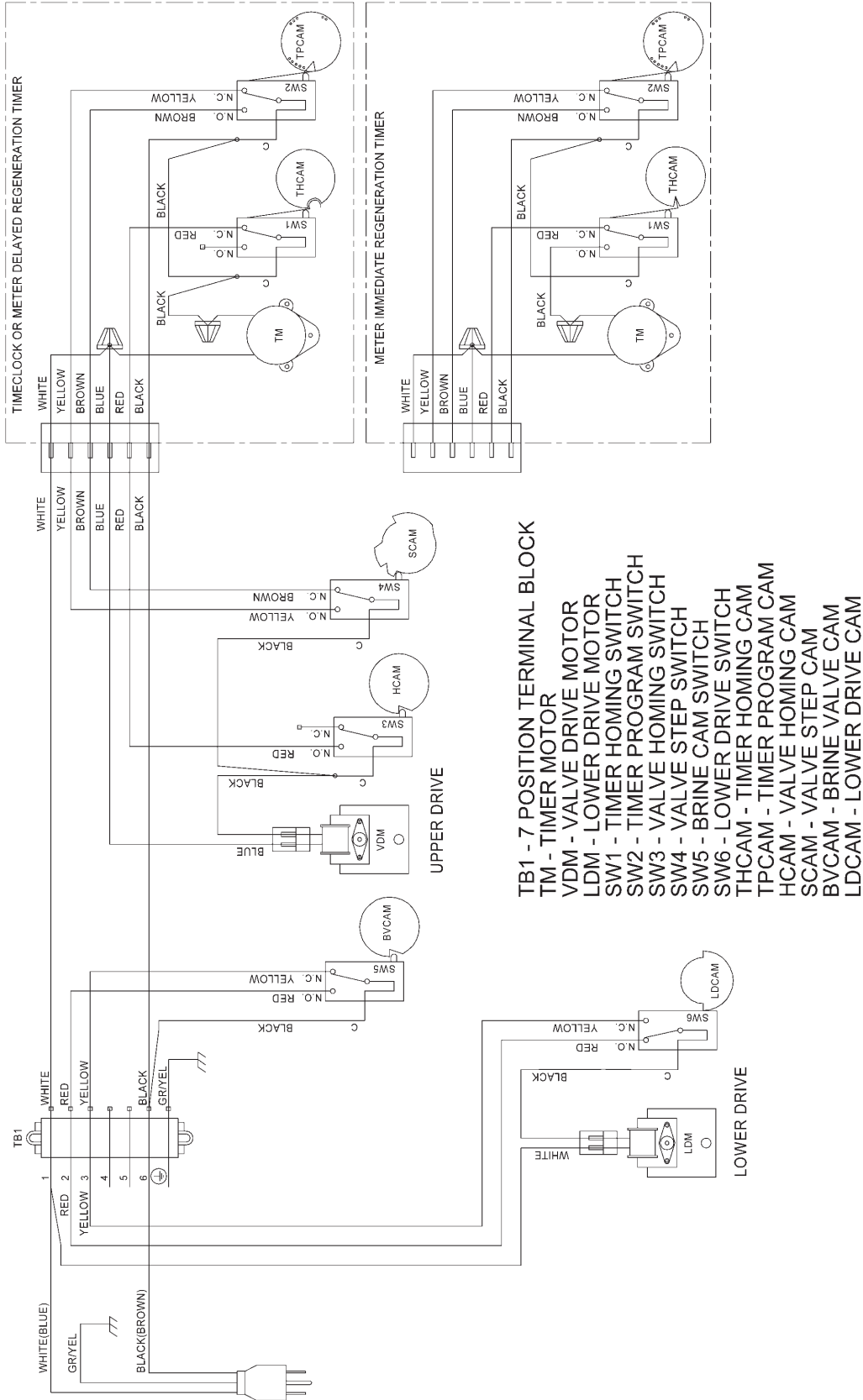
NOTE: On System 7, the power cord is on Unit 2.



NOTE: System 7 can run with either one or two brine tanks. Two brine tanks should be used if regeneration is less than 4 hours.

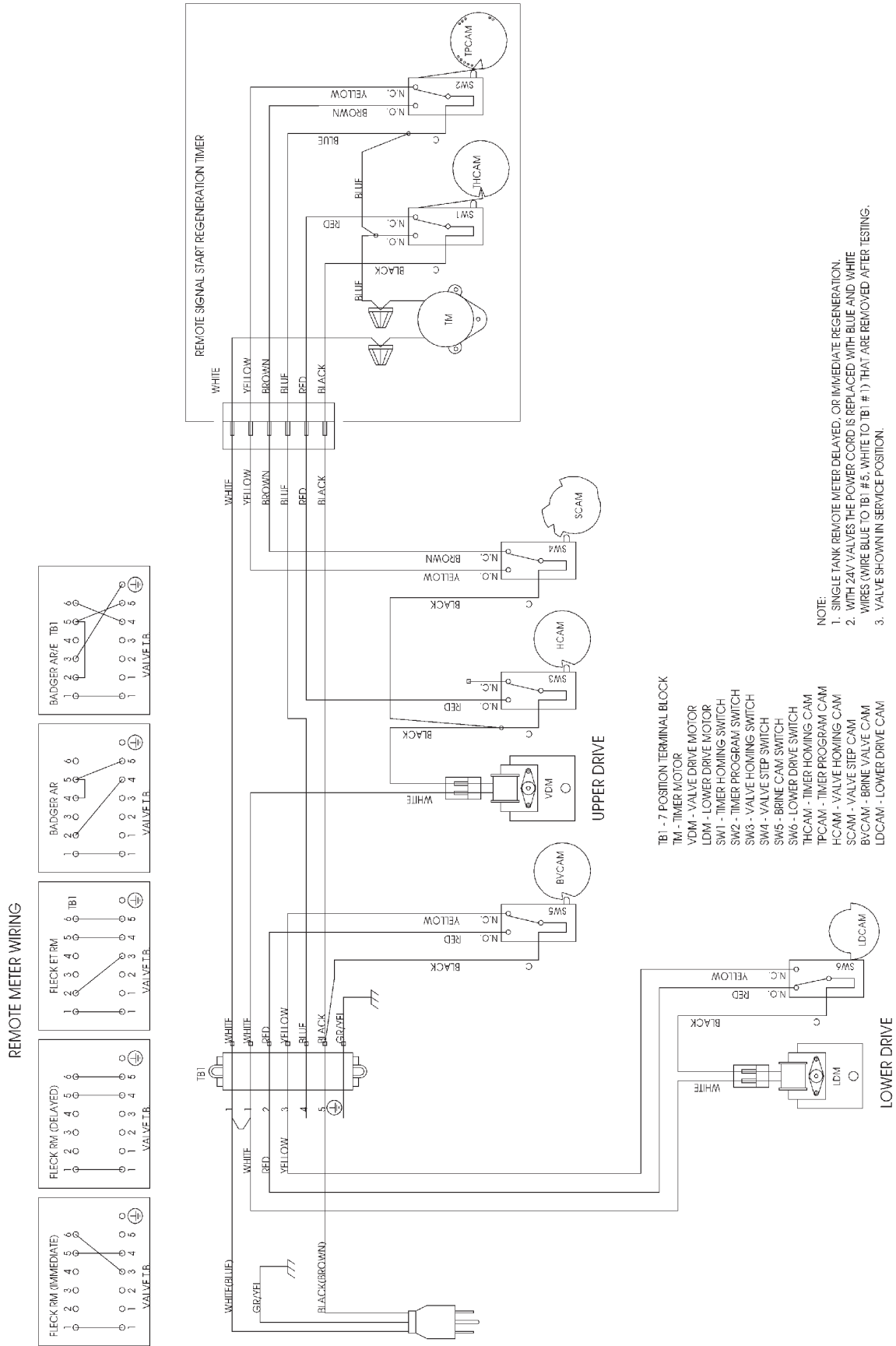
SYSTEM #4 WIRING

Single Valve Regeneration Immediate and Delayed Valve Wiring



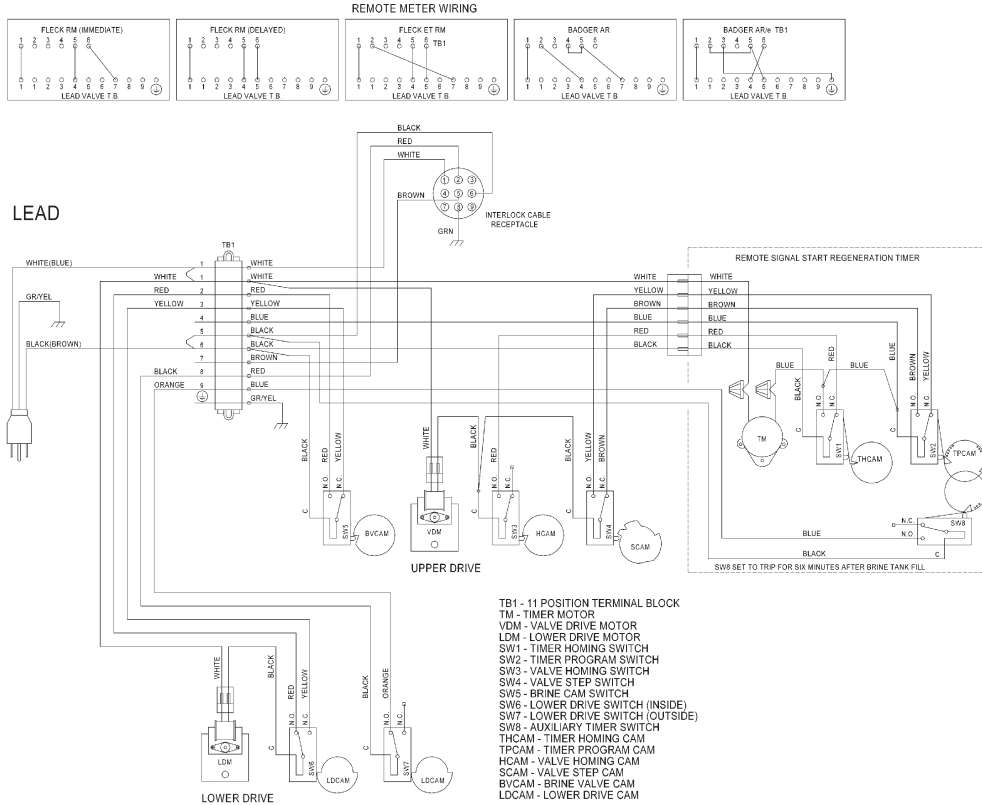
SYSTEM #4 WIRING *CONTINUED*

With Remote Starter Valve Wiring



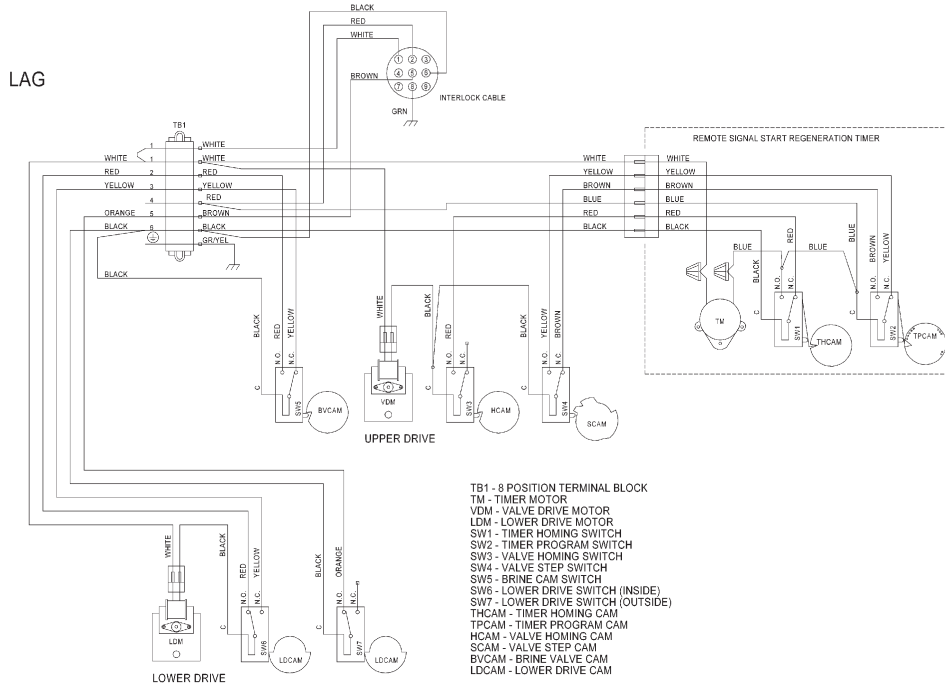
SYSTEM #6 WIRING

Series Regeneration Valve Wiring



- NOTE:**
1. TWO TANK INTERLOCKED, SINGLE REMOTE METER, SERIES REGENERATION.
 2. BOTH TANKS NORMALLY IN SERVICE.
 3. ONLY ONE TANK IN REGENERATION, THE OTHER REMAINS IN SERVICE.
 4. LEAD VALVE REGENERATES FIRST, FOLLOWED IMMEDIATELY BY LAG VALVE.

18686-01 Rev E

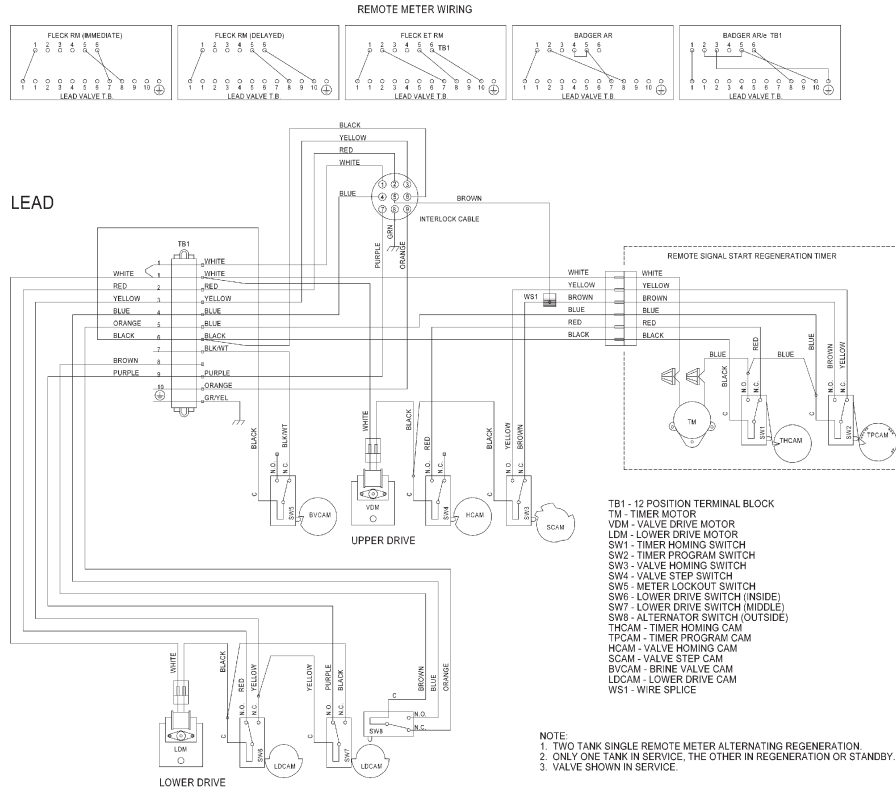


- NOTE:**
1. TWO TANK INTERLOCKED, SINGLE REMOTE METER, SERIES REGENERATION.
 2. BOTH TANKS NORMALLY IN SERVICE.
 3. ONLY ONE TANK IN REGENERATION, THE OTHER REMAINS IN SERVICE.
 4. LEAD VALVE REGENERATES FIRST, FOLLOWED IMMEDIATELY BY LAG VALVE.

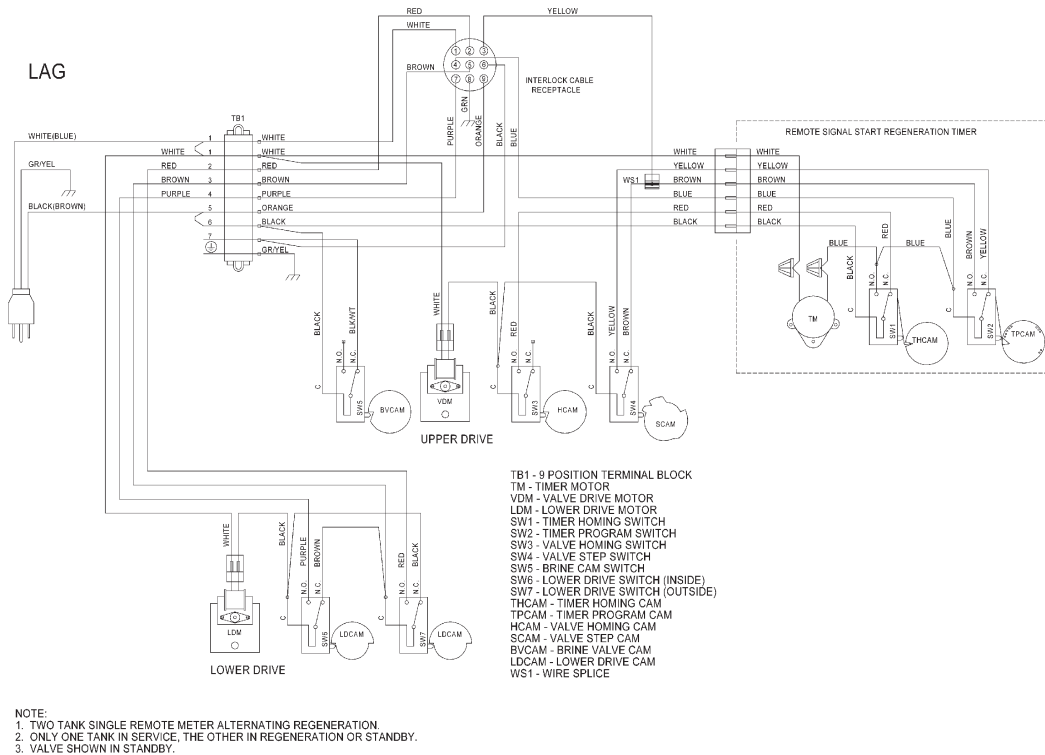
18686-02 Rev E

SYSTEM #7 WIRING

Alternating Regeneration Valve Wiring

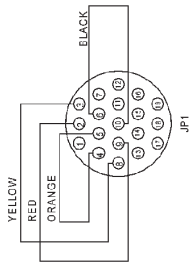


18687-01 Rev E



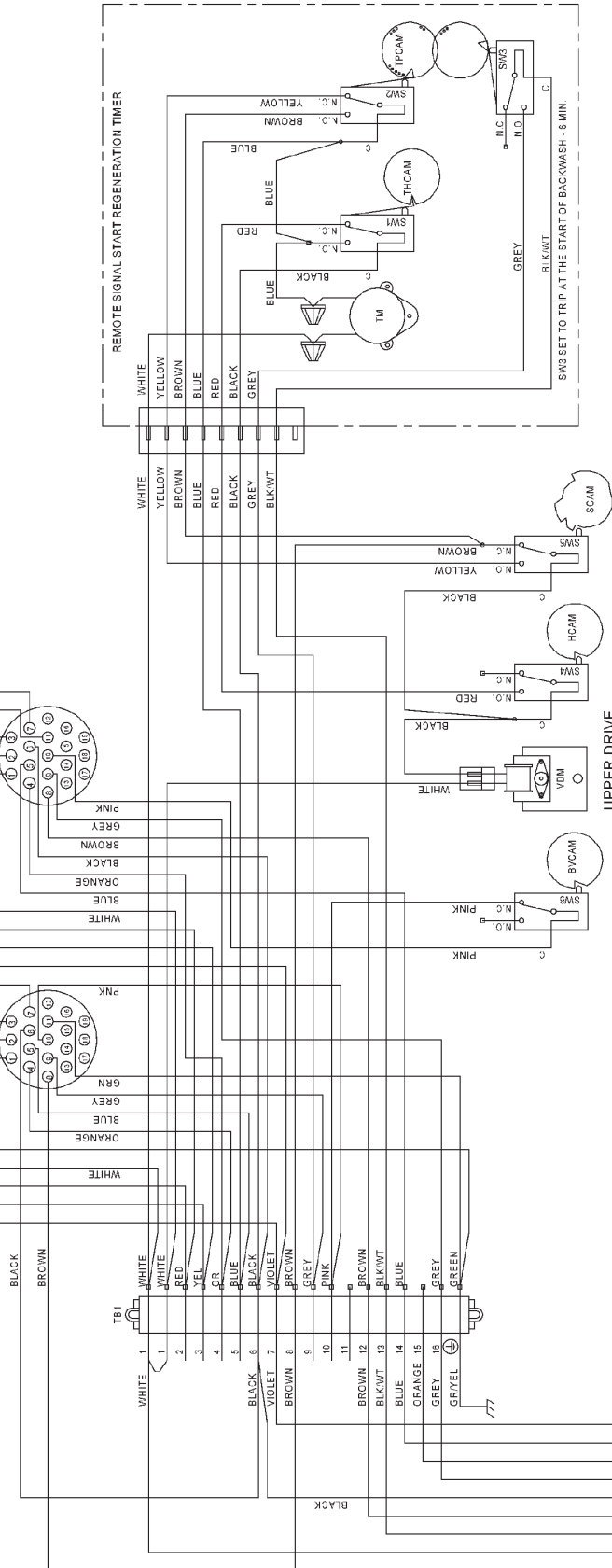
18687-02 Rev E

JUMPER PLUG WIRING
JUMPER PLUG PLACED ON LAST VALVE IN SYSTEM



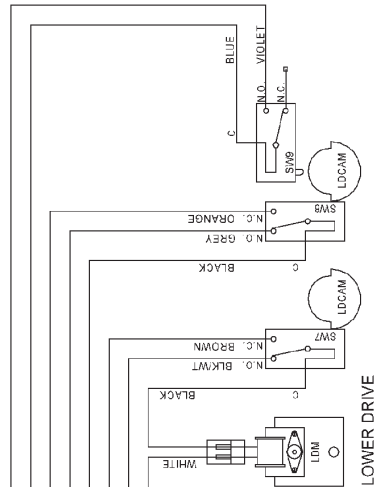
INTERLOCK CABLE RECEPTACLE
(CONNECT TO DOWNSTREAM VALVE OR JUMPER PLUG)

INTERLOCK CABLE
(CONNECT TO UPSTREAM VALVE OR REMOTE METER)



TB1 - 18 POSITION TERMINAL BLK
JP1 - JUMPER PLUG ASSEMBLY
VDM - VALVE DRIVE MOTOR
LDM - LOWER DRIVE MOTOR
TPCAM - TIMER PROGRAM SWITCH
SW1 - TIMER PROGRAM SWITCH
SW2 - TIMER AUX SWITCH
SW3 - VALVE HOMING SWITCH
SW4 - VALVE STEP SWITCH
SW5 - BRINE CAM SWITCH
SW6 - LOWER DRIVE SWITCH (INSIDE)
SW7 - LOWER DRIVE SWITCH (OUTSIDE)
SW8 - LOWER DRIVE SWITCH (INSIDE)
SW9 - LOWER DRIVE SWITCH (OUTSIDE)
TPCAM - TIMER PROGRAM CAM
HCAM - VALVE HOMING CAM
SCAM - VALVE STEP CAM
BUCAM - BRINE VALVE CAM
LOCAM - LOWER DRIVE CAM

NOTE
TO FOUR TANK SINGLE METER ALTERNATING REGENERATION:
1. TO 3 TANKS IN SERVICE.
2. ONE TANK IN REGENERATION OR STANDBY
3. ALL VALVES IN SYSTEM WIRED ALIKE.
4. LAST VALVE IN SYSTEM RECEIVES JUMPER PLUG ASSEMBLY.
5. CONNECT JUMPER PLUG TO INTERLOCK CABLE RECEPTACLE.
6. SPECIAL MULTI VALVE REMOTE METER OR EQUIV. REQUIRED FOR PROPER OPERATION
7. INTERLOCK CABLE RECEPTACLE CONNECTED TO REMOTE METER.
8. VALVE SHOWN IN SERVICE POSITION.



1600/1700 SYSTEM NOZZLE & THROAT CHART

1600 Brine System

Standard

Size	Color	Nozzle	Throat
#0.....	Red.....	10913-0	10914-0
#1.....	White.....	10913-1	10914-1
#2.....	Blue.....	10913-2	10914-2
#3.....	Yellow.....	10913-3	10914-3
#4.....	Green.....	10913-4	10914-4

PVC

Size	Color	Nozzle	Throat
#0.....	Gray.....	12973-0	12974-0
#1.....	Gray.....	12973-1	12974-1
#2.....	Gray.....	12973-2	12974-2
#3.....	Gray.....	12973-3	12974-3
#4.....	Gray.....	12973-4	12974-4

Stainless Steel

Size	Color	Nozzle	Throat
#0.....	Silver.....	10225-0	10226-0
#1.....	Silver.....	10225-1	10226-1
#2.....	Silver.....	10225-2	10226-2
#3.....	Silver.....	10225-3	10226-3
#4.....	Silver.....	10225-4	10226-4

1700 Brine System

Standard

Size	Color	Nozzle	Throat
#3.....	Yellow.....	14801-03C	14802-03C
#4.....	Green.....	14801-04C	14802-04C
#5.....	White.....	14801-05C	14802-05C
#6.....	Red.....	14801-06C	14802-06C

SERVICE ASSEMBLIES

Adapters:

61525.....	Softwater Adapter Kit, 2900s
61415.....	Adapter Assy, Sidemount 2850/2900/2930
61415NP	Adapter Assy, Sidemount, NP 2850/2900/2930
61415-20	Adapter Assy, Sidemount, BSP/MTC 2850/2900/2930
61415-20NP.....	Adapter Assy, Sidemount, BSP/NP 2850/2900/2930

Air Checks:

60002-34	Air Check, #500, 34 inches Long
60003-34	Air Check, #500, HW, 34 inches Tube
60009-01.....	Air Check, #900, Commercial, HW Less Fittings

Auxiliary Micro Switch:

60320-02	Switch Kit, 3200/9000 Timer Auxiliary
60320-11.....	Switch Assy, 2900, Lower Drive (For Adding 2nd Switch)
60320-08	Switch Assy, 2900, Lower Drive Aux (For Adding Third Switch)

Brine Line Flow Controls (BLFC):

60020-25	BLFC, .25 GPM, 1600
60020-50	BLFC, .50 GPM, 1600
60020-100.....	BLFC, 1.0 GPM, 1600
60011-090.....	Brine Valve, 1650, Short Stem
60010-25	BLFC, 1650, .25 GPM, Plastic
60010-50	BLFC, 1650, .50 GPM, Plastic
60010-100.....	BLFC, 1650, 1.0 GPM, Plastic

Brine Valves:

60011.....	Brine Valve, 1650, Less BLFC
60029.....	Brine Valve, 1600, Short Stem Brass, Std O-rings
60029HW	Brine Valve, 1600, Short Stem Hot Water
60034-XX.....	Model 1700 brine valve assy (specify flow control 1.0 - 5.0)
60604-XX.....	Model 1710 brine valve assy (specify flow control 1.0 - 5.0)

Covers:

60217-02	Environmental Lower Cover, Black
60219-02	Environmental, Cover, Black
60232-XX	Designer 2 Piece
60232-110.....	Cover, Designer, 1 Piece Black
14800-02.....	Cover, Dust, Lower, 2900, Black

Drain Line Flow Controls (DLFC):

60366-XX	1-inch FNPT x 3/4-inch FNPT (specify flow control .6 - 7.0)
60701-XX.....	1-inch FNPT x 1-inch FNPT (specify flow control 8.0 - 25.0)
60702-XX	1-inch FNPT x 1-inch MNPT (specify flow control 8.0 - 25.0)
60708-XX	1-inch FNPT x 3/4-inch FNPT (specify flow control 8.0 - 25.0)
60721-XX.....	1-inch FNPT x 1-inch FNPT (specify flow control .6 - 7.0)

Cam Assemblies:

60160-00	Drive Cam Assy, RR, White
60160-20	Drive Cam Assy, Std
60160-22	Drive Cam Assy, Link, Environmental 2900 Lower Drive
60160-30*.....	Drive Cam Assy, Upflow
60160-31*.....	Drive Cam Assy, Upflow, Variable

24-Hour Gear Assemblies:

19205	Gear Assy, 24 Hour, Silver, 5600, 12 A.M.
60519-02	Gear Assy, 3200 24 Hour 2 Times/Day, w/ Silver Label
60519-03	Gear Assy, 3200, 24 Hour 3 Times/Day, w/ Silver Label
60519-04	Gear Assy, 3200, 24 Hour 4 Times/Day, w/ Silver Label
60519-06	Gear Assy, 3200, 24 Hour (12:00) 6 Times/ Day, w/Silver Label

Injector Assemblies (Complete):

60480-XX.....	1600/1650 - 3/8-inch brine (specify size of injector)
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Meters:

60393.....	Meter Assy, 2900, 2-inch Std
60394.....	Meter Assy, 2900, 2-inch Ext
60616.....	Meter Assy, Elec 2-inch
60620.....	Meter Assy, 2-inch Plastic, Std
60621.....	Meter Assy, 2-inch Plastic, Ext
60625.....	Meter Assy, 2-inch Plastic Electronic
61439.....	Meter Sleeve w/O-ring, Machd

Piston Assemblies:

60103.....	Piston Assy, 2900/2930, HWBP Lower
60103-01.....	Piston Assy, 2900/2930, HWBP, HW, Lower
60104	Piston Assy, 2900/2930, NHWP Lwr, 2900s, Soft Wtr Rgn
60104-01.....	Piston Assy, 2900/2930, NHWP, HW Lwr, 2900s Soft Wtr Rgn
61540.....	Piston Assy, 2900s, Downflow Upper
61540-01.....	Piston Assy, 2900s Downflow Upper, HW
61545*	Piston Assy, 2900s, Upflow Upper
61545-01*.....	Piston Assy, 2900s, Upflow Upper, HW
61550.....	Piston Assy, 2900s, HWBP Lower
61550-03	Piston Assy, 2900s, HWBP Lower, HW
61555.....	Piston Assy, 2900s, NHWP Lower
61555-03	Piston Assy, 2900s, NHWP Lower, HW

Program Wheel Assemblies:

60405-20	Program Wheel, w/3/4-inch Ext Label 1-1/2 inch Std Set @ 100
60405-50	Program Wheel, w/2-inch Std Label Set @ 21
60405-60	Program Wheel, w/2-inch Ext Label
60405-70.....	Program Wheel, w/1-1/2 inch Ext Label

SERVICE ASSEMBLIES *CONTINUED*

Safety Brine Valves:

60014	Safety Brine Valve Assy, 2310
60038.....	Safety Brine Valve , 2350
60027-FFA	Safety Brine Valve Body, 2300 Fitting Facing Arm
60027-FFS	Safety Brine Valve Body Fitting Facing Stud
60026-30SAN.....	Float Assy, 400A/2350, 30-inch HW
60028-30	Float Assy, 2300, 30-inch White
60028-30	Float Assy, 2300, 30-inch, Blue/White
60068-30	Float Assy, 2310, w/30-inch Rod

Sales & Service Aids:

40738	Literature, 2900 Spec Sheet
41689	Literature, 2900s S/Manual
40717.....	Literature, Catalog Assy, PWT Residential/Commercial

Seal & Spacer Kits:

61530.....	Seal & Spacer Kit, 2900s Upper
61530-01.....	Seal & Spacet Kit, 2900s, HW Upper
60128.....	Seal & Spacer Kit, 2900/2930 Lower
60128-01.....	Seal & Spacer Kit, 2900/2930, HW Lower

Service Equipment:

11098	Stuffer Tool Assy, Complete
12682.....	Puller Tool Assy, 2900/3150
12683.....	Stuffer Tool Assy, 2900/3150
13061	Puller Assy, Port Ring
16174	Silicone, 2 oz. Tube
60460.....	Meter Checker Kit, Std
60461.....	Meter Checker Kit, Ext
16586-8	Silicone, Dow #7 8 Lb

Service Valve Operator Assemblies:

60150.....	SVO Assy, 1600 O/S
60150-01.....	SVO Assy, 1600 N/S

Skipper Wheel Assemblies:

14860	Skipper Wheel Assy, 7 Day
14381	Skipper Wheel Assy, 12 Day

*Upflow Only

For Pentair Fleck Product Warranties visit: pentair.com/assets/residential-filtration-warranty



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