

FLECK 2900S SERVICE MANUAL

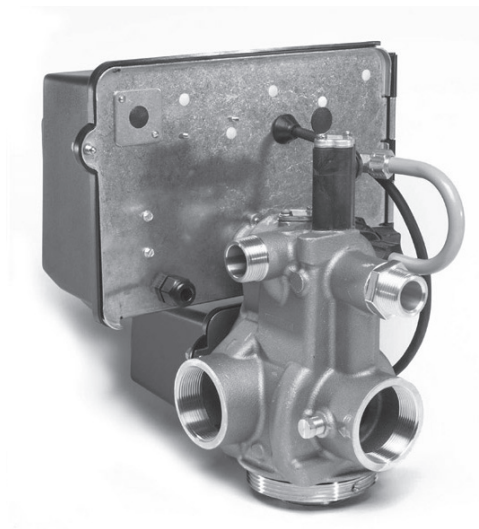


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IMPORTANT PLEASE READ:

- 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.

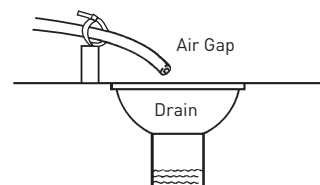
The cover should only be removed during installation set-up and maintenance by a qualified service person.

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

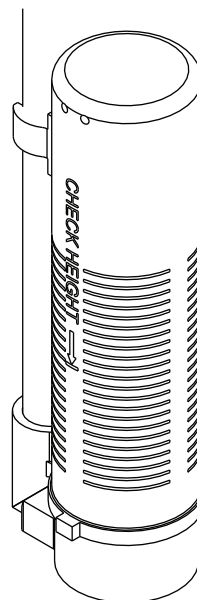
Installation Instructions

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

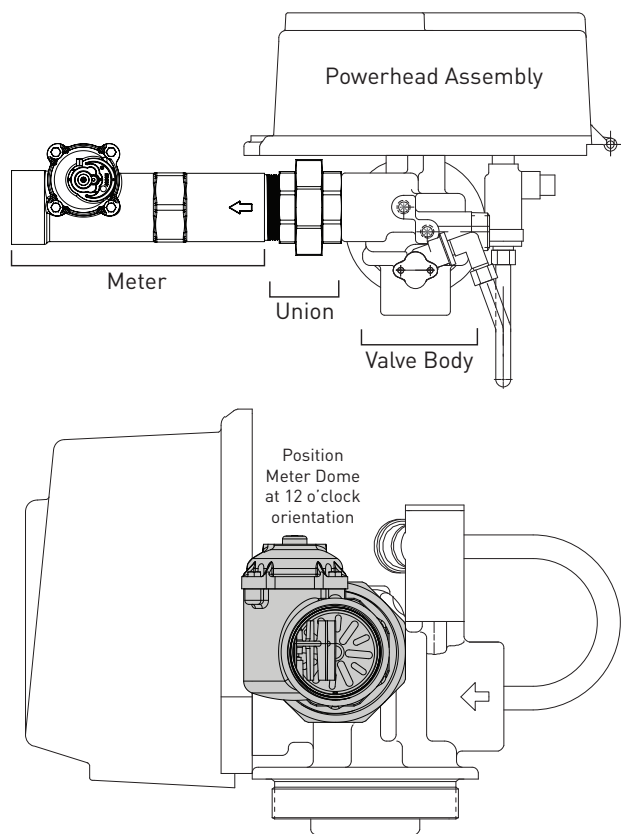
Figure 1 Residential Air Check Valve

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

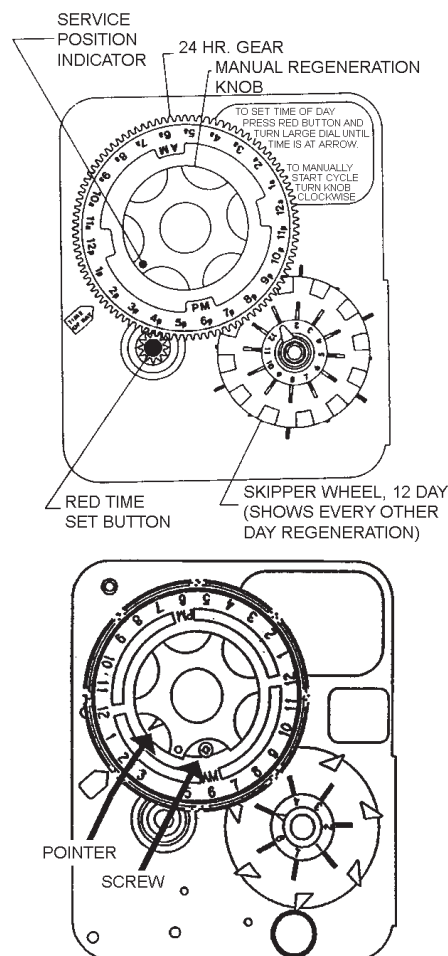
1. Press and hold the red button in to disengage the drive gear.
2. Turn the large gear until the actual time of day is at the time of day pointer.
3. Release the red button to again engage the drive gear.

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

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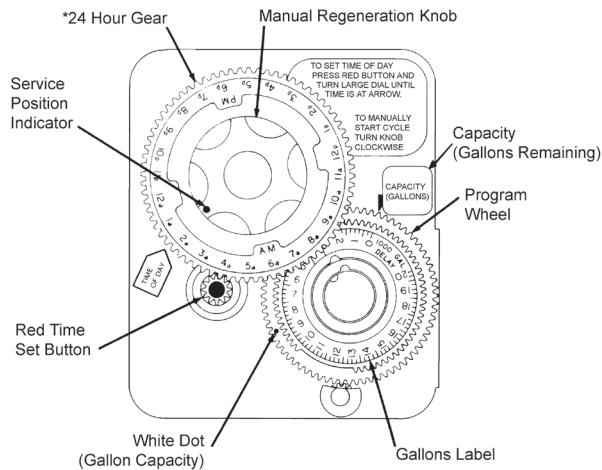
3. The black center knob will make one revolution in the following approximately three hours and stop in the position shown in the drawing.
4. Even though it takes three hours for this center knob to complete one revolution, the regeneration cycle of your unit might be set for only one half of this time.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

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)

1. To expose cycle program wheel, grasp timer in upper left-hand corner and pull, releasing snap retainer and swinging timer to the right.
2. 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.
3. 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

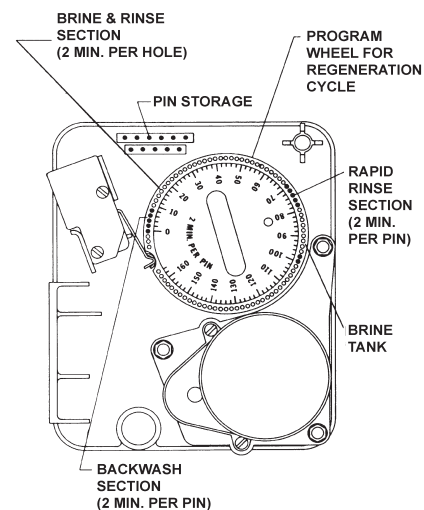
1. The group of holes between the last pin in the backwash section and the second group of pins determines the length of time that your unit will brine and rinse (2 min. per hole).
2. To change the length of brine and rinse time, move the rapid rinse group of pins to give more or fewer holes in the brine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

How To Change The Length Of Rapid Rinse

1. 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).
2. 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

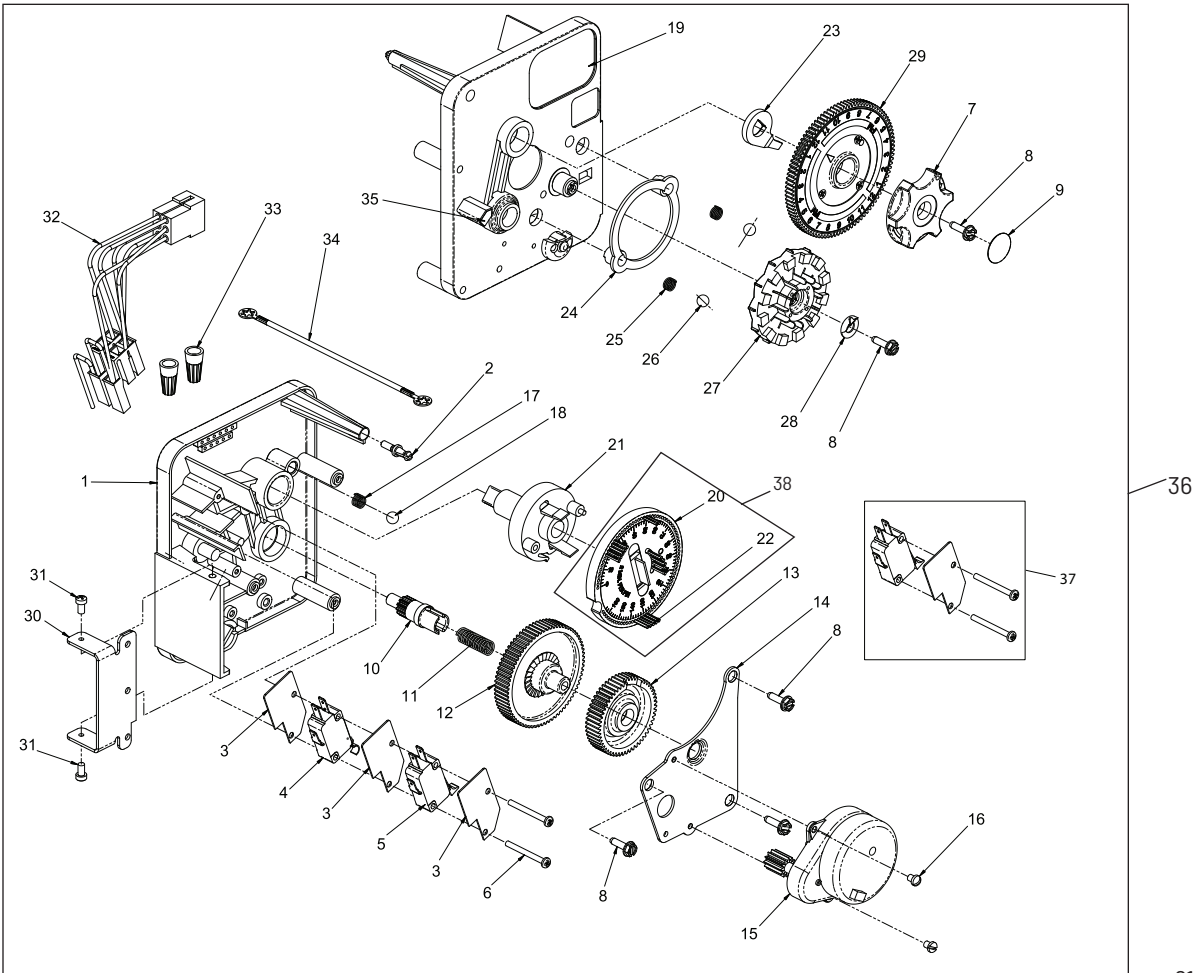
1. The second group of holes in the program wheel determines the length of time that your water conditioner will refill the brine tank (2 min. per hole).
2. To change the length of refill time, move the two pins at the end of the second group of holes as required.
3. The regeneration cycle is complete when the outer microswitch is tripped by the two pin set at end of the brine tank refill section.
4. 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

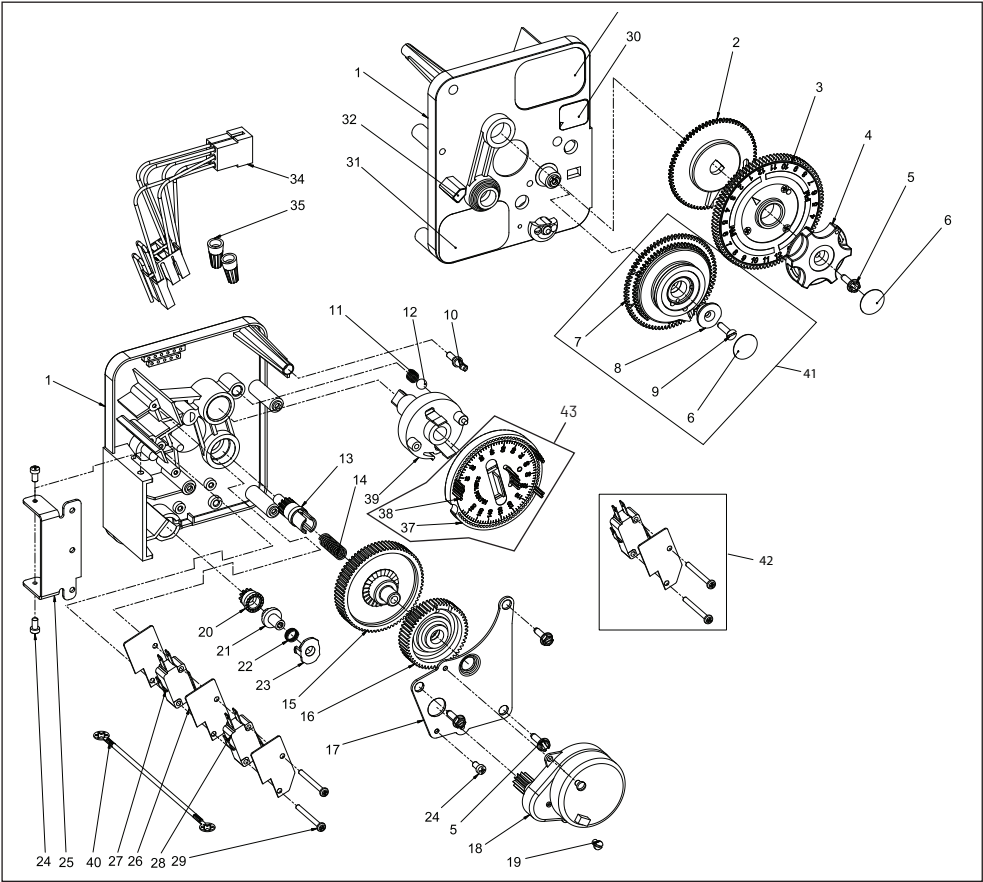
3200 TIME CLOCK TIMER ASSEMBLY CONTINUED

Item No.	QTY	Part No.	Description
1.....	1.....	13870	Housing, Timer, 3200
2.....	1.....	14265	Clip, Spring
3.....	3.....	14087	Insulator
4.....	1.....	10896	Switch, Micro
5.....	1.....	15320	Switch, Micro, Timer
6.....	2.....	11413.....	Screw, Pan Hd Mach, 4-40 x 1-1/8
7.....	1.....	13886	Knob, 3200
8.....	5.....	13296	Screw, Hex Wsh, 6-20 x 1/2
9.....	1.....	11999	Label, Button
10.....	1.....	13018	Pinion, Idler
11.....	1.....	13312	Spring, Idler Shaft
12.....	1.....	13017	Gear, Idler
13.....	1.....	13164	Gear, Drive
14.....	1.....	13887	Plate, Motor Mounting
15.....	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
16.....	2.....	13278	Screw, Sltd 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

Item No.	QTY	Part No.	Description
27.....	1.....	14381.....	Skipper Wheel Assy, 12 Day
	1.....	14860	Skipper Wheel Assy, 7 Day
28.....	1.....	13014.....	Pointer, Regeneration
29.....	1.....	40096-24.....	Dial, 12 AM Regen Assy, Black
		40096-02.....	Dial, 2 AM Regen Assy, Black
30.....	1.....	13881	Bracket, Hinger Timer
31.....	2.....	11384.....	Screw, Phil, 6-32 x 1/4 Zinc
32.....	1.....	13902	Harness, 3200
33.....	2.....	40422	Nut, Wire, Tan
34.....	1.....	15354-01.....	Wire, Ground, 4 inches
35.....	1.....	14007	Label, Time of Day
36.....	1.....	*	Complete 3200 Time Clock Timer Assembly
37.....		60320-02.....	Switch Kit, 3200/9000 Timer Auxiliary, Optional
38.....		61420-03.....	Program Wheel, Gear Assy, Filter 2 Min Per Pin
		61420-04.....	Program Wheel, Gear Assy, Softener, 2 Min Per Pin

*Call your distributor for Part Number

3210 METER DELAYED TIMER ASSEMBLY



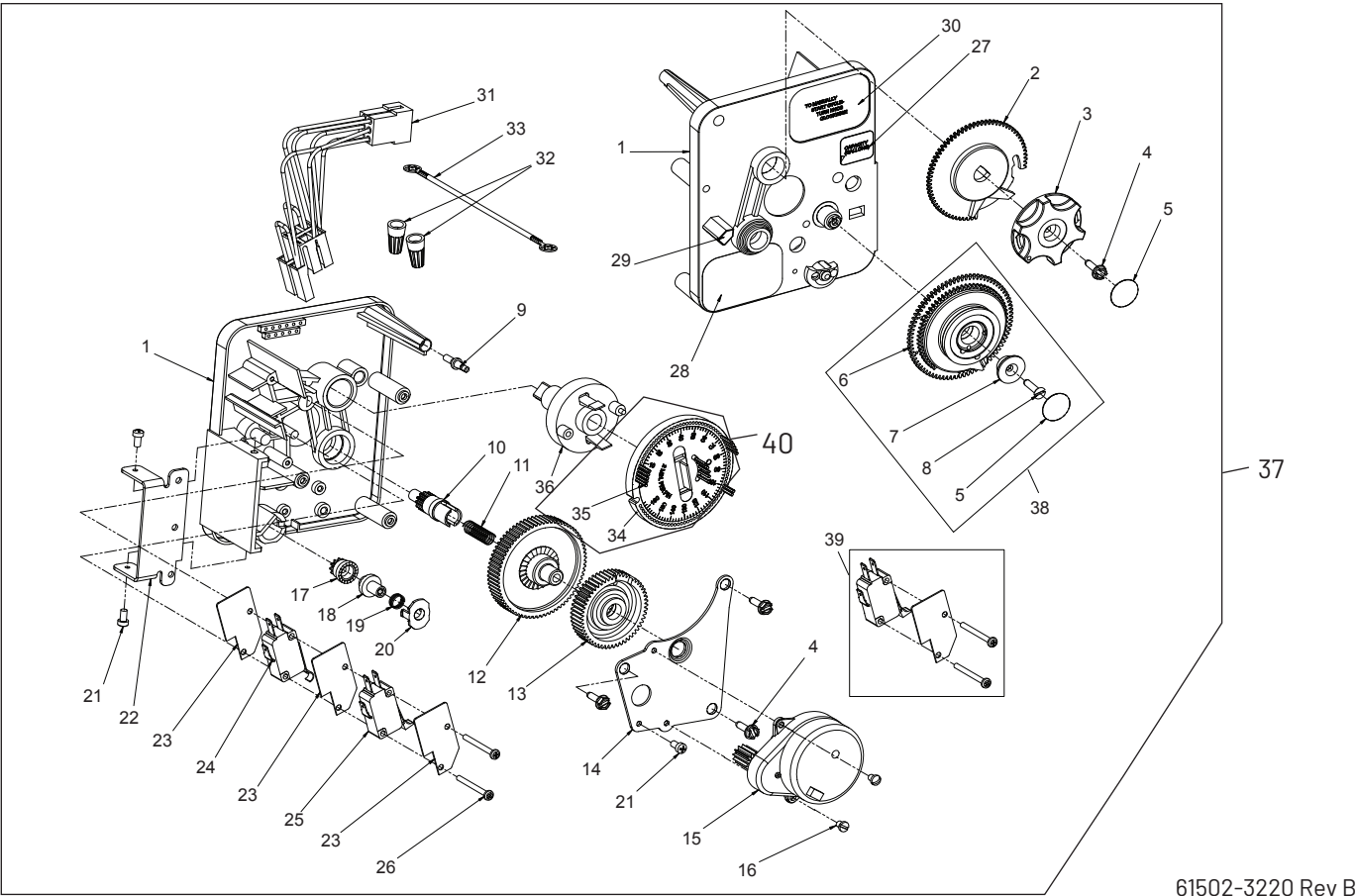
61502-3210 Rev A

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

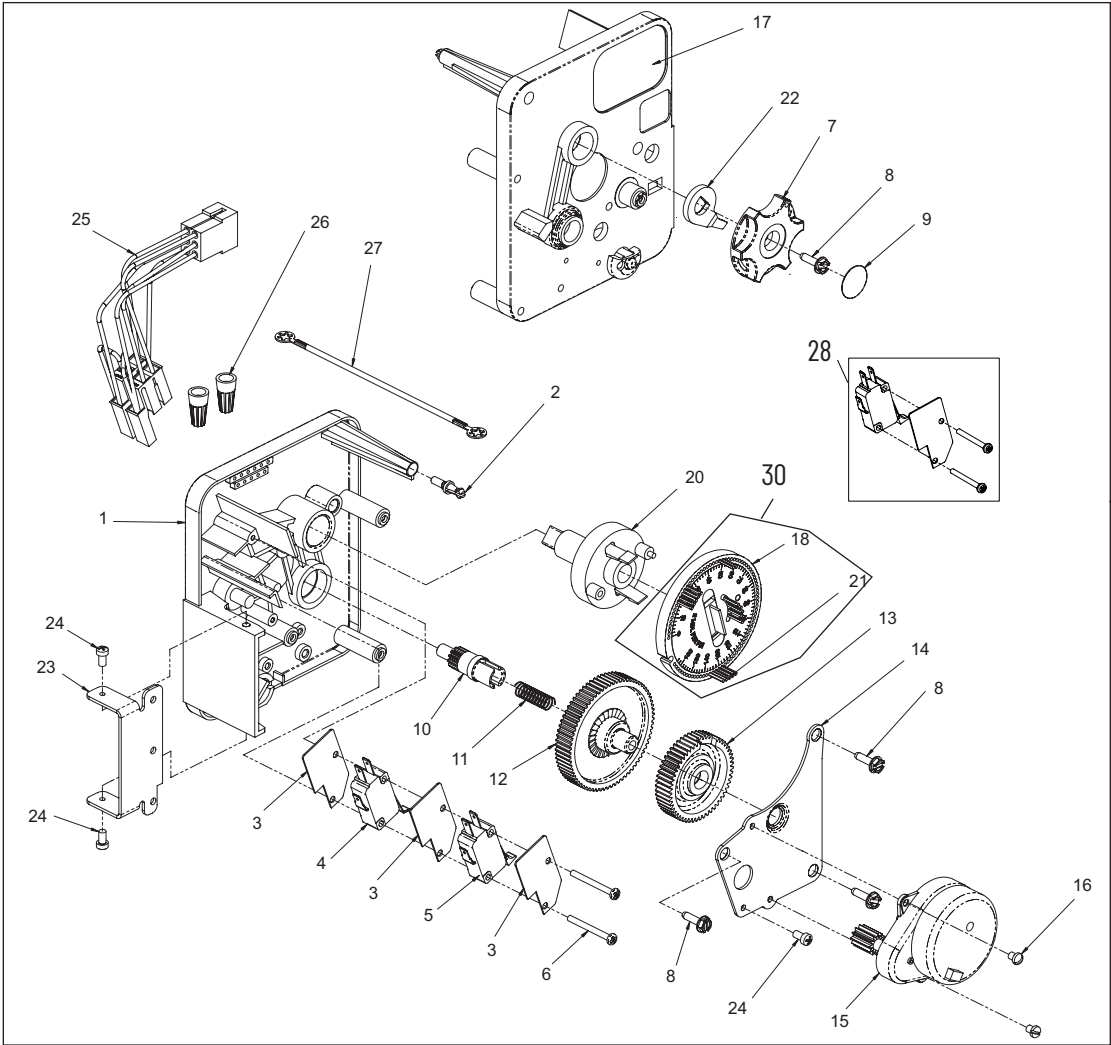


61502-3220 Rev B

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, Sltd 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

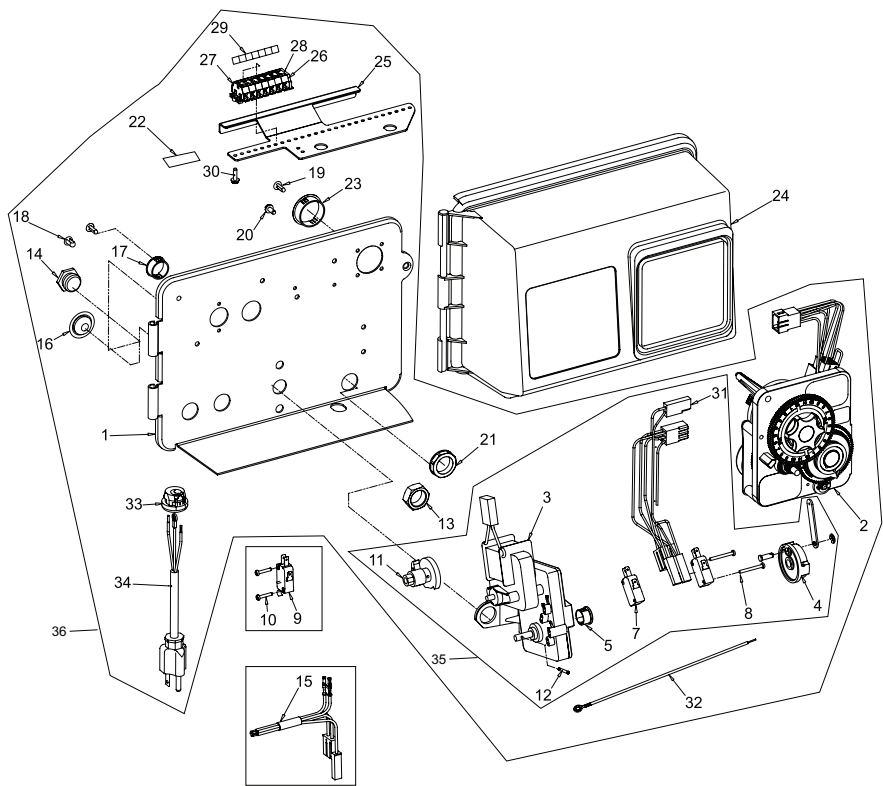
3230 REMOTE START TIMER ASSEMBLY CONTINUED

Item No.	QTY	Part No.	Description
1.....	1.....	13870	Housing, Timer
2	1.....	14265	Spring Clip
3	3.....	14087	Insulator
4	1.....	15314	Micro Switch
5	1.....	15320	Switch, Micro, Timer
6	2.....	11413.....	Screw, Pan Hd Mach, 4-40 x 1-1/8
7	1.....	13886	Knob, 3200
8	4.....	13296	Screw, Hex Wsh, 6-20 x 1/2
9	1.....	11999	Label, Button
10.....	1.....	13018	Pinion, Idler
11.....	1.....	18563	Idler Shaft Spring
12.....	1.....	13017	Gear, Idler
13.....	1.....	15055	Drive Gear
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

Item No.	QTY	Part No.	Description
18	1.....	19210-05	Program Wheel Assembly, 3200
20	1.....	15055	Main Drive Gear
21.....	17	41754.....	Pin, Spring, 1/16 x 5/8 Stainless Steel, Timer
22	1.....	13011.....	Cycle Actuator Arm
23	1.....	13881	Bracket, Hinge Timer
24	3.....	11384.....	Screw, Phil, 6-32 x 1/4 Zinc
25	1.....	16336	Harness, 3230R
26	2.....	40422	Nut, Wire, Tan
27	1.....	15354-01.....	Wire, Ground, 4 inches
28		60320-02.....	Switch Kit, 3200/9000 Timer Auxiliary, Optional
29		*	3230 Timer Assy
30		61420-06.....	Program Wheel, Gear Assy, Softener Immediate 2 Min Per Pin
		 61420-42.....	Program Wheel, Gear Assy, Filter Immediate 2 Min Per Pin

*Call your distributor for Part Number

UPPER ENVIRONMENTAL POWERHEAD ASSEMBLY

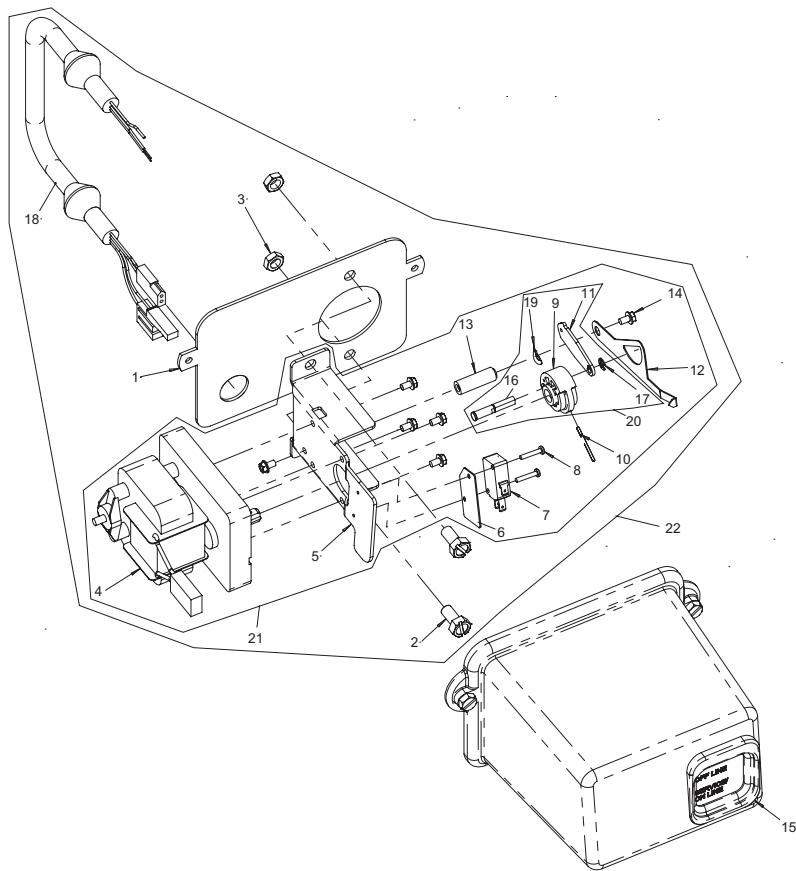


61501-2900 Rev G

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.....	60160-16.....	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

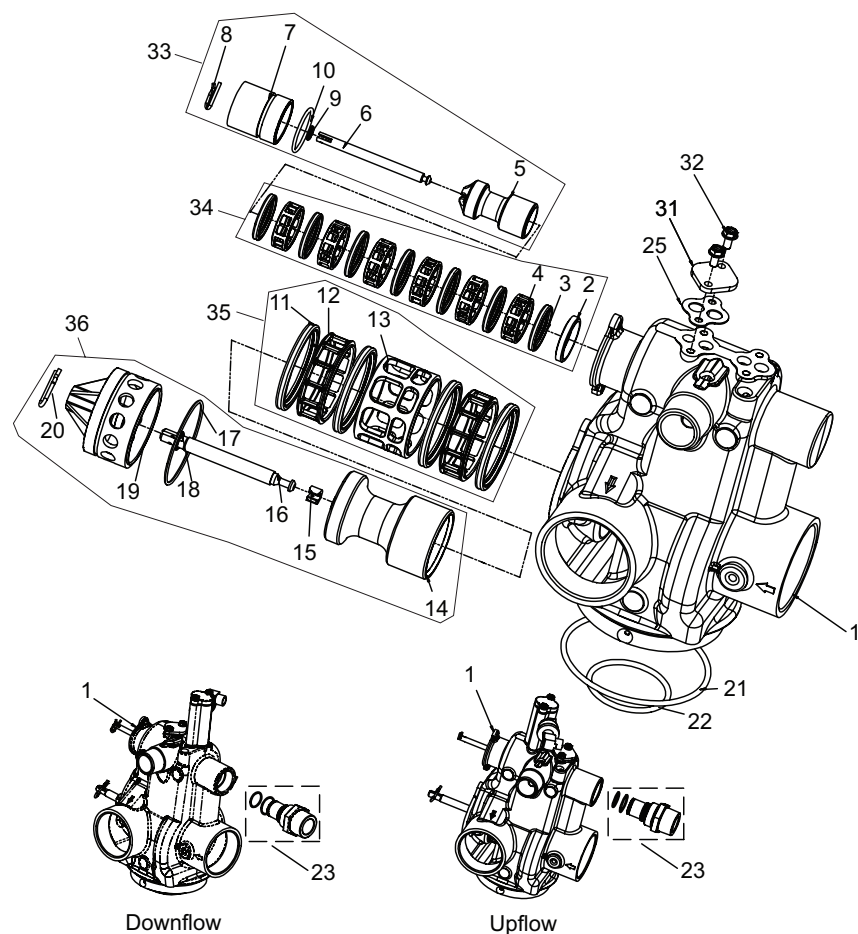
Item No.	QTY	Part No.	Description
19.....	1.....	18727.....	Washer, Curved Spring, /265 ID
20.....		60160-22.....	Drive Cam Assy, Link, Environmental, 2900 Lower Drive
21.....		60055-53	Lower Drive Assy, 2900, 24/60, System #4
		 60055-51.....	Lower Drive Assy, 2900, 120, System #4
		 60055-52	Lower 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
		16589	Spacer, Hot Water				
5	1	14451	Piston, 2750	34		61530	Seal & Spacer Kit, 2900s, Upper
		19454*	Piston, 2750, Upflow			61530-01	Seal & Spacer Kit, 2900S, Upper, Hot Water
6	1	41424	Rod, Piston, 2900S, Upper			61530-02	Seal & Spacer Kit, 2900S, Upper, VITON, Chemical Resistent
7	1	41131	Plug, End				
	1	10212	Plug, End, 1500/2750, Brass	35		60128	Seal & Spacer Kit, 2900, Lower
8	1	10909	Pin, Link			60128-01	Seal & Spacer Kit, 2900, Lower, Hot Water
9	1	10209	Quad Ring, -010			60128-10	Seal & Spacer Kit, 2900, Lower, Silicone
10	1	40078	O-ring, 28mm X 2mm	36		61550	Piston Assy, 2900S, HWBP, Lower
		10234-01	O-ring, -024, Hot Water			61550-03	Piston Assy, 2900S, HWBP, Lower, Hot Water
11	4	11720	Seal, Piston, 2900/3150			61555	Piston Assy, 2900S, NHWBP, Lower
		10545-02	Seal, Piston, Silicone			61555-03	Piston Assy, 2900S, NHWBP, Lower, Hot Water
12	2	10369	Spacer, 2-inch, 2900/3150	Not Shown:			
		14241-01	Spacer, Hot Water				
13	1	14753	Spacer, 2900			60366-00	DLFC, 1-inch F x 3/4-inch F, NPT, No Button
		16589	Spacer, Hot Water			60366-06	DLFC, 1-inch F x 3/4-inch F, NPT, 0.6 gpm
14	1	14757	Piston, HWBP			60366-08	DLFC, 1-inch F x 3/4-inch F, NPT, 0.8 gpm
		14752	Piston, 2900, NHWBP			60366-10	DLFC, 1-inch F x 3/4-inch F, NPT, 1.0 gpm
15	1	14818	Ring, Piston Rod, Snap			60366-12	DLFC, 1-inch F x 3/4-inch F, NPT, 1.2 gpm
16	1	14758	Rod, Piston, 2900			60366-13	DLFC, 1-inch F x 3/4-inch F, NPT, 1.3 gpm
17	1	14922	O-ring, -035, Piston			60366-15	DLFC, 1-inch F x 3/4-inch F, NPT, 1.5 gpm
18	1	14926	Quad Ring, -012			60366-17	DLFC, 1-inch F x 3/4-inch F, NPT, 1.7 gpm
19	1	14754-00	End Plug Assy, 2900			60366-20	DLFC, 1-inch F x 3/4-inch F, NPT, 2.0 gpm
		14754-01	Plug, End, White, Machined			60366-24	DLFC, 1-inch F x 3/4-inch F, NPT, 2.4 gpm
		14754-10	End Plug Assembly, 2900/2930, NHWBP			60366-30	DLFC, 1-inch F x 3/4-inch F, NPT, 3.0 gpm
		19276-01	End Plug Assembly, 2900S, Brass, HW			60366-35	DLFC, 1-inch F x 3/4-inch F, NPT, 3.5 gpm
		41427-01	Plug, End, 2900S, Lower, White			60366-40	DLFC, 1-inch F x 3/4-inch F, NPT, 4.0 gpm
		41427-11	Plug, End, 2900S, Lower, Black			60366-45	DLFC, 1-inch F x 3/4-inch F, NPT, 4.5 gpm
20	1	14813	Pin, Spring, Connecting Rod			60366-50	DLFC, 1-inch F x 3/4-inch F, NPT, 5.0 gpm
21	1	13575	O-ring, -240				
		15210	O-ring, -343, Park Tank				
22	1	13577	O-ring, -226				
23	1	61525	Softwater Adapter Kit, 2900S				
25	2	19925	Gasket, Injector Body, 1700				
31	1	11893	Cap, Injector, Stainless Steel				
32	2	15137	Screw, Hex Wsh Mach, 10 - 24 x 3/8				
33		61540	Piston Assy, 2900S Downflow, Upper				
		61540-01	Piston Assy, 2900S, Downflow, Upper, Hot Water				
		61545	Piston Assy, 2900S, Upflow, Upper				
		61545-01	Piston Assy, 2900S, Upflow, Upper, Hot Water				

CONTROL VALVE ASSEMBLY CONTINUED

Item No. QTY Part No. Description

Not Shown (continued)

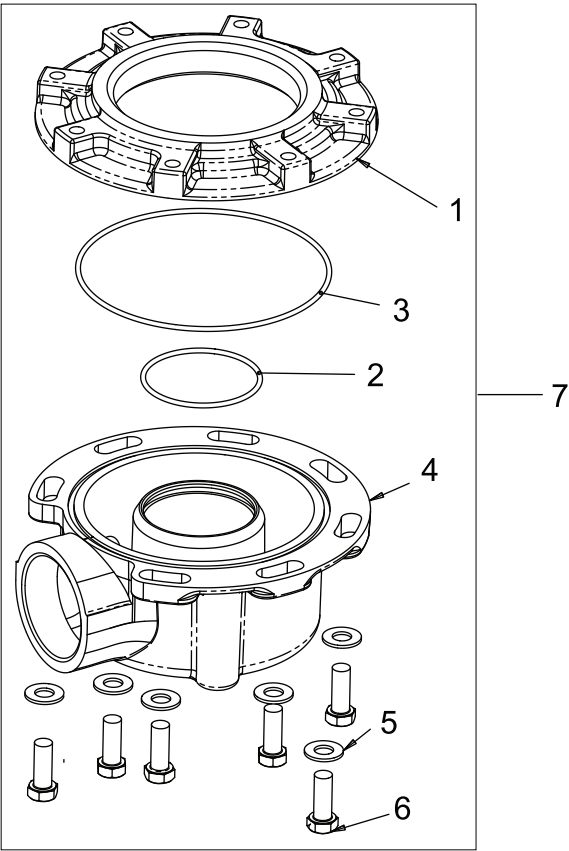
.....	60366-60		DLFC, 1-inch F x 3/4-inch F, NPT, 6.0 gpm
.....	60366-70		DLFC, 1-inch F x 3/4-inch F, NPT, 7.0 gpm
.....	60708-00		DLFC, 1-inch F x 3/4-inch F, NPT, No Button
.....	60708-8.0		DLFC, 1-inch F x 3/4-inch F, NPT, 8.0 gpm
.....	60708-9.0		DLFC, 1-inch F x 3/4-inch F, NPT, 9.0 gpm
.....	60708-10		DLFC, 1-inch F x 3/4-inch F, NPT, 10.0 gpm
.....	60708-12		DLFC, 1-inch F x 3/4-inch F, NPT, 12.0 gpm
.....	60708-15		DLFC, 1-inch F x 3/4-inch F, NPT, 15.0 gpm
.....	60708-20		DLFC, 1-inch F x 3/4-inch F, NPT, 20.0 gpm
.....	60708-25		DLFC, 1-inch F x 3/4-inch F, NPT, 25.0 gpm
.....	60721-00		DLFC, 1-inch F x 1-inch F, NPT, No Button
.....	60721-06		DLFC, 1-inch F x 1-inch F, NPT, 0.06 gpm
.....	60721-08		DLFC, 1-inch F x 1-inch F, NPT, 0.08 gpm
.....	60721-10		DLFC, 1-inch F x 1-inch F, NPT, 1.0 gpm
.....	60721-12		DLFC, 1-inch F x 1-inch F, NPT, 1.2 gpm
.....	60721-13		DLFC, 1-inch F x 1-inch F, NPT, 1.3 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

Item No. QTY Part No. Description

.....	60721-35		DLFC, 1-inch F x 1-inch F, NPTF, 3.5 gpm
.....	60721-40		DLFC, 1-inch F x 1-inch F, NPTF, 4.0 gpm
.....	60721-45		DLFC, 1-inch F x 1-inch F, NPTF, 4.5 gpm
.....	60721-50		DLFC, 1-inch F x 1-inch F, NPTF, 5.0 gpm
.....	60721-60		DLFC, 1-inch F x 1-inch F, NPTF, 6.0 gpm
.....	60721-70		DLFC, 1-inch F x 1-inch F, NPTF, 7.0 gpm
.....	60702-00		DLFC, 1-inch M x 1-inch F, NPT, Brass, No Button
.....	60702-8.0		DLFC, 1-inch M x 1-inch F, NPT, 8.0 gpm
.....	60702-9.0		DLFC, 1-inch M x 1-inch F, NPT, 9.0 gpm
.....	60702-10		DLFC, 1-inch M x 1-inch F, NPT, 10 gpm
.....	60702-12		DLFC, 1-inch M x 1-inch F, NPT, 12 gpm
.....	60702-15		DLFC, 1-inch M x 1-inch F, NPT, 15 gpm
.....	60702-20		DLFC, 1-inch M x 1-inch F, NPT, 20 gpm
.....	60702-25		DLFC, 1-inch M x 1-inch F, NPT, 25 gpm
.....	13640		Flow Control, Dole, 30 gpm
.....	60711-35		DLFC, 2-inch NPT, 35 gpm

*Upflow Only

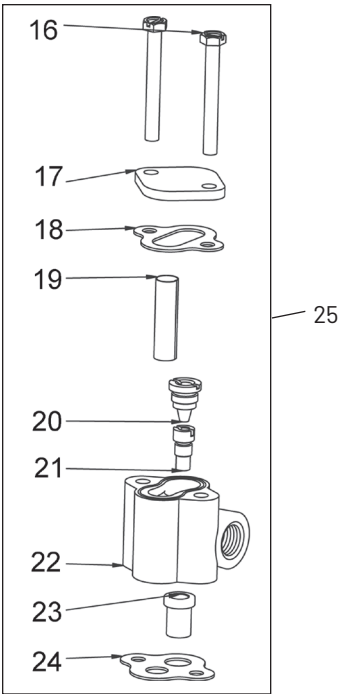
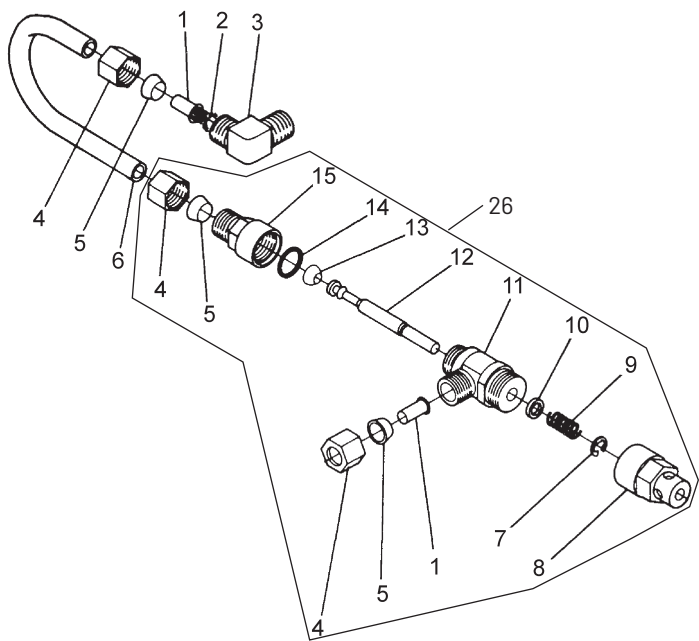
CONTROL VALVE SIDE MOUNT ADAPTER



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
1.....	2.....	10332	Fitting, Insert, 3/8
2	1.....	12767.....	Screen, Brine
3	1.....	10328	Fitting, Elbow, 90 Deg. 1/4 PT x 3/8 Tube
4	3.....	10329	Fitting, Tube, 3/8 Nut, Brass
5	3.....	10330	Fitting, Sleeve, 3/8 Celcon
6	1.....	16508	Tube, Brine, 1600, PVC
	1.....	16508-01.....	Tube, Brine Valve, 2850/2900s
	1.....	12774	Tube, Brine Valve, 1500
	1.....	40027	Tube, Brine Valve, 2510
	1.....	15221.....	Tube, Brine Valve, 2750/2900
	1.....	42184	Tube, Brine Valve, 2850s
	1.....	41683*	Tube, Brine Valve, UF, 1600/1650
7	1.....	10250	Ring, Retaining
8	1.....	11749.....	Guide, Brine Valve Stem
9	1.....	10249	Spring, Brine Valve
10.....	1.....	12550	Quad Ring, -009
11.....	1.....	12748	Brine Valve Body Assy, 1600 w/ Quad Ring
12.....	1.....	12552-02.....	Brine Valve Stem, 1600, with Seat
13.....	1.....	12626	Seat, Brine Valve
14.....	1.....	11982.....	O-ring, -016
15.....	1.....	60020-25.....	BLFC, .25 GPM, 1600
	1.....	60020-50.....	BLFC, .50 GPM, 1600
	1.....	60020-100	BLFC, 1.0 GPM, 1600
16.....	2.....	10692	Screw, Slot Hex Hd, 10 - 24X 18-8 Stainless Steel
17.....	1.....	11893.....	Cap, Injector, SS

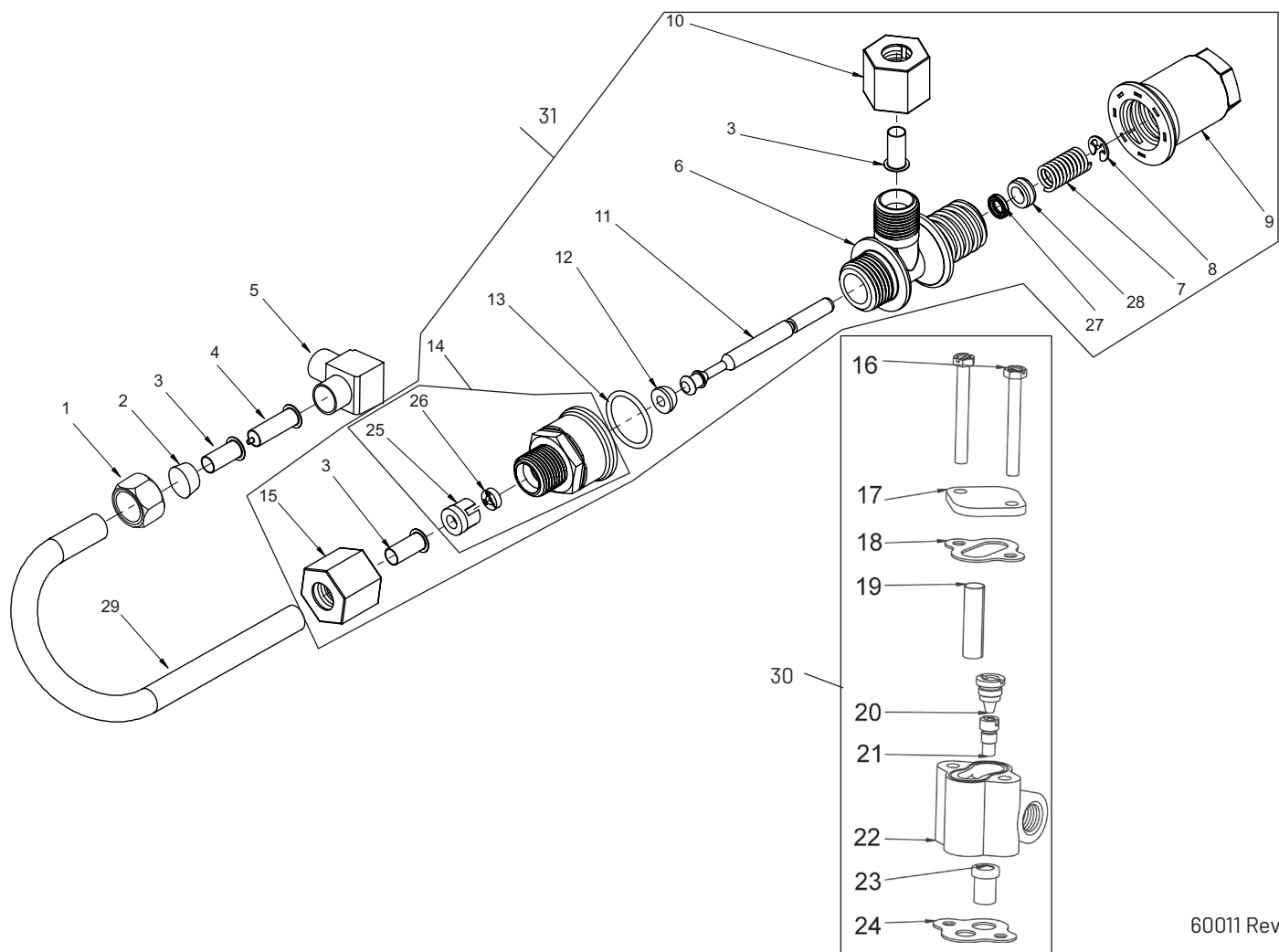
Item No.	QTY	Part No.	Description
18.....	1.....	10229	Gasket, Injector Cap, 1600
19.....	1.....	10227	Screen, Injector
20.....	1.....	10913-000	Nozzle, Injector #000, Brown
		10913-00	Nozzle, Injector #00, Violet
		10913-0	Nozzle, Injector #0, Red
		10913-1	Nozzle, Injector #1, White
		10913-2	Nozzle, 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
		10225-1	Nozzle, Injector #1, Stainless Steel
		10225-2.....	Nozzle, Injector #2, Stainless Steel
		10225-3.....	Nozzle, Injector #3, Stainless Steel
		10225-4.....	Nozzle, Injector #4, Stainless Steel
21.....	1.....	10914-000	Throat, Injector #000, Brown
		10914-00	Throat, Injector #00, Violet
		10914-0	Throat, Injector #0, Red
		10914-1.....	Throat, Injector #1, White
		10914-2	Throat, Injector #2, Blue

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.....	Disperser, 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

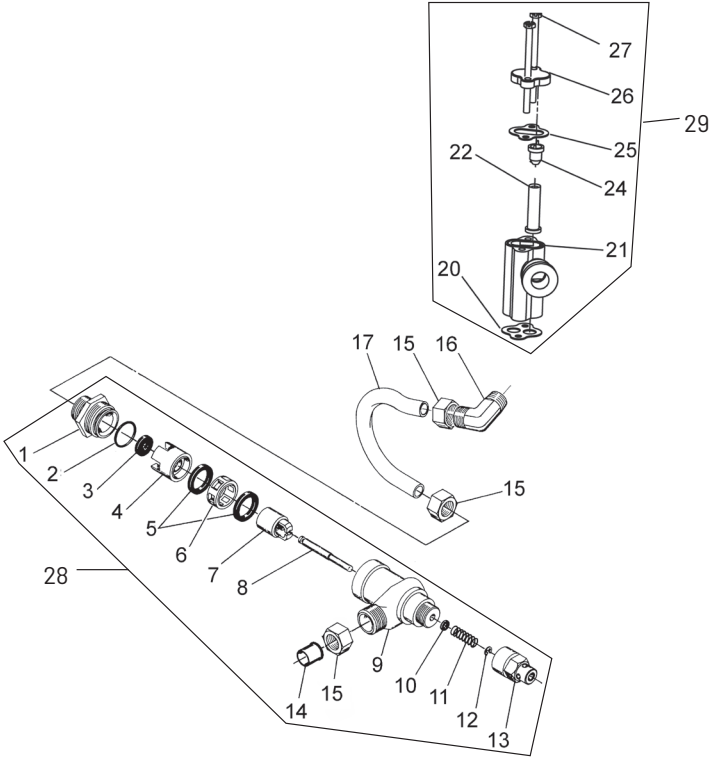
Item No.	QTY	Part No.	Description
1.....	1.....	10329	Fitting, Tube, 3/8 Nut, Brass
2.....	1.....	10330	Fitting, Sleeve, 3/8 Celcon
3.....	3.....	10332	Fitting, Insert, 3/8
4.....	1.....	12767.....	Screen, Brine
5.....	1.....	10328	Fitting, Elbow, 90 Deg 1/4 NPT x 3/8T
6.....	1.....	17884	Brine Valve 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
	1	10225-1	Nozzle, Injector #1, Stainless Steel	28	1	17908	Sleeve, Brine Valve Stem
	1	10225-2	Nozzle, Injector #2, Stainless Steel	29	1	16508-01	Tube, Brine Valve, 2850/1600
	1	10225-3	Nozzle, Injector #3, Stainless Steel		1	40027	Tube, Brine Valve, 2510
	1	10225-4	Nozzle, Injector #4, Stainless Steel		1	42184	Tube, Brine Valve, 2850s
					1	12774	Tube, Brine Valve, 1500
					1	15221	Tube, Brine Valve, 2750
					1	41683*	Tube, Brine Valve, UF, 1600/1650
21	1	10914-000	Throat, Injector #000, Brown	30		60480-01	Injector Assy, 1600, #1, Plastic
		10914-00	Throat, Injector #00, Violet			60480-02	Injector Assy, 1600, #2, Plastic
		10914-0	Throat, Injector #0, Red			60480-03	Injector Assy, 1600, #3, Plastic
		10914-1	Throat, Injector #1, White			60480-04	Injector Assy, 1600, #4, Plastic
		10914-2	Throat, Injector #2, Blue			60481-21	Injector Assy, 1600, #1, S.S. Brass
		10914-3	Throat, Injector #3, Yellow			60481-22	Injector Assy, 1600, #2, S.S. Brass
		10914-4	Throat, Injector #4, Green			60481-23	Injector Assy, 1600, #3, S.S. Brass
		12974-0	Throat, Injector #0, PVC, Grey			60080-11	Injector Assy, 1600, #1, PVC
		12974-1	Throat, Injector #1, PVC, Grey			60080-12	Injector Assy, 1600, #2, PVC
		12974-2	Throat, Injector #2, PVC, Grey			60080-14	Injector Assy, 1600, #4, PVC
		12974-3	Throat, Injector #3, PVC, Grey			60485-003	Injector Assy, 2900/1600, Upflow, #0, w/Reg Cap, 20 psi
		12974-4	Throat, Injector #4, PVC, Grey			60485-012	Injector Assy, 2900/1600, Upflow, #1, w/Reg Cap, 20 psi
		10226-0	Throat, Injector #0, Stainless Steel			60485-022	Injector Assy, 2900/1600, Upflow, #2, w/Reg Cap, 20 psi
		10226-1	Throat, Injector #1, Stainless Steel			60485-032	Injector Assy, 2900/1600, Upflow, #3, w/Reg Cap, 20 psi
		10226-2	Throat, Injector #2, Stainless Steel			60485-043	Injector Assy, 2900/1600, Upflow, #4, w/Reg Cap, 20 psi
		10226-3	Throat, Injector #3, Stainless Steel				
		10226-4	Throat, Injector #4, Stainless Steel				
22	1	17776	Body, Injector, 1600	31		60011-010	Brine Valve, 1650, 0.25 gpm
	1	17776-02*	Body, Injector, 1600 Upflow			60011-020	Brine Valve, 1650, 0.50 gpm
23	1	16221	Disperser, Air			60011-030	Brine Valve, 1650, 1.0 gpm
24	1	14805	Gasket, Injector Body, 1600/1700				
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				

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

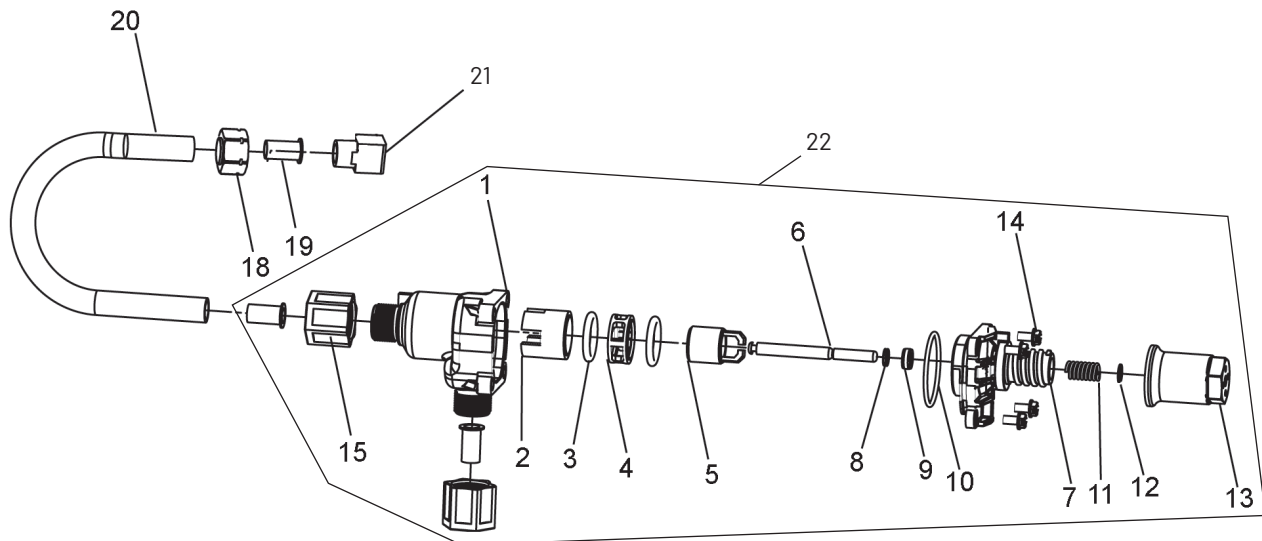
Not Shown:

1.....	16974	Fitting, Plastic, Female, 3/4 x 3/4 Slip
1.....	17996	Disperser, 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

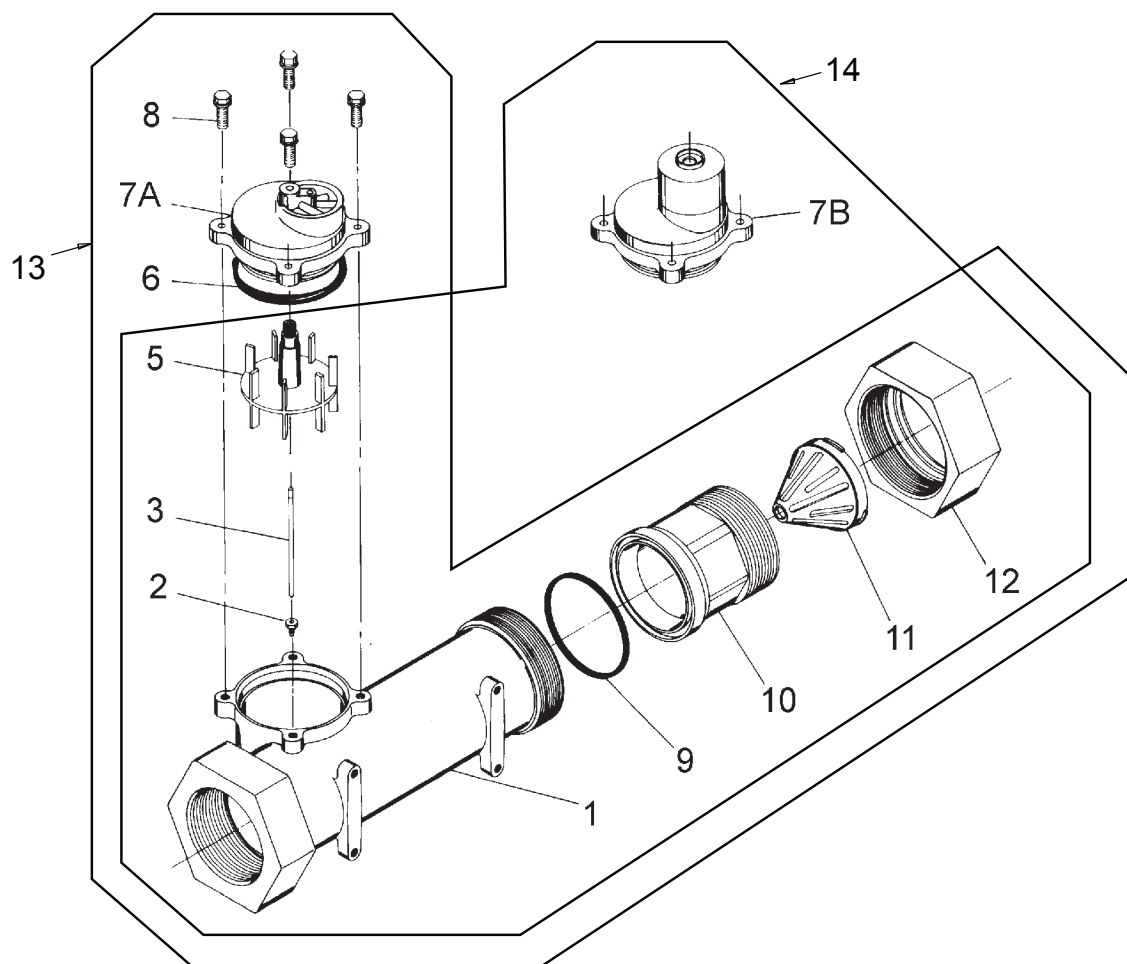
Item No.	QTY	Part No.	Description
1.....	1.....	41202	Brine Valve, 1700, Plastic, Top
2	1.....	14785-01.....	Retainer, Flow Control
3	1.....	14811.....	O-Ring, -210, 560CD, Brine
4	1.....	14798	Spacer, 1700, Brine
5	1.....	14795	Piston, Brine Valve
6	1.....	41203	Stem, Brine, 1710, Plastic, 2900
7	1.....	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.....Disperser, Air, Injector
1.....414193-00.....Label, Blank, BLFC, 1710

2-INCH BRASS METER ASSEMBLY



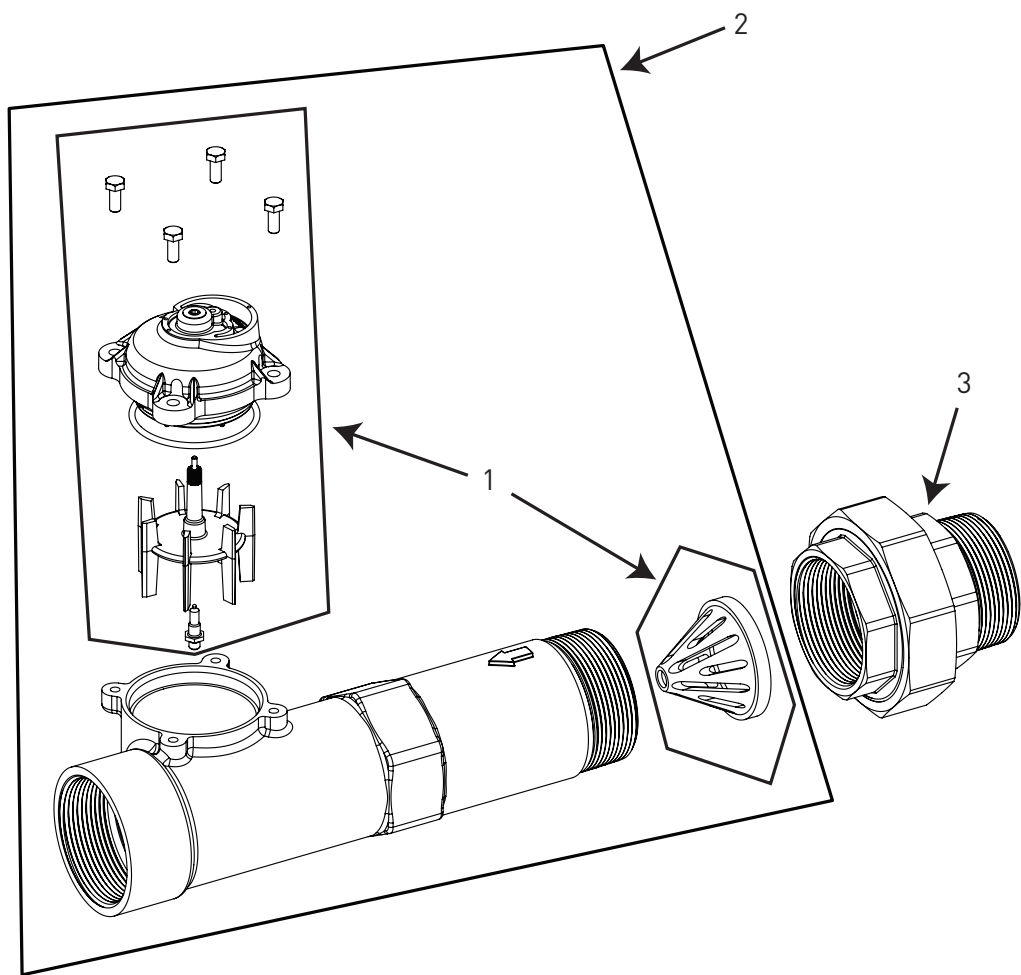
Item No.	QTY	Part No.	Description
1.....1.....	14456		Body, Meter, 2-inch
		14456-20	Body, Meter, 2-inch, BSP, Metric
2.....1.....	15532		Seat, Impeller Shaft, Hex
3.....1.....	15432		Shaft
5.....1.....	15374		Impeller Assy, 2-inch Meter
6.....1.....	13847		O-ring, -137, Std/560CD, Meter
7A.....1.....	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
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2-INCH STAINLESS STEEL METER ASSEMBLY

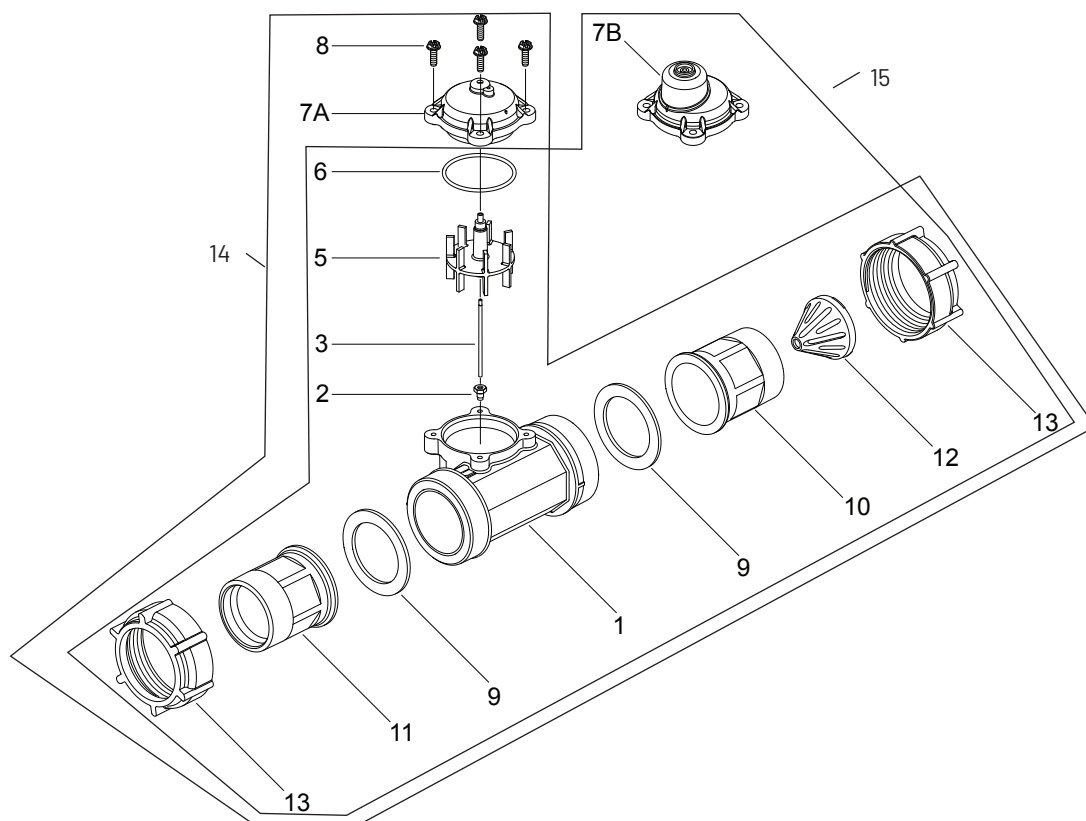


⚠ IMPORTANT: For valves equipped with electromechanical timers and stainless steel meters, refer to the Meter Dome and Union Orientation section.

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)

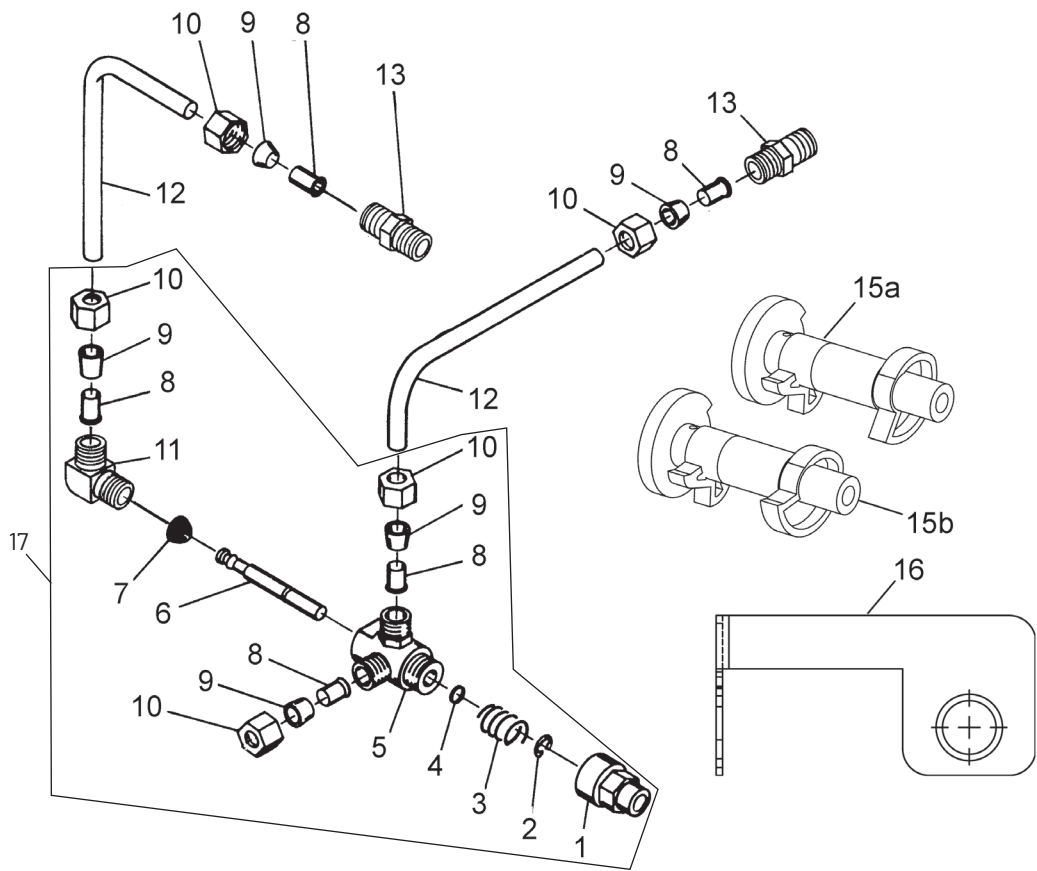
2-INCH PLASTIC METER ASSEMBLY



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				

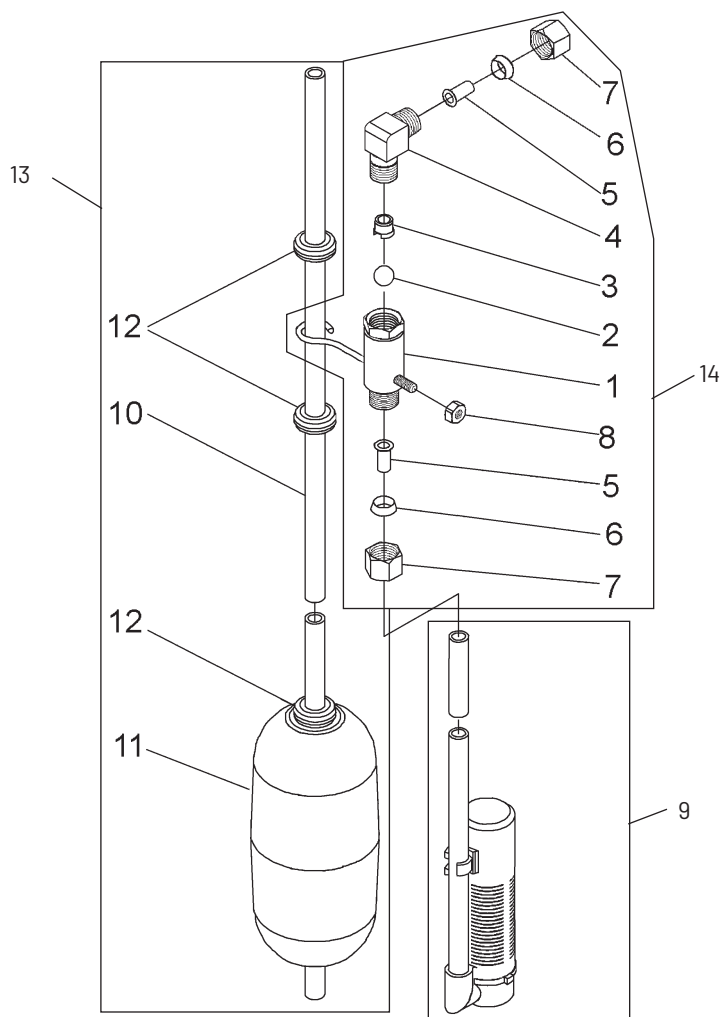
1600 SERVICE VALVE OPERATOR (NEW STYLE)



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				

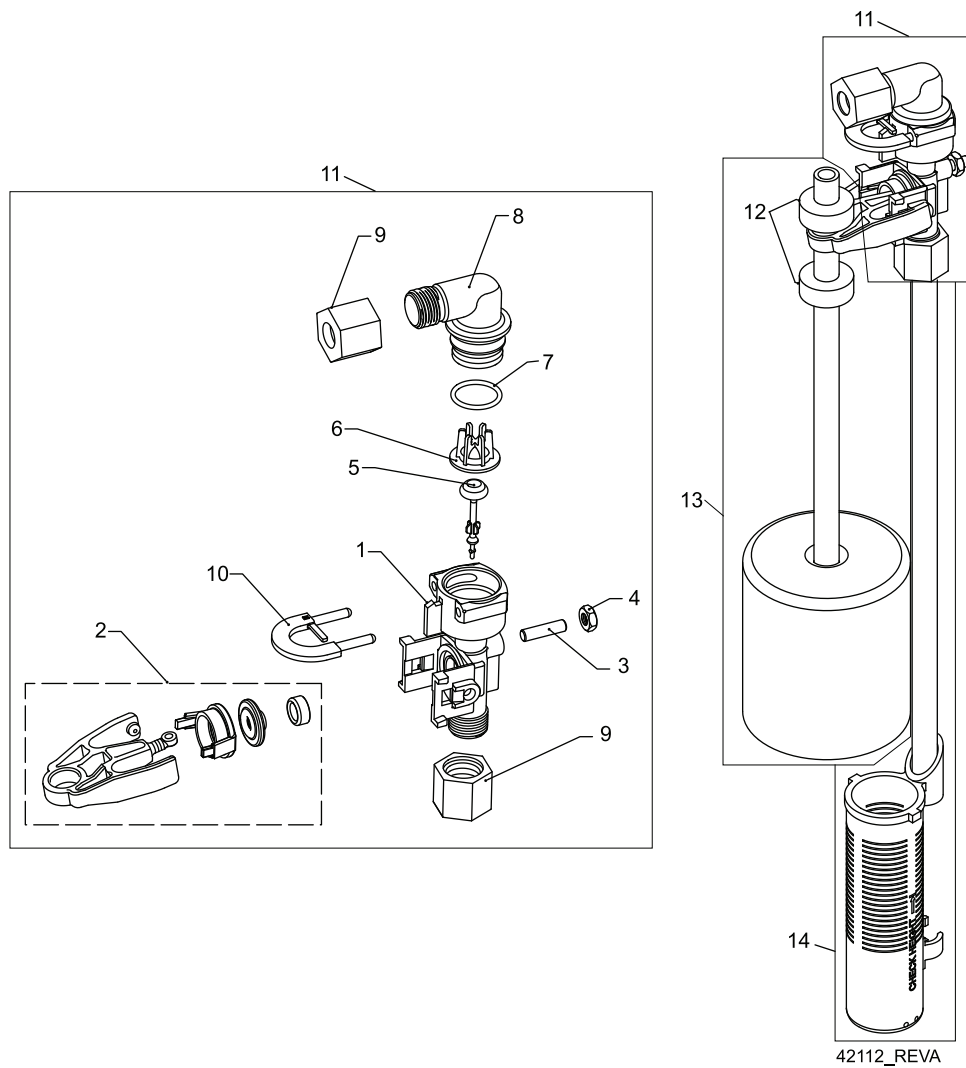
2300 SAFETY BRINE VALVE



60027 Rev D

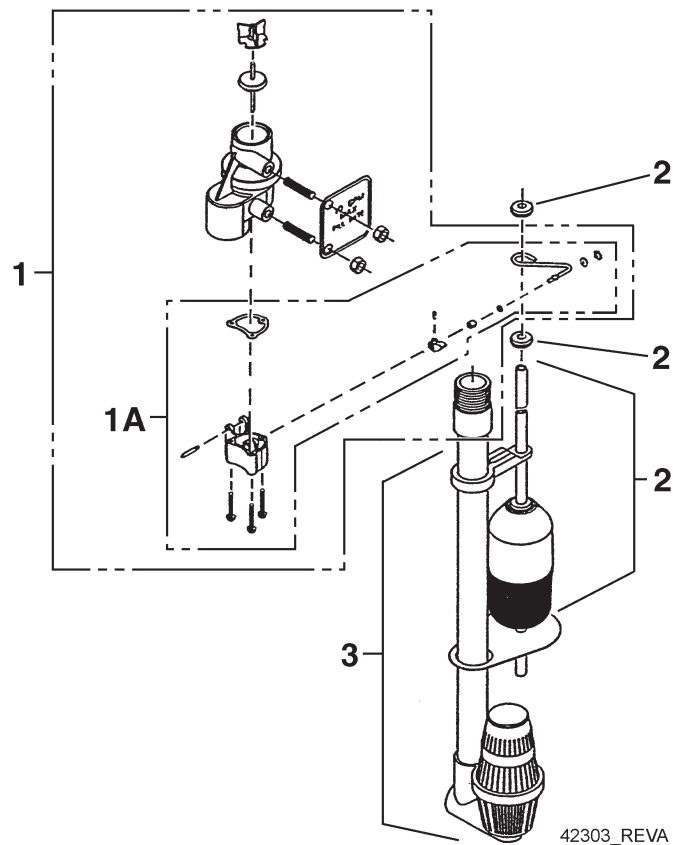
Item No.	QTY	Part No.	Description	Item No.	QTY	Part No.	Description
1.....	1.....	60027-00.....	Safety Brine Valve, 2300, Less Elbow		1.....	60002-36.....	Air Check, #500, 36 inches Long
2.....	1.....	10138.....	Ball, 3/8-inch, Brass		1.....	60002-48.....	Air Check, #500, 48 inches Long
3.....	1.....	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



Item No.	QTY	Part No.	Description	Item No.	QTY	Part No.	Description
1.....	1.....	19645	Body, Safety Brine Valve, 2310		60068-20	Float Assy, 2310, w/20-inch Rod	
2	1.....	19803	Safety Brine Valve Assy		60068-30	Float Assy, 2310, w/30-inch Rod	
3	1.....	19804	Screw, Sckt Hd, Set, 10-24 x .75	14.....	1.....	60002-10	Air Check, #500, American Hydro
4	1.....	19805	Nut, Hex, 10-24, Nylon Black		60002-11.38	Air Check, #500, 11.38-inch Long	
5	1.....	19652-01.....	Poppet Assy, SBV w/O-ring		60002-24.....	Air Check, #500, 24-inch Long	
6	1.....	19649	Flow Dispenser		60002-27	Air Check, #500, 27-inch Long	
7	1.....	11183.....	O-ring, -017		60002-32.....	Air Check, #500, 32-inch Long	
8	1.....	19647	Elbow, Safety Brine Valve		60002-34.....	Air Check, #500, 34-inch Long	
9	2.....	19625	Nut Assy, 3/8-inch Plastic		60002-36.....	Air Check, #500, 36-inch Long	
10.....	1.....	18312	Retainer, Drain		60002-48.....	Air Check, #500, 48-inch Long	
11.....	1.....	60014	Safety Brine Valve Assy, 2310		60002-26.25 ...	Air Check, #500, 26.25-inch Long	
12.....	2.....	10150.....	Grommet, .30 Dia		60002-33.25 ...	Air Check, #500, 33.25-inch Long	
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				

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.

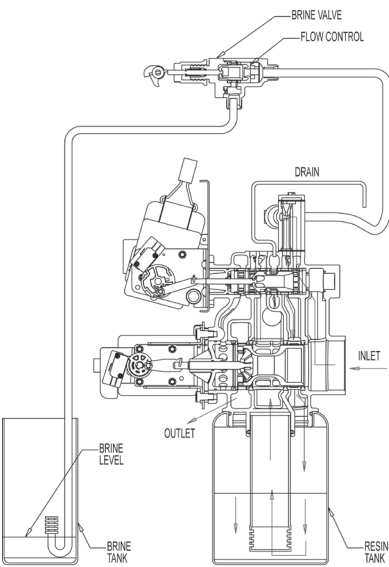
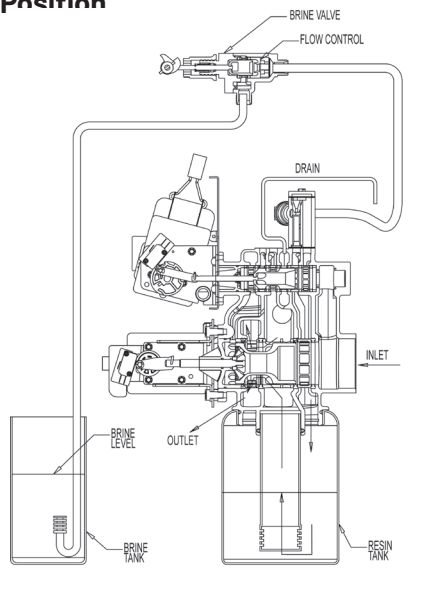
Correction: Check meter with meter checker.

TROUBLESHOOTING

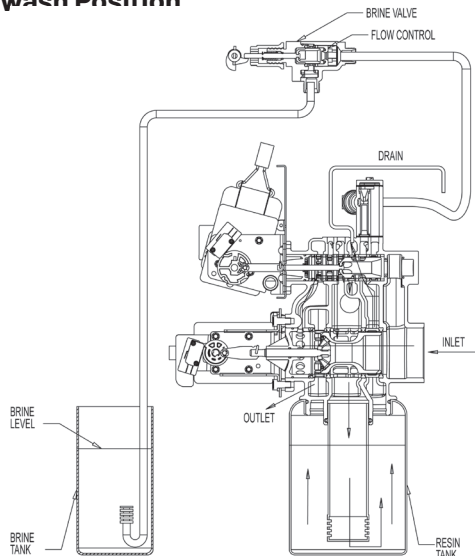
Problem	Cause	Correction
Water conditioner fails to regenerate.	Electrical service to unit has been interrupted	Assure permanent electrical service (check fuse, plug, pull chain, or switch)
	Timer is defective.	Replace timer.
	Power failure.	Reset time of day.
Hard water.	By-pass valve is open.	Close 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

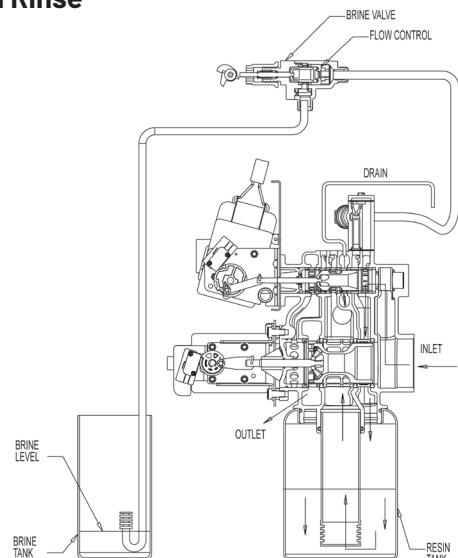
1 Service Position



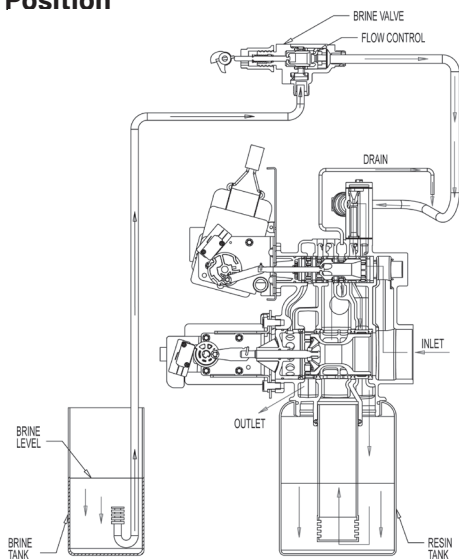
2 Backwash Position



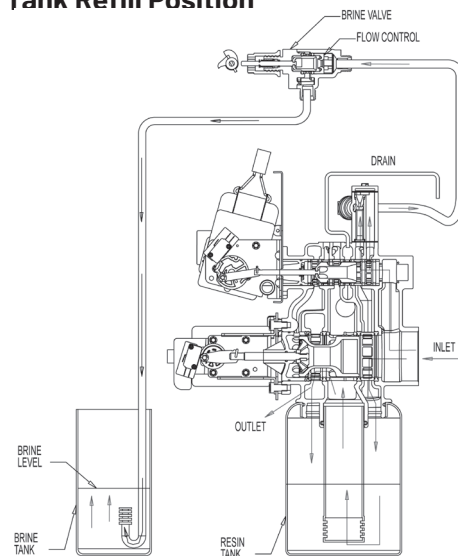
5 Rapid Rinse



3 Brine Position



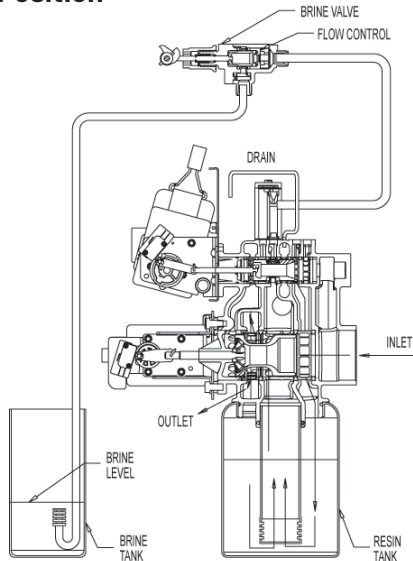
6 Brine Tank Refill Position



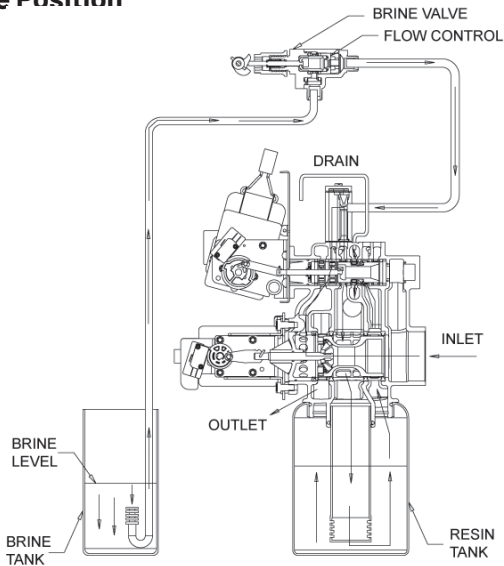
4 Slow Rinse Position

WATER CONDITIONER FLOW DIAGRAMS - UPFLOW

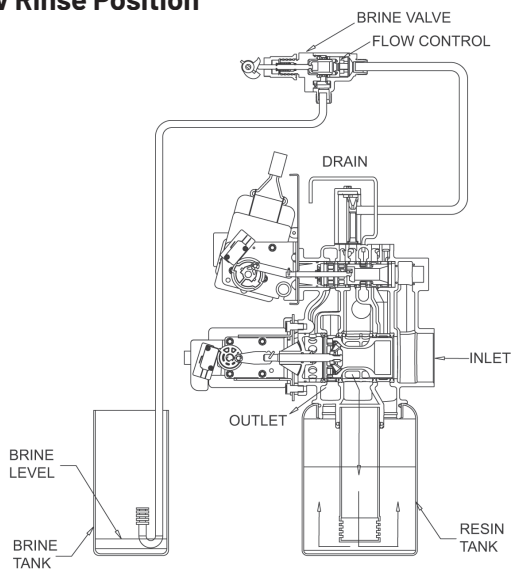
1 Service Position



2 Brine Position

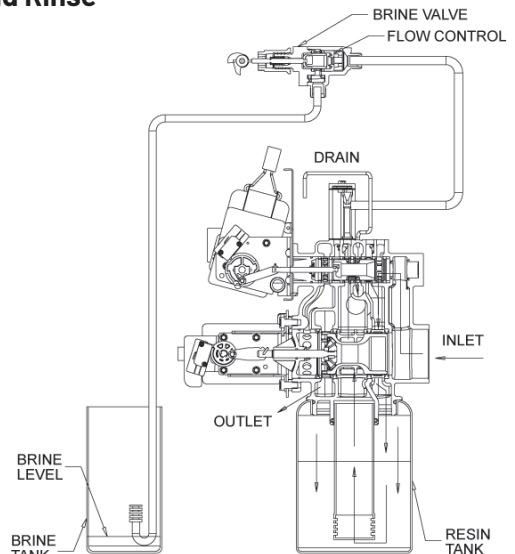


3 Slow Rinse Position

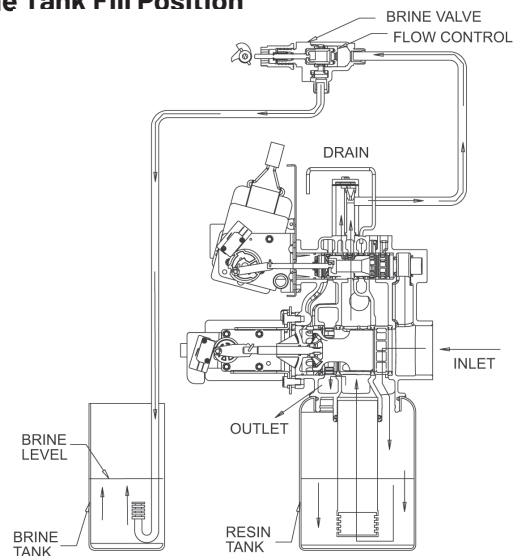


4 Back Wash Position

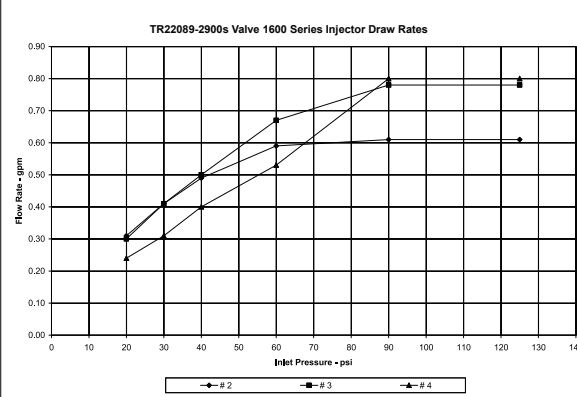
5 Rapid Rinse



6 Brine Tank Fill Position

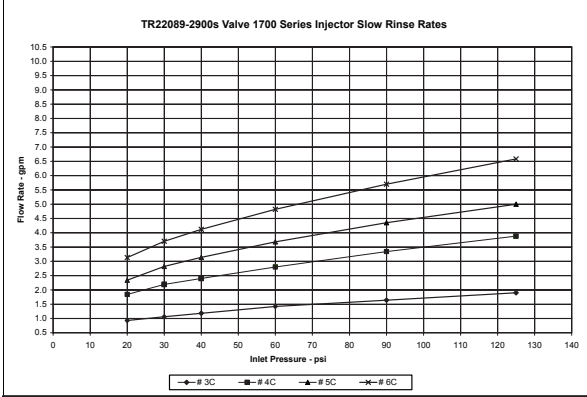


FLOW DATA & INJECTOR DRAW RATES - DOWNFLOW



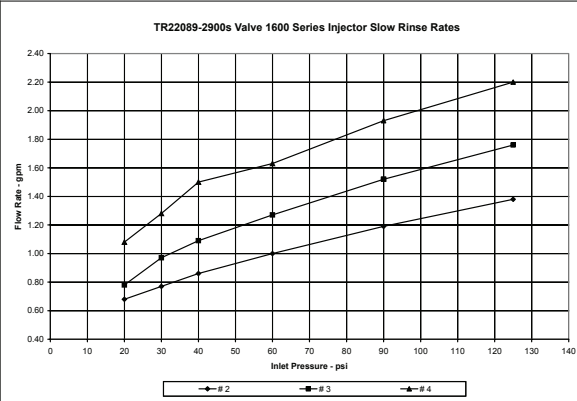
1600 series injectors			
Draw Rate - gpm			
pressure	# 2	# 3	# 4
20	0.31	0.30	0.24
30	0.41	0.41	0.31
40	0.49	0.50	0.40
60	0.59	0.67	0.53
90	0.61	0.78	0.80
125	0.61	0.78	0.80

all injectors used the steel cap and an air disperser



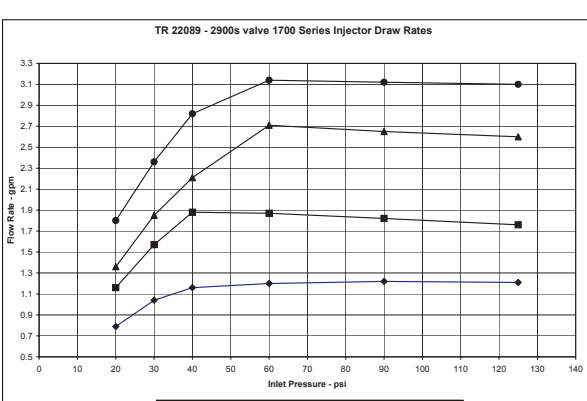
1700 series injectors				
Slow Rinse - gpm				
pressure	# 3C	# 4C	# 5C	# 6C
20	0.93	1.84	2.34	3.13
30	1.06	2.19	2.82	3.70
40	1.18	2.40	3.14	4.12
60	1.42	2.80	3.68	4.82
90	1.64	3.34	4.35	5.70
125	1.90	3.88	5.00	6.58

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



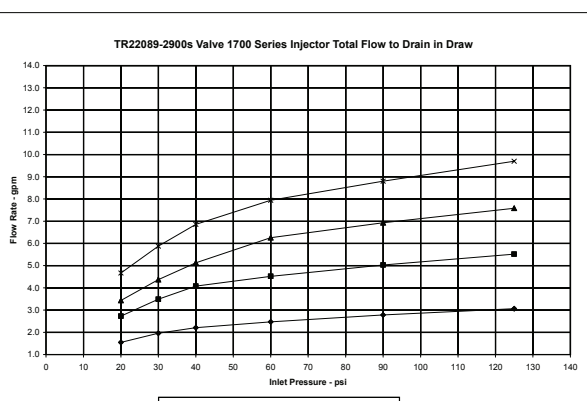
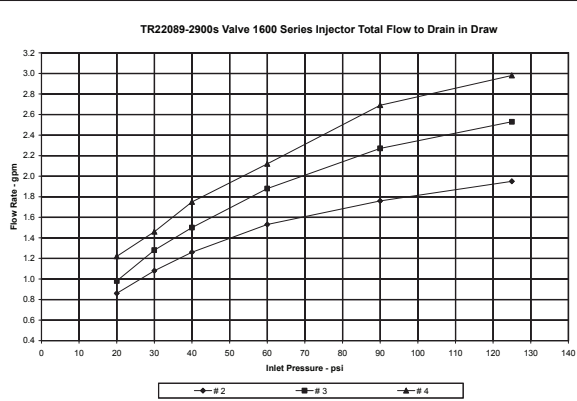
1600 series injectors			
Slow Rinse Rates - gpm			
pressure	# 2	# 3	# 4
20	0.68	0.78	1.08
30	0.77	0.97	1.28
40	0.86	1.09	1.50
60	1.00	1.27	1.63
90	1.19	1.52	1.93
125	1.38	1.76	2.20

all injectors used the steel cap and an air disperser

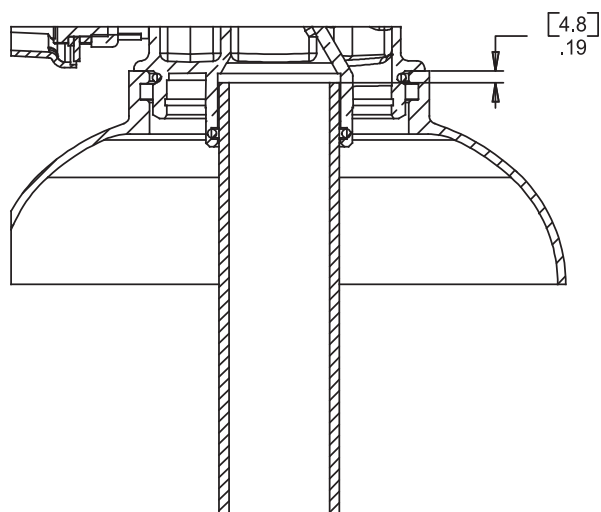
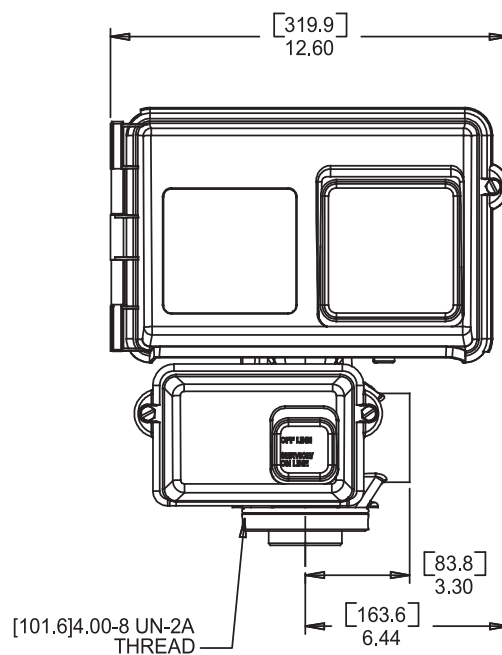
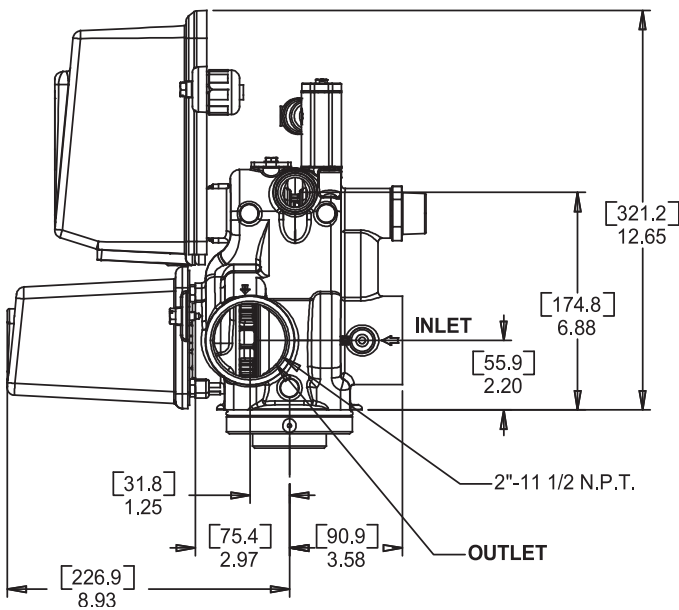
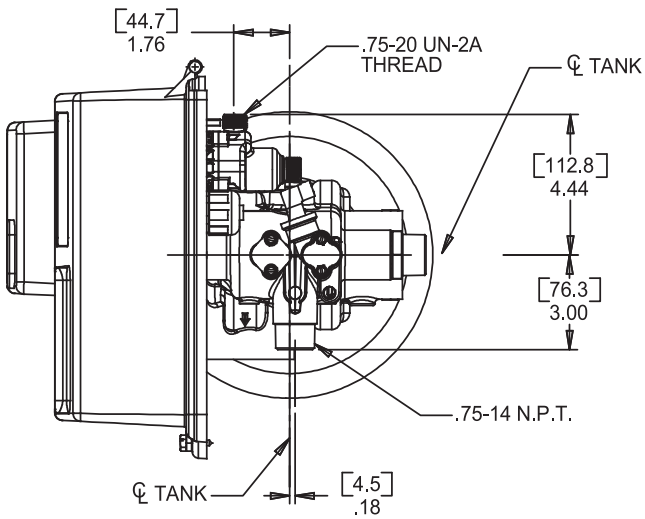


1700 series injectors				
Draw Rate - gpm				
pressure	# 3C	# 4C	# 5C	# 6C
20	0.79	1.16	1.36	1.80
30	1.04	1.57	1.85	2.36
40	1.16	1.88	2.21	2.82
60	1.20	1.87	2.71	3.14
90	1.22	1.82	2.65	3.12
125	1.21	1.76	2.60	3.10

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



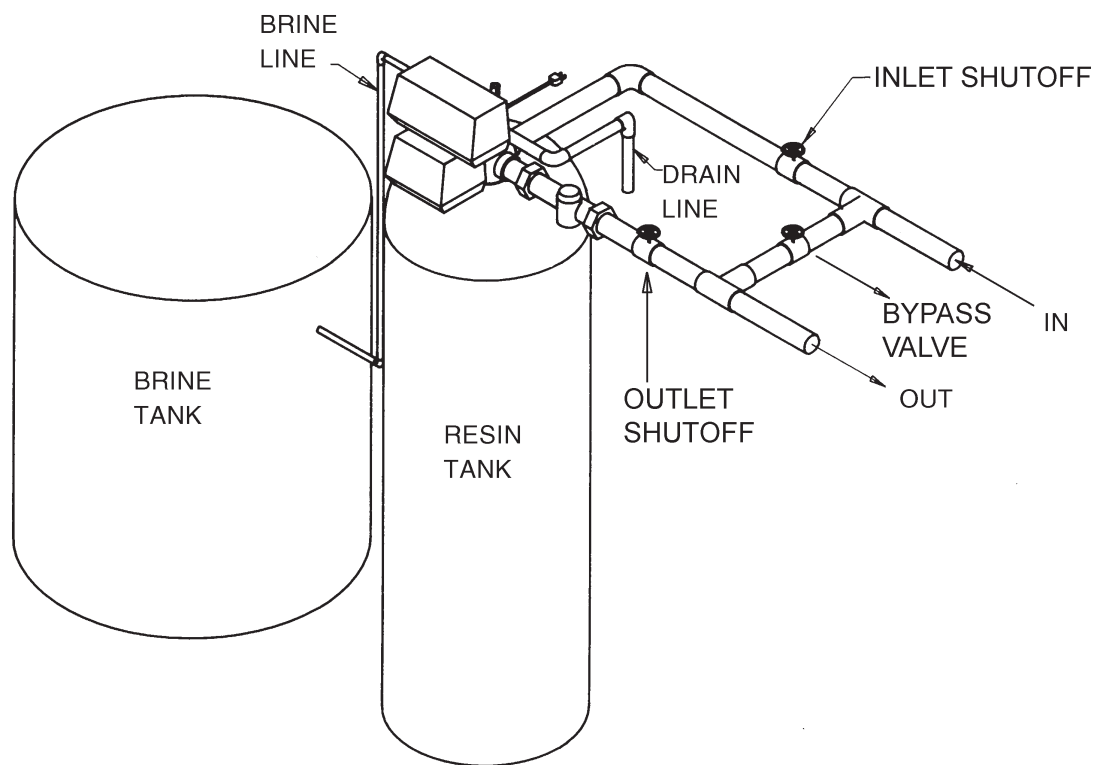
ENVIRONMENTAL BACKPLATE DIMENSIONS



61500-2900LNE Rev B

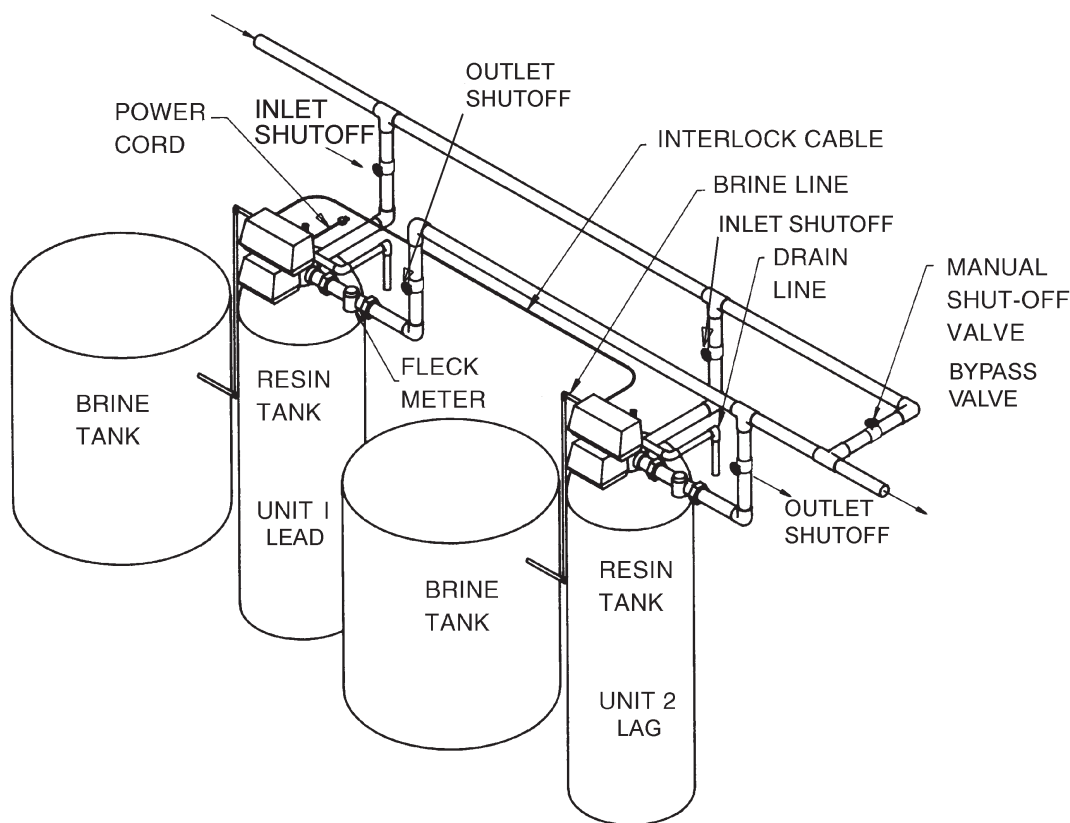
SYSTEM #4

Typical Single Tank Installation with Optional Meter



SYSTEM #5 INTERLOCK

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

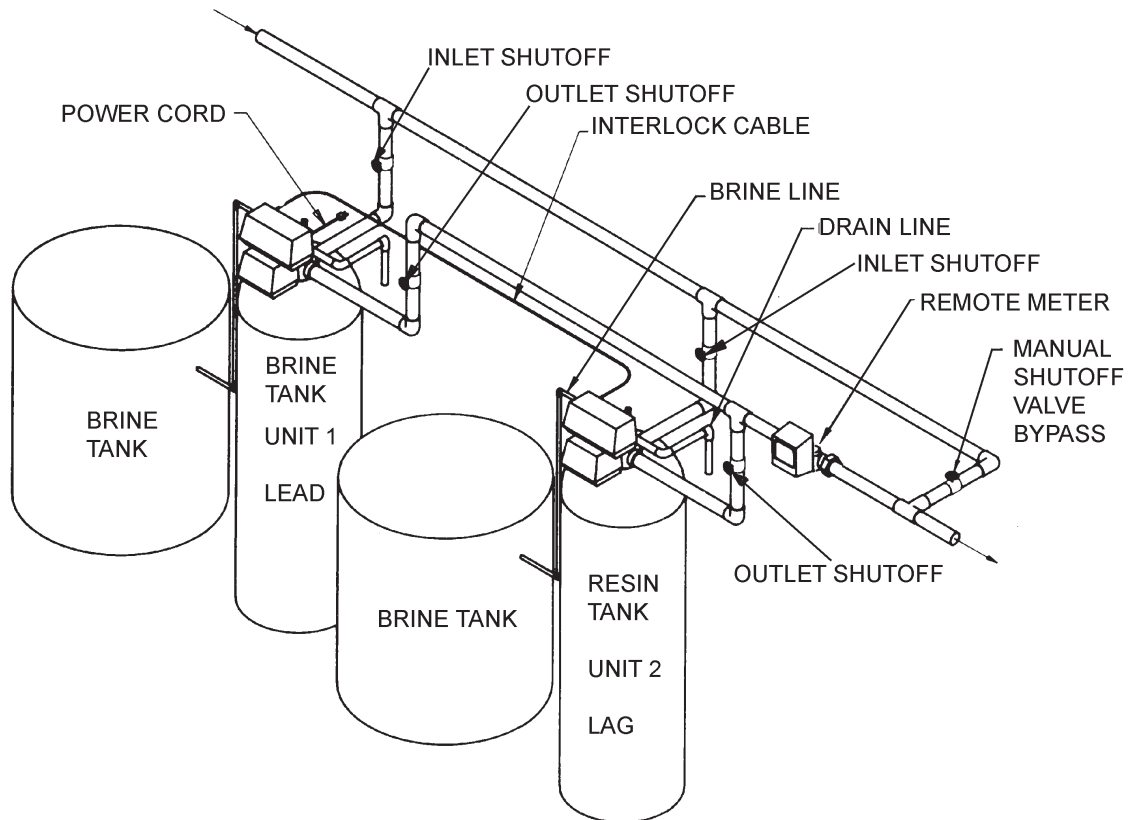


SYSTEM #6 & #7

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.

Single Valve Regeneration Immediate and Delayed Valve Wiring



With Remote Starter Valve Wiring

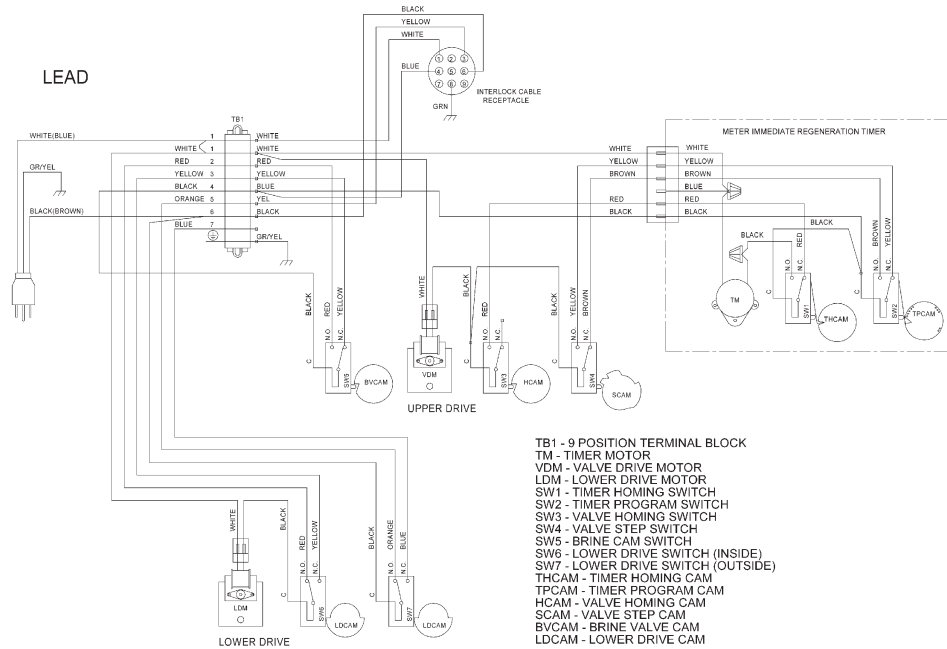
NOTE:

1. SINGLE TANK REMOTE METER DELAYED, OR IMMEDIATE REGENERATION.
2. WITH 24V VALVES THE POWER CORD IS REPLACED WITH BLUE AND WHITE WIRES (WIPE BLUE TO TB1 #5, WHITE TO TB1 #1) THAT ARE REMOVED AFTER TESTING.
3. VALVE SHOWN IN SERVICE POSITION.



SYSTEM #5 WIRING

Interlocked Regeneration Valve Wiring

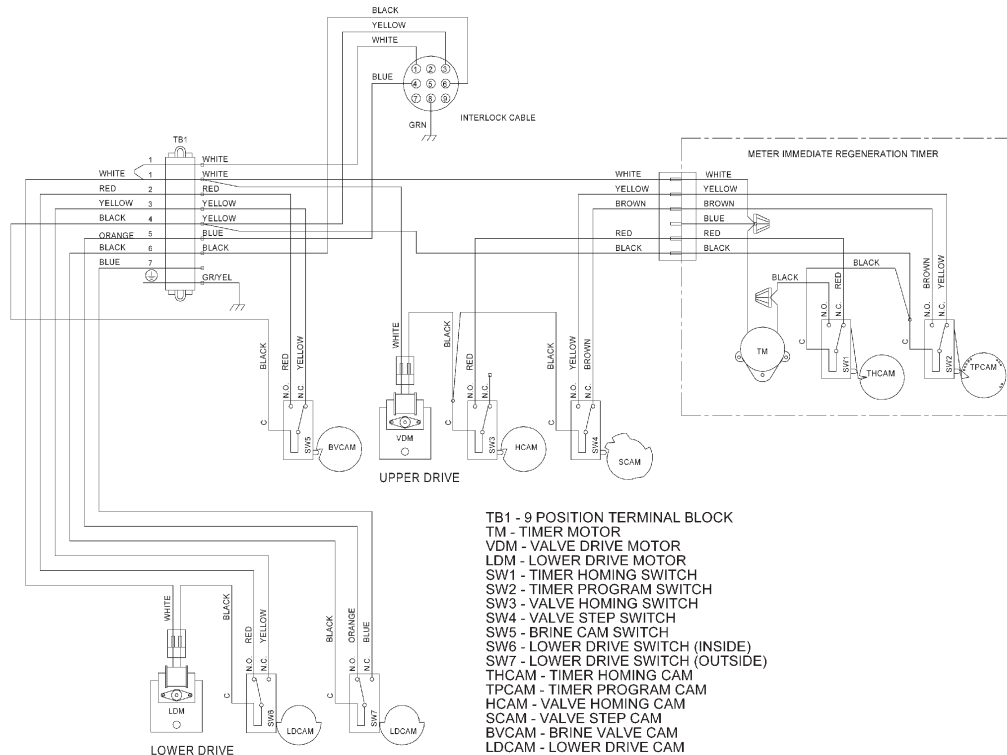


NOTE:

1. TWO TANK INTERLOCKED, INDIVIDUAL METER, IMMEDIATE REGENERATION.
2. BOTH TANKS NORMALLY IN SERVICE. ONLY ONE TANK IN REGENERATION, THE OTHER REMAINS IN SERVICE.
3. VALVE SHOWN IN SERVICE.

18685-01 Rev D

LAG



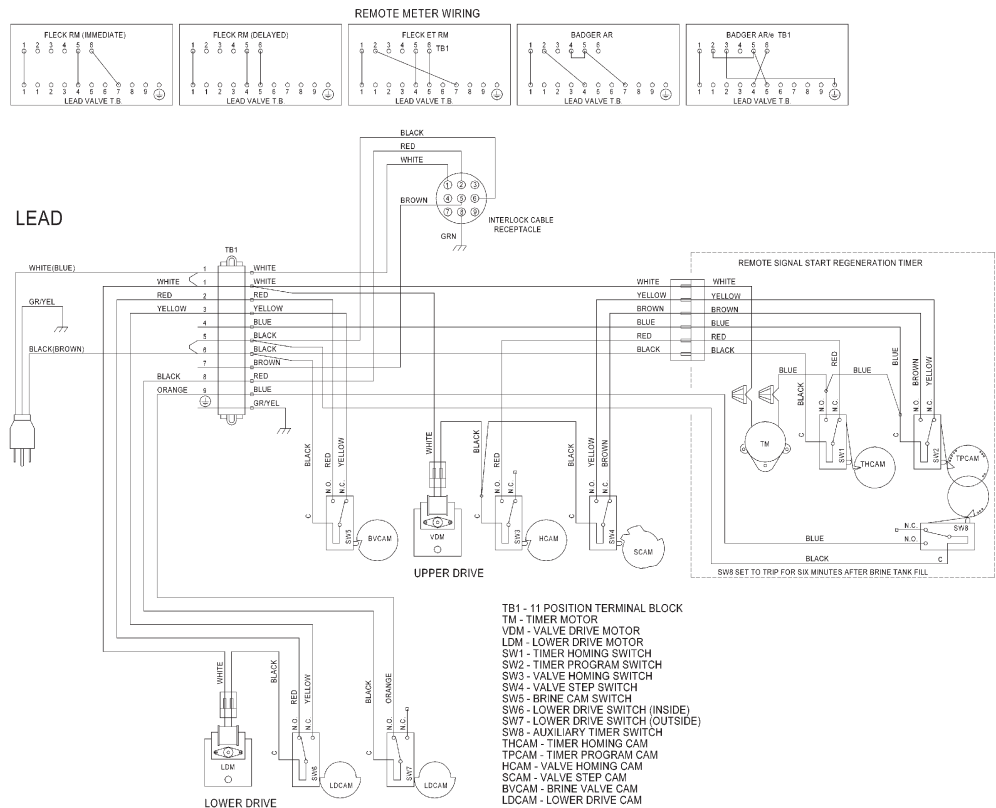
NOTE:

1. TWO TANK INTERLOCKED, INDIVIDUAL METER, IMMEDIATE REGENERATION.
2. BOTH TANKS NORMALLY IN SERVICE. ONLY ONE TANK IN REGENERATION, THE OTHER REMAINS IN SERVICE.
3. VALVE SHOWN IN SERVICE.

18685-02 Rev D

SYSTEM #6 WIRING

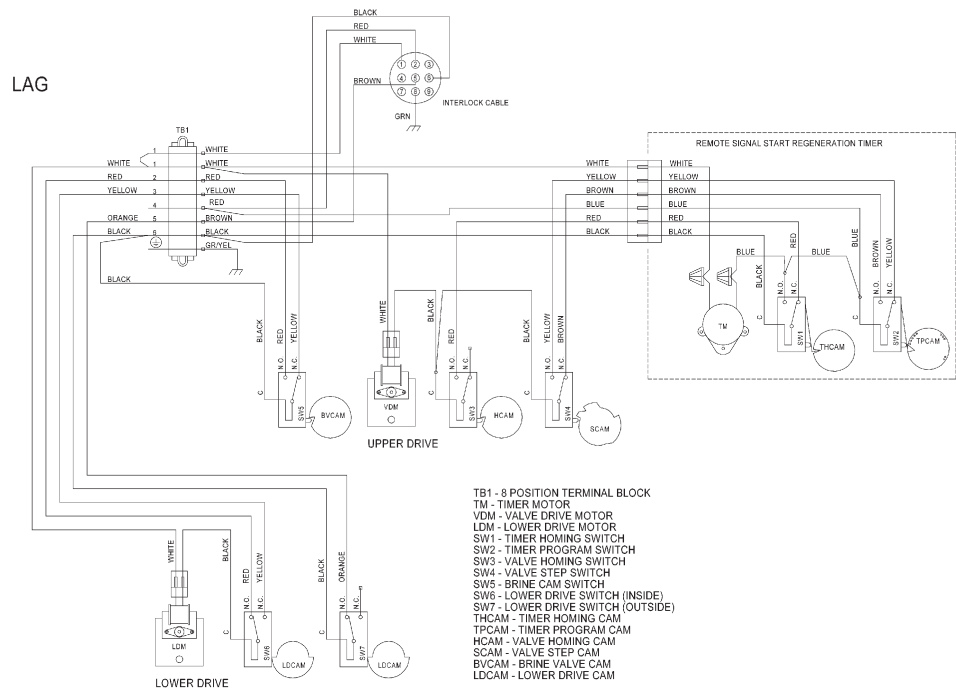
Series Regeneration Valve Wiring



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



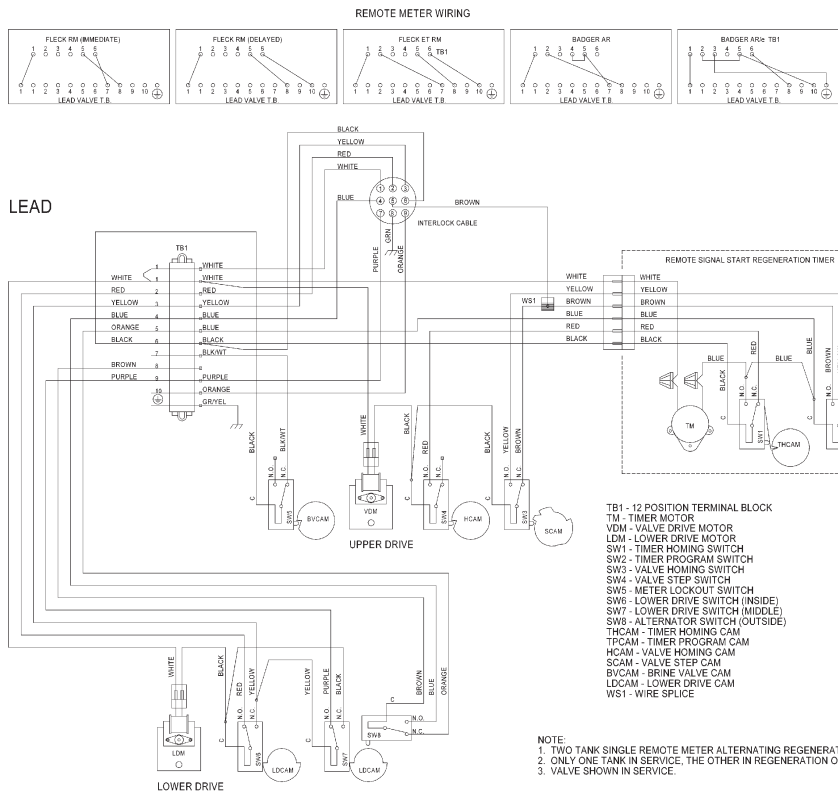
NOTE:

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.

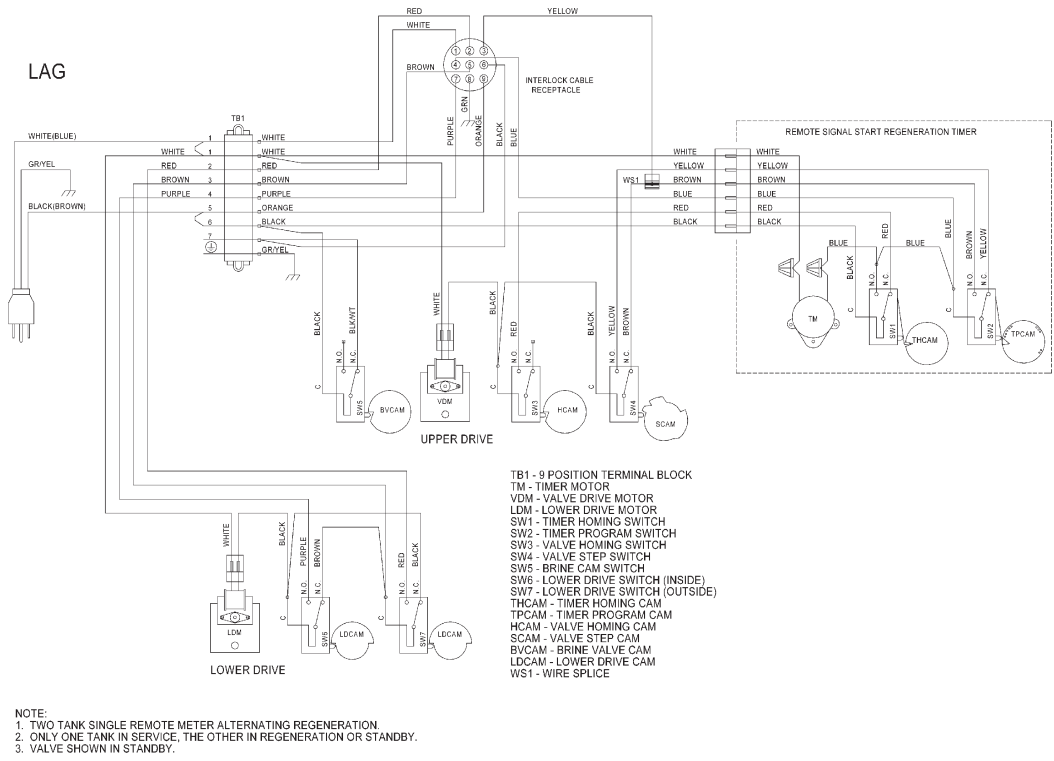
18686-02 Rev E

SYSTEM #7 WIRING

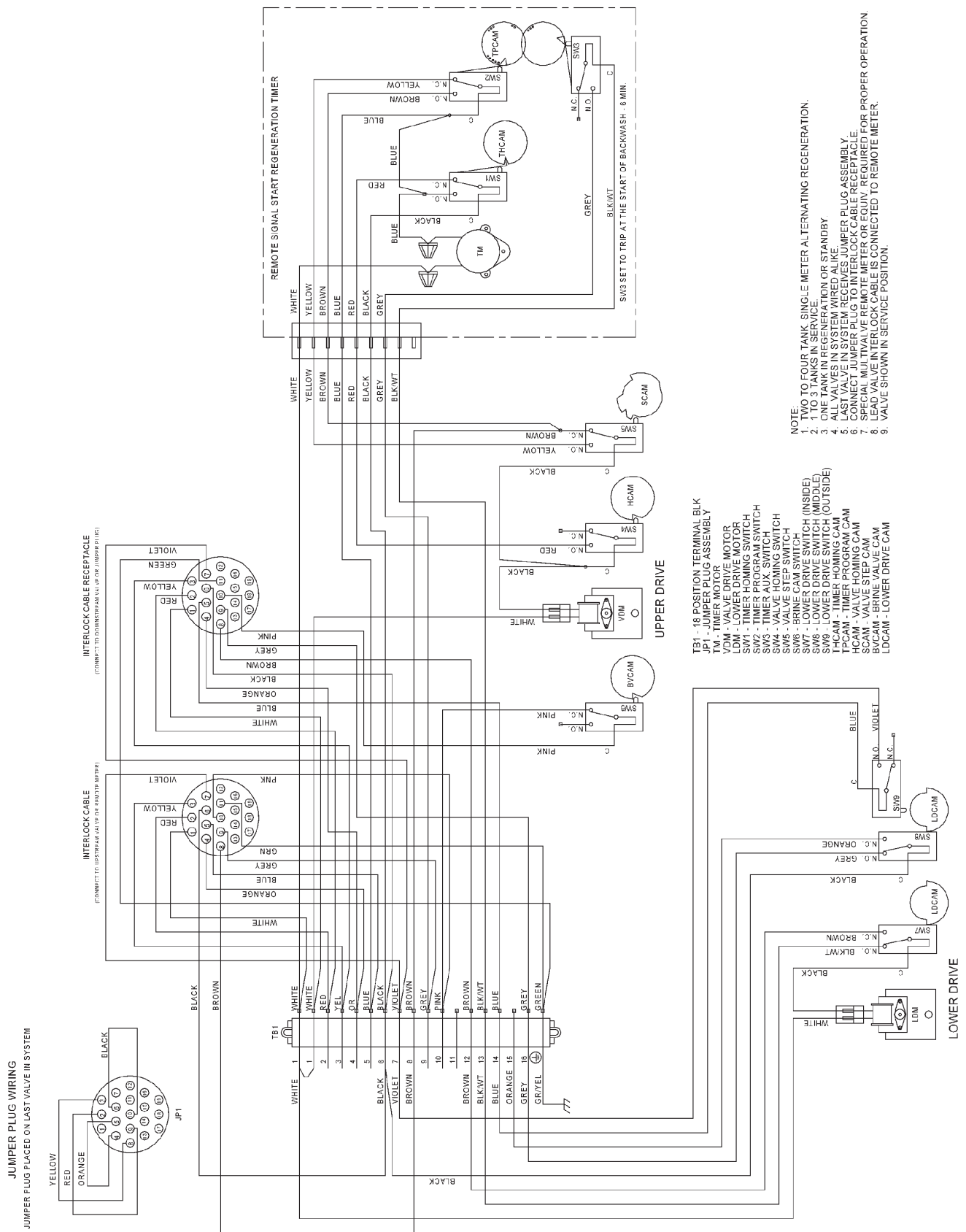
Alternating Regeneration Valve Wiring



18687-01 Rev E



18687-02 Rev E



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

NOTES

For Pentair Product Warranties visit the website or contact Pentair at the phone numbers below:

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[Pentair.com/assets/residential-filtration-warranty](https://pentair.com/assets/residential-filtration-warranty)



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41689 Rev J 0C26