



AQUA MAGIC

2900

Owner and Operational Manual

Model: _____

Serial Number: _____

Install Date: _____

Installed By: _____

Service Phone: _____

Sold By: _____



Please read this manual carefully before proceeding with installation. Your failure to follow any of these instructions or operating parameters may lead to personal injury or damage to the equipment and/or personal property. Do not use this water treatment system with water that is microbiologically unsafe or of unknown quality, without adequate disinfection before or after the system. This water treatment system contains replaceable treatment components critical for effective performance. It is the user's responsibility to periodically test the product water to verify the system is performing satisfactorily. Failure to properly maintain this water treatment system may cause a health risk.

Save this manual for future reference

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INSTALLATION

Water Pressure

A minimum of 20 pounds (1.4 bar) of water pressure is required for regeneration valve to operate effectively.

Electrical Facilities

An uninterrupted alternating current (A/C) supply is required.

NOTE: Other voltages are available. Please make sure your voltage supply is compatible with your unit before installation.

Existing Plumbing

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

Location Of Softener And Drain

The softener should be located close to a drain to prevent air breaks and back flow.

Bypass Valves

Always provide for the installation of a bypass valve if unit is not equipped with one.

CAUTION Water pressure is not to exceed 125 psi (8.6 bar), water temperature is not to exceed 110°F (43°C), and the unit cannot be subjected to freezing conditions.

Installation Instructions

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

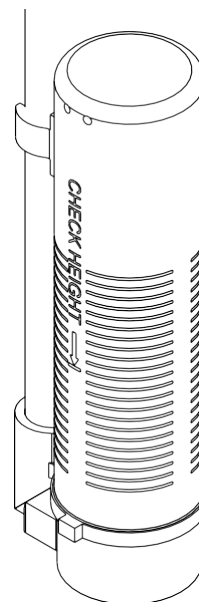
NOTE: Only use silicone lubricant.

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

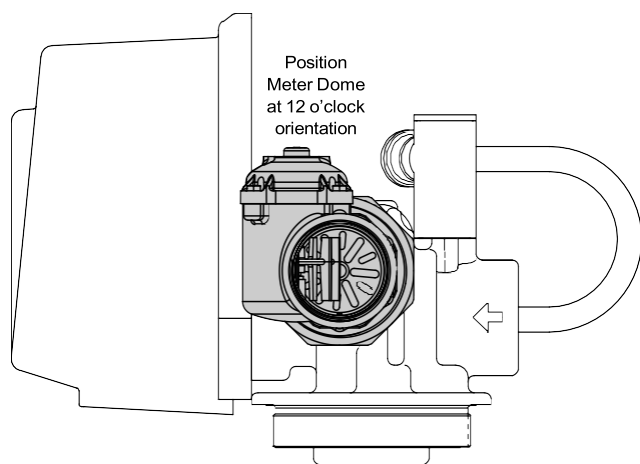
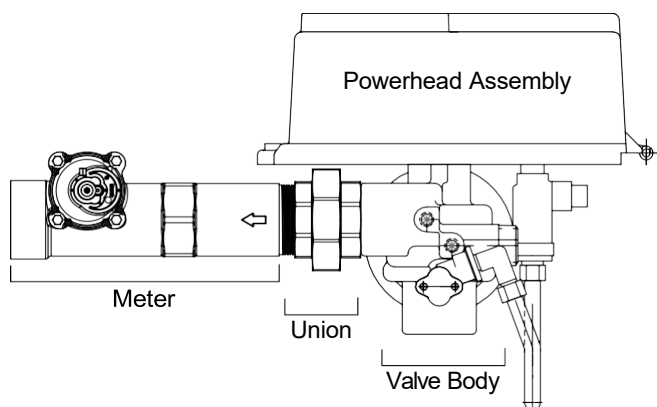
INSTALLATION CONTINUED

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 below.
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.



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

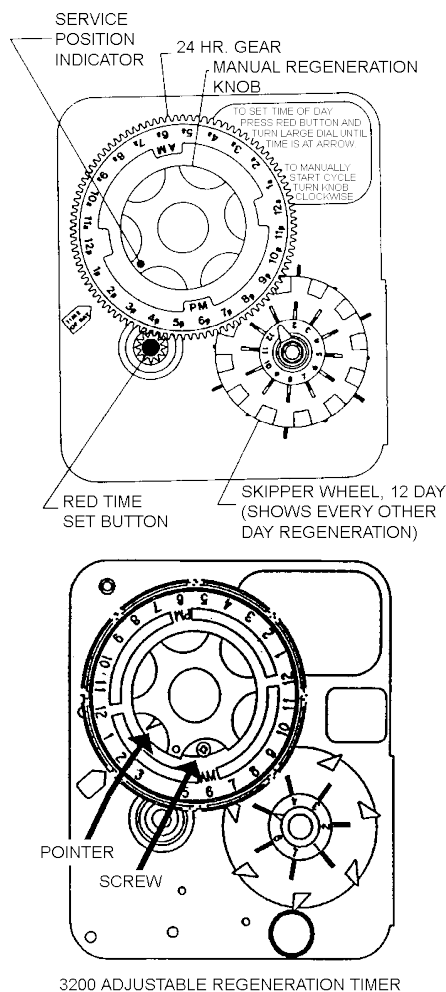
1. Press and hold the red button in to disengage the drive gear.
2. Turn the large gear until the actual time of day is at the time of day pointer.
3. Release the red button to again engage the drive gear.

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.

3210 & 3220 TIMER SETTING

PROCEDURE CONTINUED

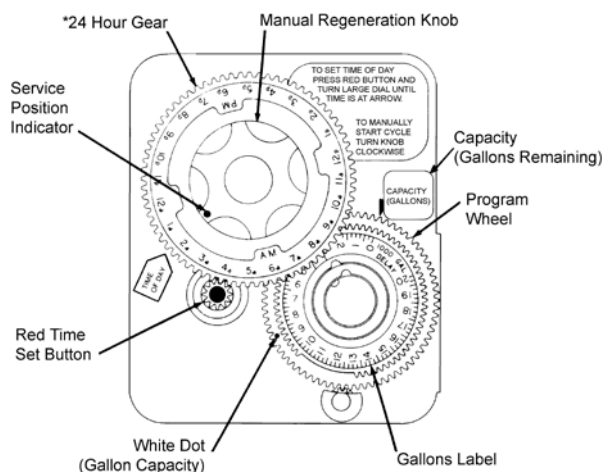
3. The black center knob will make one revolution in the following approximately three hours and stop in the position shown in the drawing.
4. Even though it takes three hours for this center knob to complete one revolution, the regeneration cycle of your unit might be set for only one half of this time.
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

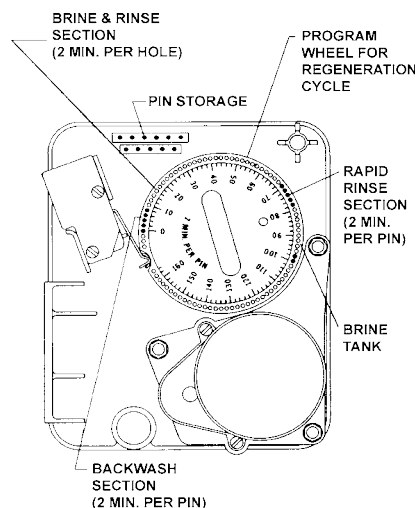
1. The group of holes between the last pin in the backwash section and the second group of pins determines the length of time that your unit will brine and rinse (2 min. per hole).
2. To change the length of brine and rinse time, move the rapid rinse group of pins to give more or fewer holes in the brine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

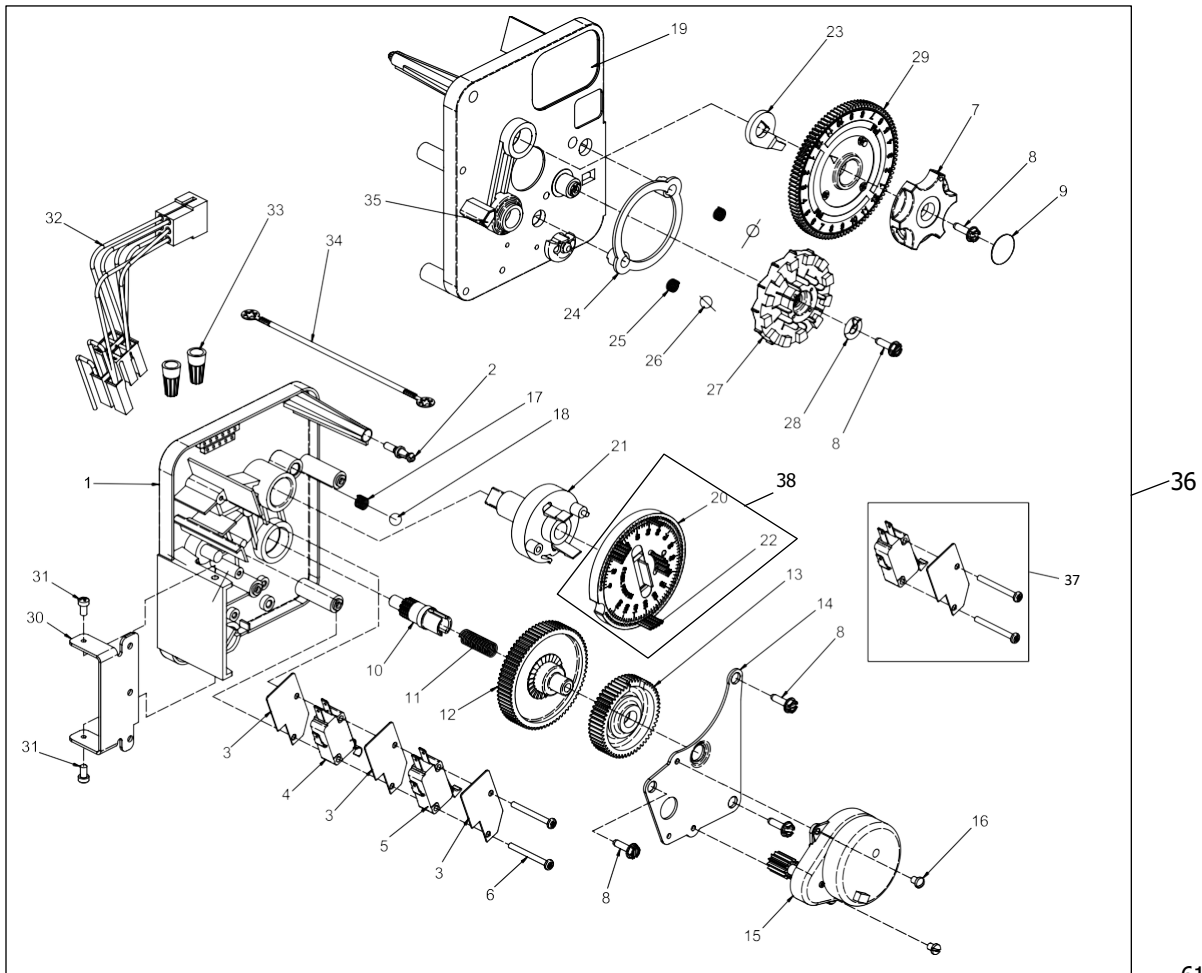
1. The second group of holes in the program wheel determines the length of time that your water conditioner will refill the brine tank (2 min. per hole).
2. To change the length of refill time, move the two pins at the end of the second group of holes as required.
3. The regeneration cycle is complete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

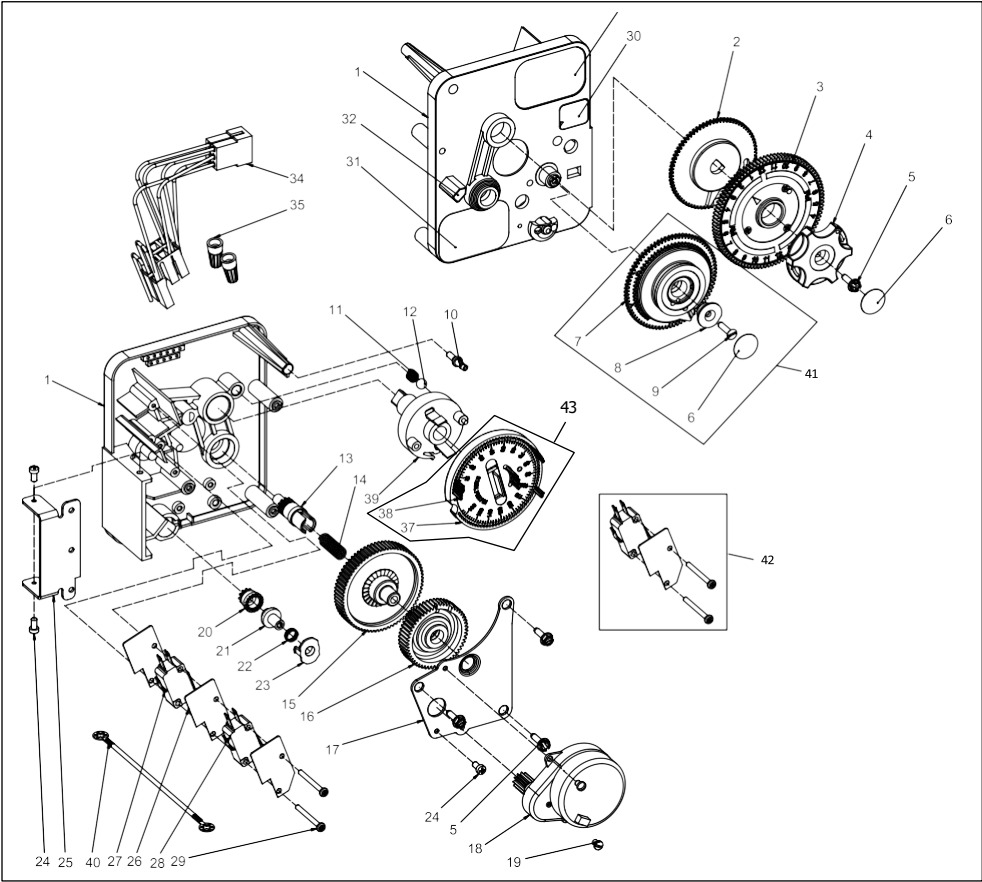
3200 TIME CLOCK TIMER ASSEMBLY

CONTINUED

Item No.	QTY	Part No.	Description	Item No.	QTY	Part No.	Description
1	1	13870	Housing, Timer, 3200	27	1	14381	Skipper Wheel Assy, 12 Day
2	1	14265	Clip, Sping	1	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, 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				

*Call your distributor for Part Number

3210 METER DELAYED TIMER ASSEMBLY



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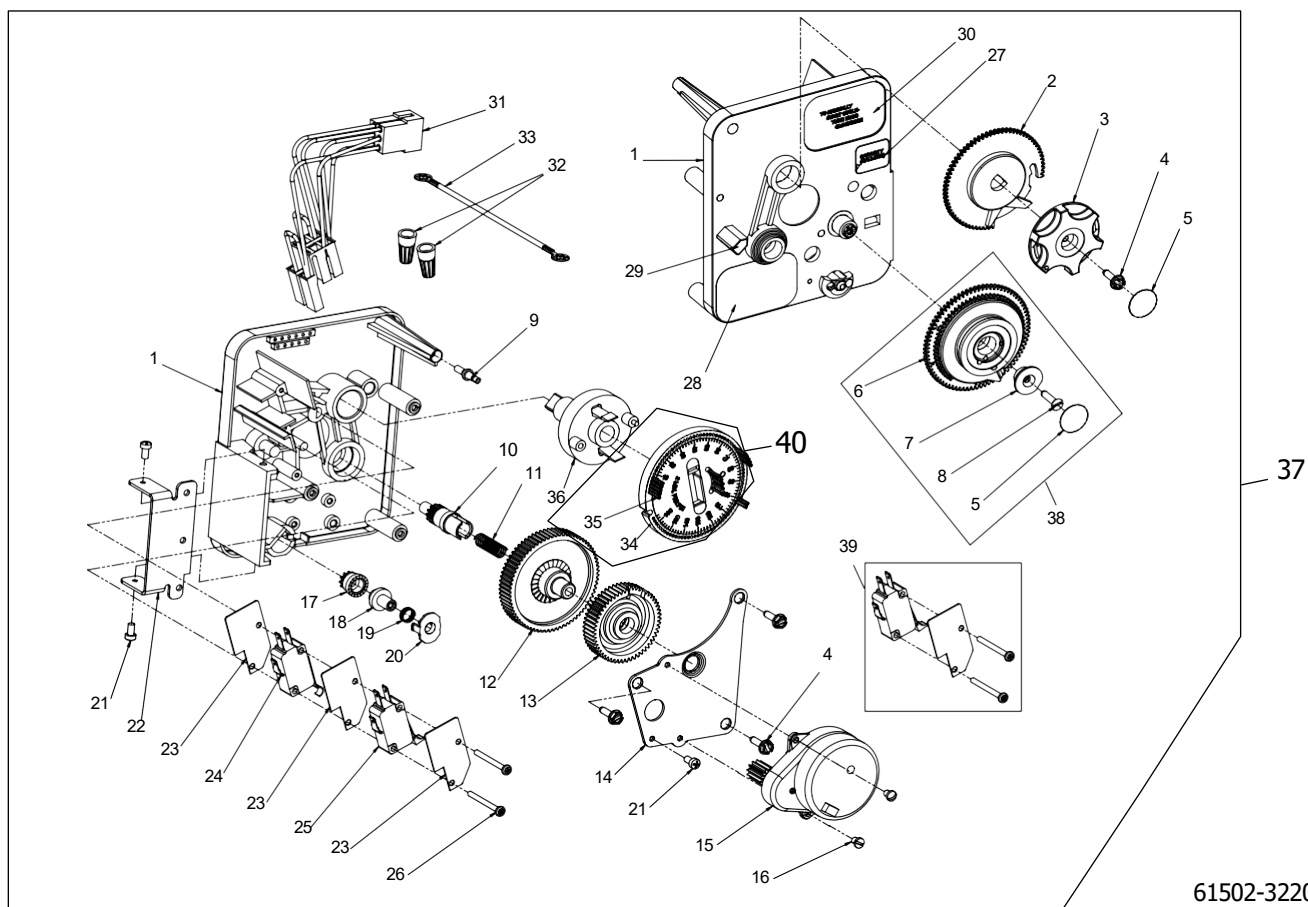
61502-3210 Rev A

3210 METER DELAYED TIMER ASSEMBLY

CONTINUED

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

3220 METER IMMEDIATE TIMER ASSEMBLY



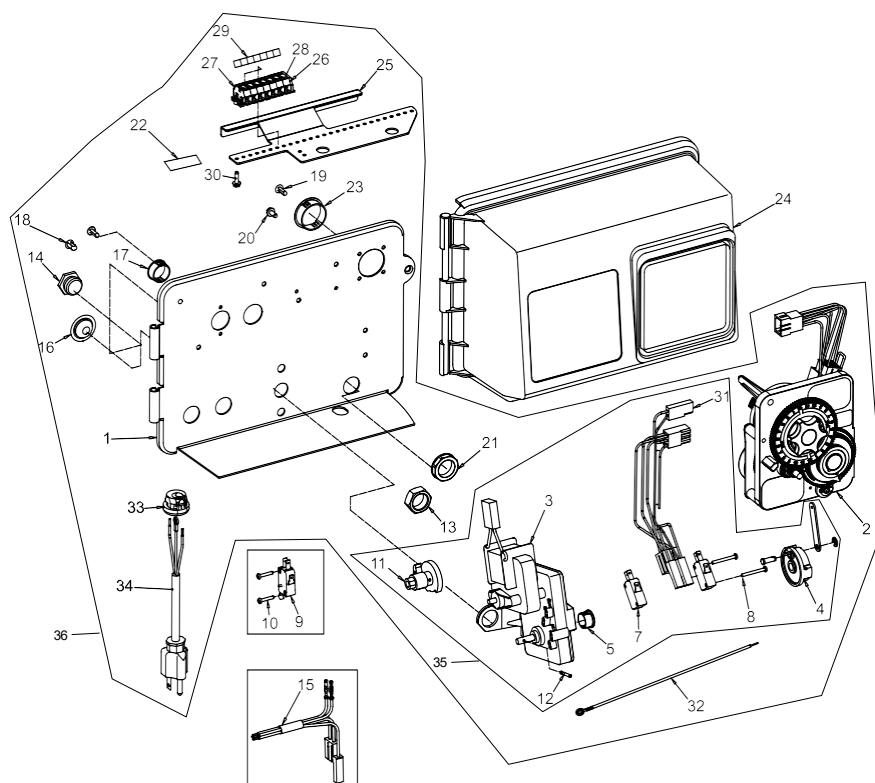
61502-3220 Rev B

3220 METER IMMEDIATE TIMER

ASSEMBLY CONTINUED

Item No.	QTY	Part No.	Description	Item No.	QTY	Part No.	Description
1.....1		13870.....	Housing, Timer	31.....1	.....	40617.....	Harness, 3220
2.....1		15431.....	Gear, Cycle Actuator, System #5	32.....2	.....	40422.....	Nut, Wire, Tan
3.....1		13886.....	Knob, 3200	33.....1	.....	15354-01.....	Wire, Ground, 4 inches
4.....4		13296.....	Screw, Hex Wsh, 6-20 x 1/2	34.....1	.....	19210-05.....	Program Wheel Assembly, 9000/3230
5.....2		11999.....	Label, Button	35.....17	.....	41754.....	Pin, Spring, 1/16 x 5/8 Stainless Steel, Timer
6.....1		13807.....	Gear, Program Drive Wheel	36.....1	.....	15055.....	Gear, Main Drive
7.....1		13806.....	Retainer, Program Wheel	37.....1	.....	*	Complete 3220 Meter Immediate Timer Assy
8.....1		13748.....	Screw, Flt Hd St, 6-20 x 1/2	38.....	.....	60405-50.....	Program Wheel, w/2-inch STD Label 0-21,000 gal
9.....1		14265.....	Spring Clip	.....	.....	60405-60.....	Program Wheel, w/2-inch EXT Label 0-100,000 gal
10.....1		13018.....	Pinion, Idler	.....	.....	60405-61.....	Program Wheel, w/2-inch EXT Range 375 m3
11.....1		18563.....	Idler Shaft Spring	39.....	.....	60320-02.....	Switch Kit, 3200/9000 Timer Auxiliary, Optional
12.....1		13017.....	Gear, Idler	40.....	.....	61420-06.....	Program Wheel, Gear Assy, Softener Immediate 2 Min Per Pin
13.....1		13164.....	Drive Gear	.....	.....	61420-42.....	Program Wheel, Gear Assy, Filter Immediate 2 Min Per Pin
14.....1		13887.....	Plate, Motor Mounting	*Call your distributor for Part Number			
15.....1		18743-1.....	Motor, 120V, 60 Hz, 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				
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				
30.....1		15148.....	Label, Instruction				

UPPER ENVIRONMENTAL POWERHEAD ASSEMBLY



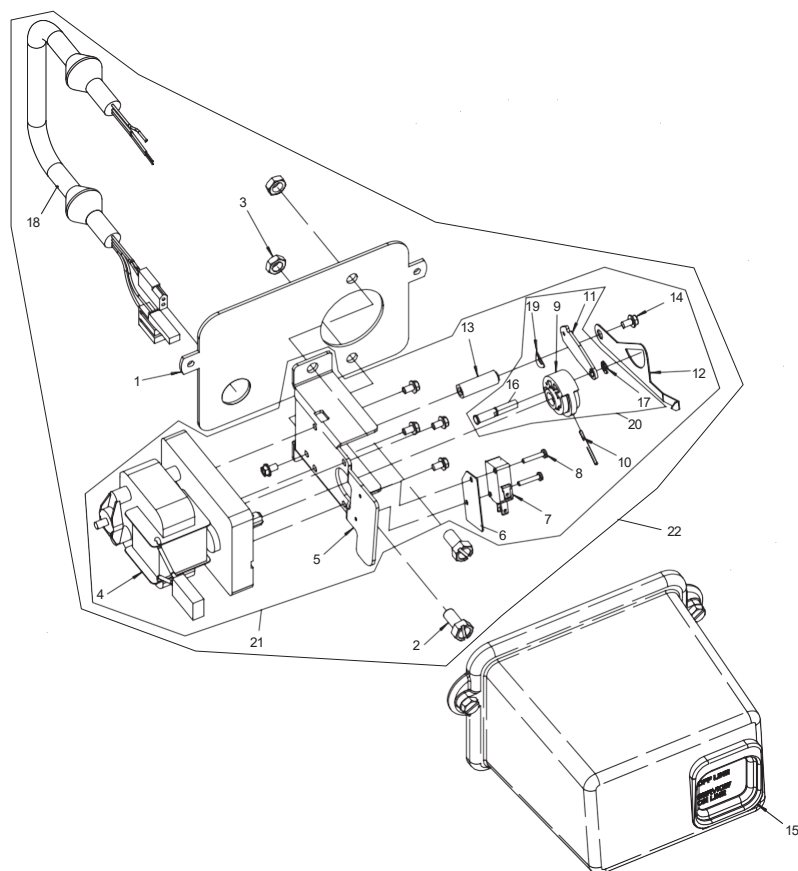
61501-2900 Rev G

UPPER ENVIRONMENTAL POWERHEAD

ASSEMBLY CONTINUED

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

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, Enviromental
		40405.....	Harness, Lower Drive Syst 5 Multiple, Enviromental
		40405.....	Harness, Lower Drive Syst 6 Multiple, Lead, Enviromental
		40406.....	Harness, Lower Drive, Sys 6, Multiple, Middle/Lag, Enviromental
		40407.....	Harness, Lower Drive, Syst #7, Duplex, Lead, Enviromental

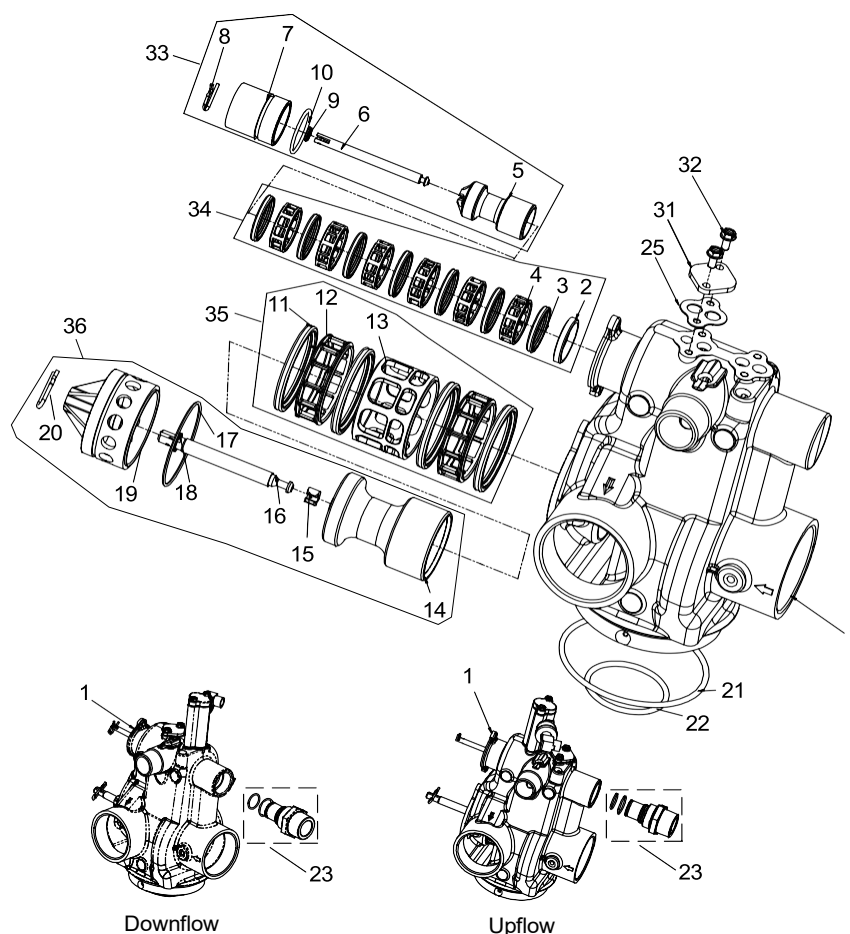
Item No.	QTY	Part No.	Description
		40408.....	Harness, Lower Drive, Syst 7, Duplex, Lag, Enviromental
		40398.....	Harness, Lower Drive, Syst #7, Multiple, Enviromental
1.....1		18727.....	Washer, Curved Spring, /265 ID
2.....		60160-22.....	Drive Cam Assy, Link, Enviromental, 2900 Lower Drive
3.....		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
4.....		*.....	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

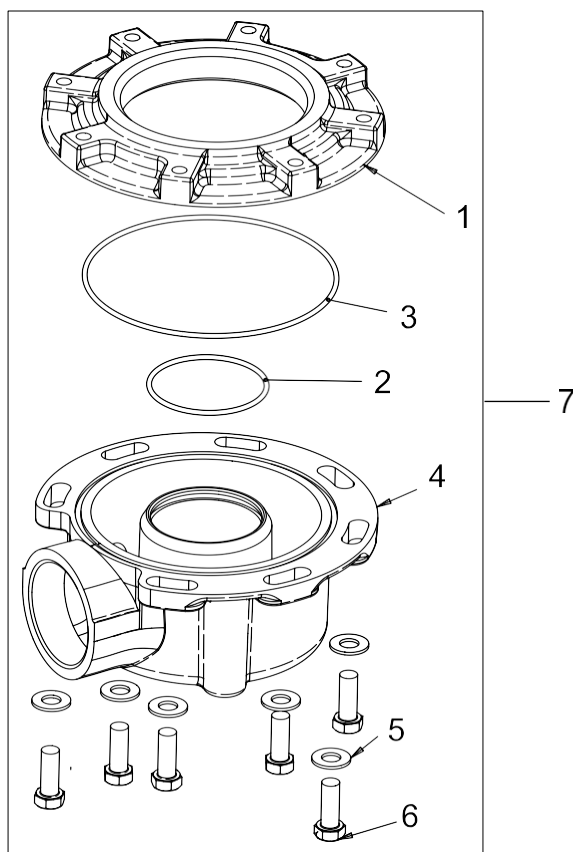
Item No.	QTY	Part No.	Description
1	1	41428-01	Valve Body, 2900s, Machd, NPT U.S. Tap
		41428-09	Valve Body, 2900s, Machined, w/Soft Water Adapter
		41428-01NP	Valve Body, 2900s, MCHD, NPT, NP, U.S. Tap, Top Coll
		41428-03	Valve Body, 2900s, MACHD, NPT, U.S. Tap, Aux Tap, Top Coll
		41428-03NP	Valve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

Item No.	QTY	Part No.	Description
		41428-09NP	Valve Body, 2900S, MCHD, NPT, NP, U.S. Tap, Soft ADAPT, Top Coll
		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

CONTROL VALVE ASSEMBLY CONTINUED

Item No.	QTY	Part No.	Description	Item No.	QTY	Part No.	Description
4.....6		11451.....	Spacer, 12 Hole	.....	61545	.....	Piston Assy, 2900S, Upflow, Upper
.....		16589	Spacer, Hot Water	.....	61545-01	.....	Piston Assy, 2900S, Upflow, Upper, 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	35.....	60128.....	.....	Seal & Spacer Kit, 2900, Lower
1		10212	Plug, End, 1500/2750, Brass	.....	60128-01	.....	Seal & Spacer Kit, 2900, Lower, Hot Water
8.....1		10909.....	Pin, Link	.....	60128-10	.....	Seal & Spacer Kit, 2900, Lower, Silicone
9.....1		10209	Quad Ring, -010	36.....	61550.....	.....	Piston Assy, 2900S, HWBP, Lower
10.....1		40078.....	O-ring, 28mm X 2mm	.....	61550-03	.....	Piston Assy, 2900S, HWBP, Lower, Hot Water
.....		10234-01	O-ring, -024, Hot Water	.....	61555	.....	Piston Assy, 2900S, NHWBP, Lower
11.....4		11720.....	Seal, Piston, 2900/3150	.....	61555-03	.....	Piston Assy, 2900S, NHWBP, Lower, Hot Water
.....		10545-02	Seal, Piston, Silicone	Not Shown:			
12.....2		10369	Spacer, 2-inch, 2900/3150	.....	60366-00	.....	DLFC, 1-inch F x 3/4-inch F, NPT, No Button
.....		14241-01	Spacer, Hot Water	.....	60366-06	.....	DLFC, 1-inch F x 3/4-inch F, NPT, 0.6 gpm
13.....1		14753.....	Spacer, 2900	.....	60366-08	.....	DLFC, 1-inch F x 3/4-inch F, NPT, 0.8 gpm
.....		16589	Spacer, Hot Water	.....	60366-10	.....	DLFC, 1-inch F x 3/4-inch F, NPT, 1.0 gpm
14.....1		14757.....	Piston, HWBP	.....	60366-12	.....	DLFC, 1-inch F x 3/4-inch F, NPT, 1.2 gpm
.....		14752	Piston, 2900, NHWBP	.....	60366-13	.....	DLFC, 1-inch F x 3/4-inch F, NPT, 1.3 gpm
15.....1		14818.....	Ring, Piston Rod, Snap	.....	60366-15	.....	DLFC, 1-inch F x 3/4-inch F, NPT, 1.5 gpm
16.....1		14758.....	Rod, Piston, 2900	.....	60366-17	.....	DLFC, 1-inch F x 3/4-inch F, NPT, 1.7 gpm
17.....1		14922.....	O-ring, -035, Piston	.....	60366-20	.....	DLFC, 1-inch F x 3/4-inch F, NPT, 2.0 gpm
18.....1		14926	Quad Ring, -012	.....	60366-24	.....	DLFC, 1-inch F x 3/4-inch F, NPT, 2.4 gpm
19.....1		14754-00	End Plug Assy, 2900	.....	60366-30	.....	DLFC, 1-inch F x 3/4-inch F, NPT, 3.0 gpm
.....		14754-01	Plug, End, White, Machined	.....	60366-35	.....	DLFC, 1-inch F x 3/4-inch F, NPT, 3.5 gpm
.....		14754-10	End Plug Assembly, 2900/2930, NHWBP	.....	60366-40	.....	DLFC, 1-inch F x 3/4-inch F, NPT, 4.0 gpm
.....		19276-01	End Plug Assembly, 2900S, Brass, HW				
.....		41427-01	Plug, End, 2900S, Lower, White				
.....		41427-11	Plug, End, 2900S, Lower, Black				
20.....1		14813	Pin, Spring, Connecting Rod				
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				

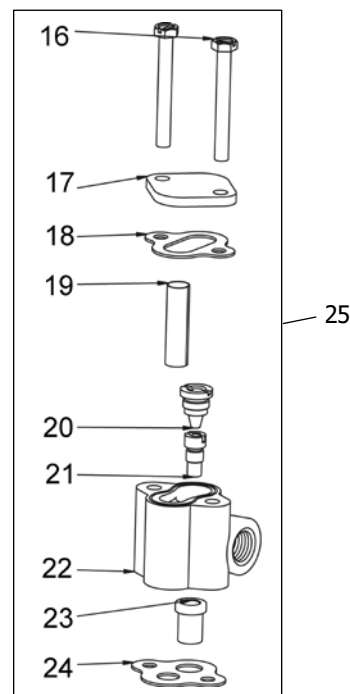
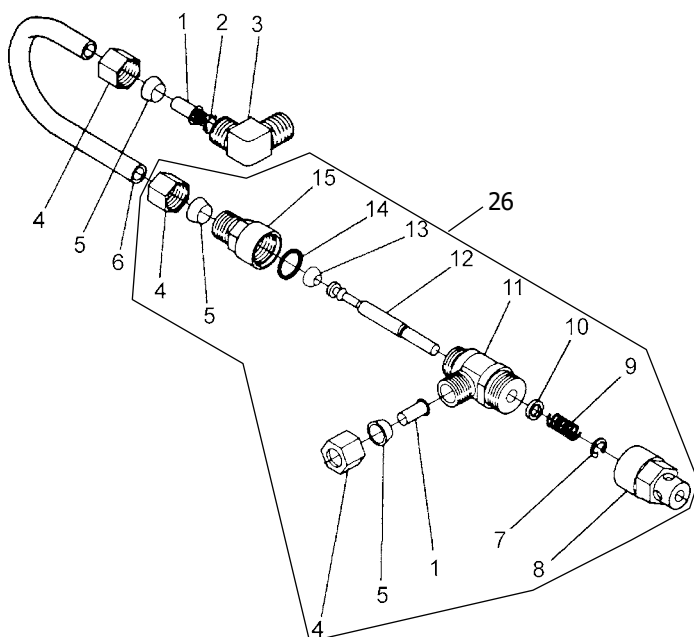
CONTROL VALVE SIDE MOUNT ADAPTER



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

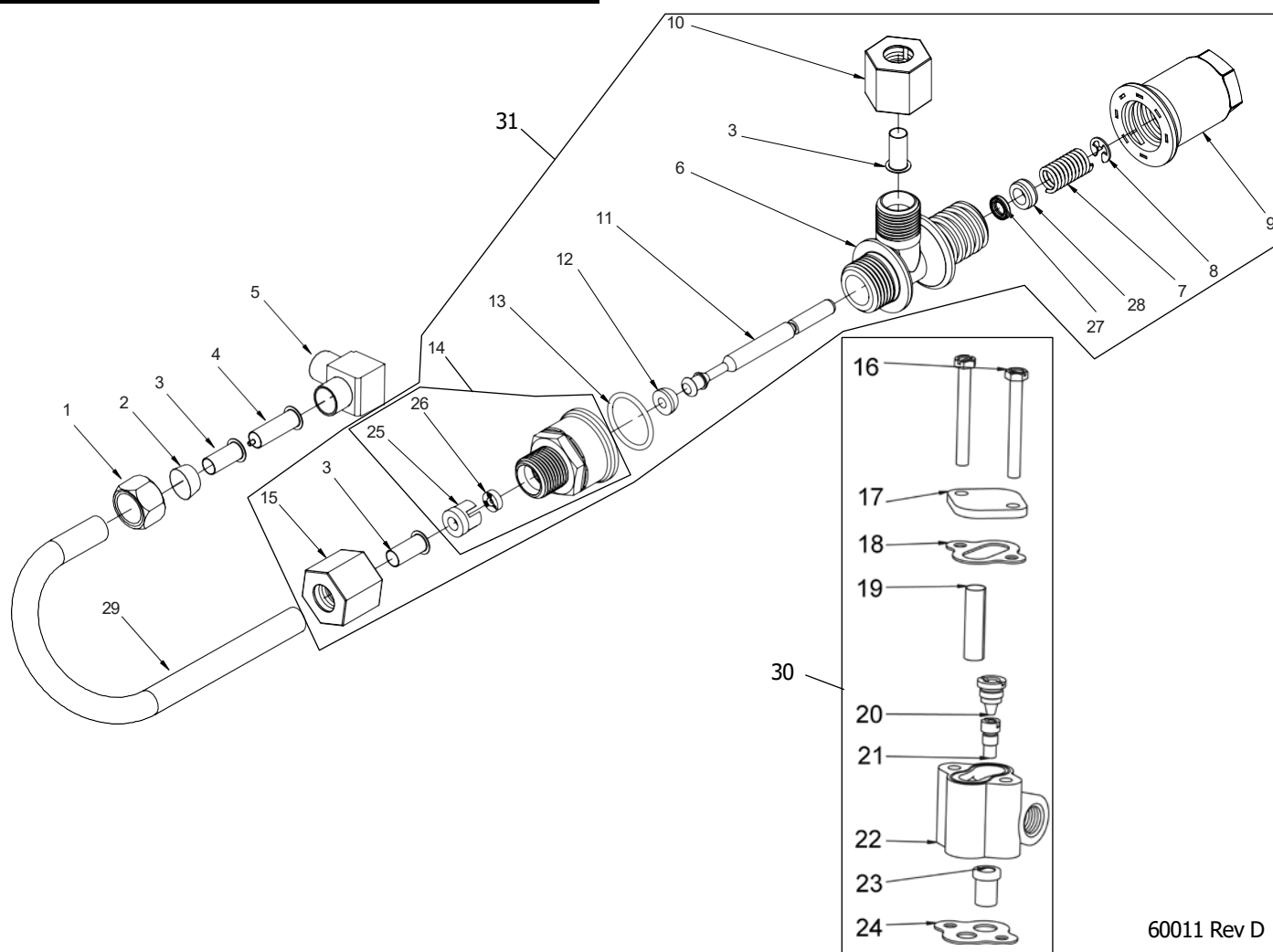
Item No.	QTY	Part No.	Description
1	2	10332	Fitting, Insert, 3/8
2	1	12767	Screen, Brine
3	1	10328	Fitting, Elbow, 90 Deg. 1/4 PT x 3/8 Tube
4	3	10329	Fitting, Tube, 3/8 Nut, Brass
5	3	10330	Fitting, Sleeve, 3/8 Celcon
6	1	16508	Tube, Brine, 1600, PVC
	1	16508-01	Tube, Brine Valve, 2850/2900s
	1	12774	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

Item No.	QTY	Part No.	Description
17	1	11893	Cap, Injector, SS
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

1600 SERIES BRINE SYSTEM *CONTINUED*

Item No.	QTY	Part No.	Description	Item No.	QTY	Part No.	Description
21	1	10914-000	Throat, Injector #000, Brown	25		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	26		60029-010	Brine Valve, 1600, 0.25 gpm
		10226-4	Throat, Injector #4, Stainless Steel			60029-020	Brine Valve, 1600, 0.50 gpm
22	1	17776	Body, Injector, 1600			60029-030	Brine Valve, 1600, 1.0 gpm
	1	17776-02*	Body, Injector, 1600 Upflow	*Upflow Only			
23	1	16221	Disperser, Air				
24	1	14805	Gasket, Injector Body, 1600/1700				

1650 BRINE SYSTEM ASSEMBLY



60011 Rev D

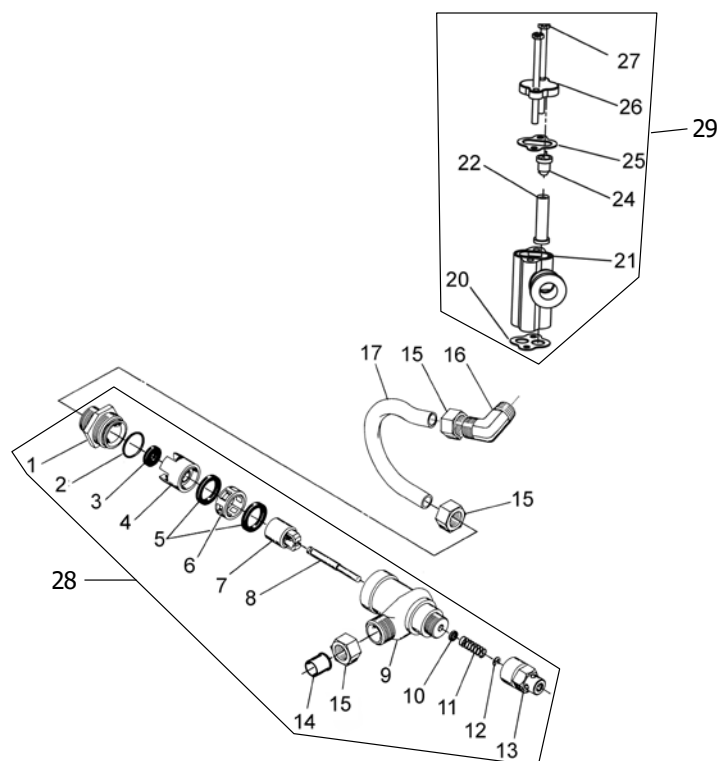
Item No.	QTY	Part No.	Description
1	1	10329	Fitting, Tube, 3/8 Nut, Brass
2	1	10330	Fitting, Sleeve, 3/8 Celcon
3	3	10332	Fitting, Insert, 3/8
4	1	12767	Screen, Brine
5	1	10328	Fitting, Elbow, 90 Deg 1/4 NPT x 3/8T
6	1	17884	Brine Valve Body Assy, 1650
7	1	10249	Spring, Brine Valve
8	1	10250	Ring, Retaining
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	1	60010-50	BLFC, 1650, .50 GPM,

Item No.	QTY	Part No.	Description
1	1	60010-100	BLFC, 1650, 1.0 GPM, Plastic
15	1	19625	Nut Assy, 3/8-inch, Plastic
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

1650 BRINE SYSTEM ASSEMBLY CONTINUED

Item No.	QTY	Part No.	Description	Item No.	QTY	Part No.	Description
		12973-3	Nozzle, Injector #3, PVC, Grey	27	1	12550	Quad Ring -009
		12973-4	Nozzle, Injector #4, PVC, Grey		1	12550-01	Quad Ring -009 560CD
		10225-0	Nozzle, Injector #0, Stainless Steel	28	1	17908	Sleeve, Brine Valve Stem
		10225-1	Nozzle, Injector #1, Stainless Steel	29	1	16508-01	Tube, Brine Valve, 2850/1600
		10225-2	Nozzle, Injector #2, Stainless Steel		1	40027	Tube, Brine Valve, 2510
		10225-3	Nozzle, Injector #3, Stainless Steel		1	42184	Tube, Brine Valve, 2850s
		10225-4	Nozzle, Injector #4, Stainless Steel		1	12774	Tube, Brine Valve, 1500
21	1	10914-000	Throat, Injector #000, Brown		1	15221	Tube, Brine Valve, 2750
		10914-00	Throat, Injector #00, Violet		1	41683*	Tube, Brine Valve, UF, 1600/1650
		10914-0	Throat, Injector #0, Red	30		60480-01	Injector Assy, 1600, #1, Plastic
		10914-1	Throat, Injector #1, White			60480-02	Injector Assy, 1600, #2, Plastic
		10914-2	Throat, Injector #2, Blue			60480-03	Injector Assy, 1600, #3, Plastic
		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	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	*Upflow Only			
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				

1700 BRINE SYSTEM ASSEMBLY

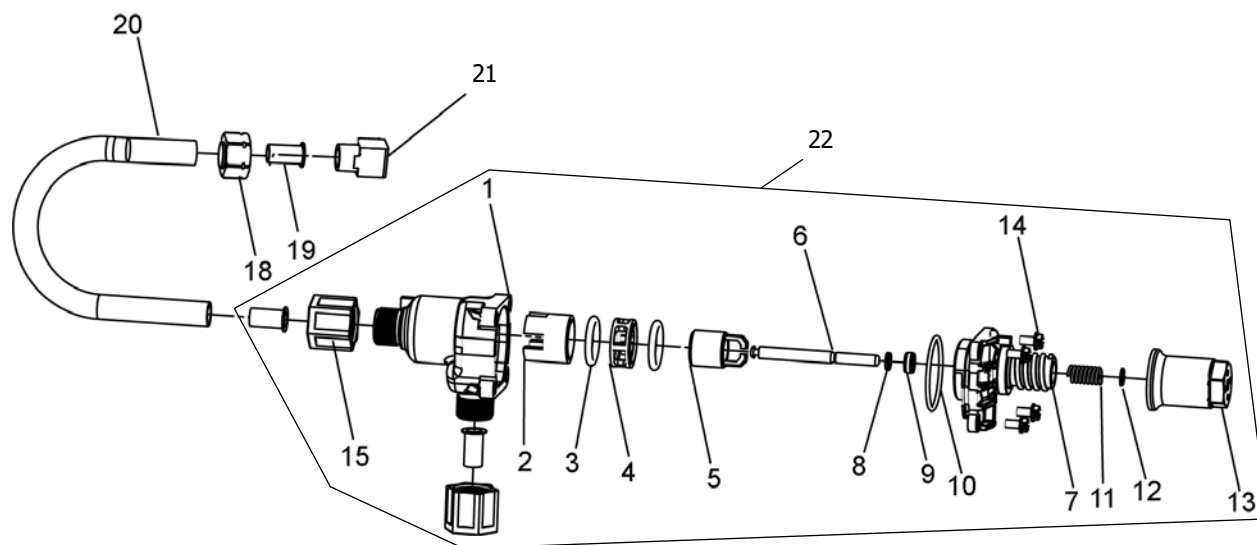


60034 Rev D

1700 BRINE SYSTEM ASSEMBLY CONTINUED

Item No.	QTY	Part No.	Description	Item No.	QTY	Part No.	Description
1	1	14792	Plug, End, Brine Valve			14801-05c	Nozzle, Injector, #5c, White
2	1	13201	Quad Ring, -020			14801-06c	Nozzle, Injector, #6c, Red
3	1	12085	Washer, Flow, 1.2 GPM	25	1	10229	Gasket, Injector Cap, 1600
	1	12086	Washer, Flow, 1.5 GPM	26	1	11893	Cap, Injector, Stainless Steel
	1	12087	Washer, Flow, 2.0 GPM		1	10228	Cap, Injector
	1	12088	Washer, Flow, 2.4 GPM	27	2	14804	Screw, Hex Hd Mach, 10 - 24 x 2-3/4-inch 18-8 Stainless Steel
	1	12089	Washer, Flow, 3.0 GPM				
	1	12090	Washer, Flow, 3.5 GPM	28	1	60034-00	Brine Valve, 1700, Blank
	1	12091	Washer, Flow, 4.0 GPM			60034-10	Brine Valve, 1700, 1.0 gpm
	1	12092	Washer, Flow, 5.0 GPM			60034-12	Brine Valve, 1700, 1.2 gpm
4	1	14785	Retainer, Flow Control			60034-15	Brine Valve, 1700, 1.5 gpm
5	3	14811	O-ring, -210, 560CD, Brine			60034-20	Brine Valve, 1700, 2.0 gpm
6	1	14798	Spacer, 1700, Brine			60034-24	Brine Valve, 1700, 2.4 gpm
7	1	14795	Piston, Brine Valve			60034-30	Brine Valve, 1700, 3.0 gpm
8	1	14797	Brine Valve Stem			60034-40	Brine Valve, 1700, 4.0 gpm
9	1	14790	Brine Valve Body			60034-50	Brine Valve, 1700, 5.0 gpm
10	1	12550	Quad Ring, -009	29	1	60381-03	Injector Assy, 1700, #3c, Complete
11	1	15310	Spring, Brine Valve			60381-04	Injector Assy, 1700, #4c, Complete
12	1	10250	Retaining Ring			60381-05	Injector Assy, 1700, #5c, Complete
13	1	15517	Guide, Stem			60381-06	Injector Assy, 1700, #6c, Complete
14	1	15415	Fitting, Insert, 1/2-inch, Tube	Not Shown:			
15	3	15414	Nut, 2900, w/Sleeve	1		16974	Fitting, Plastic, Female, 3/4 x 3/4 Slip
16	1	15413	Fitting, Elbow, Male, 1/2T x 3/8 NPT	1		17996	Disperser, Air, Injector
17	1	15416	Tube, Brine, 2900/2750	*Upflow Only			
	1	16460	Tube, Brine, 2850/2900s	NOTE: Item number 26 (11893) is used on injector sizes 2 through 5C. Part number 10228 is used on injector sizes 6C.			
	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				

1710 BRINE SYSTEM ASSEMBLY



60604 Rev F

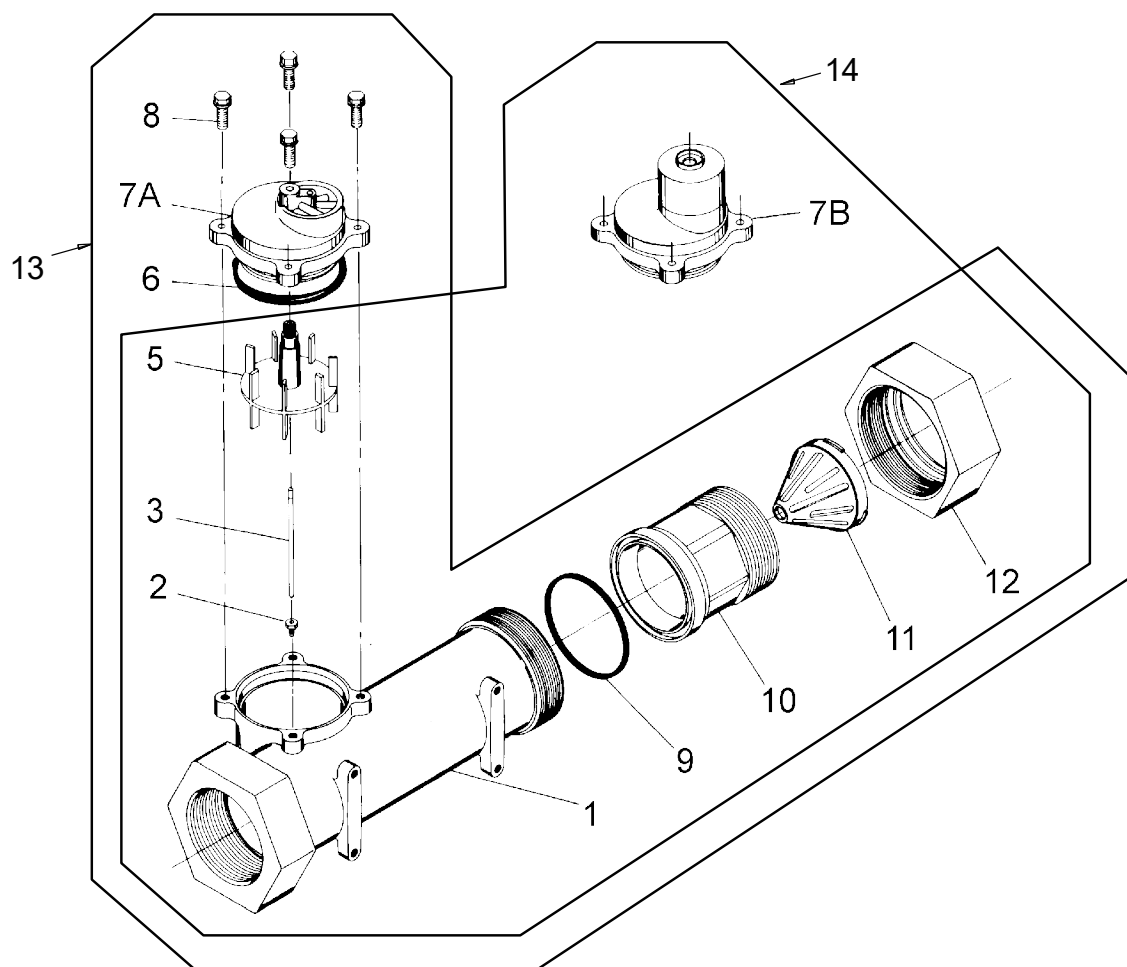
Item No.	QTY	Part No.	Description
1	1	41202	Brine Valve, 1700, Plastic, Top
2	1	14785-01	Retainer, Flow Control
3	1	14811	O-Ring, -210, 560CD, Brine
4	1	14798	Spacer, 1700, Brine
5	1	14795	Piston, Brine Valve
6	1	41203	Stem, Brine, 1710, Plastic, 2900
7	1	41201	Brine Valve, 1700, Plastic, Bottom
8	5	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

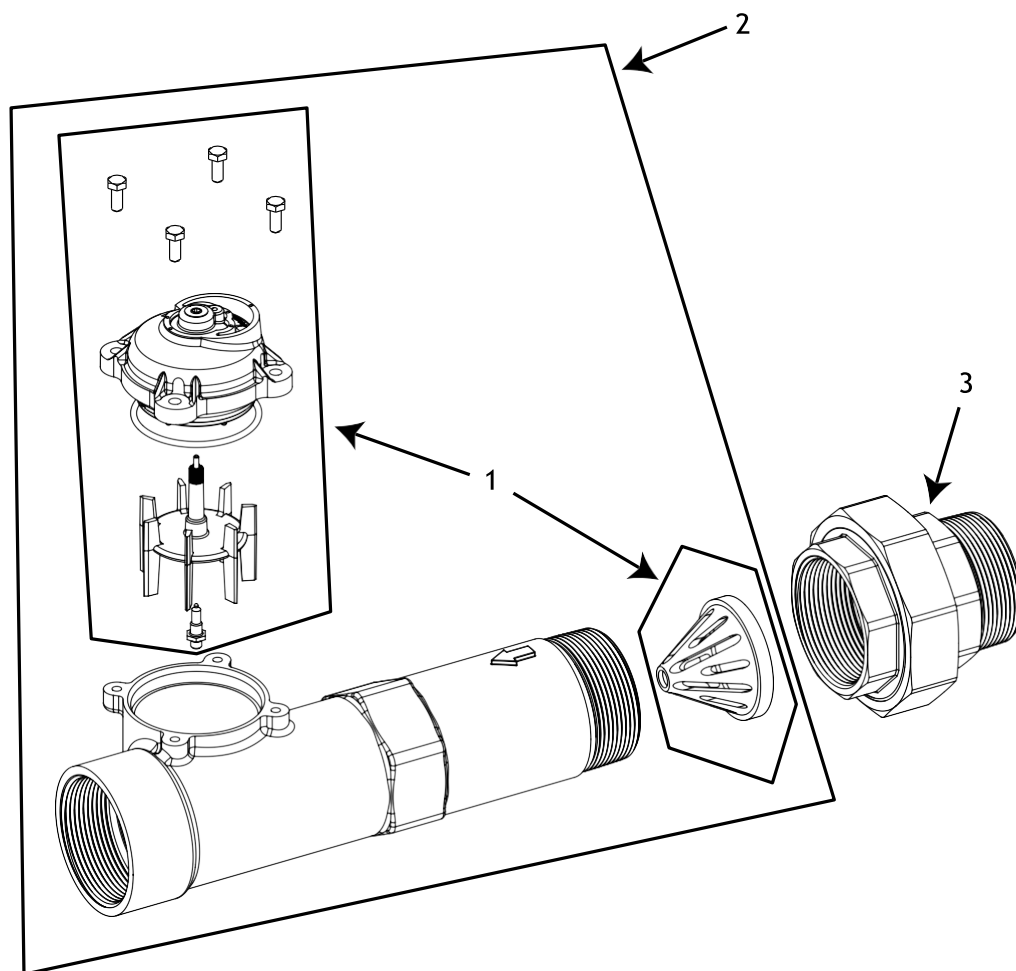
2-INCH BRASS METER ASSEMBLY



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

2-INCH STAINLESS STEEL METER ASSEMBLY

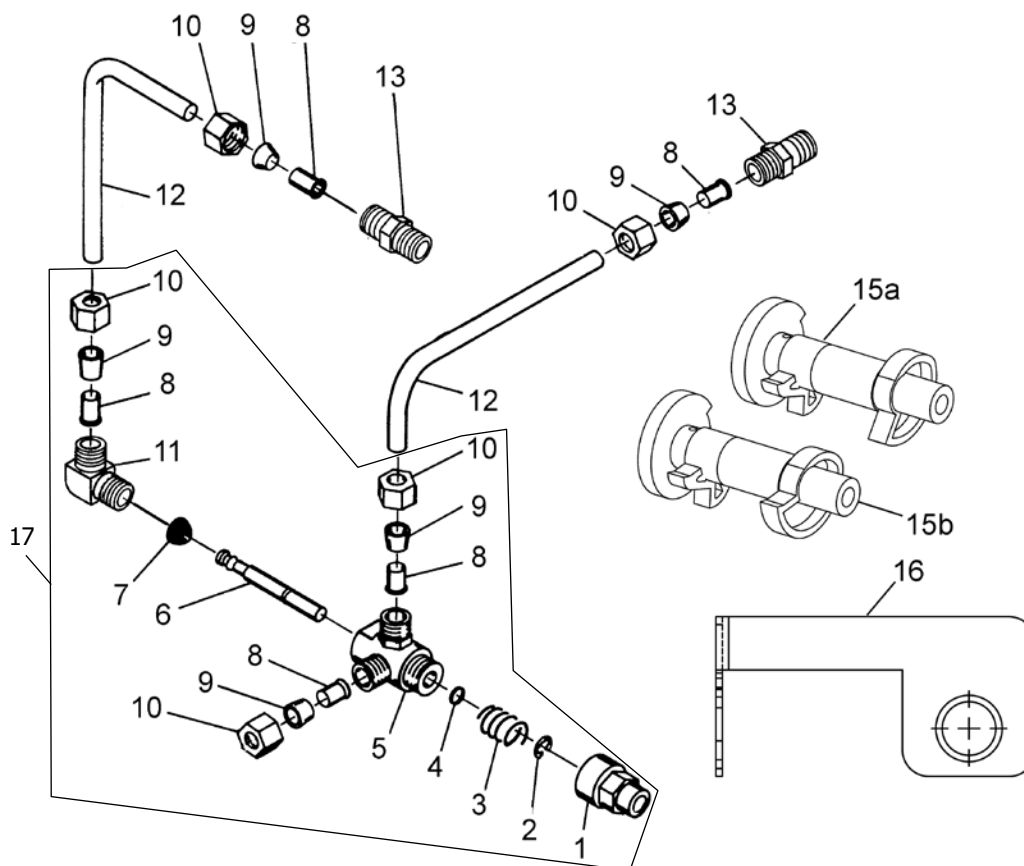


⚠ IMPORTANT: For valves equipped with electromechanical timers and stainless steel meters, refer to the Meter Dome and Union Orientation section.

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)

1600 SERVICE VALVE OPERATOR (NEW STYLE)



60150 Rev A

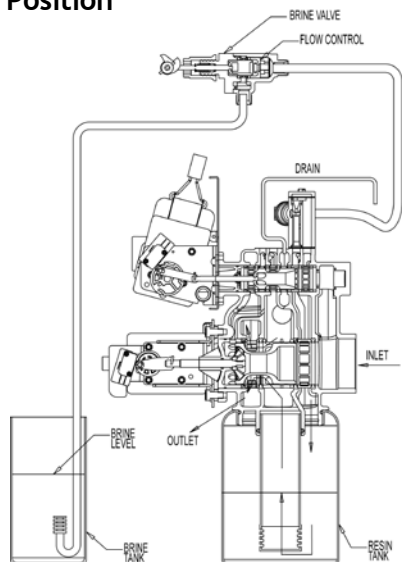
Item No.	QTY	Part No.	Description	Item No.	QTY	Part No.	Description
1	1	11749	Guide, Brine Valve Stem	14	2	15415	Fitting, Insert, 1/2-inch Tube
2	1	10250	Ring, Retaining	15a	1	12472	Cam Assembly, Tri-Stack, After RR
3	1	10249	Spring, Brine Valve	15b	1	15770	Cam Assembly, Special Tri-Stack After Brine 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				

TROUBLESHOOTING

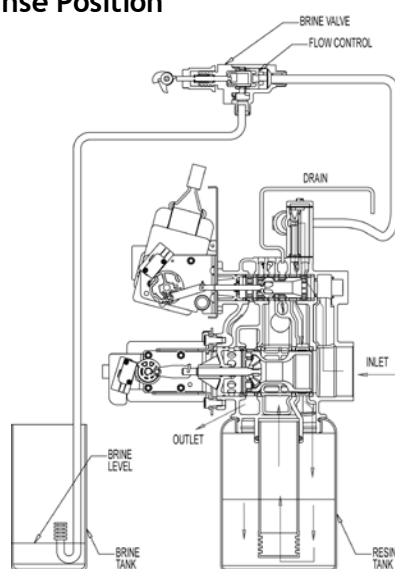
Problem	Cause	Correction
Water conditioner fails to regenerate.	Electrical service to unit has been interrupted	Assure permanent electrical service (check fuse, plug, pull chain, or switch)
	Timer is defective.	Replace timer.
	Power failure.	Reset time of day.
Hard water.	By-pass valve is open.	Close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

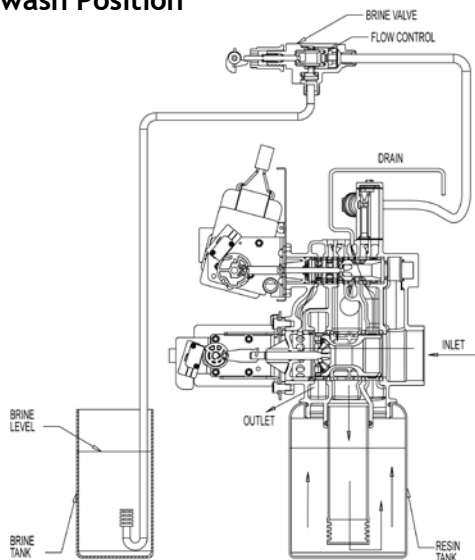
1 Service Position



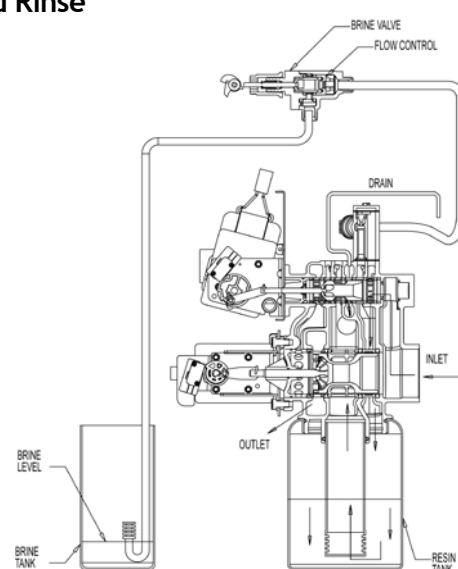
4 Slow Rinse Position



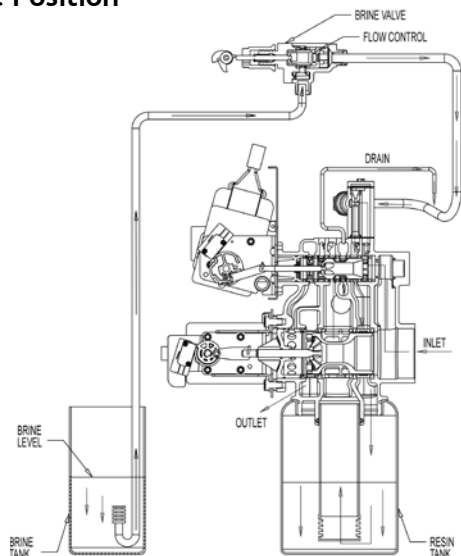
2 Backwash Position



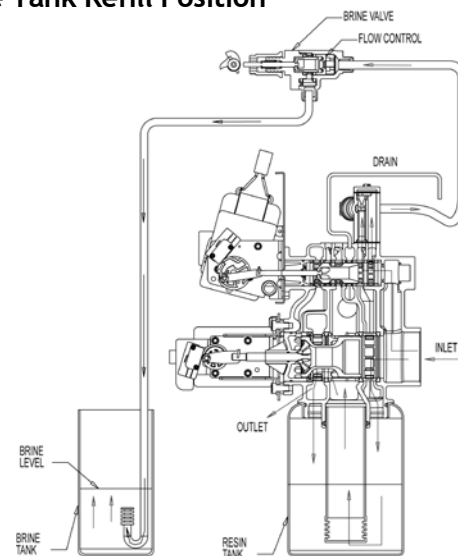
5 Rapid Rinse



3 Brine Position

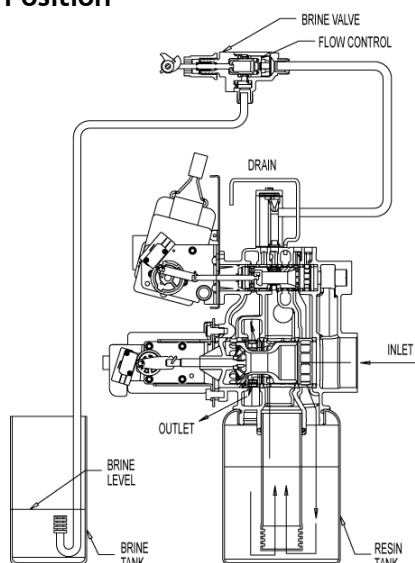


6 Brine Tank Refill Position

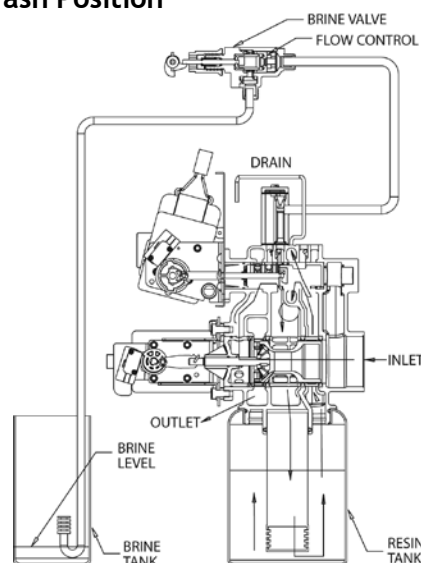


WATER CONDITIONER FLOW DIAGRAMS - UPFLOW

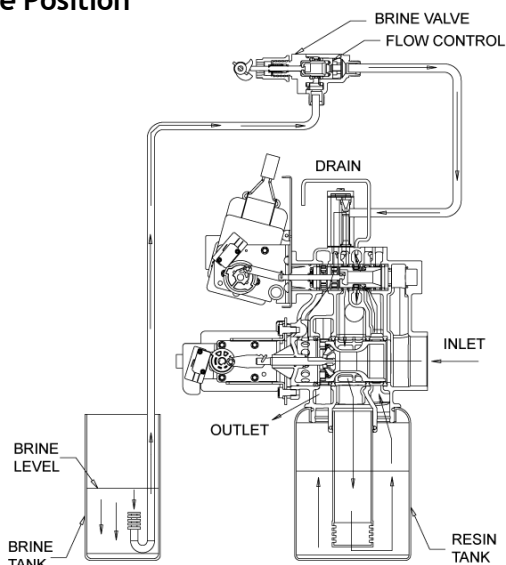
1 Service Position



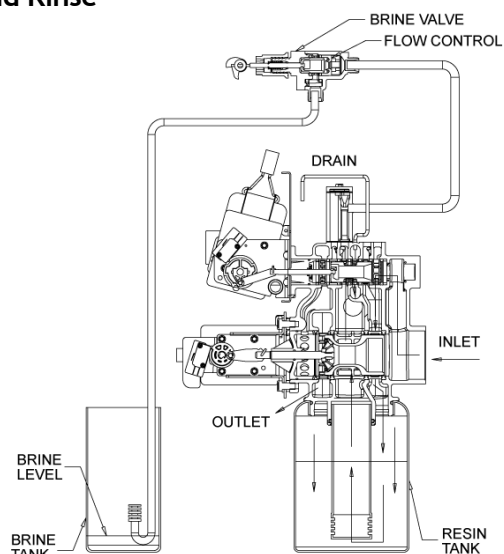
4 Back Wash Position



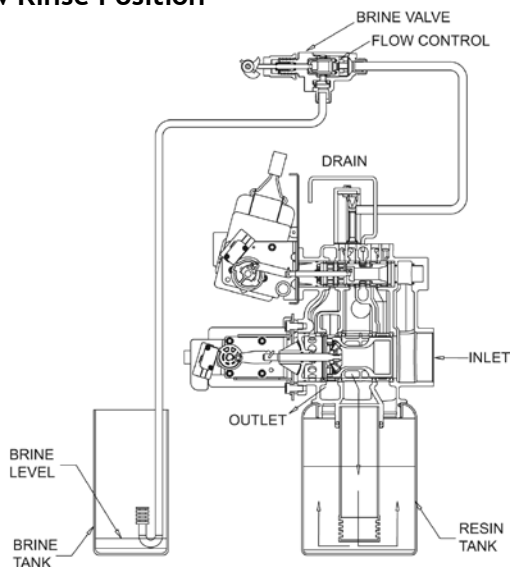
2 Brine Position



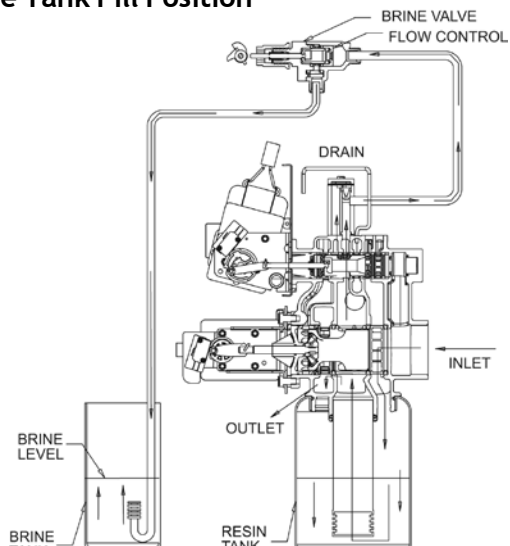
5 Rapid Rinse



3 Slow Rinse Position

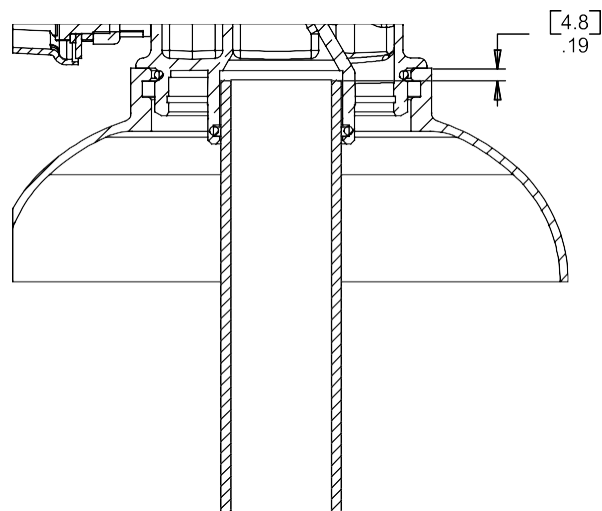
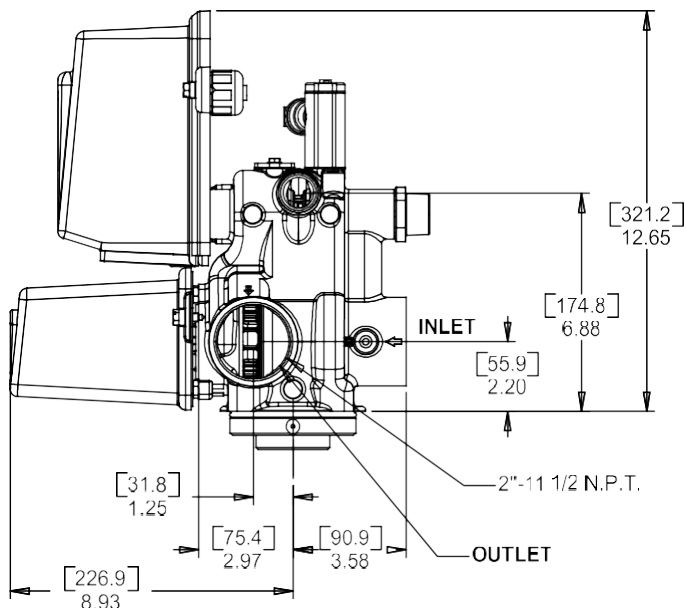
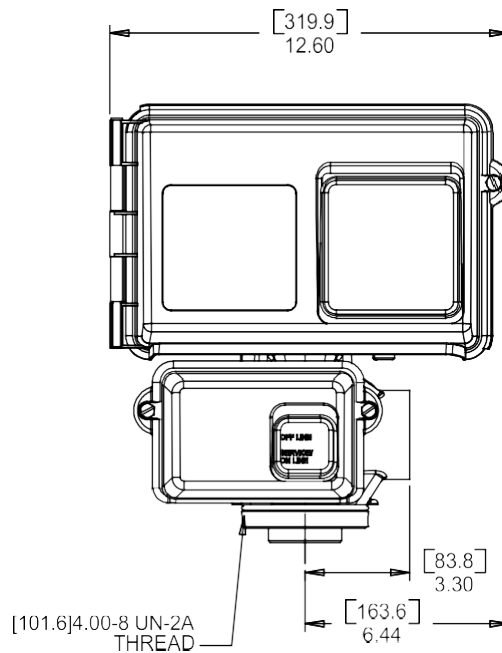
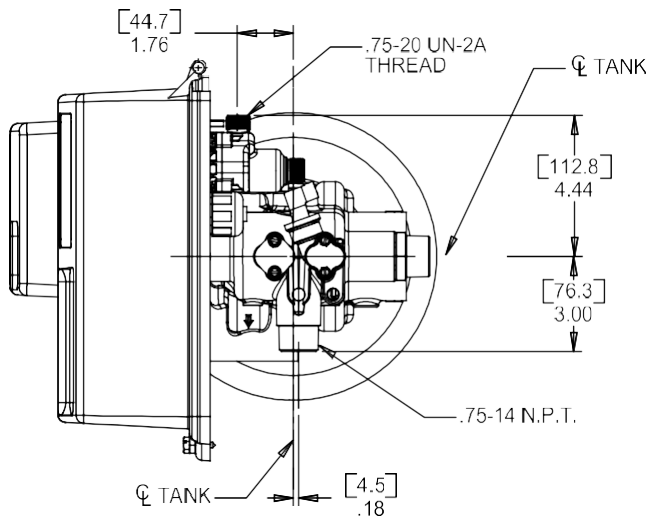


6 Brine Tank Fill Position



ENVIRONMENTAL BACKPLATE

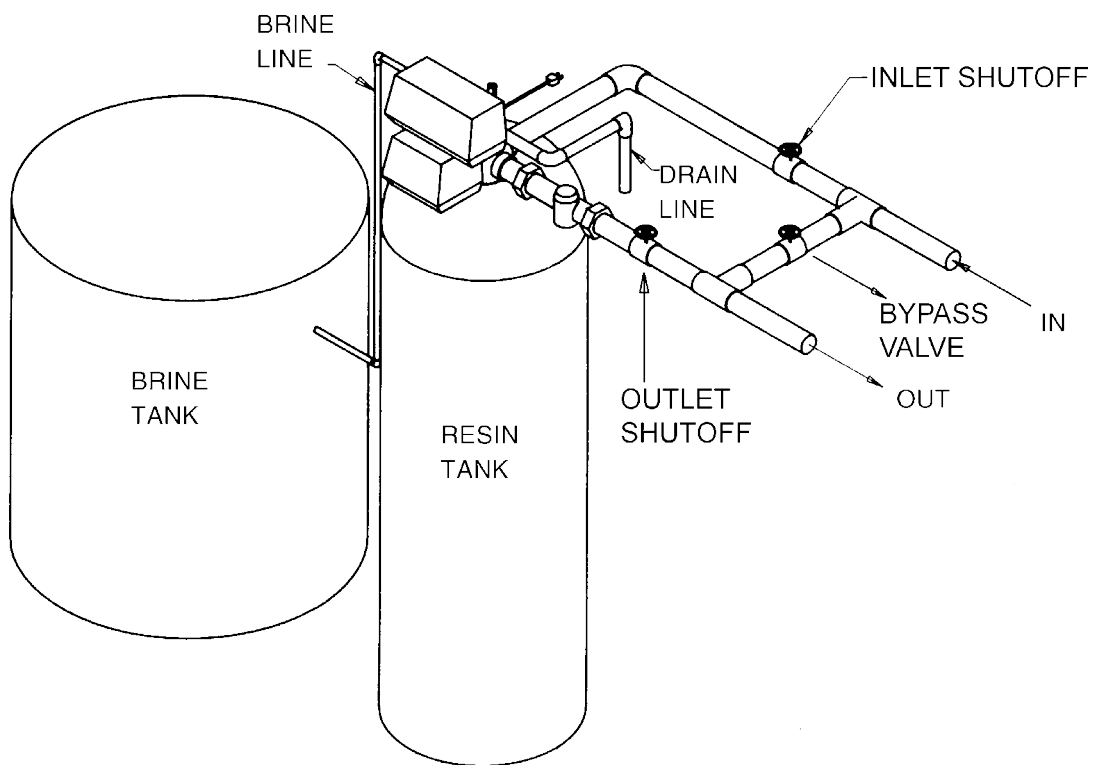
DIMENSIONS



61500-2900LNE Rev B

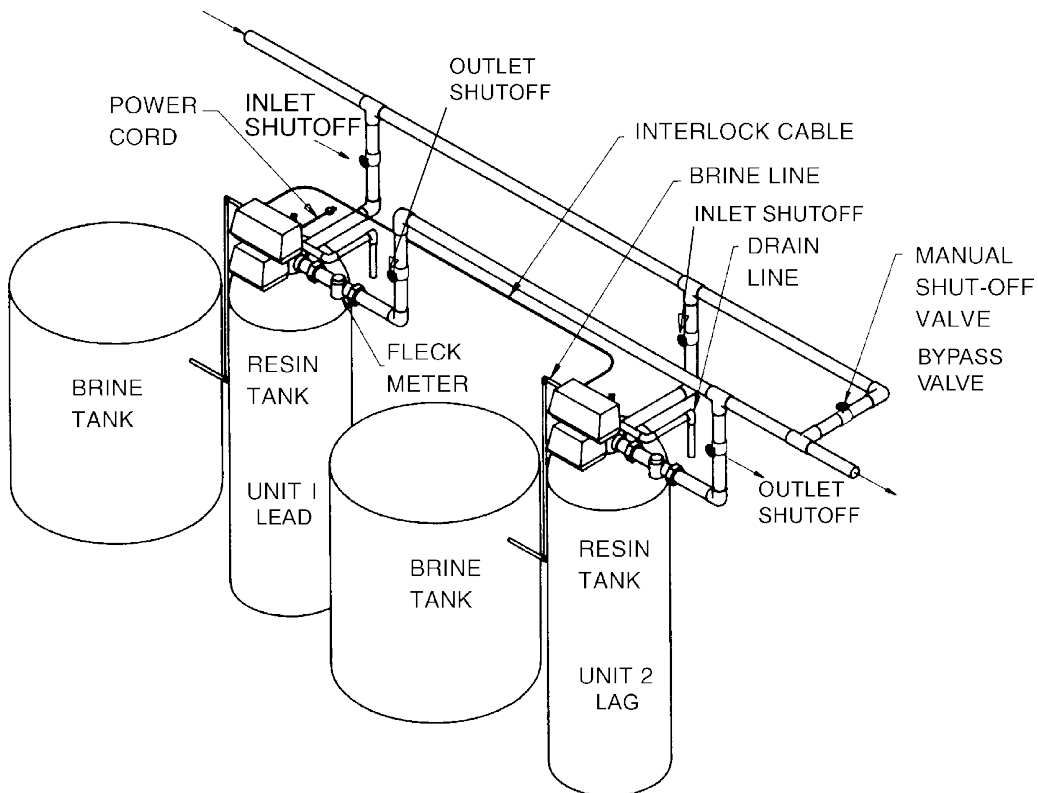
SYSTEM #4

Typical Single Tank Installation with Optional Meter



SYSTEM #5 INTERLOCK

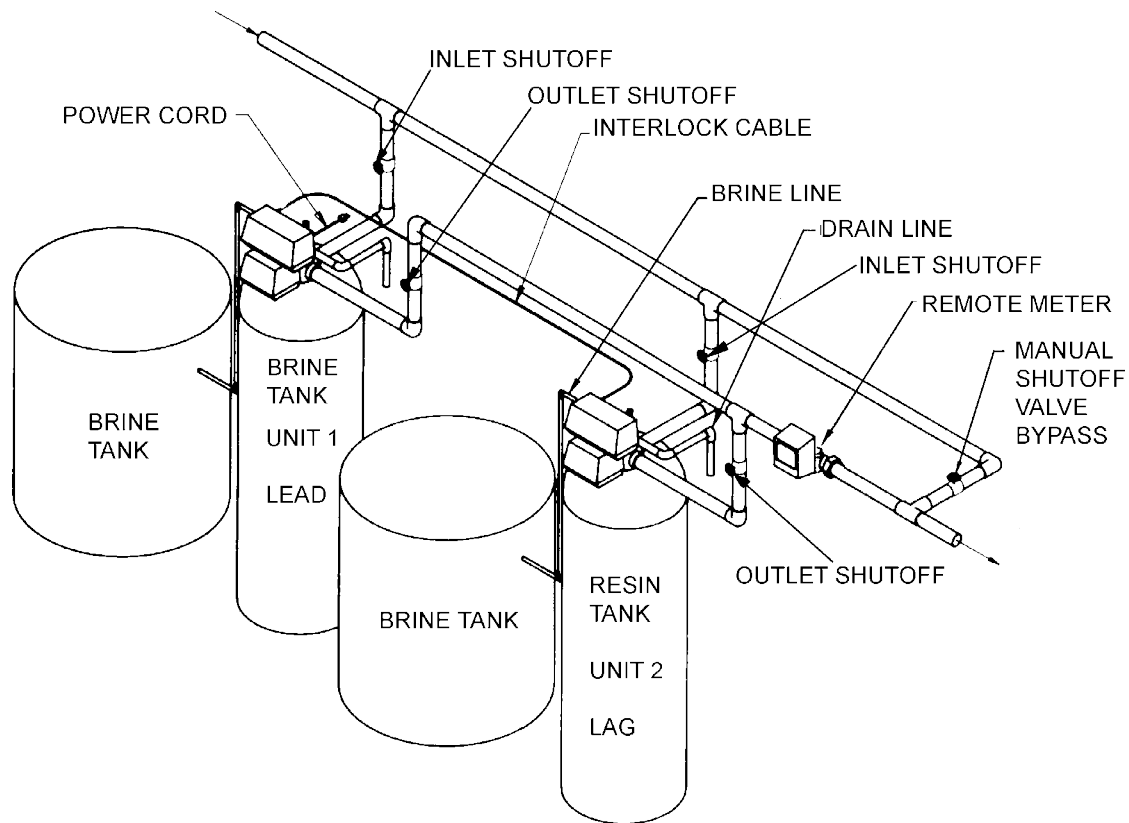
Typical Twin Tank Installation with Optional Meter Interlock and No Hard Water Bypass



SYSTEM #6 & #7

Twin Series Regeneration Installation with a Remote Meter

Twin Alternator Installation

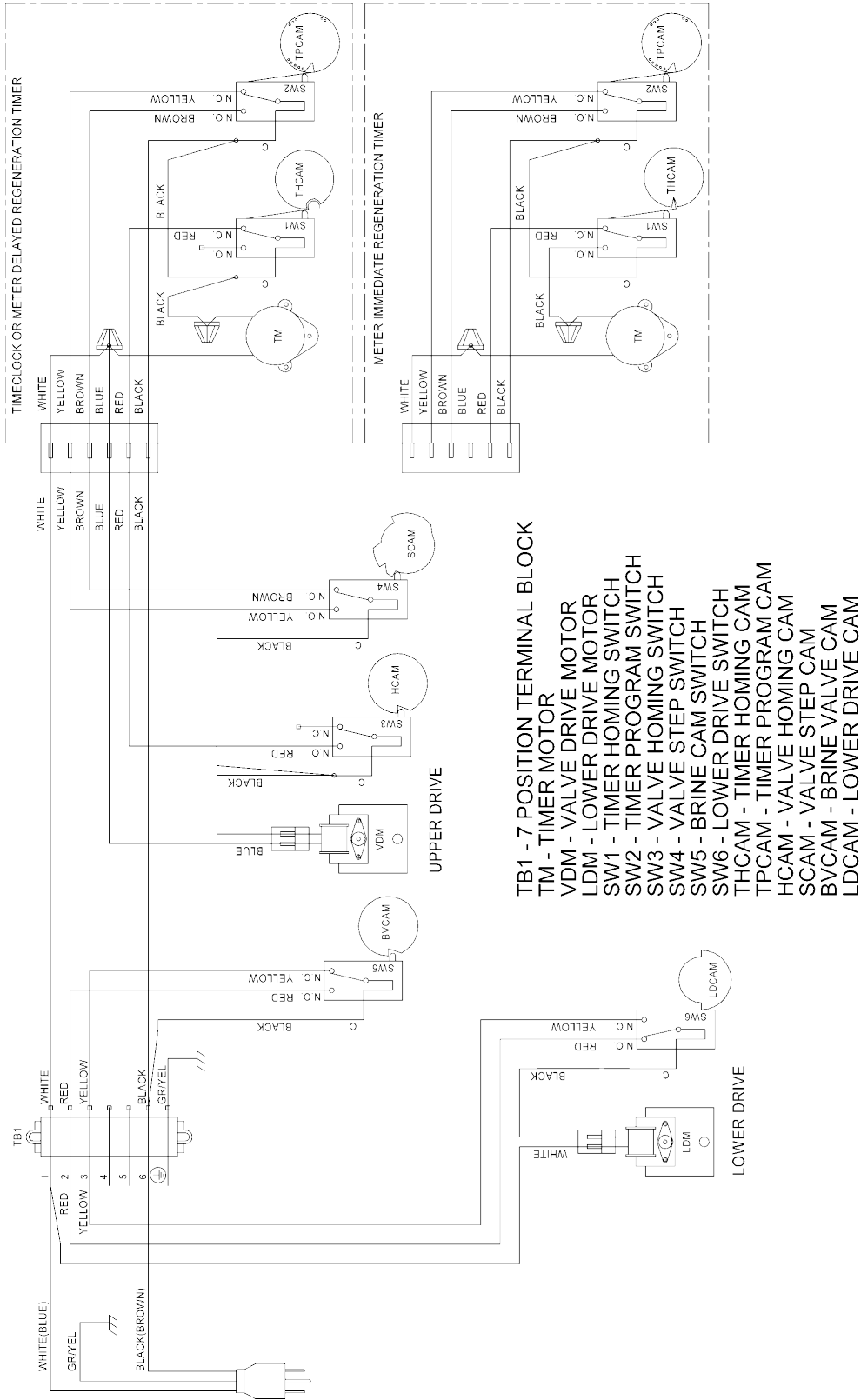


NOTE: On System 7, the power cord is on Unit 2.

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

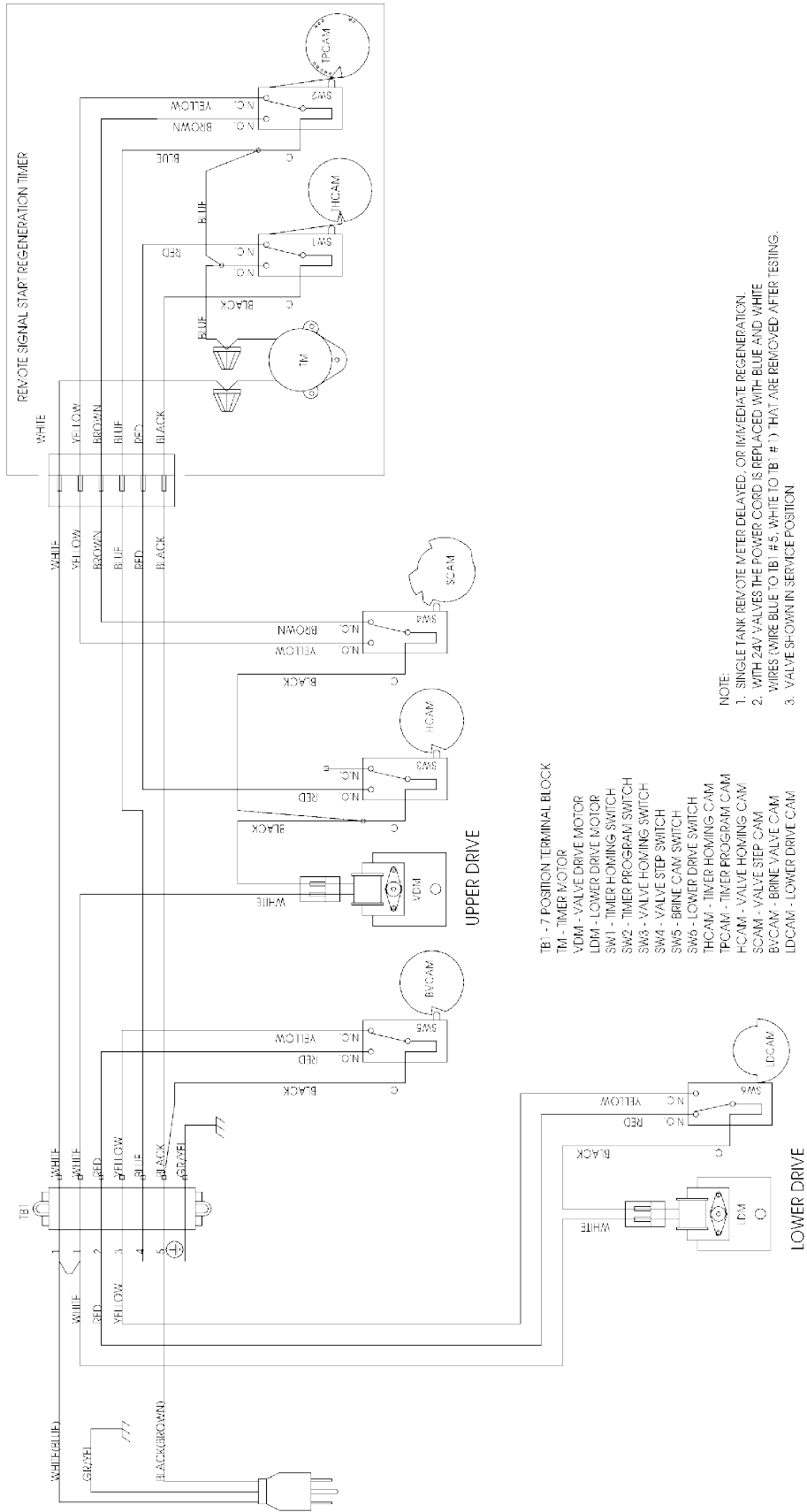
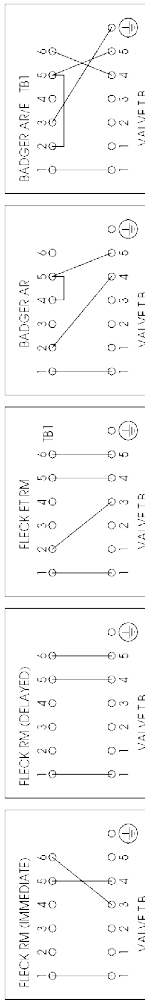


NOTE:
1. SINGLE TANK TIMECLOCK, METER DELAYED, OR METER IMMEDIATE REGENERATION.
2. VALVE SHOWN IN SERVICE.

SYSTEM #4 WIRING CONTINUED

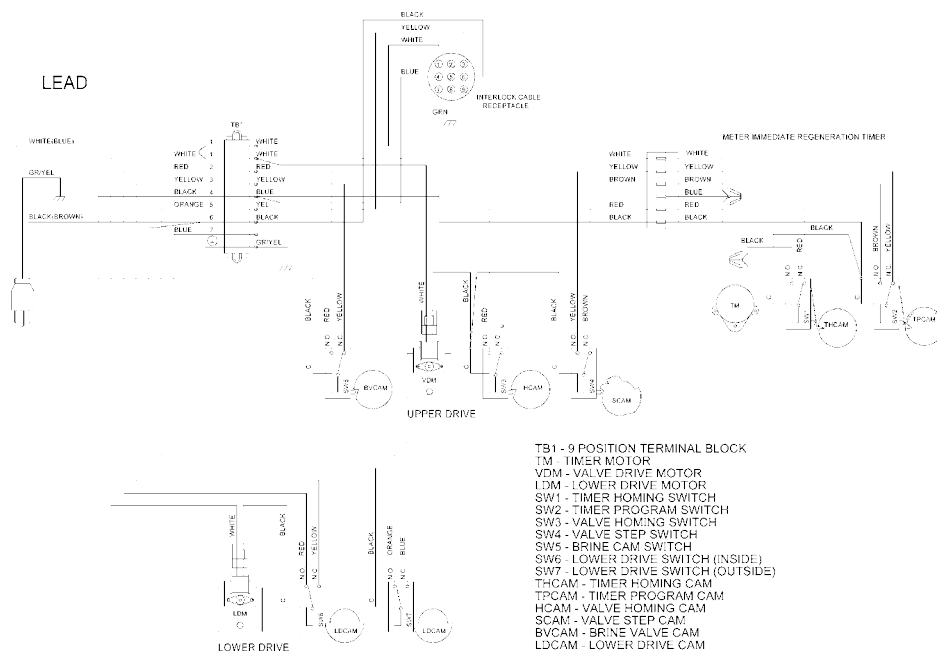
With Remote Starter Valve Wiring

REMOTE METER WIRING



SYSTEM #5 WIRING

Interlocked Regeneration Valve Wiring

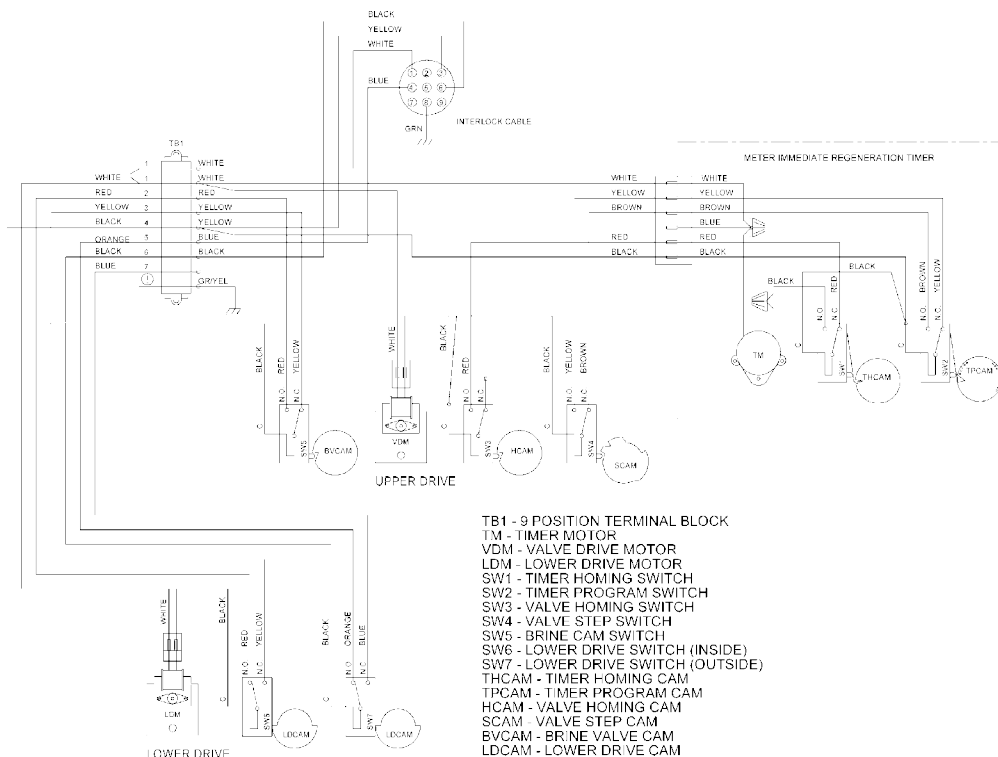


NOTE:

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



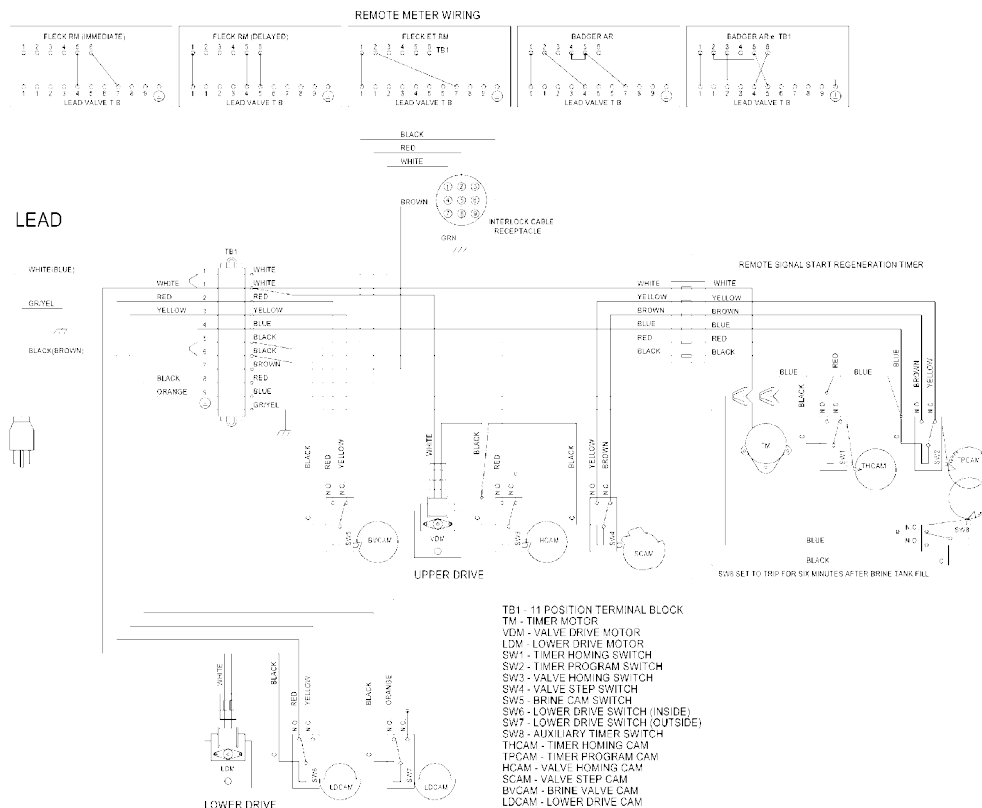
NOTE:

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

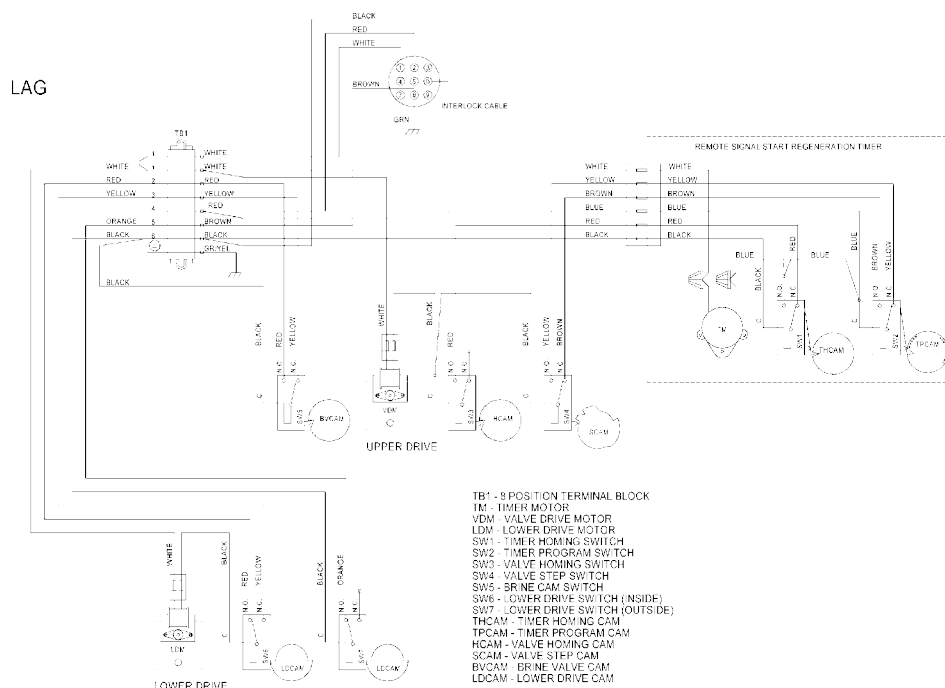
Series Regeneration Valve Wiring



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



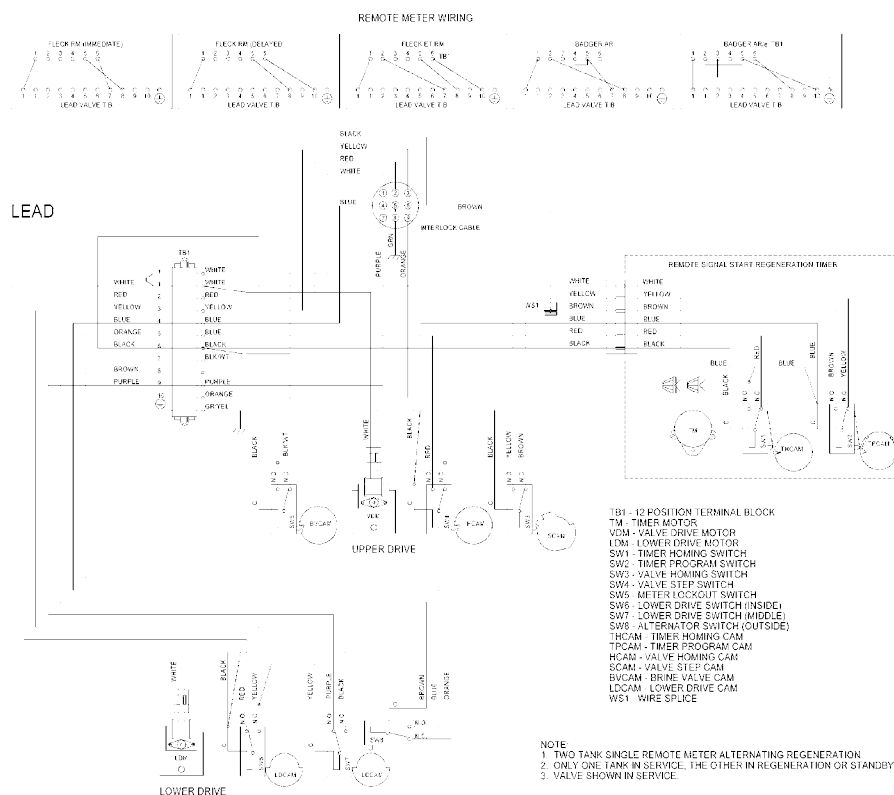
NOTE:

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

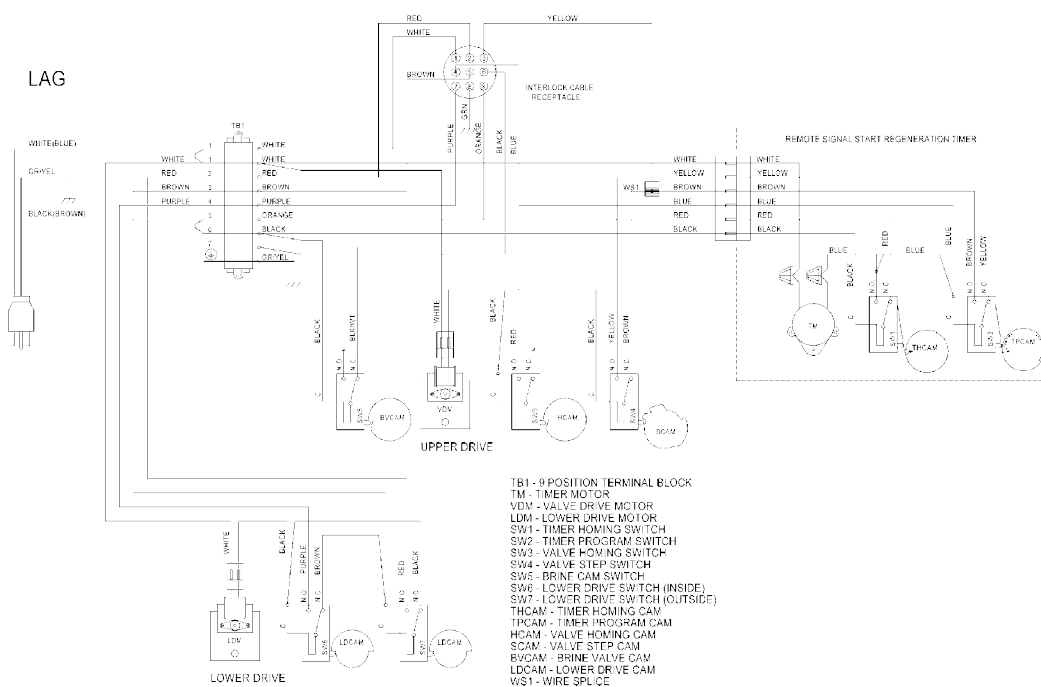
18686-02 Rev E

SYSTEM #7 WIRING

Alternating Regeneration Valve Wiring



18687-01 Rev E

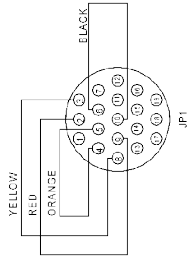


18687-02 Rev E

SYSTEM #7 WIRING CONTINUED

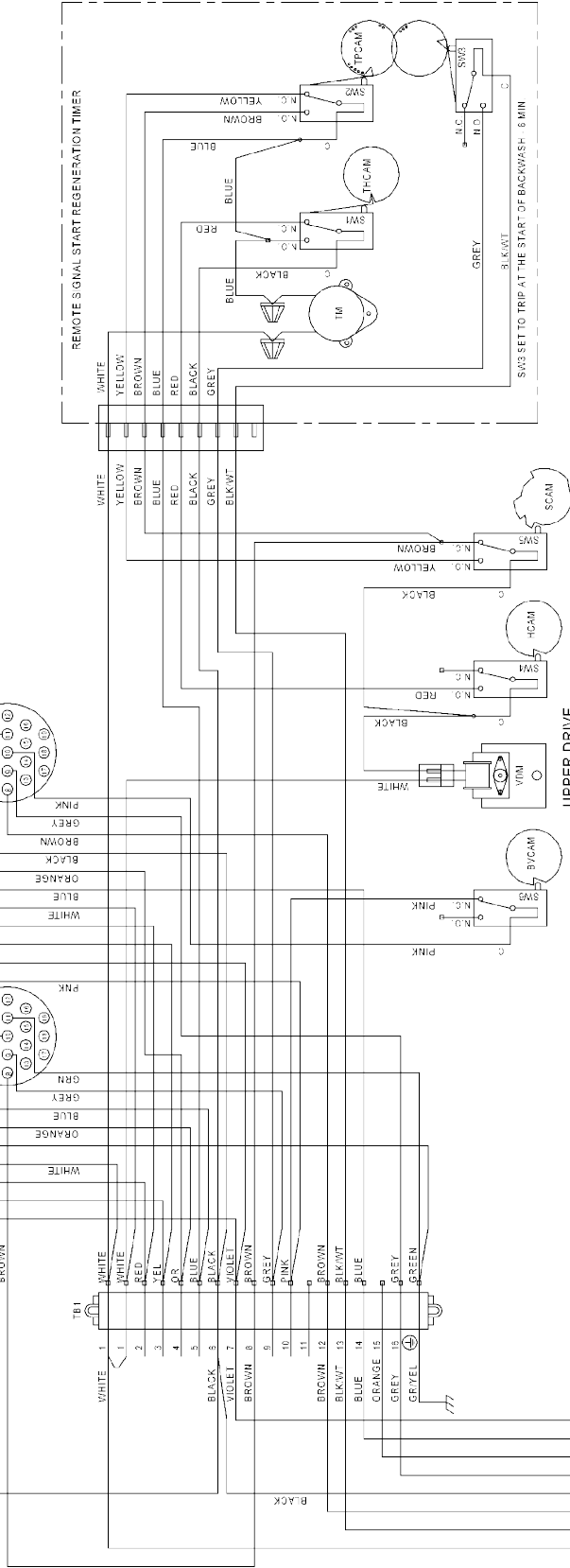
JUMPER PLUG WIRING

JUMPER PLUG PLACED ON LAST VALVE IN SYSTEM



INTERLOCK CABLE RECEPTACLE
(CONNECT TO INTERLOCK CABLE OF THE JUMPER PLUG)

INTERLOCK CABLE
(CONNECT TO INTERLOCK CABLE OF THE REMOTE METER)



T1 - 18 POSITION TERMINAL BLK

JP1 - JUMPER PLUG ASSEMBLY

TM - TIMER MOTOR

VDM - VALVE DRIVE MOTOR

LDM - LOWER DRIVE MOTOR

SW1 - TIMER HOMING SWITCH

SW2 - TIMER HOMING SWITCH

SW3 - TIMER AUX SWITCH

SW4 - VALVE HOMING SWITCH

SW5 - VALVE STEP SWITCH

SW6 - BRINE CAM SWITCH

SW7 - LOWER DRIVE SWITCH (INSIDE)

SW8 - LOWER DRIVE SWITCH (OUTSIDE)

SW9 - LOWER DRIVE SWITCH (OUTSIDE)

THCAM - TIMER HOMING CAM

HCCAM - VALVE HOMING CAM

SCAM - VALVE STEP CAM

BCAM - BRINE CAM

LDCAM - LOWER DRIVE CAM

- NOTE:
1. TWO TO FOUR TANK, SINGLE METER ALTERNATING REGENERATION
 2. 1 TO 3 TANKS IN SERVICE
 3. ONE TANK IN REGENERATION OR STANDBY
 4. LAST VALVE IN SYSTEM WIRING JUMPER PLUG ASSEMBLY
 5. CONNECT JUMPER PLUG TO INTERLOCK CABLE RECEPTACLE
 6. REMOTE METER EQUIPMENT REQUIRED FOR PROPER OPERATION
 7. INTERLOCK CABLE IS CONNECTED TO REMOTE METER
 8. VALVE SHOWN IN SERVICE POSITION

UPPER DRIVE

LOWER DRIVE

Water Treatment System Warranty

This quality FRAKCO water softener is designed and built to provide many years of satisfactory performance under normal use. FRAKCO, INC. pledges to the original owner that for sixty months, all non-wearable items of the above-described water treatment system proven to be defective due to workmanship and/or materials will be replaced or repaired. FRAKCO also pledges that the fiberglass media tank is covered under this warranty for ten years if owned by the original purchaser. Our pledge does not apply if the damage is caused by defective installation; water pressure in excess of eighty pounds per square inch; water temperature in excess of 110° F.; misuse; unauthorized alterations; freezing; accident; fire; neglect; or damage caused by shipping.

To obtain service under this warranty, notify FRAKCO, INC in writing of any defects in workmanship within thirty days of the appearance of such defects. Such written notice must include the date of purchase, the part number, and a description of the defect. Upon receiving such notice and determining that the defect is covered by this warranty, FRAKCO, INC. will replace or repair the defective item.

Replacement of a defective item will be at FRAKCO'S factory in Luverne, MN, and the purchaser must ship the defective item at its own expense to FRAKCO'S factory. Replacement items will be shipped by FRAKCO F.O.B. Luverne, Minnesota, with a shipping carton furnished. In the event certain models or colors of the replacement item are out of stock, FRAKCO, INC. may, after notifying the purchaser, furnish another model or color of the replacement item. The factory will not pay for service charges and will not perform any repair or service functions other than at its home office.

Please follow the enclosed instructions and local codes in installing your water treatment system. Failure to do so will void this warranty. Nothing in the warranty may be construed as involving the factory in the relationship between Dealer and Owner.

This warranty gives the purchaser specific legal rights. The purchase may also have implied warranty rights. In the event of a problem with warranty service or performance, the purchaser may be able to go to a Small Claims Court, a State Court, or a Federal District Court. This warranty complies with the 1975 Federal Warranty Law.

Model No. _____ Serial No. _____

Date Installed _____ Dealer _____

Address _____

*MANUFACTURED BY: FRAKCO, INC.
500 N BLUE MOUND AVE
LUVERNE, MINNESOTA 56156
WWW.FRAKCO.COM*