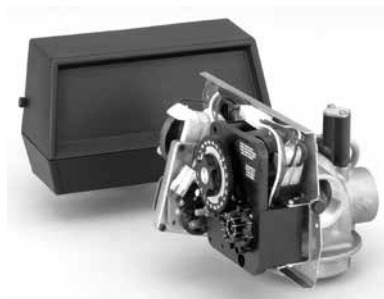




## FLECK 2850S

### SERVICE MANUAL



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## 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. 1-1/2 inch Std Range (625 - 10,625 gallon setting)
- F. 1-1/2 inch Ext Range (3,125 - 53,125 gallon setting)
- G. 2-inch Std Range (1,250 - 21,250 gallon setting)
- H. 2-inch Ext Range (6,250 - 106,250 gallon setting)
- I. 3-inch Std Range (3,750 - 63,750 gallon setting)
- J. 3-inch Ext Range (18,750 - 318,750 gallon setting)
- K. Electronic \_\_\_\_ Pulse Count \_\_\_\_ Meter Size \_\_\_\_\_

### 4. System Type:

- A. System #4: 1 Tank, 1 Meter, Immediate, or Delayed Regeneration
- B. System #4: Time Clock
- C. System #4: Twin Tank
- D. System #5: 2-5 Tanks, Interlock Mechanical  
2-4 Tanks, Interlock Electronic  
Meter per unit for Mechanical and Electronic
- E. System #6: 2-5 Tanks, 1 Meter, Series Regeneration, Mechanical  
2-4 Tanks, 1 Meter, Series Regeneration, Electronic
- F. System #7: 2-5 Tanks, 1 Meter, Alternating  
Regeneration, Mechanical  
2 Tanks only, 1 Meter, Alternating  
Regeneration, Electronic
- G. System #9: Electronic Only, 2-4 Tanks, Meter per Valve, Alternating
- H. System #14: Electronic Only, 2-4 Tanks, Meter per Valve.  
Brings units on and offline based on flow.

### 5. 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

### 6. Drain Line Flow Control:                      gpm

### 7. Brine Line Flow Controller:                      gpm

### 8. Injector Size#:

### 9. Piston Type:

- A. Hard Water Bypass
- B. No Hard Water Bypass

## INSTALLATION

### Water Pressure

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

### Electrical Facilities

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

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

### Existing Plumbing

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

### By-Pass Valves

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

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

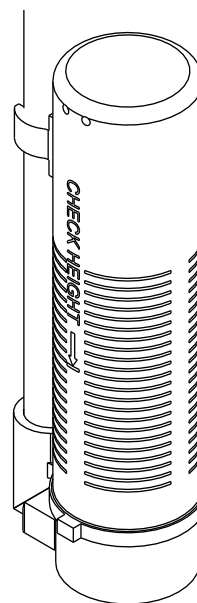
### Installation Instructions

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

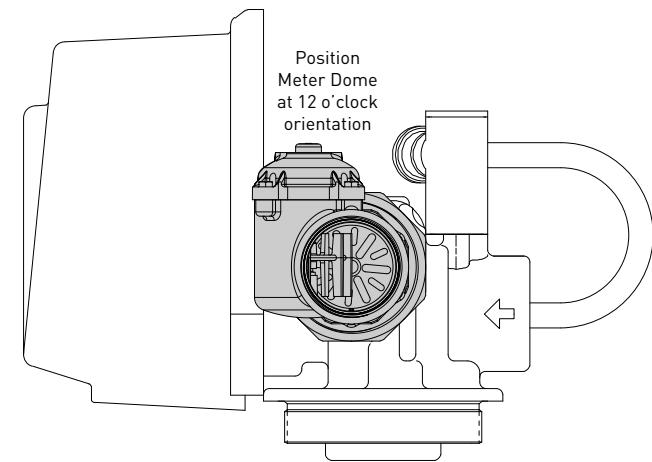
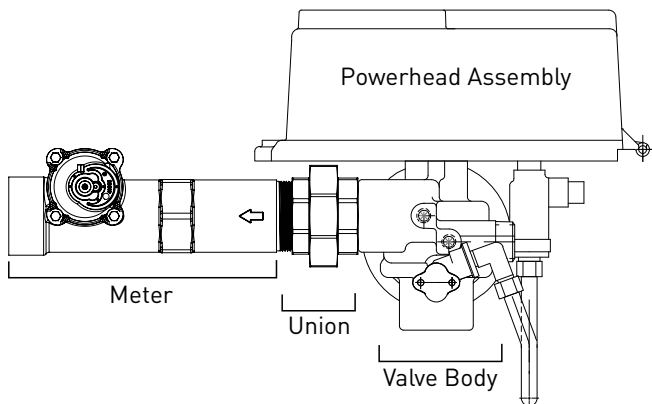
## INSTALLATION *CONTINUED*

### 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

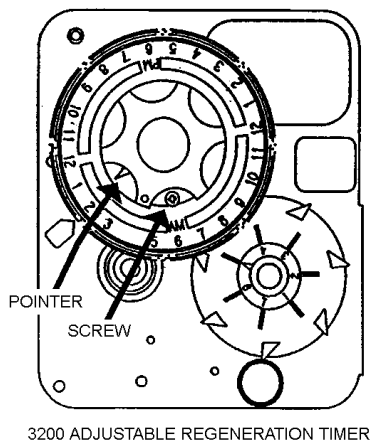
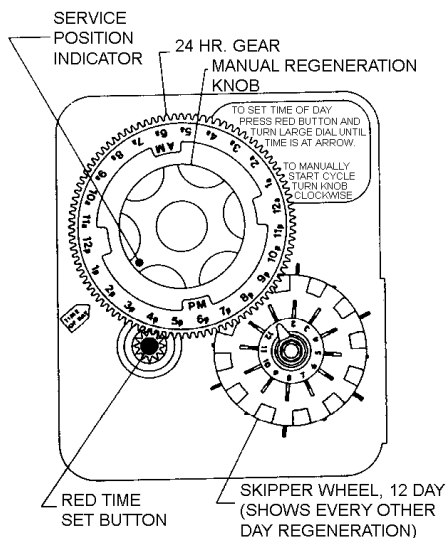
1. Turn the manual regeneration knob clockwise.
2. This slight movement of the manual regeneration knob engages the program wheel and starts the regeneration program.
3. The black center knob will make one revolution in the following approximately three hours and stop in the position shown in the drawing.
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.

## STARTUP INSTRUCTIONS *CONTINUED*

- In any event, conditioned water may be drawn after rinse water stops flowing from the water conditioner drain line.

### How to Adjust Regeneration Time

- Disconnect the power source.
- 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.
- Loosen each screw slightly to release the pressure on the time plate from the 24-hour gear.
- Locate the regeneration time pointer on the inside of the 24 hour dial in the cut out.
- Turn the time plate so the desired regeneration time aligns next to the raised arrow.
- Push the red button in and rotate the 24 hour dial. Tighten each of the three screws.
- Push the red button and locate the pointer one more time to ensure the desired regeneration time is correct.
- 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 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 4).

**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

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

### How To Manually Regenerate Your Water Conditioner At Any Time

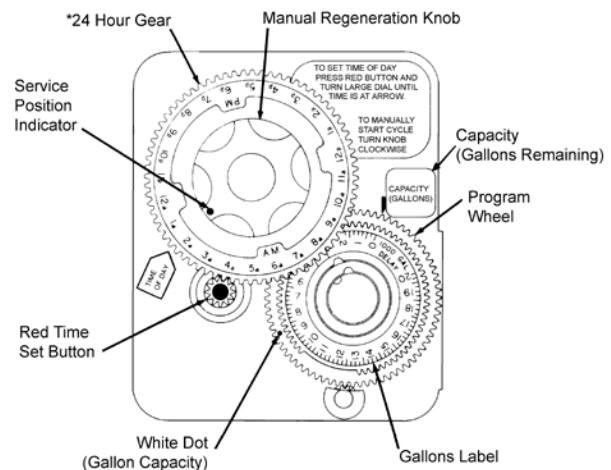
- Turn the manual regeneration knob clockwise.
- This slight movement of the manual regeneration knob engages the program wheel and starts the regeneration program.
- The black center knob will make one revolution in the following approximately three hours and stop in the position shown in the drawing.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

### Immediate Regeneration Timers

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

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

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



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

61502-3200 Rev A

Figure 3

## 3200, 3210, 3220, 3230 REGENERATION CYCLE SETTING PROCEDURE

### How To Set The Regeneration Cycle Program

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

### 3200 Series Timers (Figure 4)

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

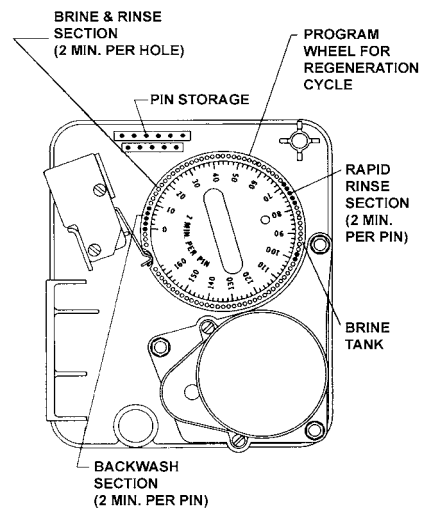
1. The group of holes between the last pin in the backwash section and the second group of pins determines the length of time that your unit will brine and rinse (2 min. per hole).
2. To change the length of brine and rinse time, move the rapid rinse group of pins to give more or fewer holes in the brine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

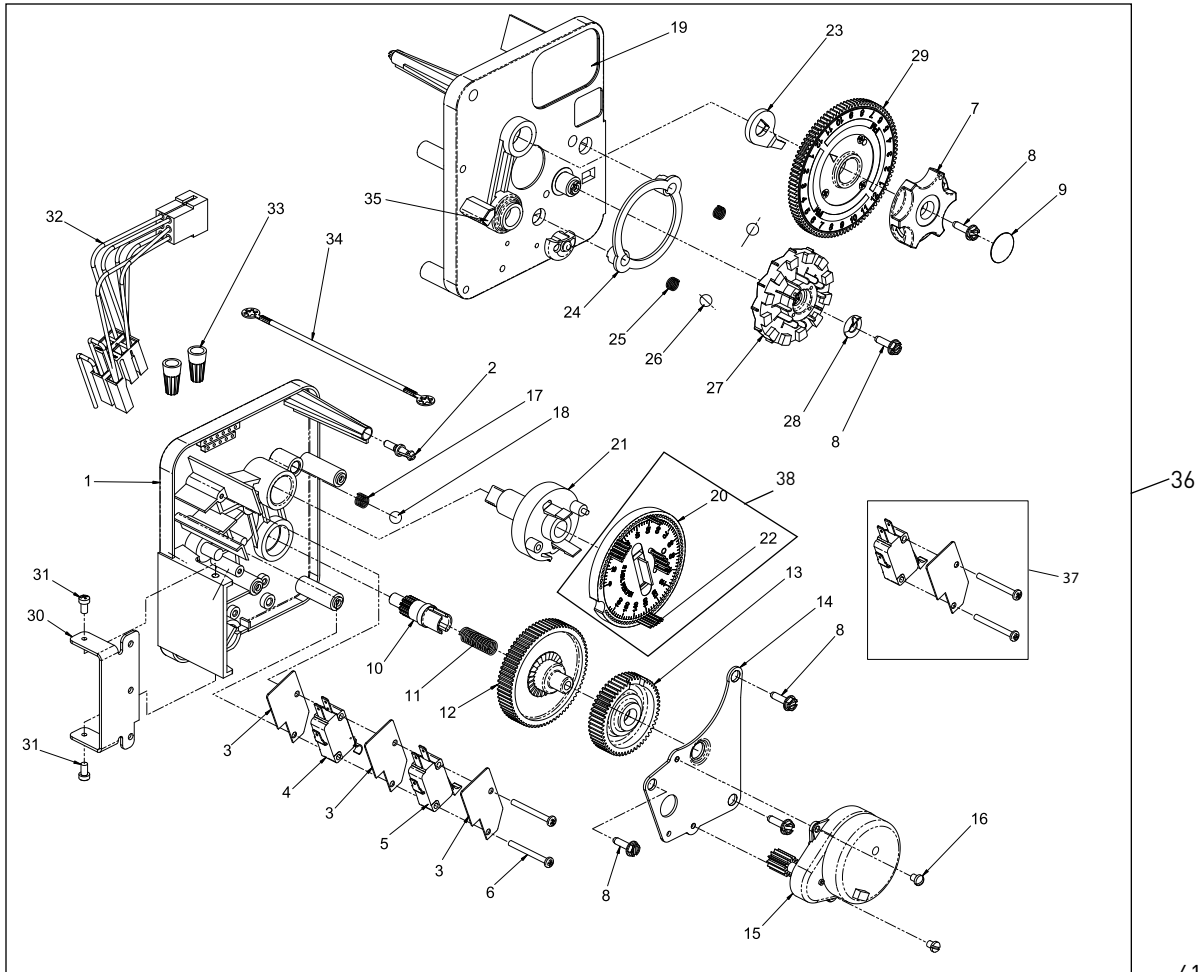


61502-3210 Rev A

Figure 4

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# 3200 TIME CLOCK TIMER ASSEMBLY



615023200 Rev A



# 3200 TIME CLOCK TIMER ASSEMBLY

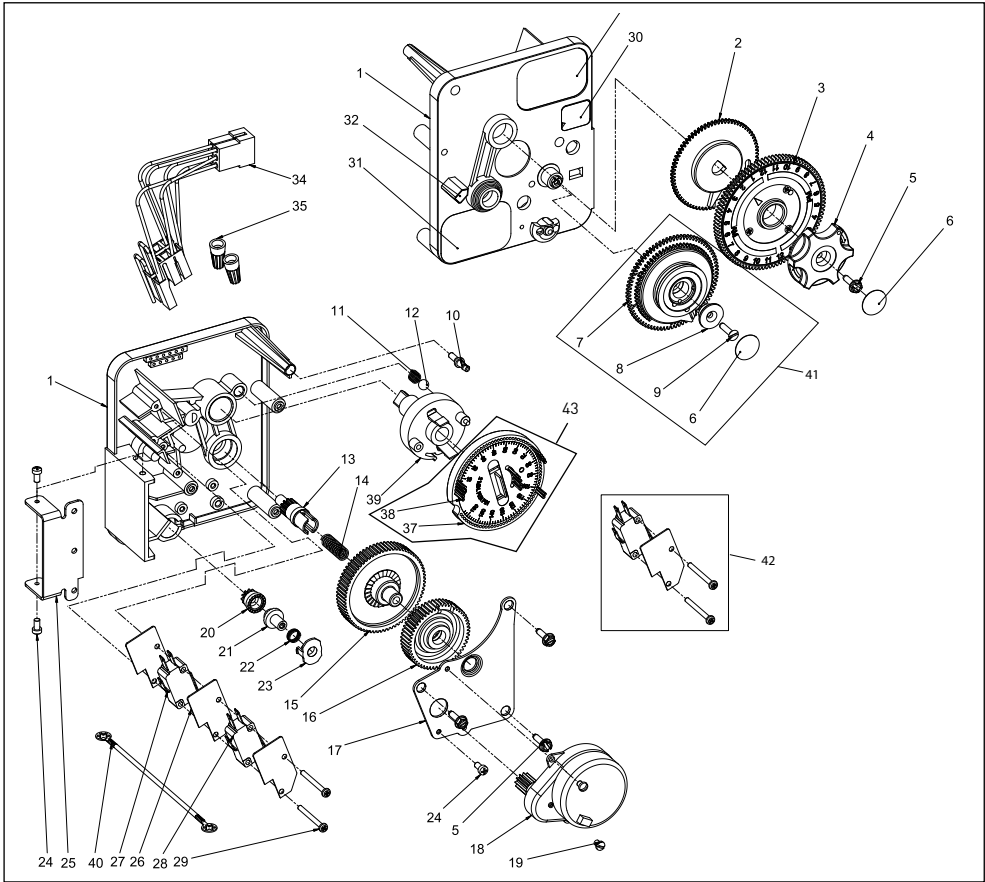
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| Item No. | QTY | Part No. | Description                          |
|----------|-----|----------|--------------------------------------|
| 1        | 1   | 13870    | Housing, Timer, 3200                 |
| 2        | 1   | 14265    | Clip, Spring                         |
| 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                  |

| Item No. | QTY | Part No. | Description   |
|----------|-----|----------|---|
| 24       | 1   | 13864    | Ring, Skipper Wheel                                   |
| 25       | 2   | 13311    | Spring, Detent, Timer                                 |
| 26       | 2   | 13300    | Ball, 1/4-inch, SS                                    |
| 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     |
|          |     | 61420-06 | Program Wheel, Gear Assy, Soft Immed, 2 Min Per Pin   |
|          |     | 61420-42 | Program Wheel, Gear Assy, Filter Immed, 2 Min Per Pin |

\*Call your distributor for Part Number

# 3210 METER DELAYED TIMER ASSEMBLY



40

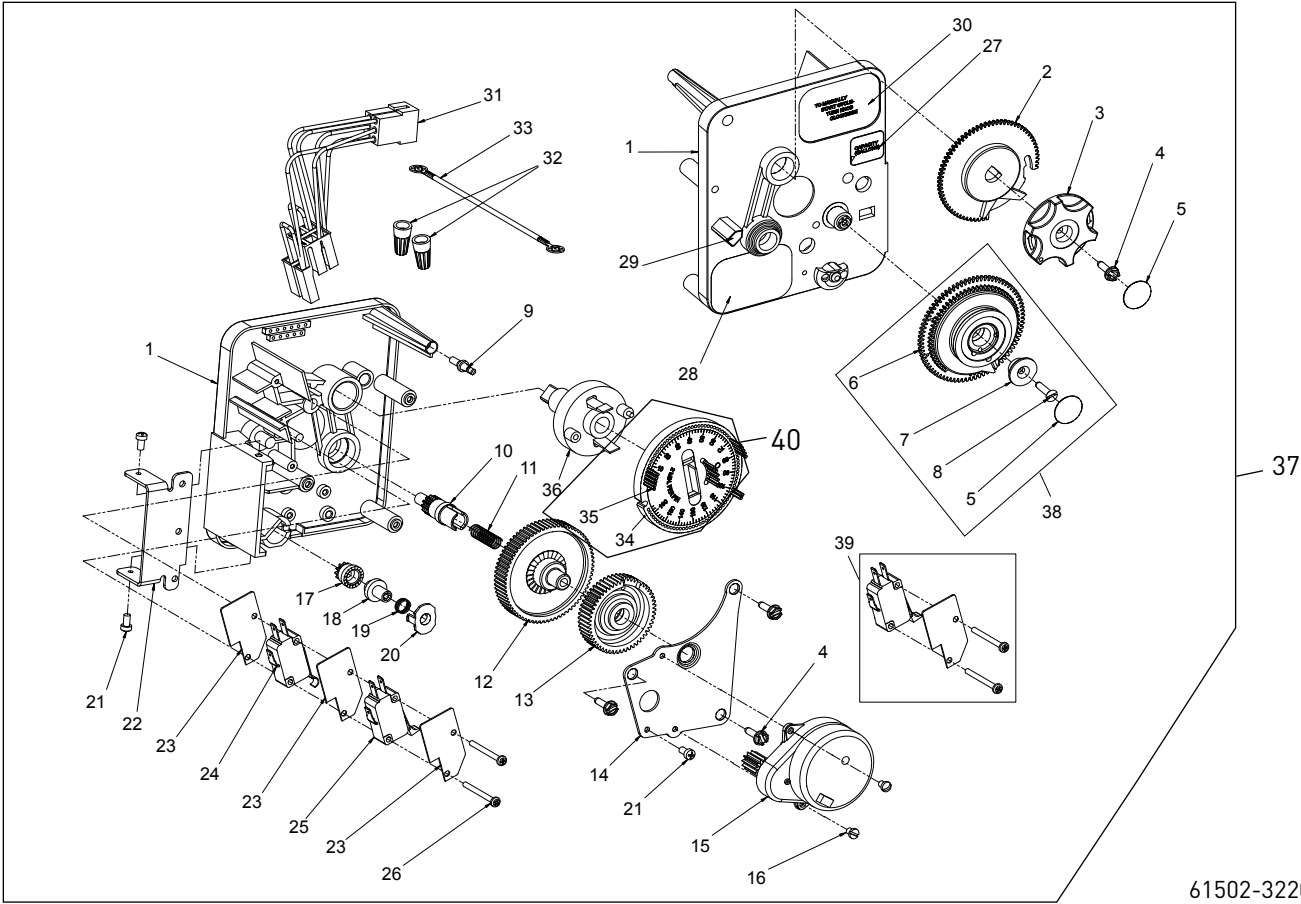
61502-3210 Rev A

# 3210 METER DELAYED TIMER ASSEMBLY

*CONTINUED*

| Item No. | QTY | Part No. | Description                      | Item No.                               | QTY | Part No. | Description   |
|----------|-----|----------|----------------------------------|--|-----|----------|---|
| 1        | 1   | 13870    | Housing, Timer, 3200             | 33                                     | 1   | 14045    | Label, Instruction  |
| 2        | 1   | 13802    | Gear, Cycle Actuator             | 34                                     | 1   | 13902    | Harness, 3200   |
| 3        | 1   | 40096-02 | Dial 2 AM Regen Assy, Black      | 35                                     | 2   | 40422    | Nut, Wire, Tan  |
| 4        | 1   | 13886    | Knob, 3200                       | 36                                     | 1   | 15354-01 | Wire, Ground, 4 inches  |
| 5        | 4   | 13296    | Screw, Hex Wsh, 6-20 x 1/2       | 37                                     | 1   | 19210    | Program Wheel Assy  |
| 6        | 2   | 11999    | Label, Button                    | 38                                     | 17  | 41754    | Pin, Spring, 1/16 x 5/8 SS, Timer                             |
| 7        | 1   | 13803    | Gear, Program Drive Wheel        | 39                                     | 1   | 13911    | Gear, Main Drive, Timer                                       |
| 8        | 1   | 13806    | Retainer, Program Wheel          | 40                                     | 1   | *        | Complete 3210 Meter Delayed Timer Assembly                    |
| 9        | 1   | 13748    | Screw, Flat Head St, 6-20 x 1/2  | 41                                     |     | 60405-10 | Program Wheel, w/3/4-inch STD Label 0-2,100 gal               |
| 10       | 1   | 14265    | Clip, Spring                     |  |     | 60405-20 | Program Wheel, w/3/4-inch EXT Label 0-10,000 gal              |
| 11       | 1   | 15424    | Spring, Detent, Timer            |  |     | 60405-11 | Program Wheel, w/3/4-inch STD Metric Label 0-8 m <sup>3</sup> |
| 12       | 1   | 15066    | Ball, 1/4-inch Delrin            |  |     | 60405-21 | Program Wheel, w/3/4-inch EXT Range 0-40 m <sup>3</sup>       |
| 13       | 1   | 13018    | Pinion, Idler                    |  |     | 60405-70 | Program Wheel, w/1-1/2 inch EXT Range Label, 0-50,000         |
| 14       | 1   | 13312    | Spring, Idler Shaft              | 42                                     |     | 60320-02 | Switch Kit, 3200/9000 Timer Auxiliary, Optional               |
| 15       | 1   | 13017    | Gear, Idler                      | 43                                     |     | 61420-03 | Program Wheel, Gear Assy, Filter 2 Min Per Pin                |
| 16       | 1   | 13164    | Gear, Drive                      |  |     | 61420-04 | Program Wheel, Gear Assy, Softener, 2 Min Per Pin             |
| 17       | 1   | 13887    | Plate, Motor Mounting            |  |     | 61420-06 | Program Wheel, Gear Assy, Soft Immed, 2 Min Per Pin           |
| 18       | 1   | 18743-1  | Motor, 120V, 60Hz, 1/30 RPM      |  |     | 61420-42 | Program Wheel, Gear Assy, Filter Immed, 2 Min Per Pin         |
|          |     | 18752-1  | Motor, 100V, 50Hz, 1/30 RPM      | *Call your distributor for Part Number |     |          |   |
|          |     | 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 |  |     |          |   |
| 30       | 1   | 14198    | Label, Indicator                 |  |     |          |   |
| 31       | 1   | 15465    | Label, Caution                   |  |     |          |   |
| 32       | 1   | 14007    | Label, Time of Day               |  |     |          |   |

# 3220 METER IMMEDIATE TIMER ASSEMBLY



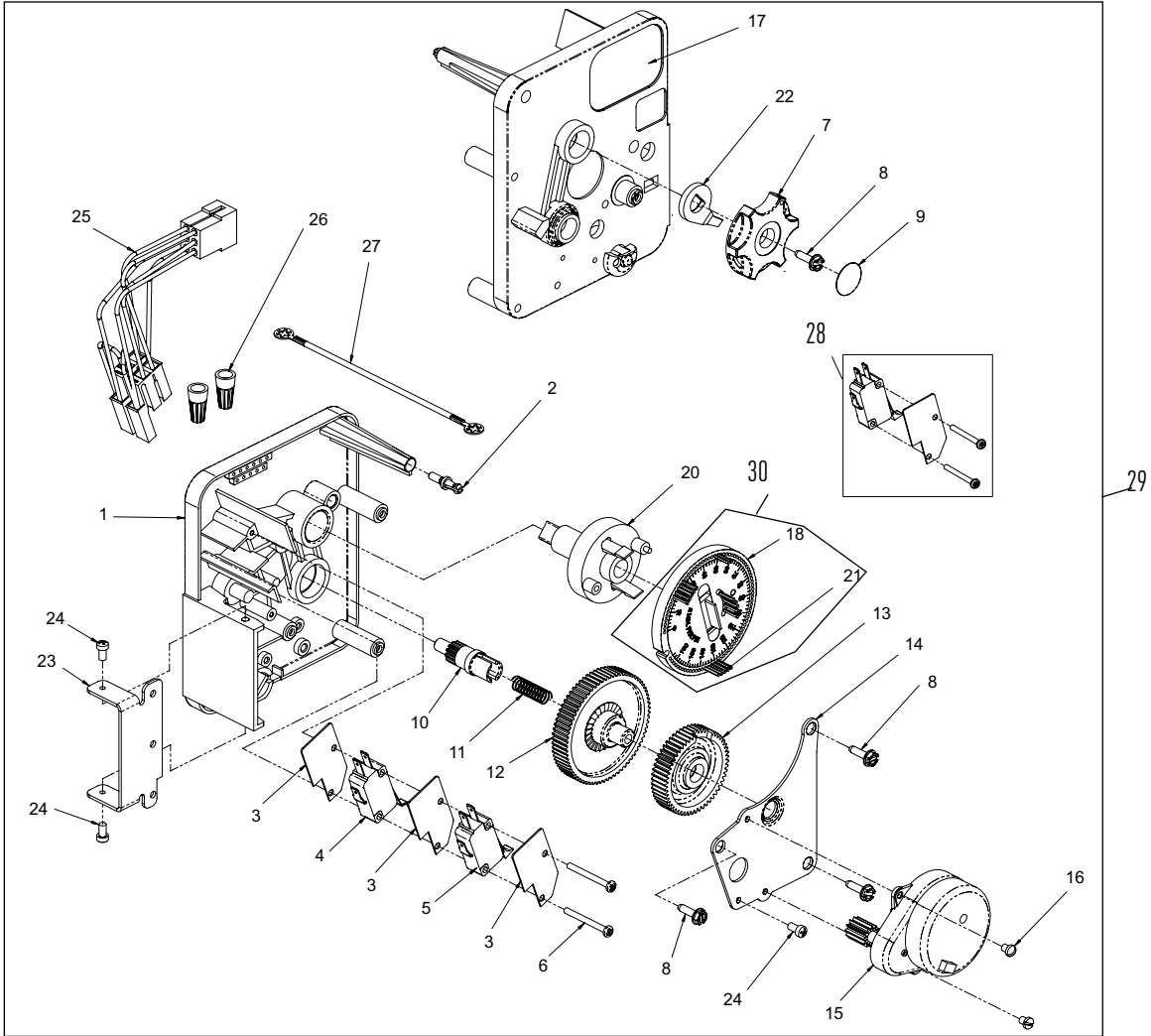
61502-3220 Rev B

# 3220 METER IMMEDIATE TIMER

## ASSEMBLY *CONTINUED*

| Item No. | QTY | Part No. | Description                                       | Item No.                               | QTY | Part No. | Description  |
|----------|-----|----------|---|--|-----|----------|--|
| 1        | 1   | 13870    | Housing, Timer                                    | 36                                     | 1   | 15055    | Gear, Main Drive   |
| 2        | 1   | 15431    | Gear, Cycle Actuator,<br>System #5                | 37                                     | 1   | *        | Complete 3220 Meter<br>Immediate Timer Assy                      |
| 3        | 1   | 13886    | Knob, 3200  | 38                                     |     | 60405-10 | Program Wheel, w/3/4-inch<br>STD Label 0-2,100 gal               |
| 4        | 4   | 13296    | Screw, Hex Wsh, 6-20 x 1/2                        |  |     | 60405-20 | Program Wheel, w/3/4-inch<br>EXT Label 0-10,000 gal              |
| 5        | 2   | 11999    | Label, Button                                     |  |     | 60405-11 | Program Wheel, w/3/4-inch<br>STD Metric Label 0-8 m <sup>3</sup> |
| 6        | 1   | 13807    | Gear, Program Drive Wheel                         |  |     | 60405-21 | Program Wheel, w/3/4-inch<br>EXT Range 0-40 m <sup>3</sup>       |
| 7        | 1   | 13806    | Retainer, Program Wheel                           |  |     | 60405-70 | Program Wheel, w/1-1/2 inch<br>EXT Range Label, 0-50,000         |
| 8        | 1   | 13748    | Screw, Flt Hd St, 6-20 x 1/2                      | 39                                     |     | 60320-02 | Switch Kit, 3200/9000 Timer<br>Auxiliary, Optional               |
| 9        | 1   | 14265    | Spring Clip                                       | 40                                     |     | 61420-06 | Program Wheel, Gear Assy,<br>Softener Immediate 2 Min<br>Per Pin |
| 10       | 1   | 13018    | Pinion, Idler                                     |  |     | 61420-42 | Program Wheel, Gear Assy,<br>Filter Immediate 2 Min Per<br>Pin   |
| 11       | 1   | 18563    | Idler Shaft Spring                                | *Call your distributor for Part Number |     |          |  |
| 12       | 1   | 13017    | Gear, Idler                                       |  |     |          |  |
| 13       | 1   | 13164    | Drive Gear  |  |     |          |  |
| 14       | 1   | 13887    | Plate, Motor Mounting                             |  |     |          |  |
| 15       | 1   | 18743-1  | Motor, 120V, 60 Hz,<br>1/30 RPM                   |  |     |          |  |
|          |     | 18752-1  | Motor, 100V, 50Hz,<br>1/30 RPM                    |  |     |          |  |
|          |     | 18824-1  | Motor, 230V, 50Hz,<br>1/30 RPM                    |  |     |          |  |
|          |     | 18826-1  | Motor, 24V, 50Hz, 1/30 RPM                        |  |     |          |  |
|          |     | 19659-1  | Motor, 24V, 60Hz, 1/30 RPM                        |  |     |          |  |
|          |     | 19660-1  | Motor, 230V, 60Hz,<br>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,<br>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                                |  |     |          |  |
| 31       | 1   | 40617    | Harness, 3220                                     |  |     |          |  |
| 32       | 2   | 40422    | Nut, Wire, Tan                                    |  |     |          |  |
| 33       | 1   | 15354-01 | Wire, Ground, 4 inches                            |  |     |          |  |
| 34       | 1   | 19210-05 | Program Wheel Assembly,<br>9000/3230              |  |     |          |  |
| 35       | 17  | 41754    | Pin, Spring, 1/16 x 5/8<br>Stainless Steel, Timer |  |     |          |  |

**3230 REMOTE START TIMER ASSEMBLY**



61502-3230R REV A

# 3230 REMOTE START TIMER ASSEMBLY

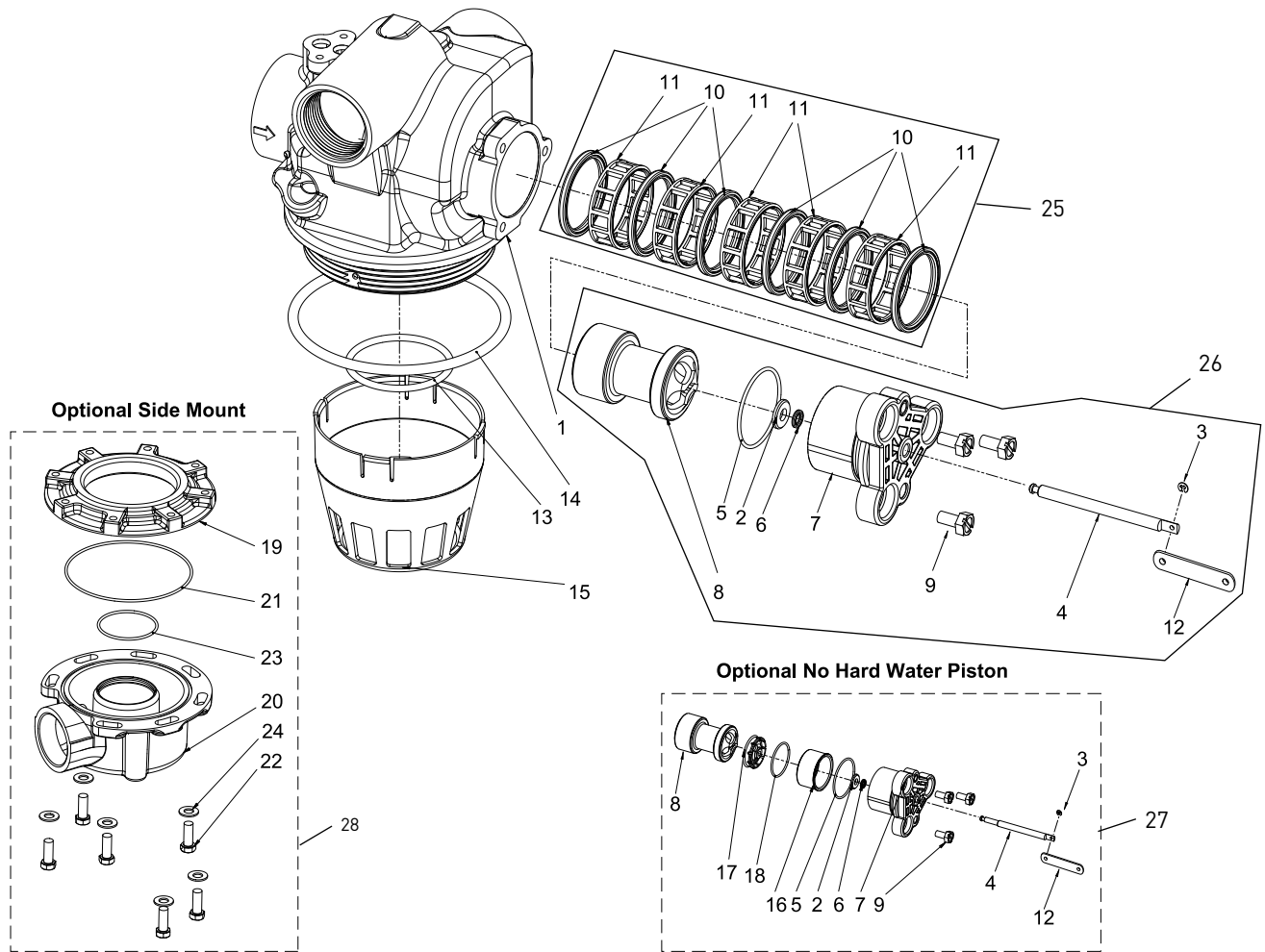
*CONTINUED*

| 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,<br>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,<br>1/30 RPM                   |
|          |     | 18752-1  | Motor, 100V, 50Hz,<br>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,<br>1/30 RPM                    |
| 16       | 2   | 13278    | Screw, Sltd Fillister Hd                          |
| 17       | 1   | 15313    | Label, Caution                                    |
| 18       | 1   | 19210-05 | Program Wheel Assembly,<br>3200                   |
| 20       | 1   | 15055    | Main Drive Gear                                   |
| 21       | 17  | 41754    | Pin, Spring, 1/16 x 5/8<br>Stainless Steel, Timer |

| Item No. | QTY | Part No. | Description  |
|----------|-----|----------|--|
| 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<br>Auxiliary, Optional               |
| 29       |     | *        | 3230 Timer Assy  |
| 30       |     | 61420-06 | Program Wheel, Gear Assy,<br>Softener Immediate 2 Min<br>Per Pin |
|          |     | 61420-42 | Program Wheel, Gear Assy,<br>Filter Immediate 2 Min Per<br>Pin   |

\*Call your distributor for Part Number

# CONTROL VALVE ASSEMBLY



61500-2850s Rev C

| Item No. | QTY | Part No. | Description                     |
|----------|-----|----------|---------------------------------|
| 1        | 1   | 42176-01 | Valve Body, 2850s, Machd        |
| 2        | 1   | 13008    | Retainer, End Plug Seal         |
| 3        | 1   | 42302    | Ring, Retaining, .074           |
| 4        | 1   | 42178    | Rod, NHWBP                      |
|          | 1   | 42394    | Rod, Piston, 2850s, Std         |
|          | 1   | 42394-01 | Rod, Manual Valve               |
| 5        | 1   | 40952    | O-ring, -030                    |
| 6        | 1   | 10209    | Quad Ring, -010                 |
| 7        | 1   | 42181    | Plug, End, 2850s, 3 Bolt, Black |
|          |     | 42181-02 | Plug, End, 2850s, 3 Bolt, White |
| 8        | 1   | 42177    | Piston, 2850s                   |
| 9        | 3   | 10231    | Screw, Slot Hex, 1/4 - 20 x 1/2 |
| 10       | 6   | 42172    | Seal, 2850s, LDF                |
| 11       | 5   | 42175    | Spacer, 2850s, LDF              |
| 12       | 1   | 42179    | Link, Drive, 2850s              |
| *13      | 1   | 13577    | O-ring, -226                    |
| 14       | 1   | 16455    | O-ring, -347                    |

| Item No. | QTY | Part No. | Description                                      |
|----------|-----|----------|--|
| 15       | 1   | 19608-15 | Disperser, Commercial, 1-1/2 inch 2850/2900/9500 |
| 16       | 1   | 42174    | Piston, 2850s, NHWBP                             |
| 17       | 1   | 42182    | Retainer, NHWBP Piston, O-ring, 2850s            |
| 18       | 1   | 17242    | O-ring, -026                                     |
| 19       | 1   | 40316    | Adapter, Side Mount                              |
| 20       | 1   | 40310    | Base, 2850/2900/2930, Rotating                   |
| 21       | 1   | 40368    | O-ring, -160, Sidemount, Flange                  |
| 22       | 7   | 19768    | Screw, Hex Hd, 3/8 - 16 x 1                      |
| 23       | 1   | 40372    | O-ring, -142                                     |
| 24       | 7   | 40375    | Washer, Flat, 3/8-inch, Type A                   |
| 25       |     | 61632    | Seal & Spacer Kit, 2850s                         |
|          |     | 61632-30 | Seal & Spacer Kit, 2850s, 559PE                  |
|          |     | 61632-20 | Seal & Spacer Kit, 2850s, Hot                    |

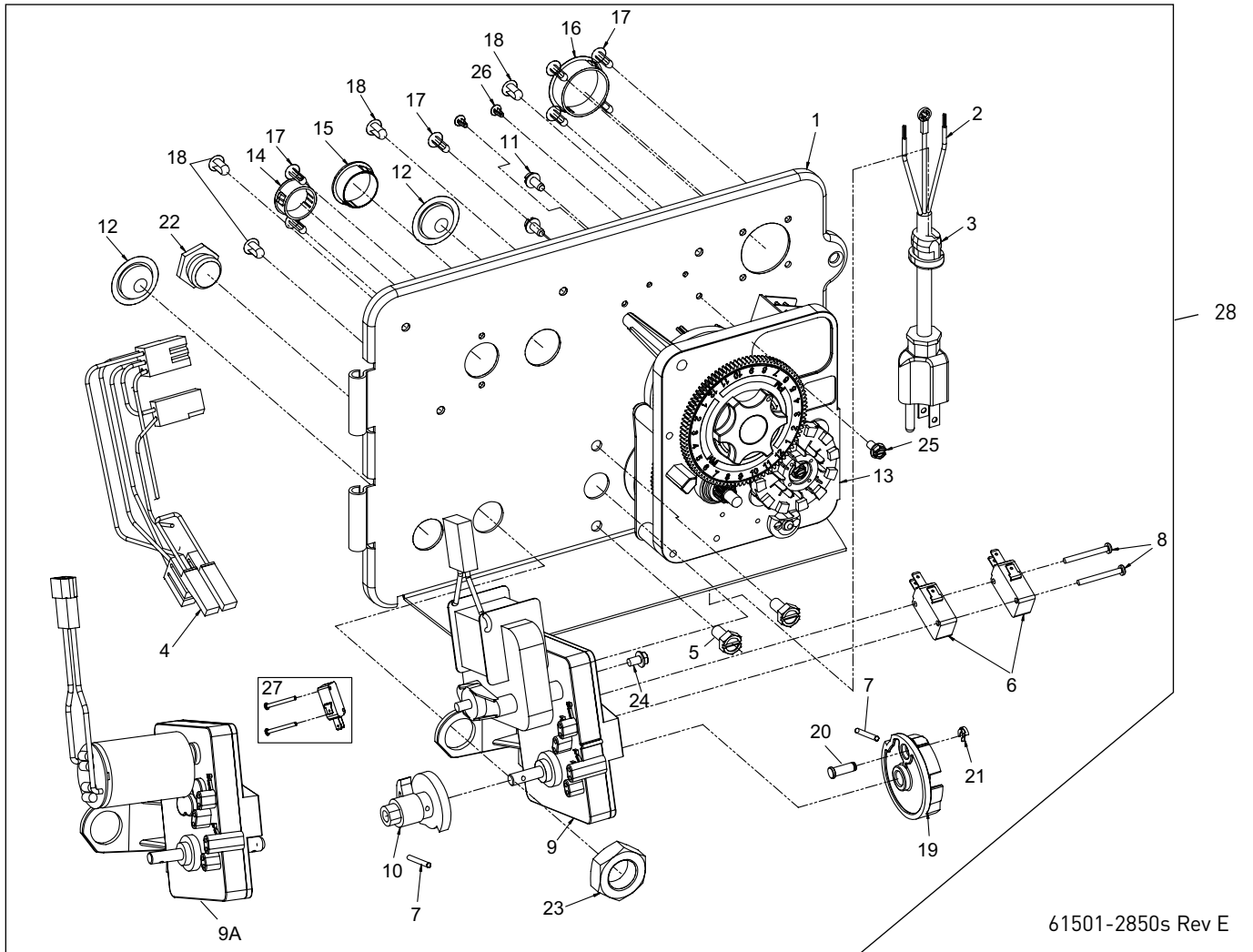


## CONTROL VALVE ASSEMBLY *CONTINUED*

| Item No.          | QTY   | Part No.      | Description   | Item No. | QTY           | Part No. | Description  |
|-------------------|-------|---------------|---|----------|---------------|----------|--|
|                   |       |               | Water   | .....    | 61640-75..... |          | DLFC, Plastic, 75 gpm  |
| 26                | ..... | 61630-00..... | Piston Assy, 2850s, STD, HWBP                             | .....    | 40565-11..... |          | Connector Assy, 1-1/4 inch BSP, Plastic, DLFC to Valve           |
|                   |       | .....         | 61630-02.....Piston Assy, 2850s, Manual Valve             | .....    | 40565-01..... |          | Connector Assy, 1-1/4 inch NPT, Plastic, DLFC to Valve           |
|                   |       | .....         | 61630-01HW...Piston Assy, 2850s, Hot Water, HWBP          | .....    | 61561-10..... |          | Connector Assy, 1-inch BSP, Brass, DLFC to Drain Piping          |
| 27                | ..... | 61631-00..... | Piston Assy, 2850s, NHWBP                                 | .....    | 40563-11..... |          | Connector Assy, 1-inch BSP, Plastic, DLFC to Drain Piping        |
| 28                | ..... | 61415.....    | Adapter Assy, Rotating 2850s/2850/2900s                   | .....    | 61561.....    |          | Connector Assy, 1-inch NPT, Brass, DLFC to Drain piping          |
|                   |       | .....         | 61415-20.....Adapter Assy, BSP, Rotating 2850s/2850/2900s | .....    | 40563-01..... |          | Connector Assy, 1-inch NPT, Plastic, DLFC to Drain               |
| <b>Not Shown:</b> |       |               |   | .....    | 41242-01..... |          | Connector Assy, 1-inch & 1-1/4 inch, Sweat, DLFC to Drain Piping |
| 2                 | ..... | 15137.....    | Screw, Hex, Wsh, Mach, 10-24 x 3/8                        | .....    | 61562-10..... |          | Connector Assy, 1-1/2 inch BSP, Brass, DLFC to Drain Piping      |
| 1                 | ..... | 11893.....    | Cap, Injector, Stainless Steel                            | .....    | 42241-11..... |          | Connector Assy, 1-1/2 inch BSP, Plastic, DLFC to Drain Piping    |
| 1                 | ..... | 14805.....    | Gasket, Injector Body                                     | .....    | 61562.....    |          | Connector Assy, 1-1/2 inch NPT, Brass, DLFC to Drain Piping      |
|                   |       | .....         | 61643-00.....DLFC Assy, 1-1/4 inch, Brass, Blank          | .....    | 42241-01..... |          | Connector Assy, 1-1/2 inch NPT, Plastic, DLFC to Drain Piping    |
|                   |       | .....         | 61643-8.0.....DLFC Assy, 1-1/4 inch, Brass, 8.0 gpm       | .....    | 41243-01..... |          | Connector Assy, 1-1/4 inch and 1-1/2 inch, DLFC to Drain Piping  |
|                   |       | .....         | 61643-9.0.....DLFC Assy, 1-1/4 inch, Brass, 9.0 gpm       | .....    | 42414-11..... |          | Connector Assy, 3/4-inch BSP, DLFC to Drain Piping               |
|                   |       | .....         | 61643-10.....DLFC Assy, 1-1/4 inch, Brass, 10.0 gpm       | .....    | 42414-01..... |          | Connector Assy, 3/4-inch NPT, DLFC to Drain Piping               |
|                   |       | .....         | 61643-12.....DLFC Assy, 1-1/4 inch, Brass, 12.0 gpm       | .....    | 61626.....    |          | Connector Assy, 3/4-inch and 1-inch, DLFC to Drain Piping        |
|                   |       | .....         | 61643-15.....DLFC Assy, 1-1/4 inch, Brass, 15.0 gpm       | .....    | 41596.....    |          | Connector, Brass, 1-inch NPT, DLFC to Drain Piping               |
|                   |       | .....         | 61643-20.....DLFC Assy, 1-1/4 inch, Brass, 20.0 gpm       |          |               |          |  |
|                   |       | .....         | 61643-25.....DLFC Assy, 1-1/4 inch, Brass, 25.0 gpm       |          |               |          |  |
|                   |       | .....         | 61640-00.....DLFC, Plastic, Less Buttons                  |          |               |          |  |
|                   |       | .....         | 61640-000.....DLFC, Plastic, Less Buttons                 |          |               |          |  |
|                   |       | .....         | 61640-01.....DLFC, Plastic, Less Button                   |          |               |          |  |
|                   |       | .....         | 61640-08.....DLFC, Plastic, 8 gpm                         |          |               |          |  |
|                   |       | .....         | 61640-09.....DLFC, Plastic, 9 gpm                         |          |               |          |  |
|                   |       | .....         | 61640-10.....DLFC, Plastic, 10 gpm                        |          |               |          |  |
|                   |       | .....         | 61640-15.....DLFC, Plastic, 15 gpm                        |          |               |          |  |
|                   |       | .....         | 61640-20.....DLFC, Plastic, 20 gpm                        |          |               |          |  |
|                   |       | .....         | 61640-25.....DLFC, Plastic, 25 gpm                        |          |               |          |  |
|                   |       | .....         | 61640-30.....DLFC, Plastic, 30 gpm                        |          |               |          |  |
|                   |       | .....         | 61640-35.....DLFC, Plastic, 35 gpm                        |          |               |          |  |
|                   |       | .....         | 61640-40.....DLFC, Plastic, 40 gpm                        |          |               |          |  |
|                   |       | .....         | 61640-45.....DLFC, Plastic, 45 gpm                        |          |               |          |  |
|                   |       | .....         | 61640-50.....DLFC, Plastic, 50 gpm                        |          |               |          |  |
|                   |       | .....         | 61640-55.....DLFC, Plastic, 55 gpm                        |          |               |          |  |
|                   |       | .....         | 61640-60.....DLFC, Plastic, 60 gpm                        |          |               |          |  |
|                   |       | .....         | 61640-65.....DLFC, Plastic, 65 gpm                        |          |               |          |  |
|                   |       | .....         | 61640-70.....DLFC, Plastic, 70 gpm                        |          |               |          |  |

\*Do not use o-ring if control is side mounted

# POWERHEAD ASSEMBLY



61501-2850s Rev E

## POWERHEAD ASSEMBLY *CONTINUED*

| Item No. | QTY | Part No. | Description                         |
|----------|-----|----------|-------------------------------------|
| 1        | 1   | 18697-15 | Back Plate, Hinged                  |
| 2        | 1   | 11839    | Power Cord, 12-foot US, Flat, 120V  |
|          |     | 40084-12 | Power Cord, 12-foot Round, 120V     |
|          |     | 40085-12 | Power Cord, 12-foot Round, 240V     |
|          |     | 19303    | Power Cord, 8-foot Australian       |
|          |     | 11545-01 | Power Cord, 4-foot, Black, European |
|          |     | 19885-01 | Power Cord Assy Japanese            |
| 3        | 1   | 13547    | Strain Relief, Flat Cord            |
|          |     | 13547-02 | Strain Relief, Round Cord           |
| 4        | 1   | 40400    | Harness, Drive, Designr/Envirmtl    |
| 5        | 2   | 10231    | Screw, Slot, Hex 1/4 - 20 x 1/2     |
| 6        | 2   | 10218    | Switch, Micro                       |
| 7        | 2   | 10338    | Pin, Roll, 3/32 x 7/8               |
| 8        | 2   | 14923    | Screw, Pan Hd, Mach 4-40 x 1        |
| 9        | 1   | 41543    | Motor, Drive, 115V, 50/60 Hz        |
|          |     | 41545    | Motor, Drive, 230V, 50/60 Hz        |
| 9A       | 1   | 42579    | Motor, Drive, 24Vac/Dc, 50/60 Hz    |
| 10       | 1   | 12777    | Cam, Shut-off Valve                 |
| 11       | 2   | 10300    | Screw, Hex Wash Hd, 8 x 3/8         |
| 12       | 2   | 19691    | Plug, .750 Dia, Hole, Flush         |
| 13       | 1   |          | Timer Assy, 3200                    |
| 14       | 1   | 15806    | Plug, Hole (Heyco)                  |

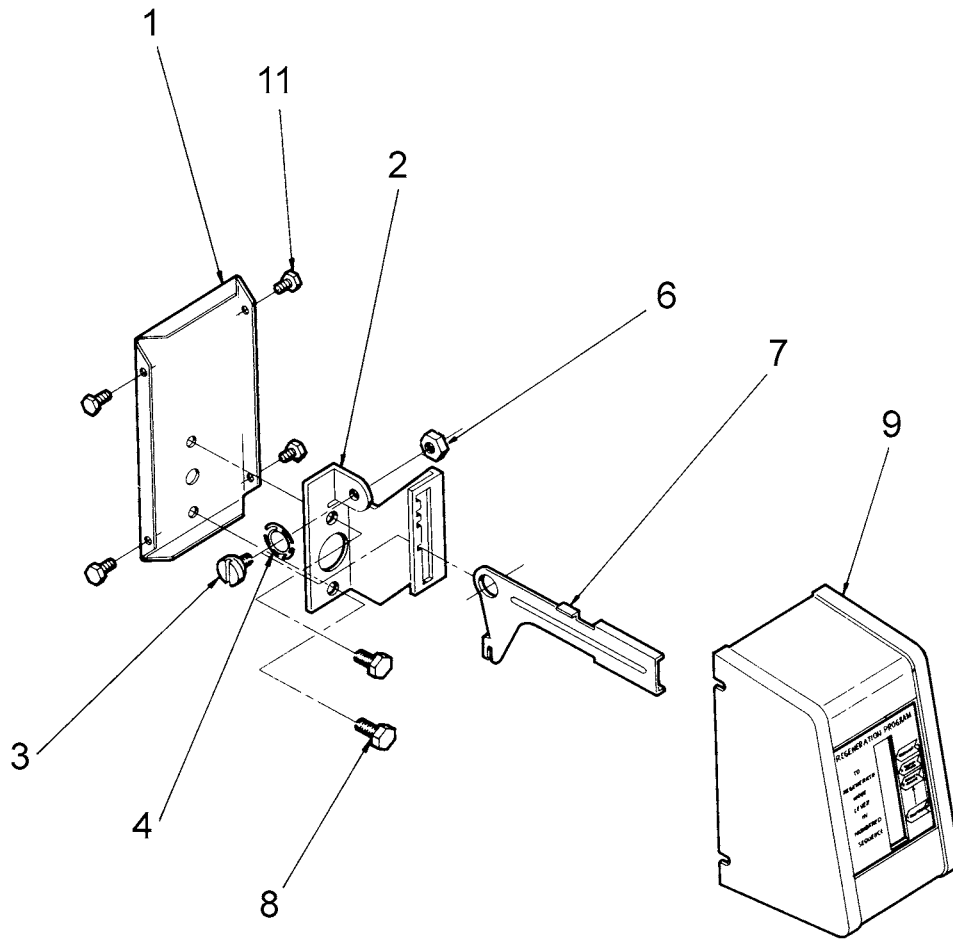
| Item No. | QTY | Part No. | Description                      |
|----------|-----|----------|----------------------------------|
| 15       | 1   | 16493    | Plug, Hole, (Heyco) .88 Dia      |
| 16       | 1   | 17421    | Plug, 1.20 Hole                  |
| 17       | 7   | 19800    | Plug, Hole, .140 Dia             |
| 18       | 4   | 19801    | Plug, .190 Dia                   |
| 19       | 1   | 60160-40 | Cam, Drive, 2850s, STF, Gray     |
| 20       | 1   | 13366    | Connecting Rod Bearing           |
| 21       | 1   | 42761    | Ring, Retaining, 2850s, Clip     |
| 22       | 1   | 43560    | Fitting, Brine Valve             |
| 23       | 1   | 10269    | Nut, Jam, 3/4-16                 |
| 24       | 1   | 10872    | Screw, Hex Wsh, 8-32 x 17/64     |
| 25       | 1   | 14202-01 | Screw, Hex Wsh, 8-32 x 5/16      |
| 26       | 2   | 41581    | Plug, Hole, .125 Dia, White      |
| 27       | 1   |          | Switch Kit Assy, 1500 thru 2850s |
| 28       | *   |          | Powerhead Assy, 2850s            |

### Not Shown:

|   |  |          |   |
|---|--|----------|---|
| 1 |  | 60219-02 | Cover Assy, Enviromental, Black with Clear Window             |
| 1 |  | 17741    | Meter Cable, 16.5 inch long, 1-1/2 inch Brass Meter           |
| 1 |  | 15513    | Meter Cable, 17.5-inch long, 1-1/2 inch Stainless Steel Meter |
| 1 |  | 17470    | Cable Guide Assy, 2850/3150                                   |

\*Call your distributor for Part Number

# MANUAL DRIVE ASSEMBLY



60409 Rev G

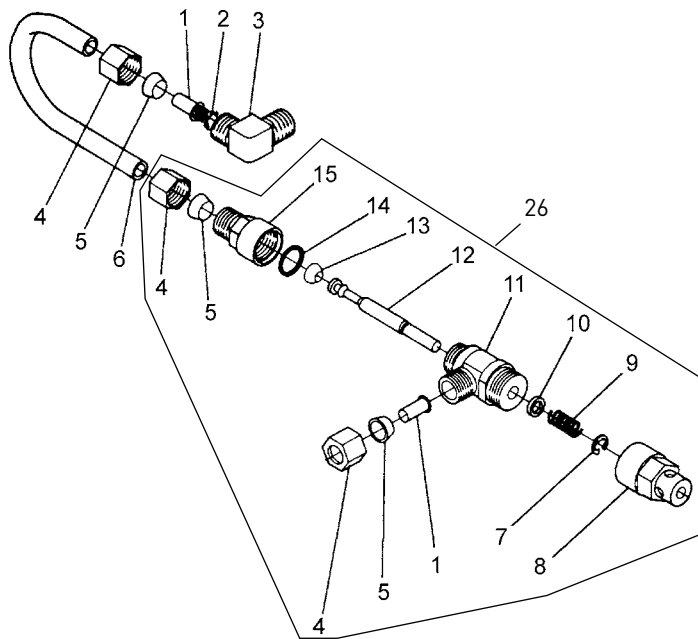
| Item No. | QTY | Part No. | Description                                      |
|----------|-----|----------|--|
| 1        | 1   | 12593    | Backplate, Manual                                |
| 2        | 1   | 42186    | Bracket, 2850s, manual                           |
| 3        | 1   | 12596    | Screw, Spec Mach, 1/4 - 20 x 1/2                 |
| 4        | 1   | 12707    | Washer, Spring                                   |
| 6        | 1   | 11235    | Nut, Hex, 1/4 - 20, Mach Screw, Zinc             |
| 7        | 1   | 42185    | Lever, 2850s, Manual                             |
| 8        | 2   | 10231    | Screw, Slot Hex, 1/4 - 20 x 1/2 18-8 SS          |
| 9        | 1   | 60224-32 | Cover Assy, Manual, Filter                       |
|          | 1   | 60224-33 | Cover Assy, Manual, Softener                     |
| 11       | 4   | 10300    | Screw, Slot Hex Wsh, 8-18 x 3/8 Type "B" RC44-47 |

**Not Shown:**

|   |       |           |
|---|-------|-----------|
| 1 | 10909 | Pin, Link |
|---|-------|-----------|

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# 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                    |
|          |     | 16508-01 | Tube, Brine Valve, 2850/2900s             |
|          |     | 12774    | Tube, Brine Valve, 1500                   |
|          |     | 40027    | Tube, Brine Valve, 2510                   |
|          |     | 15221    | Tube, Brine Valve, 2750/2900              |
|          |     | 42184    | Tube, Brine Valve, 2850s                  |
|          |     | 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                         |

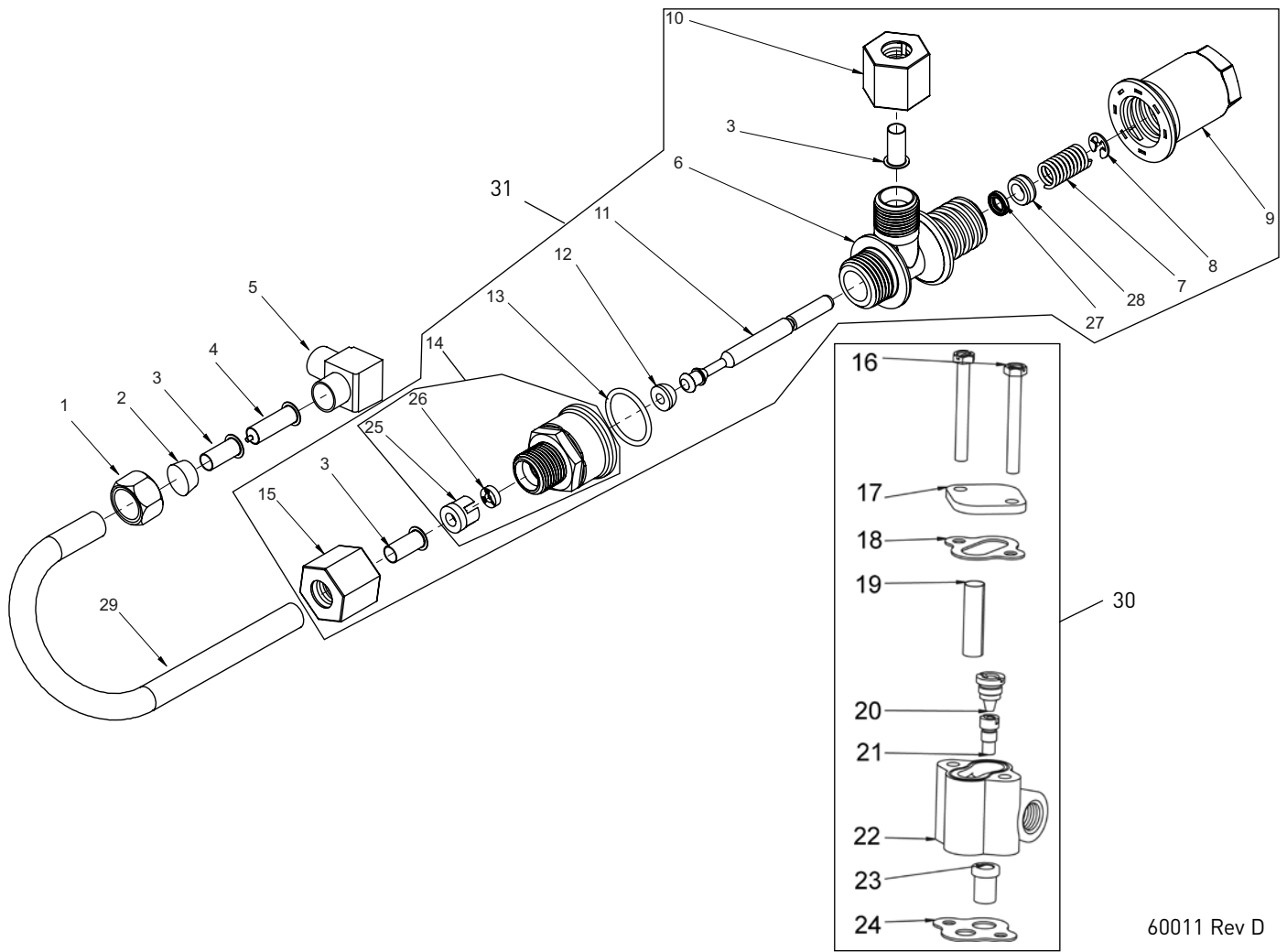
| Item No. | QTY | Part No.  | Description                                       |
|----------|-----|-----------|---|
| 14       | 1   | 11982     | O-ring, -016                                      |
| 15       | 1   | 60020-25  | BLFC, .25 GPM, 1600                               |
|          |     | 60020-50  | BLFC, .50 GPM, 1600                               |
|          |     | 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                                 |
| 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                   |

# 1600 SERIES BRINE SYSTEM *CONTINUED*

| Item No. | QTY | Part No.  | Description                           |
|----------|-----|-----------|---------------------------------------|
|          |     |           | 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            |
|          |     | 10914-3   | Throat, Injector, #3, Yellow          |
|          |     | 10914-4   | Throat, Injector, #4, Green           |
|          |     | 12974-0   | Throat, Injector, #0, PVC Grey        |
|          |     | 12974-1   | Throat, Injector, #1, PVC Grey        |
|          |     | 12974-2   | Throat, Injector, #2, PVC Grey        |
|          |     | 12974-3   | Throat, Injector, #3, PVC Grey        |
|          |     | 12974-4   | Throat, Injector, #4, PVC Grey        |
|          |     | 10226-0   | Throat, Injector, #0, Stainless Steel |
|          |     | 10226-1   | Throat, Injector, #1, Stainless Steel |
|          |     | 10226-2   | Throat, Injector, #2, Stainless Steel |
|          |     | 10226-3   | Throat, Injector, #3, Stainless Steel |
|          |     | 10226-4   | Throat, Injector, #4, Stainless Steel |
| 22       | 1   | 17776     | Body, Injector, 1600                  |
|          | 1   | 17776-02* | Body, Injector, 1600 Upflow           |
| 23       | 1   | 16221     | Dispenser, Air                        |
| 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       |
|          |     | 60480-04  | Injector Assy, 1600, #4 Plastic       |
|          |     | 60481-21  | Injector Assy, 1600, #1, S.S. Brass   |
|          |     | 60481-22  | Injector Assy, 1600, #2, S.S. Brass   |
|          |     | 60481-23  | Injector Assy, 1600, #3, S.S. Brass   |
|          |     | 60080-11  | Injector Assy, 1600, #1, PVC          |
|          |     | 60080-12  | Injector Assy, 1600, #2, PVC          |
|          |     | 60080-14  | Injector Assy, 1600, #4, PVC          |
| 26       |     | 60029-010 | Brine Valve, 1600, 0.25 gpm           |
|          |     | 60029-020 | Brine Valve, 1600, 0.50 gpm           |
|          |     | 60029-030 | Brine Valve, 1600, 1.0 gpm            |

\*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          |

| Item No. | QTY | Part No.  | Description                                       |
|----------|-----|-----------|---|
| 1        | 1   | 60010-50  | BLFC, 1650, .50 GPM, Plastic                      |
| 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                    |
|          |     | 12973-3   | Nozzle, Injector, #3, PVC Grey                    |



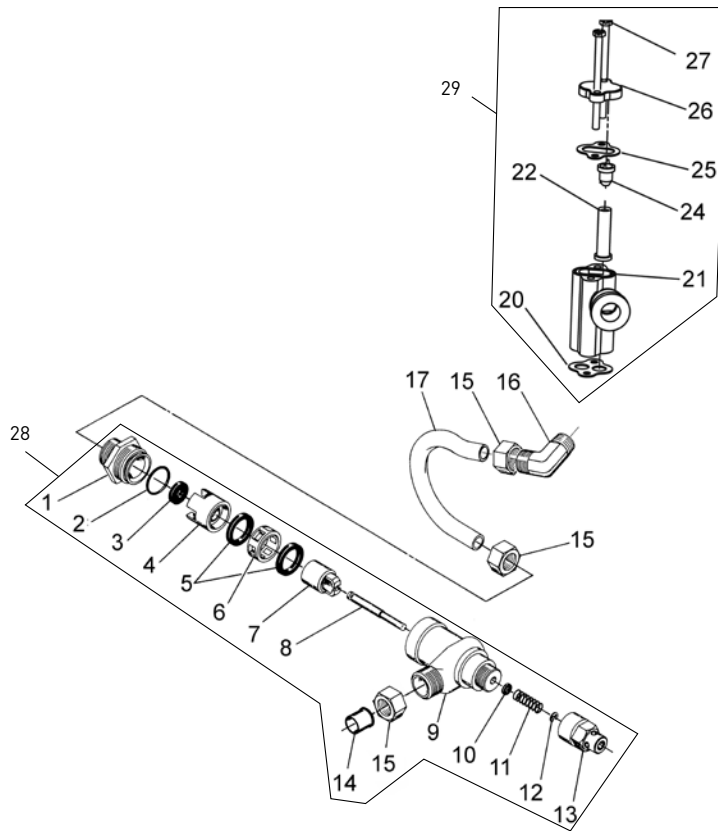
## 1650 BRINE SYSTEM ASSEMBLY *CONTINUED*

| Item No. | QTY | Part No.  | Description                           | Item No. | QTY | Part No.  | Description                         |
|----------|-----|-----------|---------------------------------------|----------|-----|-----------|-------------------------------------|
|          |     | 12973-4   | Nozzle, Injector, #4, PVC Grey        | 1        |     | 12094     | Washer, Flow Control .25 GPM        |
|          |     | 10225-0   | Nozzle, Injector, #0, Stainless Steel | 1        |     | 12097     | Washer, Flow Control 1.0 GPM        |
|          |     | 10225-1   | Nozzle, Injector, #1, Stainless Steel | 27       | 1   | 12550     | Quad Ring -009                      |
|          |     | 10225-2   | Nozzle, Injector, #2, Stainless Steel |          | 1   | 12550-01  | Quad Ring -009 560CD                |
|          |     | 10225-3   | Nozzle, Injector, #3, Stainless Steel | 28       | 1   | 17908     | Sleeve, Brine Valve Stem            |
|          |     | 10225-4   | Nozzle, Injector, #4, Stainless Steel | 29       | 1   | 16508-01  | Tube, Brine Valve, 2850/1600        |
| 21       | 1   | 10914-000 | Throat, Injector, #000, Brown         |          | 1   | 40027     | Tube, Brine Valve, 2510             |
|          |     | 10914-00  | Throat, Injector, #00, Violet         |          | 1   | 42184     | Tube, Brine Valve, 2850s            |
|          |     | 10914-0   | Throat, Injector, #0, Red             |          | 1   | 12774     | Tube, Brine Valve, 1500             |
|          |     | 10914-1   | Throat, Injector, #1, White           |          | 1   | 15221     | Tube, Brine Valve, 2750             |
|          |     | 10914-2   | Throat, Injector, #2, Blue            |          | 1   | 41683*    | Tube, Brine Valve, UF, 1600/1650    |
|          |     | 10914-3   | Throat, Injector, #3, Yellow          | 30       |     | 60480-01  | Injector Assy, 1600, #1 Plastic     |
|          |     | 10914-4   | Throat, Injector, #4, Green           |          |     | 60480-02  | Injector Assy, 1600, #2 Plastic     |
|          |     | 12974-0   | Throat, Injector, #0, PVC Grey        |          |     | 60480-03  | Injector Assy, 1600, #3 Plastic     |
|          |     | 12974-1   | Throat, Injector, #1, PVC Grey        |          |     | 60480-04  | Injector Assy, 1600, #4 Plastic     |
|          |     | 12974-2   | Throat, Injector, #2, PVC Grey        |          |     | 60481-21  | Injector Assy, 1600, #1, S.S. Brass |
|          |     | 12974-3   | Throat, Injector, #3, PVC Grey        |          |     | 60481-22  | Injector Assy, 1600, #2, S.S. Brass |
|          |     | 12974-4   | Throat, Injector, #4, PVC Grey        |          |     | 60481-23  | Injector Assy, 1600, #3, S.S. Brass |
|          |     | 10226-0   | Throat, Injector, #0, Stainless Steel |          |     | 60080-11  | Injector Assy, 1600, #1, PVC        |
|          |     | 10226-1   | Throat, Injector, #1, Stainless Steel |          |     | 60080-12  | Injector Assy, 1600, #2, PVC        |
|          |     | 10226-2   | Throat, Injector, #2, Stainless Steel |          |     | 60080-14  | Injector Assy, 1600, #4, PVC        |
|          |     | 10226-3   | Throat, Injector, #3, Stainless Steel | 31       |     | 60011-010 | Brine Valve, 1650, 0.25 gpm         |
|          |     | 10226-4   | Throat, Injector, #4, Stainless Steel |          |     | 60011-020 | Brine Valve, 1650, 0.50 gpm         |
| 22       | 1   | 17776     | Body, Injector, 1600                  |          |     | 60011-030 | Brine Valve, 1650, 1.0 gpm          |
|          | 1   | 17776-02* | Body, Injector, 1600 Upflow           |          |     |           |                                     |
| 23       | 1   | 16221     | Dispenser, Air                        |          |     |           |                                     |
| 24       | 1   | 14805     | Gasket, Injector Body, 1600/1700      |          |     |           |                                     |
| 25       | 1   | 12098     | Retainer, Flow Control                |          |     |           |                                     |
| 26       | 1   | 12095     | Washer, Flow Control .50 GPM          |          |     |           |                                     |

\*Upflow Only

\*\*Item 14 includes Items 25 and 26

# 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   |
|          |     | 12086     | Washer, Flow, 1.5 GPM   |
|          |     | 12087     | Washer, Flow, 2.0 GPM   |
|          |     | 12088     | Washer, Flow, 2.4 GPM   |
|          |     | 12089     | Washer, Flow, 3.0 GPM   |
|          |     | 12090     | Washer, Flow, 3.5 GPM   |
|          |     | 12091     | Washer, Flow, 4.0 GPM   |
|          |     | 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  |
|          |     | 16460     | Tube, Brine, 2850/2900s                                       |
|          |     | 41447*    | Tube, Brine, 2900s, U/F                                       |
|          |     | 42183     | Tube, Brine, 1700, 2850s                                      |
| 20       | 1   | 14805     | Gasket, Injector Body 1600/1700                               |
| 21       | 1   | 17777     | Body, Injector, 1700  |
|          |     | 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                                   |
| 25       | 1   | 10229     | Gasket, Injector Cap, 1600                                    |
| 26       | 1   | 11893     | Cap, Injector, Stainless Steel                                |
|          |     | 10228     | Cap, Injector   |
| 27       | 2   | 14804     | Screw, Hex Hd Mach, 10 - 24 x 2-3/4 inch 18-8 Stainless Steel |

| Item No. | QTY | Part No. | Description                        |
|----------|-----|----------|------------------------------------|
| 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 |

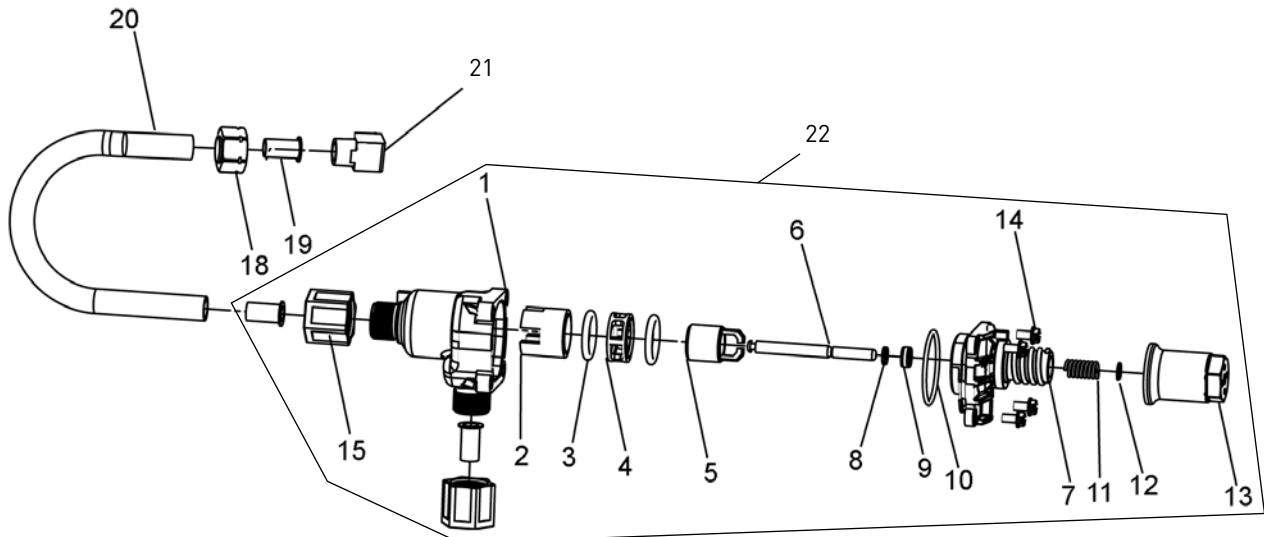
**Not Shown:**

- 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

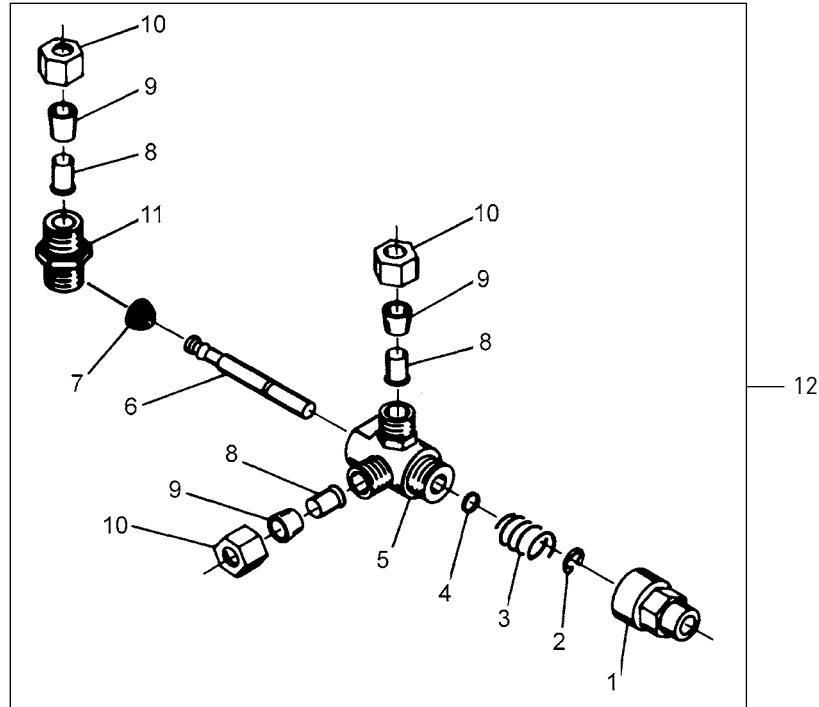
| Item No. | QTY | Part No. | Description                        |
|----------|-----|----------|------------------------------------|
| 1        | 1   | 41202    | Brine Valve, 1700, Plastic, Top    |
| 2        | 1   | 14785-01 | Retainer, Flow Control             |
| 3        | 1   | 14811    | O-Ring, -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       |

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

### Not Shown

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

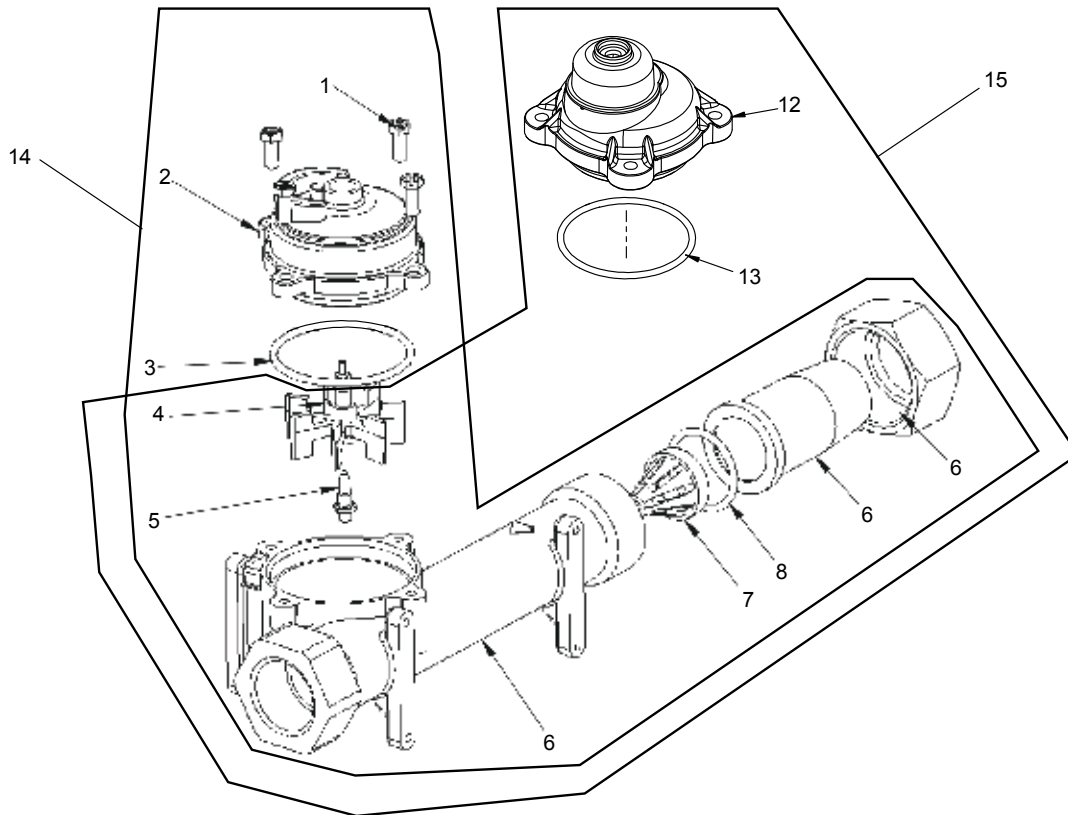
# 1600 SERVICE VALVE OPERATOR ASSEMBLY (OLD STYLE)



60150 Rev A

| Item No. | QTY | Part No. | Description  |
|----------|-----|----------|--|
| 1        | 1   | 11749    | Guide, Brine Valve Stem                                    |
| 2        | 1   | 10250    | Ring, Retaining  |
| 3        | 1   | 10249    | Spring, Brine Valve  |
| 4        | 1   | 12550    | Quad Ring, -009  |
| 5        | 1   | 10785    | SVO Body Assy Brass Valves                                 |
| 6        | 1   | 12552-02 | Brine Valve Stem, 1600, w/<br>Seat                         |
| 7        | 1   | 12626    | Seat, Brine Valve  |
| 8        | 3   | 10332    | Fitting, Insert, 3/8                                       |
| 9        | 3   | 10330    | Fitting, Sleeve, 3/8 Celcon                                |
| 10       | 3   | 10329    | Fitting, Tube, 3/8 Nut, Brass                              |
| 11       | 1   | 10331    | Fitting, Compression, 1/4-<br>inch x 3/8-inch              |
| 12       | 1   | 60150    | Service Valve Operator, Assy,<br>1600, Old Style, Complete |

# 1-INCH BRASS METER ASSEMBLY



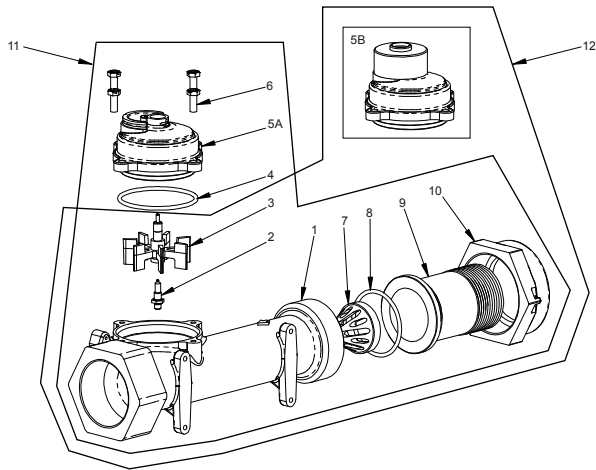
| Item No. | QTY | Part No. | Description  |
|----------|-----|----------|--|
| 1        | 4   | 12112    | Screw, Slotted Hex Head, #10 - 24 x .50                            |
| 2        | 1   | 14038    | Cap, Meter, STD Range, Plastic                                     |
| 3        | 1   | 13847    | O-ring, -137   |
| 4        | 1   | 13509    | Impeller, Meter  |
|          | 1   | 13509-01 | Impeller, Celcon, Hot Water  |
| 5        | 1   | 13882    | Post, Meter Impeller   |
| 6        | 1   | 14959    | Body, Meter, 27550   |
|          | 1   | 60628NP  | Meter Assy, 1-inch, NP   |
|          |     | 14959    | Body, Meter, 2750  |
|          |     | 14961    | Fitting, Nipple, 1-inch, Quick Connect                             |
|          |     | 14962    | Nut, 1-inch Meter, Quick Connect                                   |
| 7        | 1   | 14960    | Flow Straightener  |
| 8        | 1   | 13287    | O-ring, 123  |
| 12       | 1   | 15150    | Meter Cap Assy, Ext, Range, Plastic                                |
| 13       | 1   | 13847    | O-ring, -137   |
| 14       |     | 60391    | Meter Assy, 1-inch, NPT, STD Range, Brass, Paddlewheel             |
|          |     | 60391NP  | Meter Assy, 1-inch Inline, NPT, STD Nickel Plated, Paddlewheel     |
|          |     | 60391HW  | Meter Assy, 1-inch Inline, NPT, STD, Brass, Hot Water, Paddlewheel |

| Item No. | QTY | Part No. | Description  |
|----------|-----|----------|--|
| 15       |     | 60392    | Meter Assy, 1-inch Inline, NPT EXT Range                                   |
|          |     | 60392NP  | Meter Assy, 1-inch Inline, NPT, EXT Brass Body, Nickel Plated, Paddlewheel |

**Not Shown**

|   |  |       |   |
|---|--|-------|---|
| 1 |  | 15218 | Meter Cap Assy, STD Range, Brass, Hot Water |
| 1 |  | 15237 | Meter Cap Assy, EXT Range, Brass, Hot Water |

# 1-1/2 INCH BRASS METER ASSEMBLY



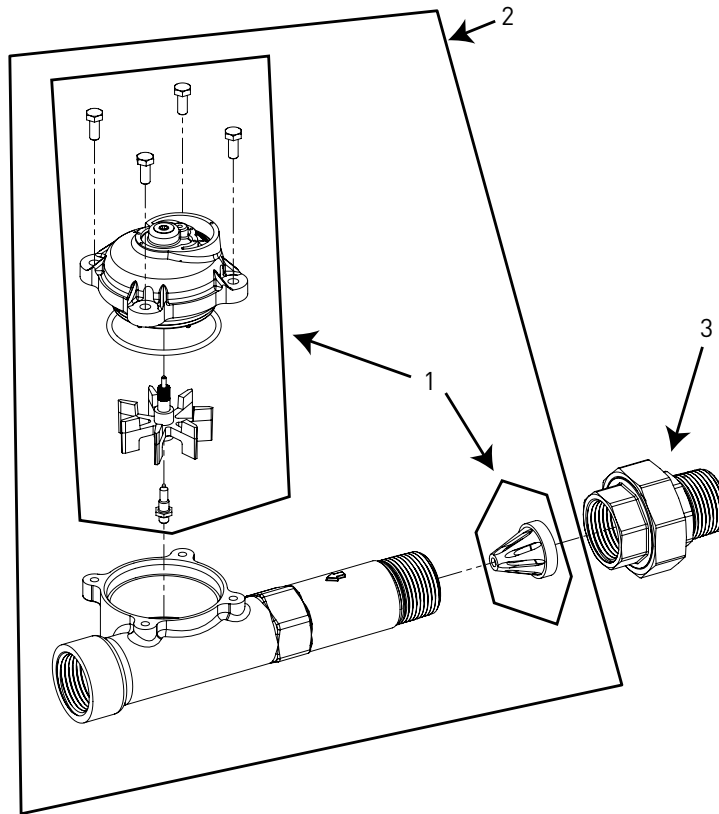
| Item No. | QTY | Part No.   | Description  |
|----------|-----|------------|--|
| 1        | 1   | 17569      | Body, Meter, 2850/9500   |
| 2        | 1   | 13882      | Post, Meter Impeller   |
| 3        | 1   | 13509      | Impeller, Meter  |
|          | 1   | 13509-01   | Impeller, Celcon, Hot Water  |
| 4        | 1   | 13847      | O-Ring, -137, Std/560CD, Meter   |
| 5A       | 1   | 14038      | Meter Cap Assy, STD Range, Plastic   |
| 5B       | 1   | 15150      | Meter Cap Assy, Ext Range, Plastic   |
| 6        | 4   | 12112      | Screw, Hex Hd Mach, 10-24 x 1/2 18-8 Stainless Steel                                 |
| 7        | 1   | 17542      | Flow Straightener, 1-1/2 inch  |
| 8        | 1   | 12733      | O-Ring, -132   |
| 9        | 1   | 17544      | Fitting, 1-1/2 inch Quick Connector  |
| 10       | 1   | 17543      | Nut, 1-1/2 inch, Q/C   |
| 11       |     | 60610-01   | Meter Assy, 1-1/2 inch, NPT, STD, Brass, Paddlewheel                                 |
|          |     | 60610-01NP | Meter Assy, 1-1/2 inch Inline, NPT, STD Brass Body, Nickel Plated, Paddlewheel       |
|          |     | 60610-01HW | Meter Assy, 1-1/2 inch Inline, NPT, STD Brass, Hot Water, Paddlewheel                |
|          |     | 60610-21   | Meter Assy, 1-1/2 inch, BSP, STD, Brass, Paddlewheel                                 |
|          |     | 60610-21NP | Meter Assy, 1-1/2 inch Inline, BSP, STD, Brass Body, Nickel Plated, Paddlewheel      |
|          |     | 60611-01   | Meter Assy, 1-1/2 inch Inline, NPT, STD, Brass Body, Paddlewheel, Sleeve to 1-inch   |
|          |     | 60611-01NP | Meter Assy, 1-1/2 inch Inline, NPT, STD Nickel Plated, Paddlewheel, Sleeve to 1-inch |

| Item No. | QTY | Part No.   | Description   |
|----------|-----|------------|---|
|          |     | 60611-23   | Meter Assy, 1-1/2 inch Inline, BSP, STD, Paddlewheel, Sleeve to 1-inch                |
|          |     | 60611-23NP | Meter Assy, 1-1/2 inch Inline, BSP/MET STD, Nickel Plated, Paddlewheel, 1-inch Sleeve |
| 12       |     | 60610-02   | Meter Assy, 1-1/2 inch, NPT, STD, Brass Paddlewheel                                   |
|          |     | 60610-02NP | Meter Assy, 1-1/2 inch Inline, NPT, EXT Nickel Plate, Paddlewheel                     |
|          |     | 60610-02HW | Meter Assy, 1-1/2 inch Inline, NPT, EXT Brass, Hot Water, Paddlewheel                 |
|          |     | 60610-22   | Meter Assy, 1-1/2 inch, BSP, EXT, Brass, Paddlewheel                                  |
|          |     | 60610-22NP | Meter Assy, 1-1/2 inch Inline, BSP EXT, Brass Body, Nickel Plate, Paddlewheel         |
|          |     | 60611-02   | Meter Assy, 1-1/2 inch Inline, NPT, EXT Brass Body, Paddlewheel, Sleeve to 1-inch     |
|          |     | 60611-02NP | Meter Assy, 1-1/2 inch Inline, NPT, EXT Nickel Plated, Paddlewheel, Sleeve to 1-inch  |
|          |     | 60611-22   | Meter Assy, 1-1/2 inch Inline, BSP, EXT Brass Body, Paddlewheel, Sleeve to 1-inch     |
|          |     | 60611-22NP | Meter Assy, 1-1/2 inch Inline, BSP, EXT, Nickel, Paddlewheel, Sleeve to 1-inch        |

## Not Shown

|   |  |       |   |
|---|--|-------|---|
| 1 |  | 17790 | Sleeve, Meter, 1 1/2 inch x 1-inch          |
| 1 |  | 15218 | Meter Cap Assy, STD Range, Brass, Hot Water |
| 1 |  | 15237 | Meter Cap Assy, EXT Range, Brass, Hot Water |

## 1-1/2 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.

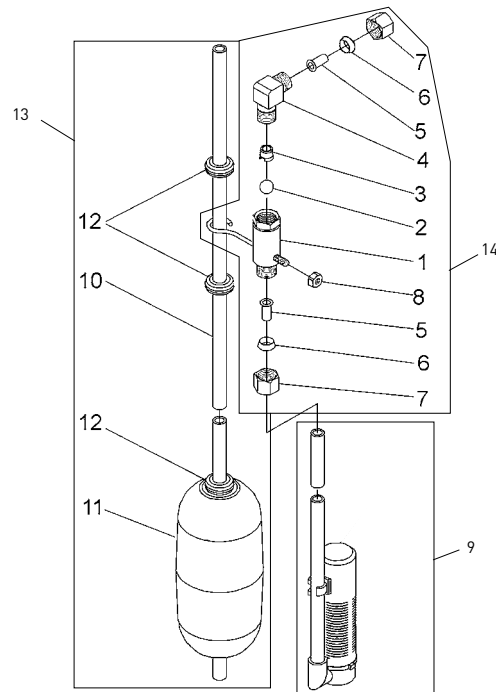
| Item No. | QTY | Part No. | Description  |
|----------|-----|----------|--|
| 1        | 1   | 62049-01 | Service Kit,<br>1 inch & 1-1/2 inch Meter,<br>Standard Range               |
| 1        | 1   | 62049-02 | Service Kit,<br>1 inch & 1-1/2 inch Meter,<br>Extended Range               |
| 2        | 1   | 61933-10 | Meter Assy, 1-1/2 inch,<br>Inline, Stainless Steel, NPT,<br>Standard Range |
| 1        | 1   | 61933-11 | Meter Assy, 1-1/2 inch,<br>Inline, Stainless Steel, NPT,<br>Extended Range |
| 1        | 1   | 61933-20 | Meter Assy, 1-1/2 inch,<br>Inline, Stainless Steel, BSP,<br>Standard Range |
| 1        | 1   | 61933-21 | Meter Assy, 1-1/2 inch,<br>Inline, Stainless Steel, BSP,<br>Extended Range |
| 3        | 1   | 44024    | Union, 1-1/2 inch, NPT<br>(Optional on models with<br>electronic controls) |
| 1        | 1   | 44025    | Union, 1-1/2 inch, BSP<br>(Optional on models with<br>electronic controls) |

### Not Shown (optional)

|   |   |       |   |
|---|---|-------|---|
| 1 | 1 | 62072 | Meter Sleeve,<br>1-1/2 inch to 1 inch<br>(optional) |
|---|---|-------|---|



# 2300 SAFETY BRINE VALVE

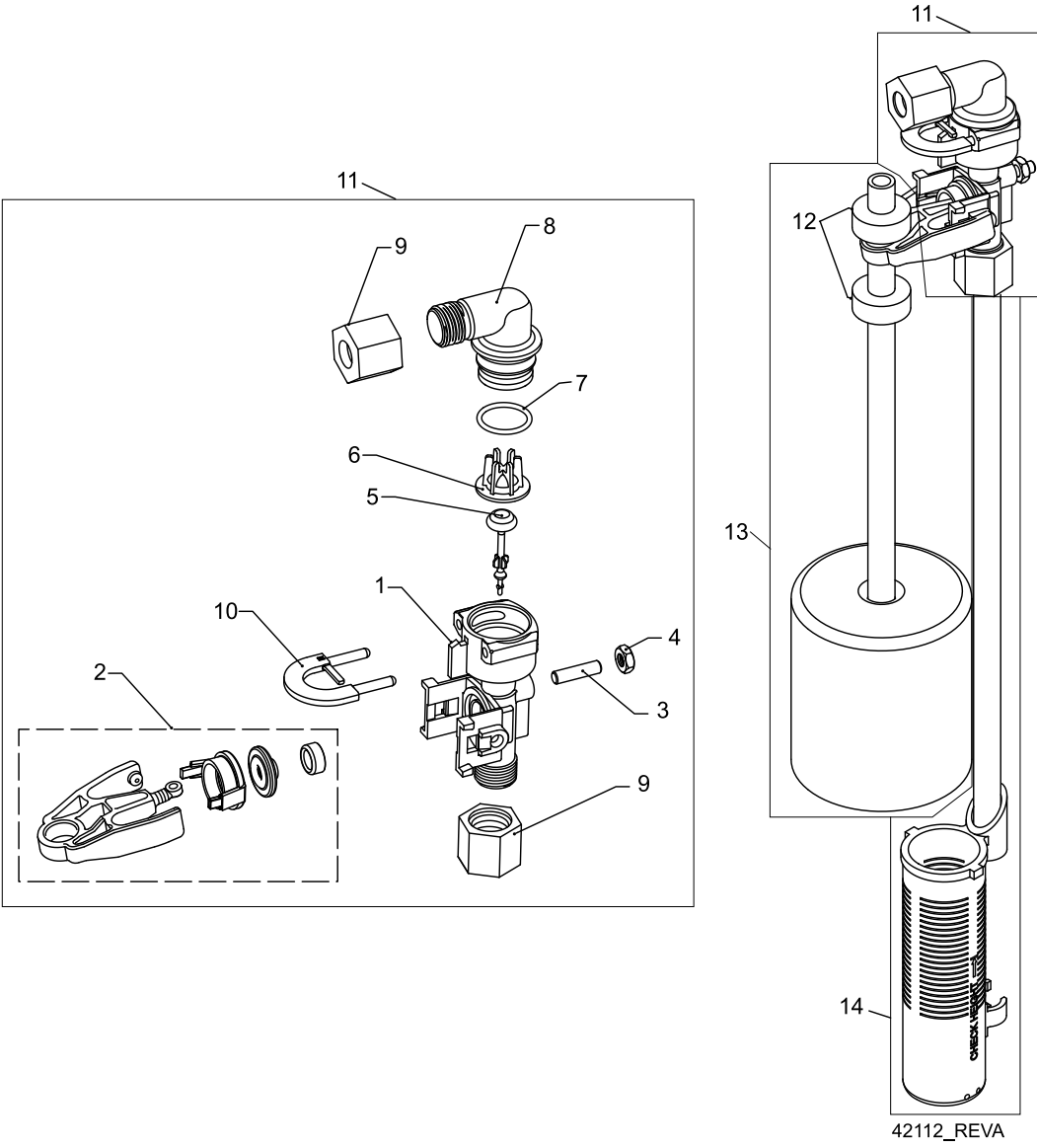


60027 Rev D

| Item No. | QTY | Part No.    | Description                                |
|----------|-----|-------------|--|
| 1        | 1   | 60027-00    | Safety Brine Valve, 2300, Less Elbow       |
| 2        | 1   | 10138       | Ball, 3/8-inch, Brass                      |
| 3        | 1   | 11566       | Ball Stop, Slow Fill                       |
| 4        | 1   | 10328       | Fitting, Elbow, 90 Deg. 1/4 NPT x 3/8 Tube |
| 5        | 1   | 10332       | Fitting, Insert, 3/8                       |
| 6        | 1   | 10330       | Fitting, Sleeve, 3/8 Celcon                |
| 7        | 1   | 10329       | Fitting, Tube, 3/8 Nut, Brass              |
| 8        | 1   | 10186       | Nut, Hex, 10-32                            |
| 9        | 1   | 60002-10    | Air Check, #500, American Hydro            |
|          |     | 60002-11.38 | Air Check, #500, 11.38 inches Long         |
|          |     | 60002-24    | Air Check, #500, 24 inches Long            |
|          |     | 60002-27    | Air Check, #500, 27 inches Long            |
|          |     | 60002-32    | Air Check, #500, 32 inches Long            |
|          |     | 60002-34    | Air Check, #500, 34 inches Long            |
|          |     | 60002-36    | Air Check, #500, 36 inches Long            |
|          |     | 60002-48    | Air Check, #500, 48 inches Long            |
|          |     | 60002-26.25 | Air Check, #500, 26.25 inches Long         |
|          |     | 60002-33.25 | Air Check, #500, 33.25 inches Long         |

| Item No. | QTY | Part No.  | Description                                  |
|----------|-----|-----------|--|
| 10       | 1   | 10149     | Rod, Float, 30-inch                          |
| 11       | 1   | 10700     | Float Assy, White                            |
| 12       | 3   | 10150     | Grommet, .30 Dia                             |
| 13       | 1   | 60028-30  | Float Assy, 2300, 30-inch White              |
| 14       | 1   | 60027-FFA | Safety Brine Valve, 2300, Fitting Facing Arm |
|          | 1   | 60027-FFS | Safety Brine Valve, 2300 Fitting Facing Stud |

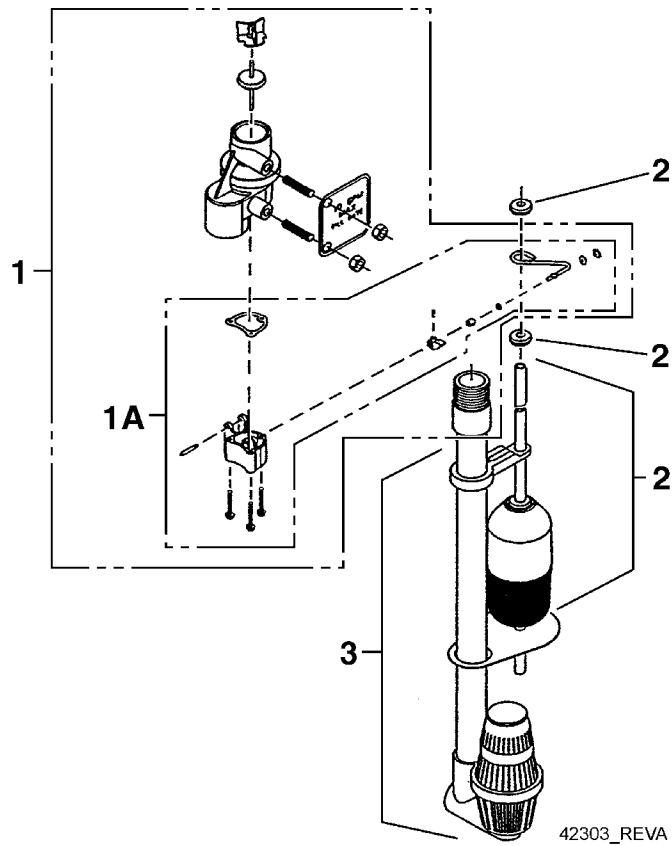
**2310 SAFETY BRINE VALVE**



## 2310 SAFETY BRINE VALVE *CONTINUED*

| Item No. | QTY | Part No.   | Description                       | Item No.    | QTY | Part No.    | Description                        |
|----------|-----|------------|-----------------------------------|-------------|-----|-------------|------------------------------------|
| 1        | 1   | 19645      | Body, Safety Brine Valve, 2310    | 60002-11.38 | 1   | 60002-11.38 | Air Check, #500, 11.38 inches Long |
| 2        | 1   | 19803      | Safety Brine Valve Assy           | 60002-24    | 1   | 60002-24    | Air Check, #500, 24 inches Long    |
| 3        | 1   | 19804      | Screw, Sckt Hd, Set, 10-24 x .75  | 60002-27    | 1   | 60002-27    | Air Check, #500, 27 inches Long    |
| 4        | 1   | 19805      | Nut, Hex, 10-24, Nylon Black      | 60002-32    | 1   | 60002-32    | Air Check, #500, 32 inches Long    |
| 5        | 1   | 19652-01   | Poppet Assy, SBV w/O-ring         | 60002-34    | 1   | 60002-34    | Air Check, #500, 34 inches Long    |
| 6        | 1   | 19649      | Flow Dispenser                    | 60002-36    | 1   | 60002-36    | Air Check, #500, 36 inches Long    |
| 7        | 1   | 11183      | O-ring, -017                      | 60002-48    | 1   | 60002-48    | Air Check, #500, 48 inches Long    |
| 8        | 1   | 19647      | Elbow, Safety Brine Valve         | 60002-26.25 | 1   | 60002-26.25 | Air Check, #500, 26.25 inches Long |
| 9        | 2   | 19625      | Nut Assy, 3/8-inch Plastic        | 60002-33.25 | 1   | 60002-33.25 | Air Check, #500, 33.25 inches Long |
| 10       | 1   | 18312      | Retainer, Drain                   |             |     |             |                                    |
| 11       | 1   | 60014      | Safety Brine Valve Assy, 2310     |             |     |             |                                    |
| 12       | 2   | 10150      | Grommet, .30 Dia                  |             |     |             |                                    |
| 13       | 1   | 60068-8.06 | Float Assy, 2310, w/8.06-inch Rod |             |     |             |                                    |
|          |     | 60068-10.5 | Float Assy, 2310, w/10.5-inch Rod |             |     |             |                                    |
|          |     | 60068-11.5 | Float Assy, 2310, w/11.5-inch Rod |             |     |             |                                    |
|          |     | 60068-20   | Float Assy, 2310, w/20-inch Rod   |             |     |             |                                    |
|          |     | 60068-30   | Float Assy, 2310, w/30-inch Rod   |             |     |             |                                    |
| 14       | 1   | 60002-10   | Air Check, #500, American Hydro   |             |     |             |                                    |

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

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## SEAL & SPACER TOOLS & REPLACEMENT

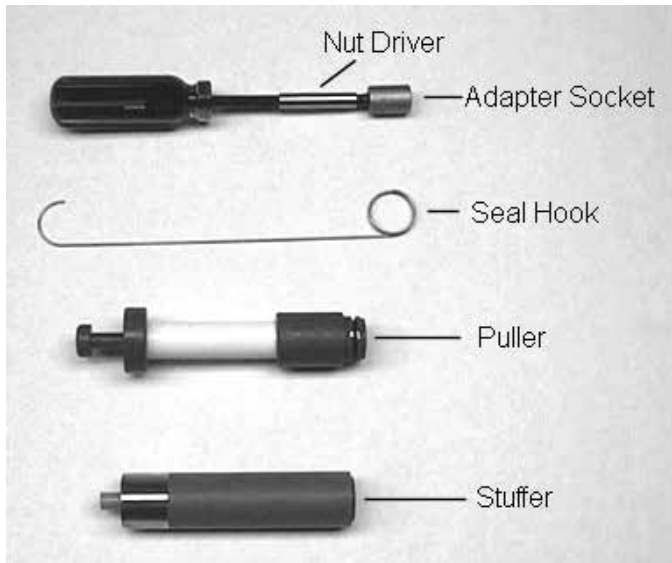


Figure 5

**NOTE: Photos shown are for reference only for replacing the seal and spacer. Actual valve may be different.**

1. Turn off water supply to valve. Next, cycle valve to backwash position, then to service. Now remove electrical plug from outlet.
2. Remove control box cover.
3. Disconnect the brine line from the injector housing to the brine valve (if your unit has timed brine tank fill).
4. Remove the two capscrews that hold the back plate to the valve.
5. Grasp the back plate on both sides and slowly pull end plug and piston assembly out of the valve body (see Figure 6) and lay aside.

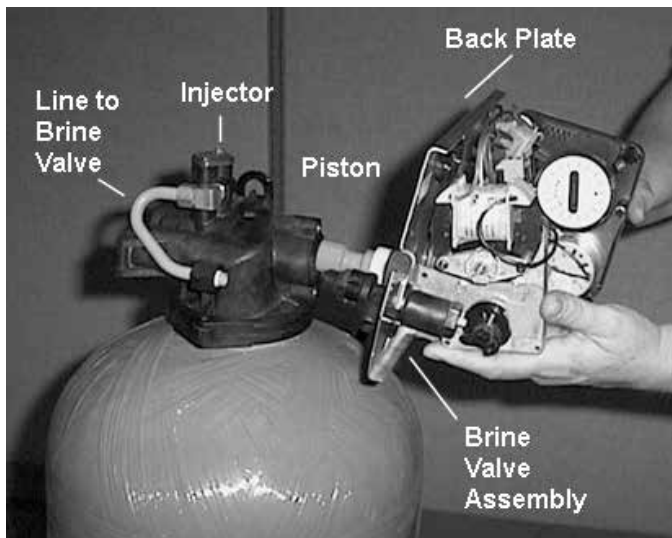


Figure 6

6. Remove the seal first using the wire hook with the finger loop (see Figure 7).

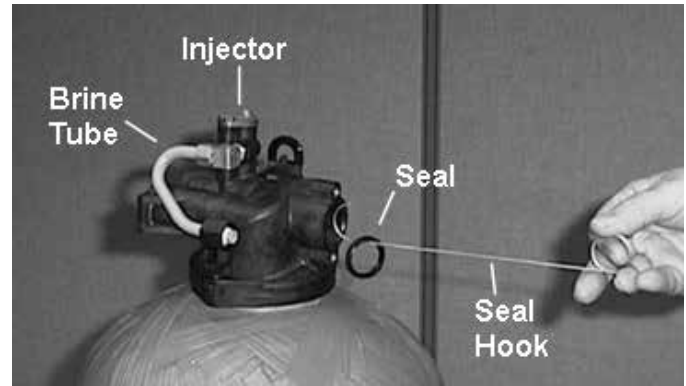


Figure 7

7. The spacer tool (use only for removing the spacers) has three retractable pins, retained by a rubber ring, at one end. They are retracted or pushed out by pulling or pushing the center button the opposite end.
8. Insert the pin end of the spacer tool into the valve body with the pins retracted (button pulled back). Push the tool tight against the spacer and push the button in, (see Figure 8). When the button is pushed in, the pins are pushed out to engage the 1/4 dia. holes in the spacer. Remove the tool from the valve body. The spacer will be on the end. Pull the center button back, the pins will be retracted and the spacer can be removed from the spacer tool.

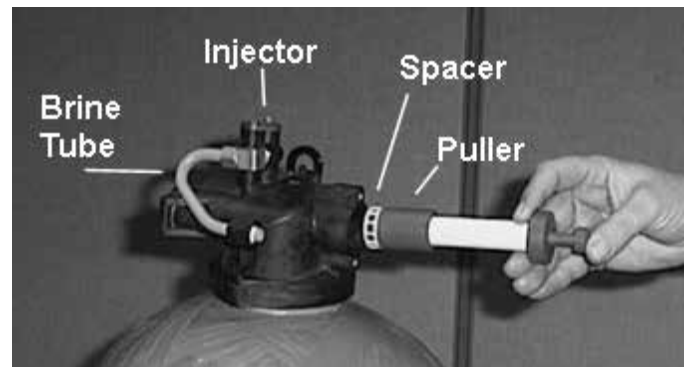


Figure 8

9. Alternately remove the remaining seals and spacers in accordance with steps No. 6 and 8.
10. The last or end spacer does not have any holes for the pins of the spacer tool to engage, therefore if the end spacer does not come out on the first try, try again using the wire hook with the finger loop.
11. To replace seals, spacers and end ring, use special tool with the brass sleeve on one end. This is a double-purpose tool (see Figure 9). The male end acts as a pilot to hold the spacers as they are pushed into the valve body and the brass female end is used to insert the seals into the valve

## SEAL & SPACER TOOLS & REPLACEMENT

*CONTINUED*

---

body.

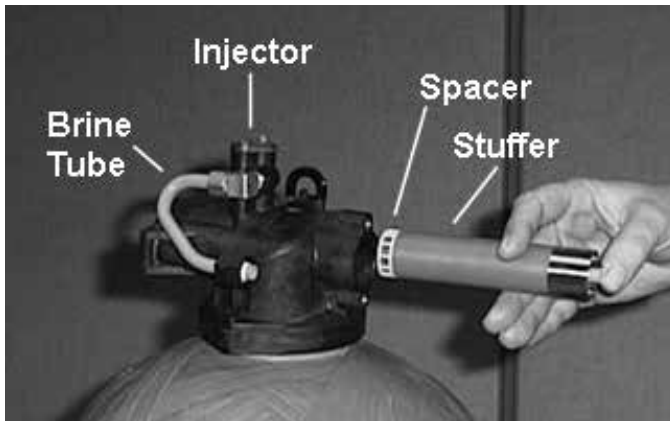


Figure 9

12. To restuff a valve body, first take the end ring (the plastic or brass ring without holes), then with your thumb press the button on the brass sleeve end. The large dia. inner portion is now exposed (see Figure 8). Place the end ring on this pilot with the lip on the end ring facing the tool. Push the tool into the valve body bore until it bottoms. While the tool is in the valve body, take a seal and press it into the inside diameter of the exposed brass female end.
13. Remove the tool, turn it end for end and insert it into the valve body bore. While holding the large dia. of the tool, slide it all the way into the valve body bore until it bottoms. Then push the center button to push the seal of the tool and leave it in place in the valve body.
14. Remove the tool from the valve body and push the center on the brass female end to expose the pilot on the opposite end. Place a spacer on this end and insert the spacer and tool into the valve.

## 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

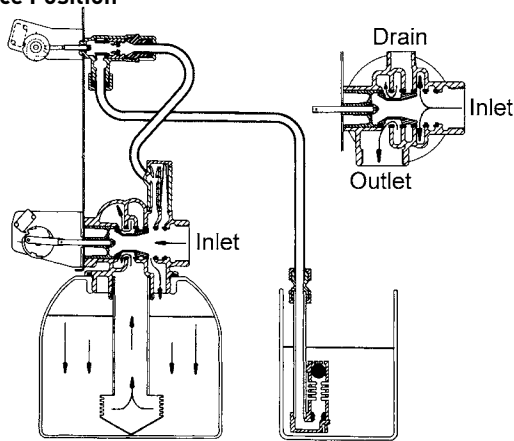
| Problem                                | Cause  | Correction  |
|--|--|---|
| Water conditioner fails to regenerate. | Electrical service to unit has been interrupted  | Assure permanent electrical service (check fuse, plug, pull chain, or switch)   |
|  | Timer is defective.  | Replace timer.  |
|  | 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.  |



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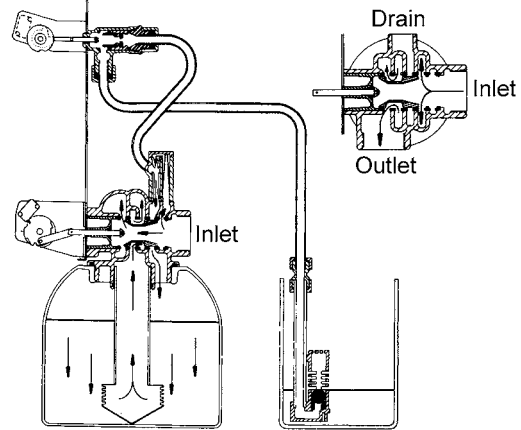
# WATER CONDITIONER FLOW DIAGRAMS

## 1 Service Position



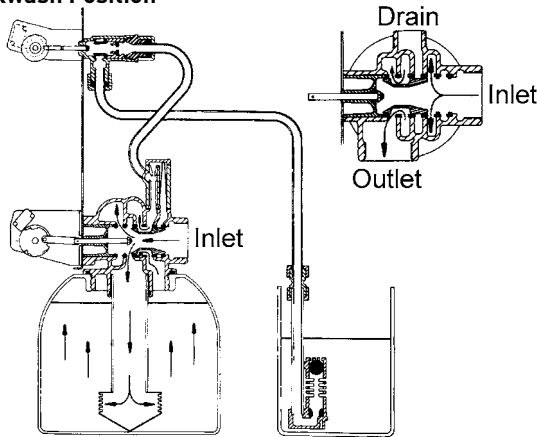
Hard water enters unit at valve inlet and flows down through the mineral in the mineral tank. Conditioned water enters center tube through the bottom distributor, then flows up through the center tube, around the piston, and out the outlet of the valve.

## 4 Slow Rinse Position



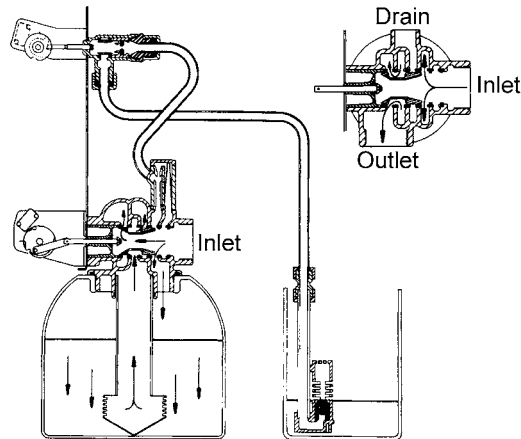
Hard water enters unit at valve inlet, flows up into injector housing and down through nozzle and throat, around the piston, down through mineral, enters center tube through bottom distributor, flows up through center tube, around piston and out through drain line.

## 2 Backwash Position



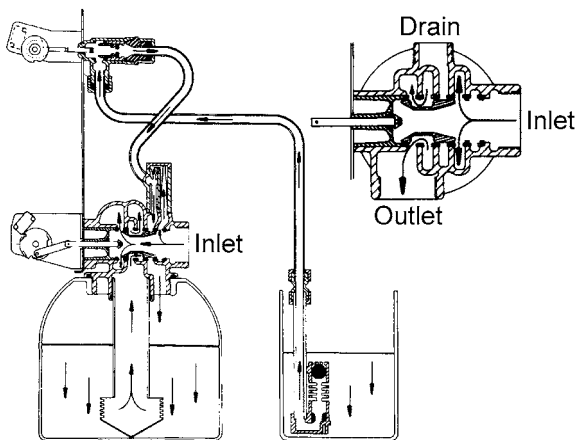
Hard water enters unit at valve inlet, flows through piston, down center tube, through bottom distributor, and up through the mineral, around the piston and out the drain line.

## 5 Rapid Rinse



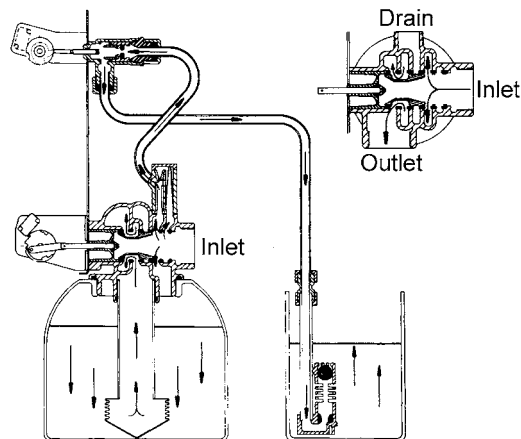
Hard water enters unit at valve inlet, flows directly from inlet down through mineral into center tube bottom distributor and up through center tube, around piston and out through the drain line.

## 3 Brine Position



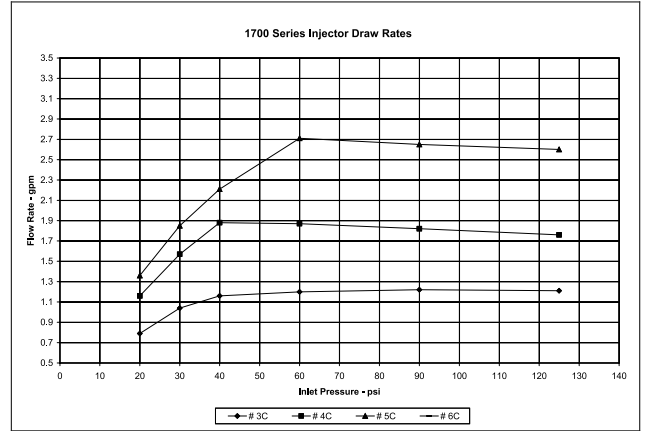
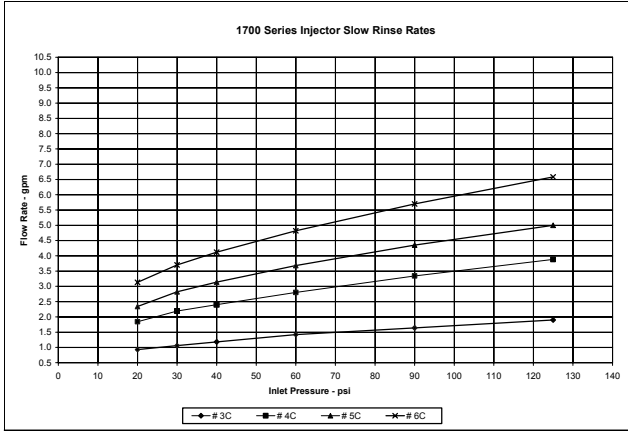
Hard water enters unit at valve inlet, flows up into injector housing and down through nozzle and throat to draw brine from the brine tank, brine flows down through mineral and enters the center tube through bottom distributor and out through the drain line.

## 6 Brine Tank Refill Position



Hard water enters unit at valve inlet, flows up through the injector housing, through the brine valve to refill the brine tank.

# FLOW DATA & INJECTOR DRAW RATES - DOWNFLOW

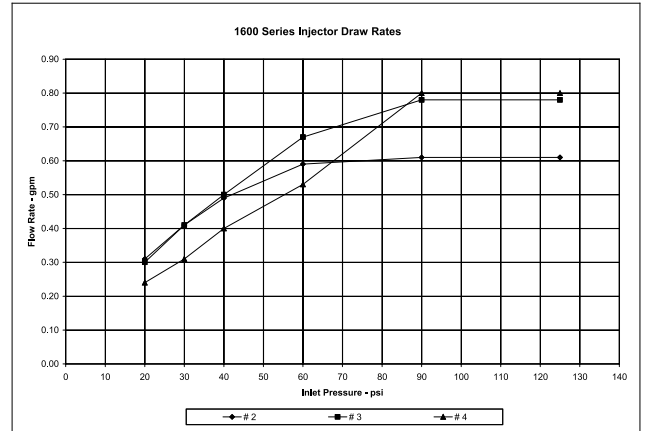
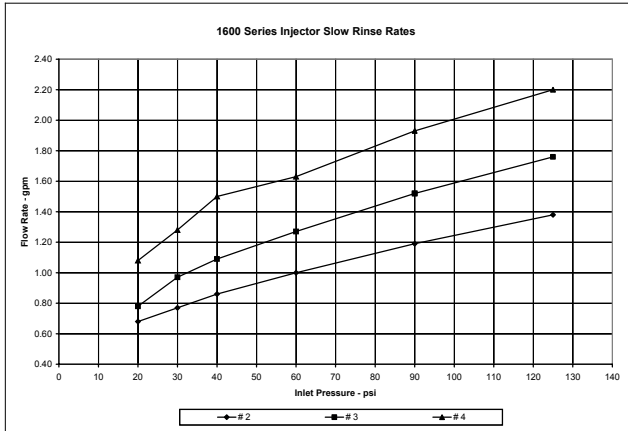


| 1700 series injectors | Slow Rinse - gpm |      |      |      |
|-----------------------|------------------|------|------|------|
| pressure              | #3C              | #4C  | #5C  | #6C  |
| 20                    | 0.93             | 1.84 | 2.34 | 3.13 |
| 30                    | 1.06             | 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

| 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 & 7C - brass cap, o-ring, no air disperser

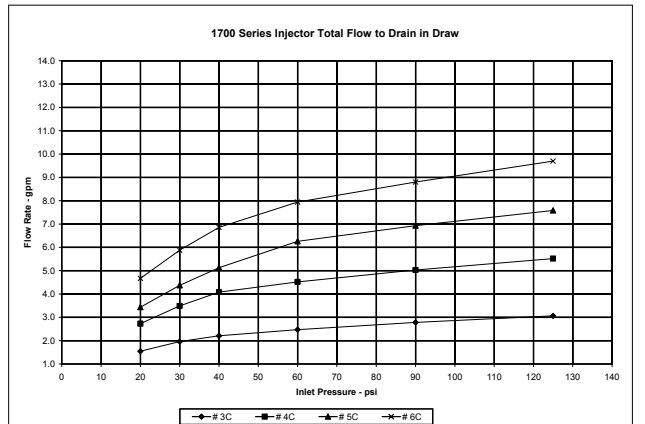
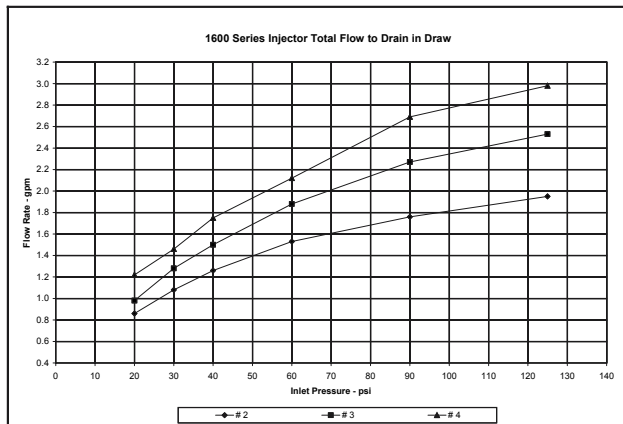


| 1600 series injectors | Slow Rinse Rates - gpm |      |      |
|-----------------------|------------------------|------|------|
| pressure              | #2                     | #3   | #4   |
| 20                    | 0.68                   | 0.78 | 1.08 |
| 30                    | 0.77                   | 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 |

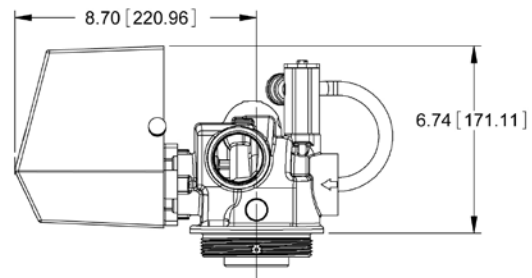
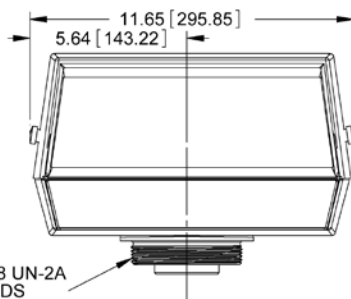
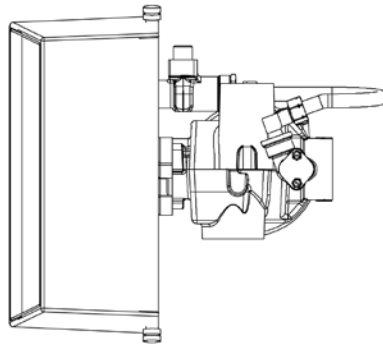
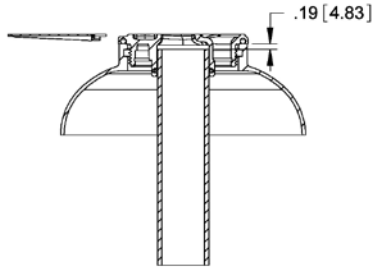
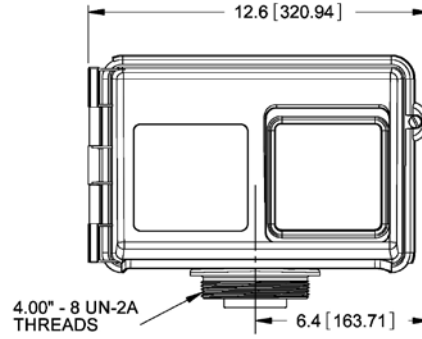
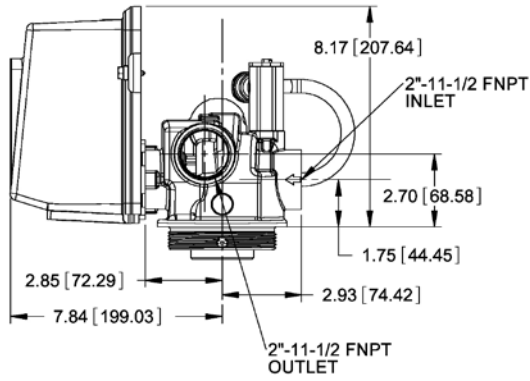
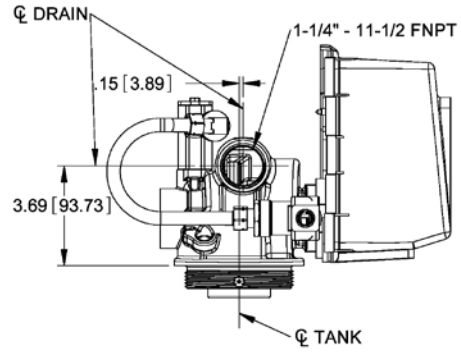
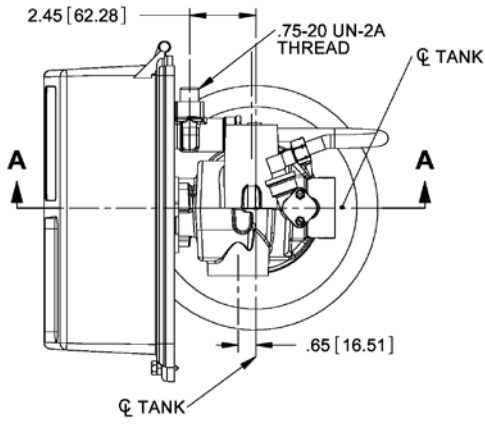
all injectors used the steel cap and an air disperser

| 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

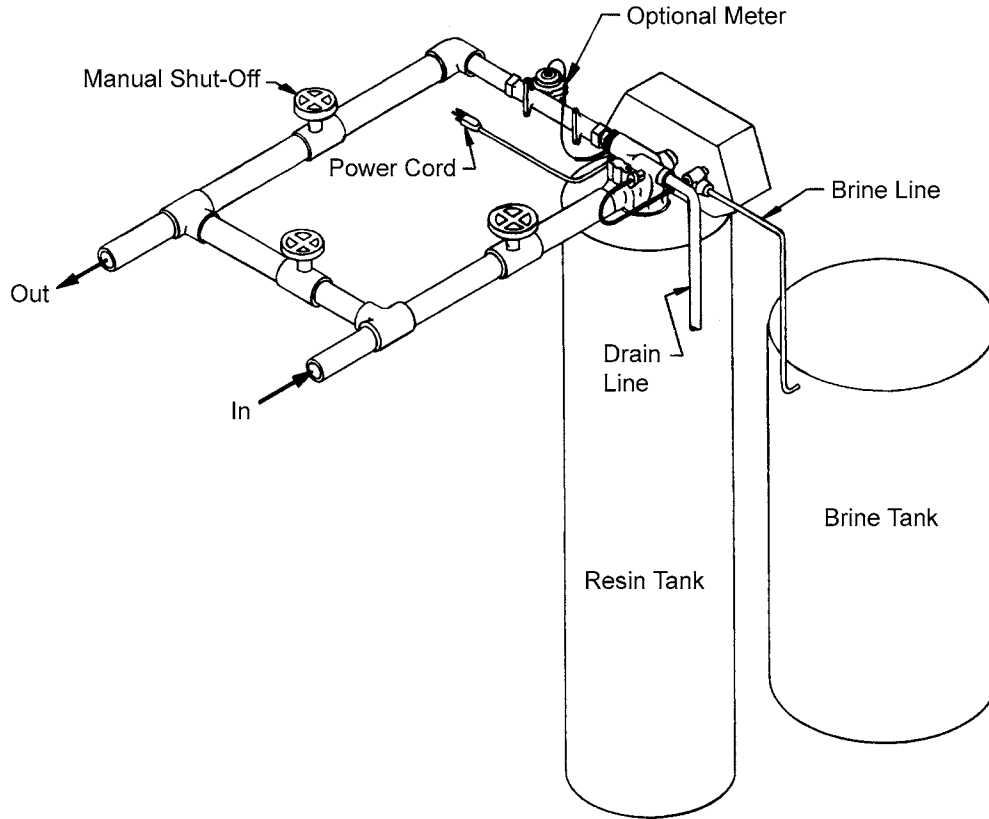


# DIMENSIONAL DRAWING



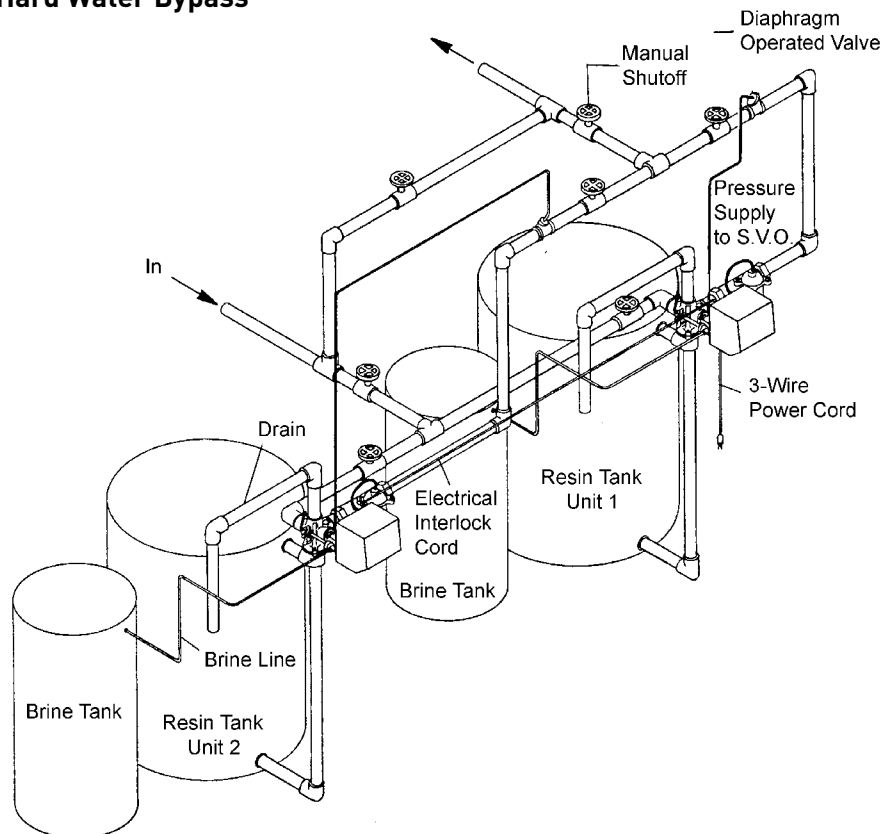
## SYSTEM #4

### Typical Single Tank Installation with Optional Meter



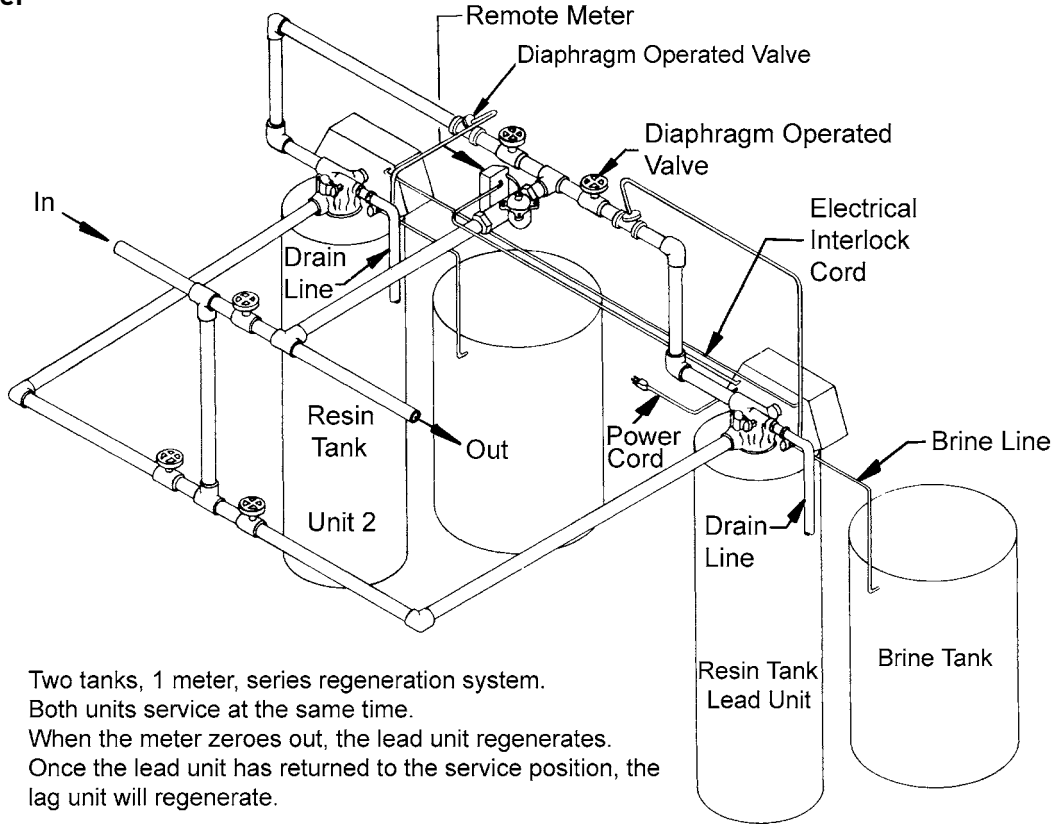
## SYSTEM #5 INTERLOCK

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



## SYSTEM #6

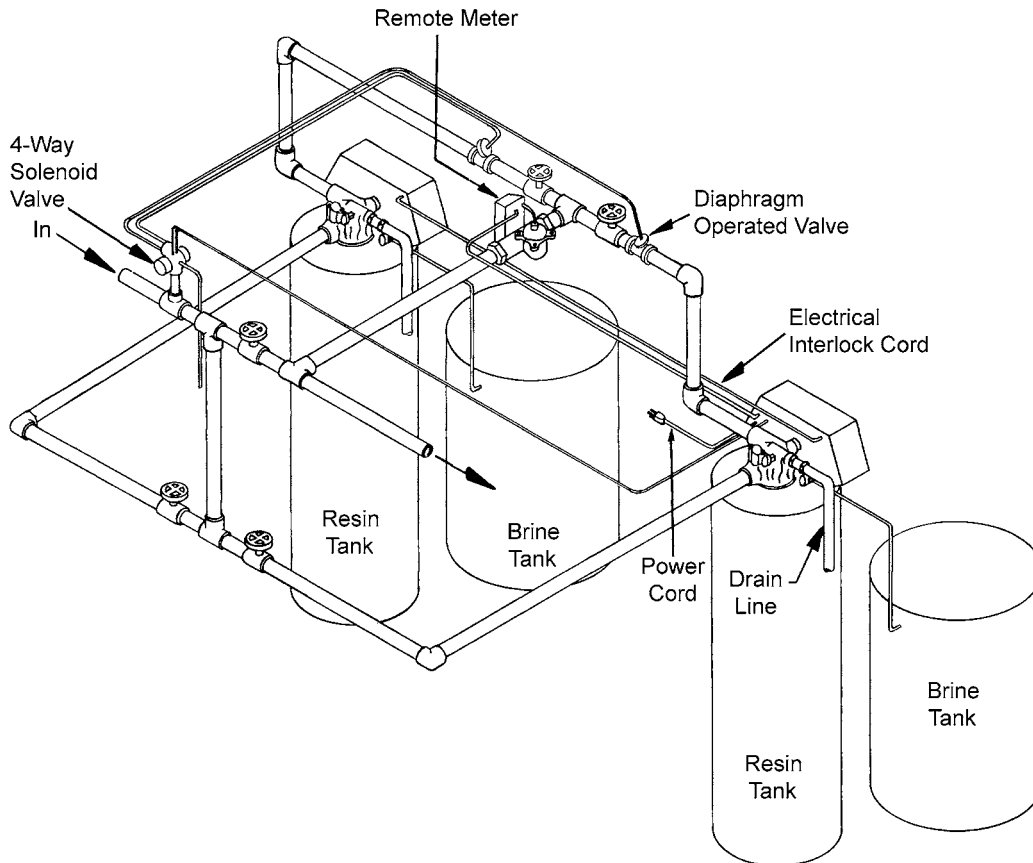
### Twin Series Regeneration Installation with a Remote Meter



Two tanks, 1 meter, series regeneration system.  
Both units service at the same time.  
When the meter zeroes out, the lead unit regenerates.  
Once the lead unit has returned to the service position, the lag unit will regenerate.

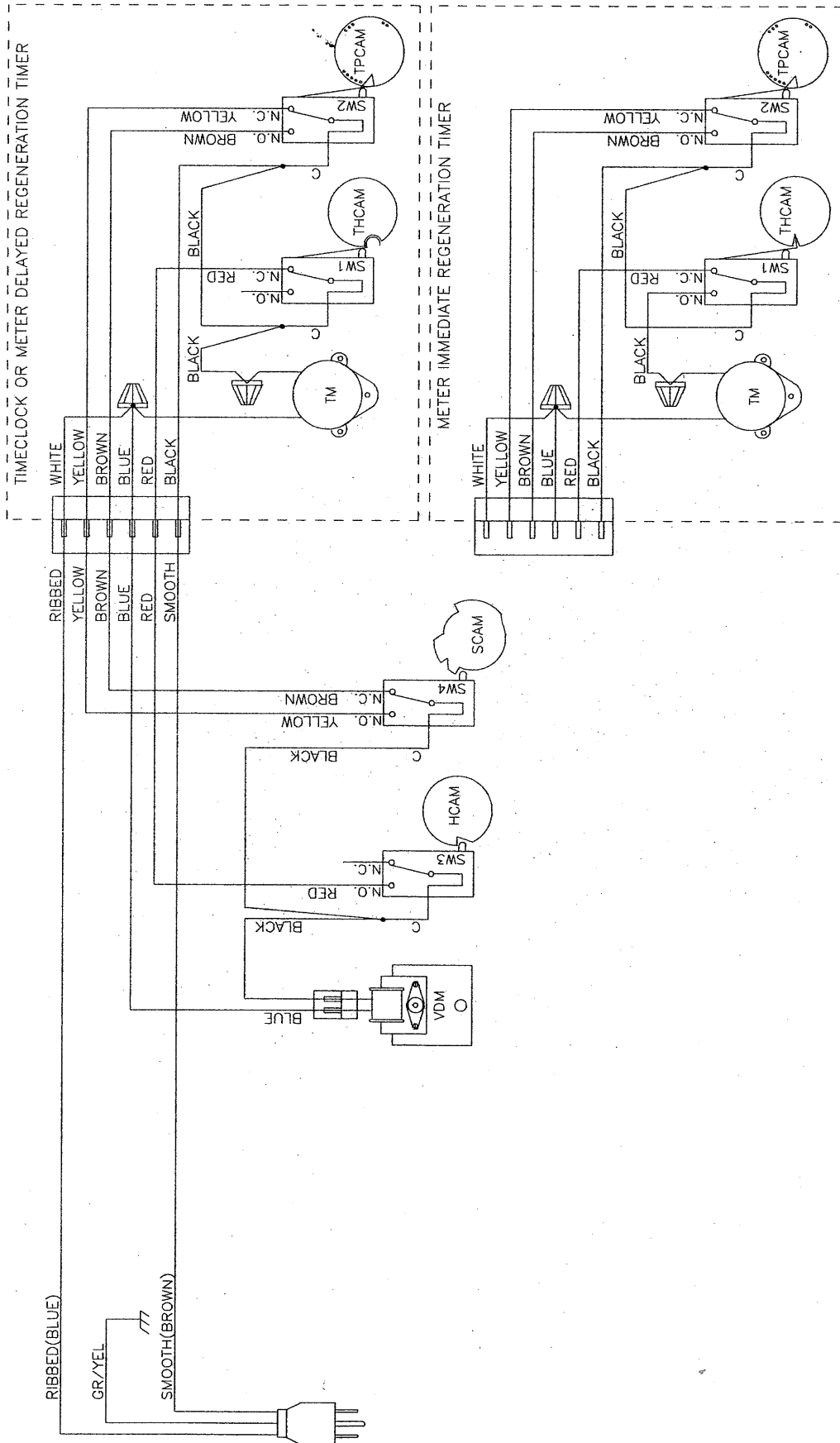
## SYSTEM #7

### Twin Alternator Installation with a Remote Meter



# SYSTEM #4 WIRING

## Single Valve Regeneration Immediate and Delayed Valve Wiring

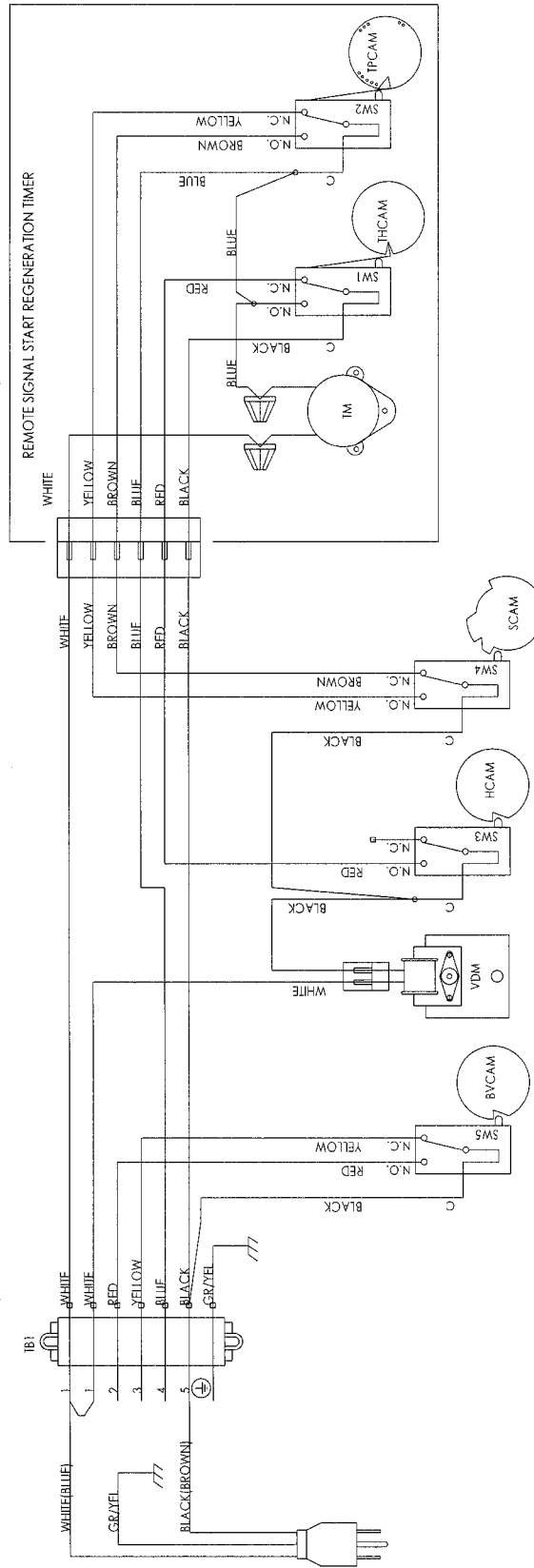
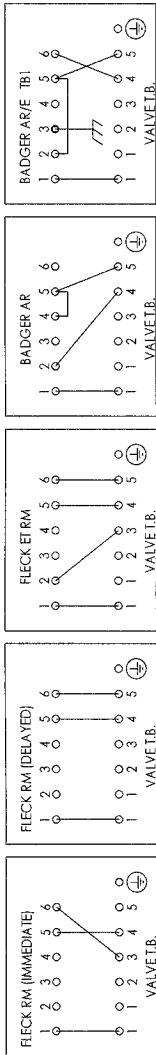


19201 Rev C

# SYSTEM #4 WIRING *CONTINUED*

## With Remote Starter Valve Wiring

### REMOTE METER WIRING



- TB1 - 7 POSITION TERMINAL BLOCK
- TM - TIMER MOTOR
- VDM - VALVE DRIVE MOTOR
- SW1 - TIMER HOMING SWITCH
- SW2 - TIMER PROGRAM SWITCH
- SW3 - VALVE HOMING SWITCH
- SW4 - VALVE STEP SWITCH
- SW5 - BRINE CAM SWITCH
- HCAM - TIMER HOMING CAM
- TPCAM - TIMER PROGRAM CAM
- HCAM - VALVE HOMING CAM
- SCAM - VALVE STEP CAM
- BVCAM - BRINE VALVE CAM

- NOTE:
1. SINGLE TANK REMOTE METER INITIATED DELAYED OR IMMEDIATE REGENERATION.
  2. WITH 24V VALVES THE POWER CORD IS REPLACED WITH BLUE AND WHITE WIRES (WIRE BLUE TO TB1 #5, WHITE TO TB1 #1).
  3. VALVE SHOWN IN SERVICE POSITION.

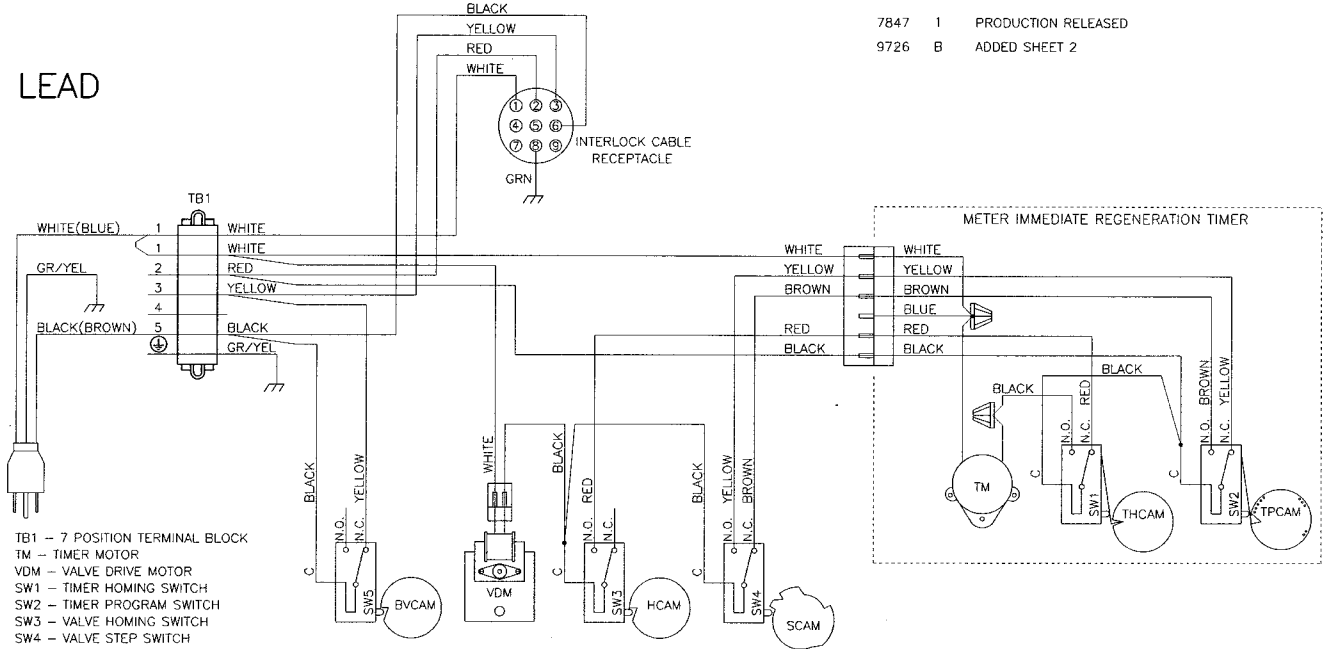


# SYSTEM #5 WIRING

## Interlocked Regeneration Valve Wiring

7847 1 PRODUCTION RELEASED  
9726 B ADDED SHEET 2

LEAD

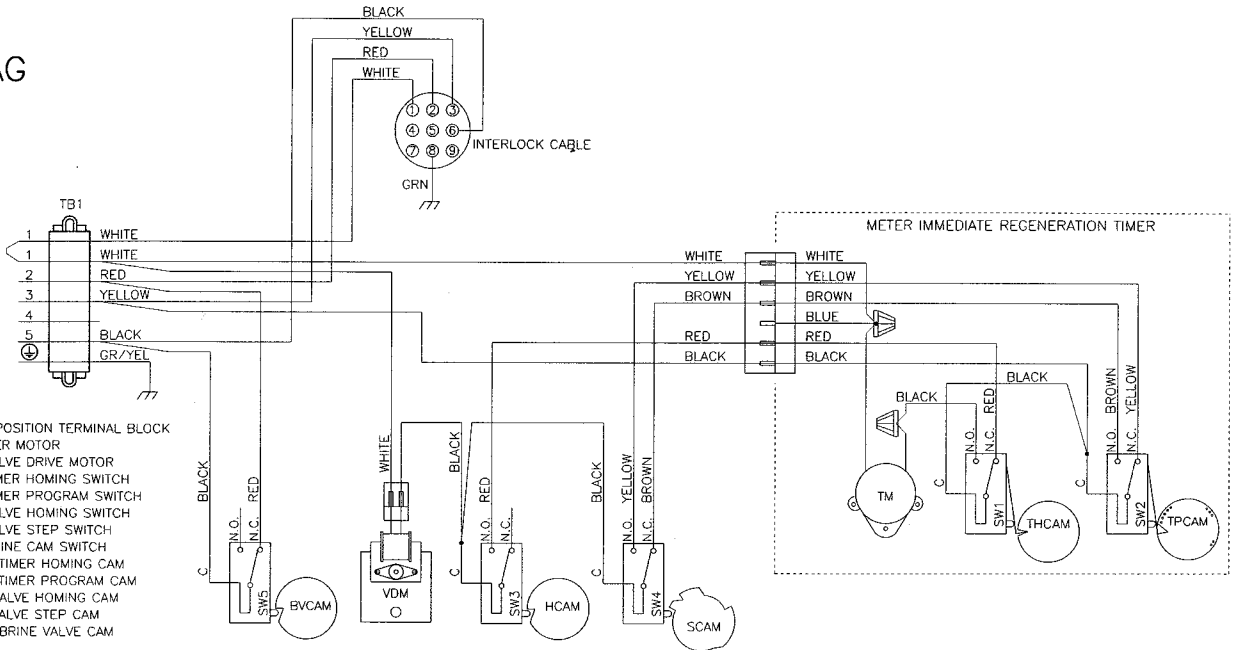


- TB1 - 7 POSITION TERMINAL BLOCK  
 TM - TIMER MOTOR  
 VDM - VALVE DRIVE MOTOR  
 SW1 - TIMER HOMING SWITCH  
 SW2 - TIMER PROGRAM SWITCH  
 SW3 - VALVE HOMING SWITCH  
 SW4 - VALVE STEP SWITCH  
 SW5 - BRINE CAM SWITCH  
 THCAM - TIMER HOMING CAM  
 TPCAM - TIMER PROGRAM CAM  
 HCAM - VALVE HOMING CAM  
 SCAM - VALVE STEP CAM  
 BVCAM - BRINE VALVE CAM

- NOTE:  
 1. BOTH VALVES IN SERVICE, ONLY ONE VALVE IN REGENERATION AT A TIME.  
 2. INDIVIDUAL LOCAL METER REGENERATION.  
 3. VALVE SHOWN IN SERVICE.

40502-01 Rev C

LAG



- TB1 - 7 POSITION TERMINAL BLOCK  
 TM - TIMER MOTOR  
 VDM - VALVE DRIVE MOTOR  
 SW1 - TIMER HOMING SWITCH  
 SW2 - TIMER PROGRAM SWITCH  
 SW3 - VALVE HOMING SWITCH  
 SW4 - VALVE STEP SWITCH  
 SW5 - BRINE CAM SWITCH  
 THCAM - TIMER HOMING CAM  
 TPCAM - TIMER PROGRAM CAM  
 HCAM - VALVE HOMING CAM  
 SCAM - VALVE STEP CAM  
 BVCAM - BRINE VALVE CAM

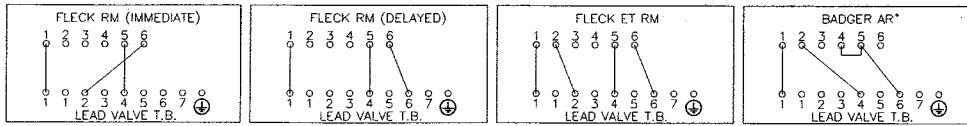
- NOTE:  
 1. BOTH VALVES IN SERVICE, ONLY ONE VALVE IN REGENERATION AT A TIME.  
 2. INDIVIDUAL LOCAL METER REGENERATION.  
 3. VALVE SHOWN IN SERVICE.

40502-02 Rev C

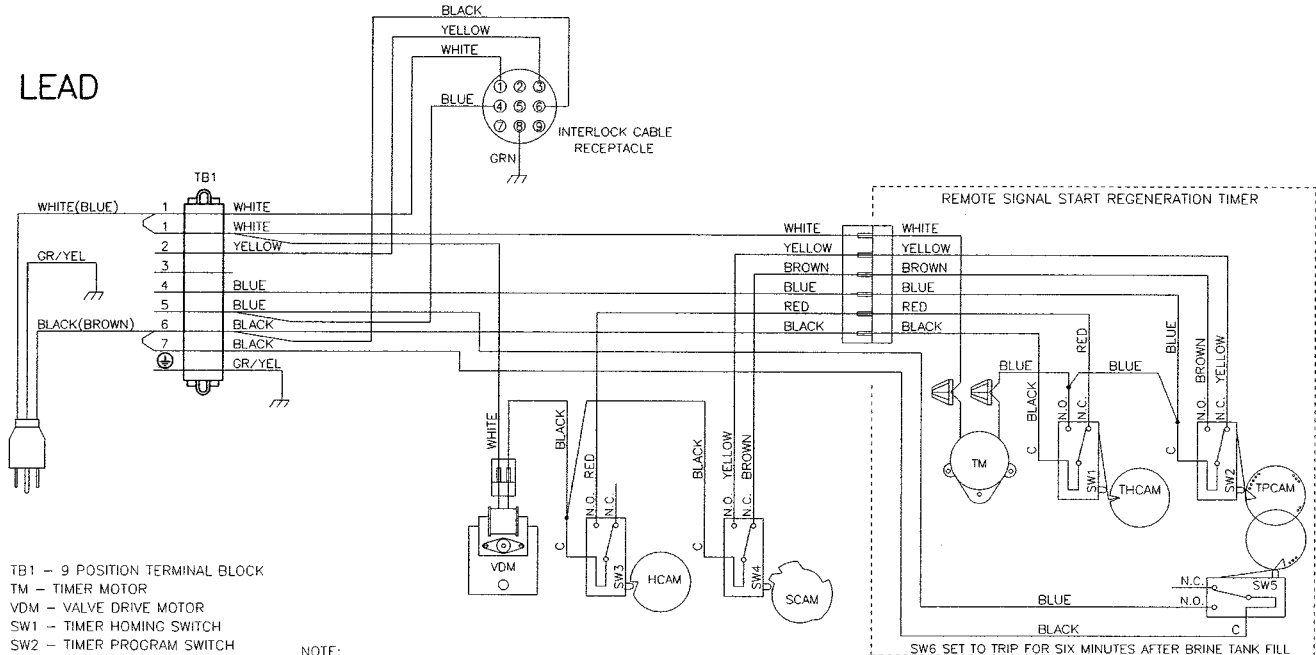
# SYSTEM #6 WIRING

## Series Regeneration Valve Wiring

### REMOTE METER WIRING



### LEAD



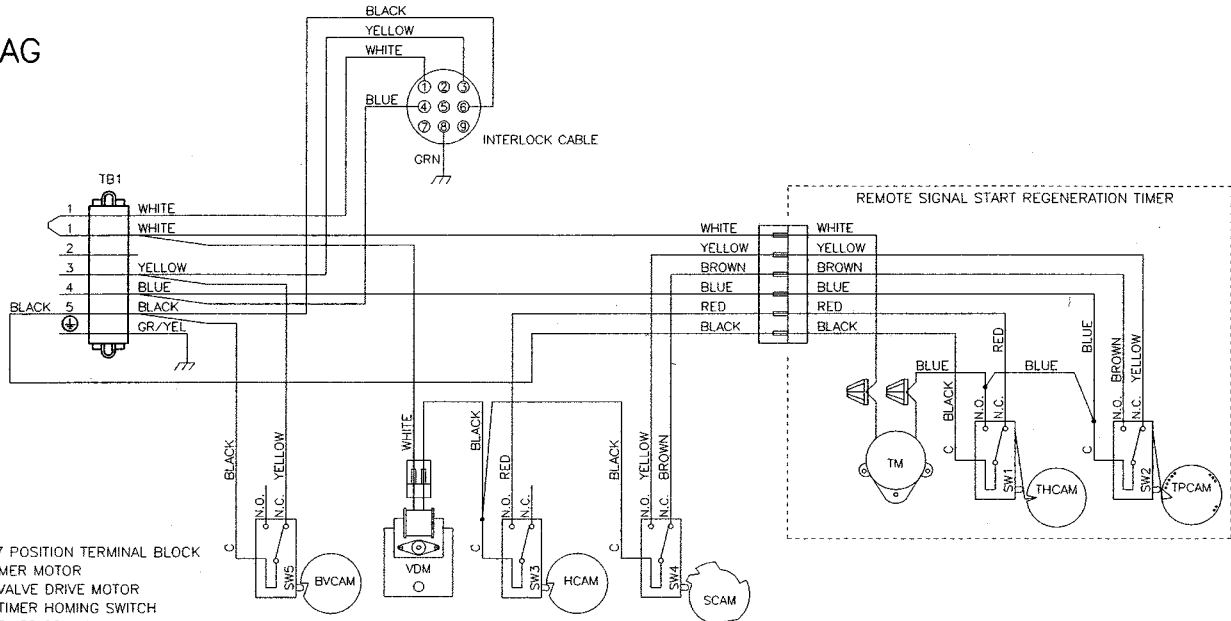
- TB1 - 9 POSITION TERMINAL BLOCK
- TM - TIMER MOTOR
- VDM - VALVE DRIVE MOTOR
- SW1 - TIMER HOMING SWITCH
- SW2 - TIMER PROGRAM SWITCH
- SW3 - VALVE HOMING SWITCH
- SW4 - VALVE STEP SWITCH
- SW5 - AUXILIARY TIMER SWITCH
- THCAM - TIMER HOMING CAM
- TPCAM - TIMER PROGRAM CAM
- HCAM - VALVE HOMING CAM
- SCAM - VALVE STEP CAM

**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.
5. WITH 24V VALVES THE POWER CORD IS REPLACED WITH BLUE AND WHITE WIRES (WIRE BLUE TO TB1 #6, WHITE TO TB1 #1).
6. VALVE SHOWN IN SERVICE POSITION.

13632-01 Rev L

### LAG



- TB1 - 7 POSITION TERMINAL BLOCK
- TM - TIMER MOTOR
- VDM - VALVE DRIVE MOTOR
- SW1 - TIMER HOMING SWITCH
- SW2 - TIMER PROGRAM SWITCH
- SW3 - VALVE HOMING SWITCH
- SW4 - VALVE STEP SWITCH
- SW5 - BRINE CAM SWITCH
- THCAM - TIMER HOMING CAM
- TPCAM - TIMER PROGRAM CAM
- HCAM - VALVE HOMING CAM
- SCAM - VALVE STEP CAM
- BVCAM - BRINE VALVE CAM

**NOTE:**

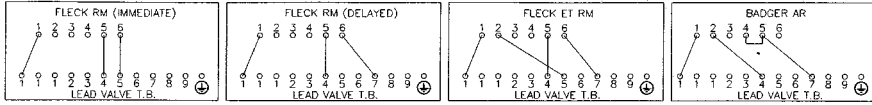
1. TWO TANK INTERLOCKED, SINGLE REMOTE METER, SERIES REGENERATION.
2. BOTH TANKS NORMALLY IN SERVICE.
3. ONLY ONE TANK IN REGENERATION, THE OTHER REMAINS IN SERVICE.
4. LEAD VALVE REGENERATES FIRST, FOLLOWED IMMEDIATELY BY LAG VALVE.
5. WITH 24V VALVES, THE POWER CORD IS REPLACED WITH BLUE AND WHITE WIRES (WIRE BLUE TO TB1 #6, WHITE TO TB1 #1).
6. VALVE SHOWN IN SERVICE POSITION.

13632-02 Rev L

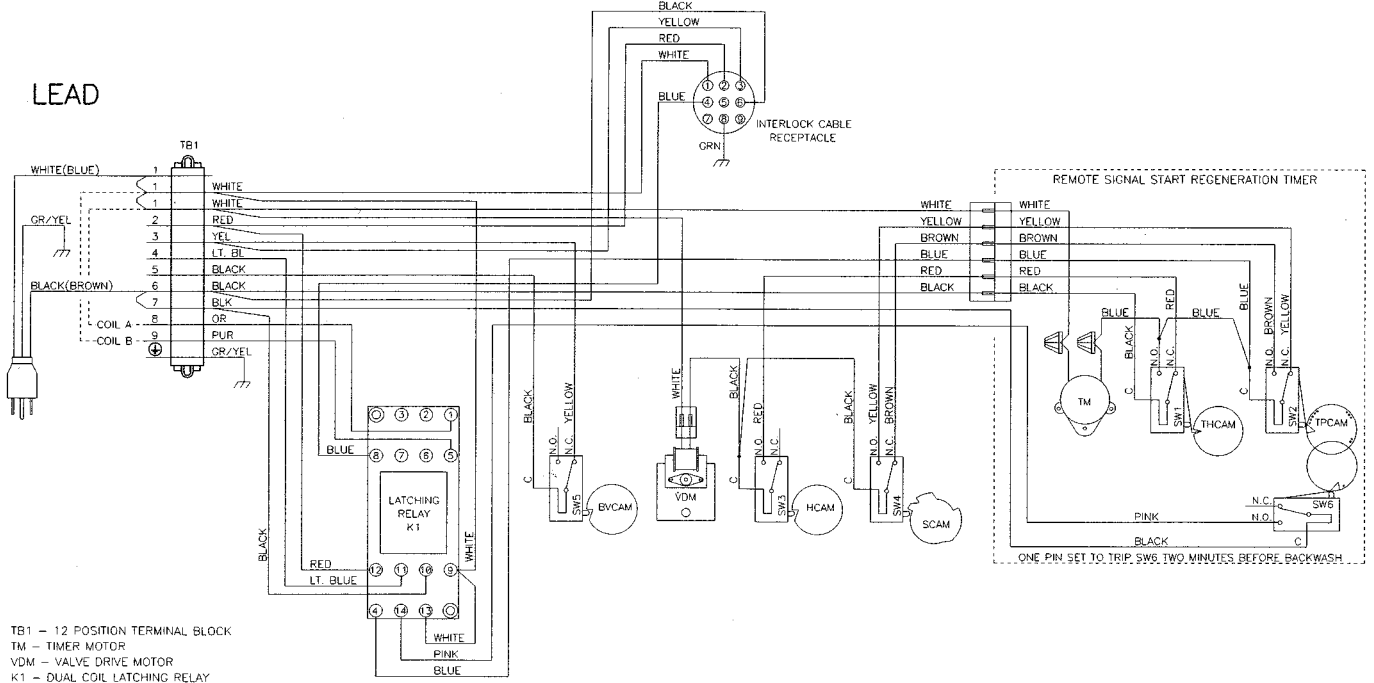
# SYSTEM #7 WIRING

## Alternating Regeneration 230V / 3-Way Solenoid Output Valve Wiring

REMOTE METER WIRING

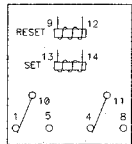


### LEAD



- TB1 - 12 POSITION TERMINAL BLOCK
- TM - TIMER MOTOR
- VDM - VALVE DRIVE MOTOR
- K1 - DUAL COIL LATCHING RELAY
  - 24V P/N 1701B
  - 120V P/N 16807
- SW1 - TIMER HOMING SWITCH
- SW2 - TIMER PROGRAM SWITCH
- SW3 - VALVE HOMING SWITCH
- SW4 - VALVE STEP SWITCH
- SW5 - BRINE CAM SWITCH
- SW6 - TIMER AUXILIARY SWITCH
- THCAM - TIMER HOMING CAM
- TPCAM - TIMER PROGRAM CAM
- HCCAM - VALVE HOMING CAM
- SCAM - VALVE STEP CAM
- BVCAM - BRINE VALVE CAM

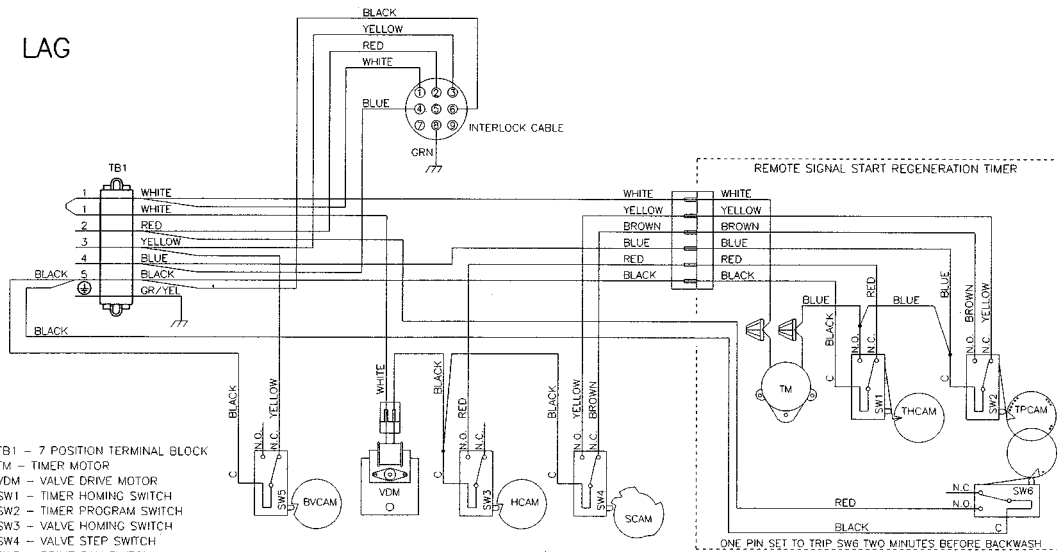
RELAY TERMINAL BLOCK PINOUT (SHOWN IN RESET POSITION)



- NOTE:
1. TWO TANK SINGLE REMOTE METER ALTERNATING REGENERATION. ONLY ONE TANK IN SERVICE THE OTHER IN REGENERATION OR STANDBY.
  2. SYSTEM WIRED FOR 3-WAY SOLENOID OUTPUT. COIL A CLOSSES THE DIAPHRAGM VALVES OF LEAD UNIT.
  3. VALVE SHOWN IN SERVICE POSITION.

19138-01 Rev E

### LAG



- TB1 - 7 POSITION TERMINAL BLOCK
- TM - TIMER MOTOR
- VDM - VALVE DRIVE MOTOR
- SW1 - TIMER HOMING SWITCH
- SW2 - TIMER PROGRAM SWITCH
- SW3 - VALVE HOMING SWITCH
- SW4 - VALVE STEP SWITCH
- SW5 - BRINE CAM SWITCH
- SW6 - TIMER AUXILIARY SWITCH
- THCAM - TIMER HOMING CAM
- TPCAM - TIMER PROGRAM CAM
- HCCAM - VALVE HOMING CAM
- SCAM - VALVE STEP CAM
- BVCAM - BRINE VALVE CAM

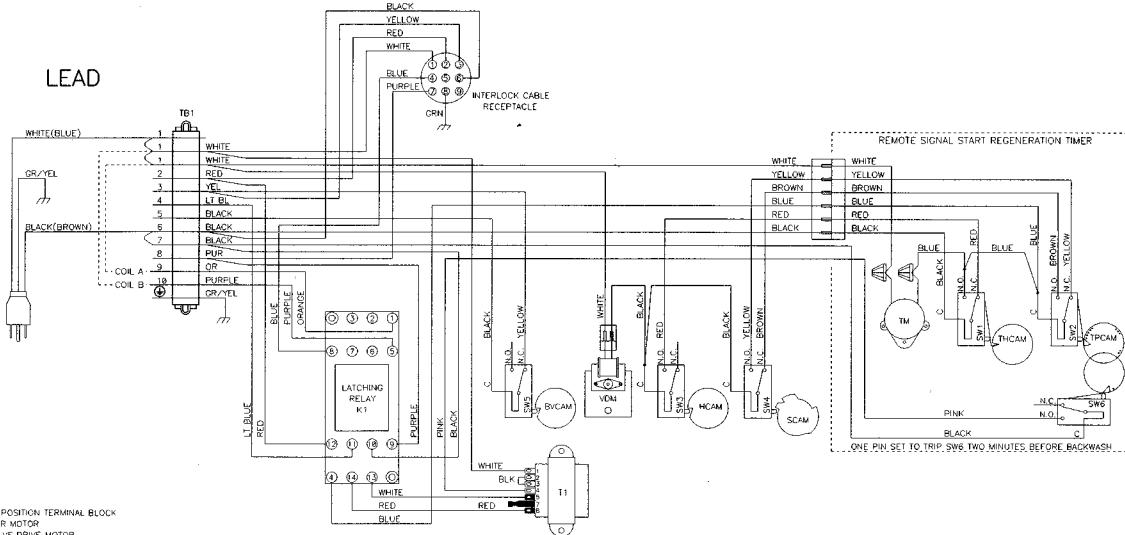
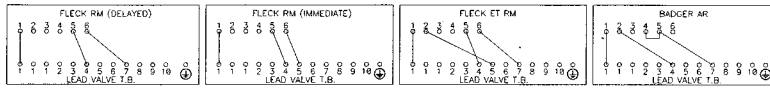
- NOTE:
1. TWO TANK SINGLE REMOTE METER ALTERNATING REGENERATION. ONLY ONE TANK IN SERVICE THE OTHER IN REGENERATION OR STANDBY.
  2. SYSTEM WIRED FOR 3-WAY SOLENOID OUTPUT. COIL A CLOSSES THE DIAPHRAGM VALVES OF LAG UNIT.
  3. VALVE SHOWN IN SERVICE POSITION.

19138-02 Rev E

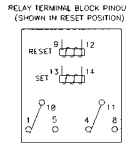
# SYSTEM #7 WIRING *CONTINUED*

## Alternating Regeneration 24V / 120V / 3-Way Solenoid Output Valve Wiring

REMOTE METER WIRING

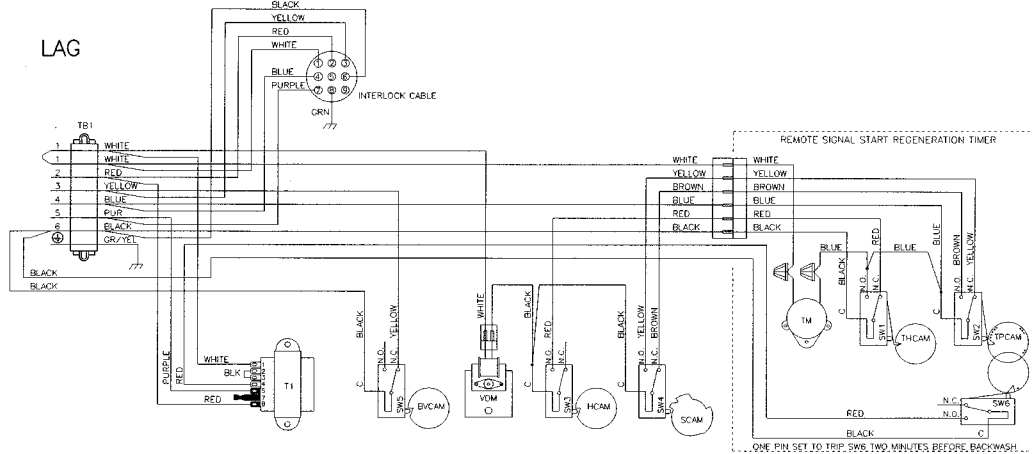


- TB1 - 13 POSITION TERMINAL BLOCK
- TM - TIMER MOTOR
- VDM - VALVE DRIVE MOTOR
- X1 - 120V DUAL COIL LATCHING RELAY P/N 16987
- T1 - 230V/120V TRANSFORMER P/N 40112
- SW1 - TIMER HOMING SWITCH
- SW2 - TIMER PROGRAM SWITCH
- SW3 - VALVE HOMING SWITCH
- SW4 - VALVE STEP SWITCH
- SW5 - BRINE CAM SWITCH
- SW6 - TIMER AUXILIARY SWITCH
- THCAM - TIMER HOMING CAM
- TPCAM - TIMER PROGRAM CAM
- HCAM - VALVE HOMING CAM
- SCAM - VALVE STEP CAM
- EVCAM - BRINE VALVE CAM



- NOTE:
1. TWO TANK SINGLE REMOTE METER ALTERNATING REGENERATION. ONLY ONE TANK IN SERVICE THE OTHER IN REGENERATION OR STANDBY.
  2. SYSTEM WIRED FOR 3-WAY SOLENOID OUTPUT.
  - COIL A CLOSSES THE DIAPHRAGM VALVES OF LAG UNIT.
  - COIL B CLOSSES THE DIAPHRAGM VALVES OF LEAD UNIT.
  3. VALVE SHOWN IN SERVICE POSITION.

17727-01 Rev E



- TB1 - 8 POSITION TERMINAL BLOCK
- TM - TIMER MOTOR
- T1 - 230V TO 120V TRANSFORMER P/N 40112
- VDM - VALVE DRIVE MOTOR
- SW1 - TIMER HOMING SWITCH
- SW2 - TIMER PROGRAM SWITCH
- SW3 - VALVE HOMING SWITCH
- SW4 - VALVE STEP SWITCH
- SW5 - BRINE CAM SWITCH
- SW6 - TIMER AUXILIARY SWITCH
- THCAM - TIMER HOMING CAM
- TPCAM - TIMER PROGRAM CAM
- HCAM - VALVE HOMING CAM
- SCAM - VALVE STEP CAM
- EVCAM - BRINE VALVE CAM

- NOTE:
1. TWO TANK SINGLE REMOTE METER ALTERNATING REGENERATION. ONLY ONE TANK IN SERVICE THE OTHER IN REGENERATION OR STANDBY.
  2. SYSTEM WIRED FOR 3-WAY SOLENOID OUTPUT.
  - COIL A CLOSSES THE DIAPHRAGM VALVES OF LAG UNIT.
  - COIL B CLOSSES THE DIAPHRAGM VALVES OF LEAD UNIT.
  3. VALVE SHOWN IN SERVICE POSITION.

17727-02 Rev E

## SERVICE ASSEMBLIES

### 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 |

### Adapters

|                  |   |
|------------------|---|
| 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-inch Long                 |
| 60003-34 ..... | Air Check, #500, HW, 34-inch Tube             |
| 60009-00 ..... | Air Check, #900, Commercial, Less Fittings    |
| 60009-01 ..... | Air Check, #900, Commercial, HW Less Fittings |

### Auxiliary Micro Switch

|                |  |
|----------------|--|
| 60320-02 ..... | Switch Kit, 3200/9000 Timer Auxiliary        |
| 60320-07 ..... | Switch Assy, 2850, Aux w/Self Tapping Screws |
| 60320-12 ..... | Switch Assy, 1500 through 2850               |

### Brine Line Flow Control (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             |
| 60029-010 ..... | Brine Valve, 1600, Short Stem .25 GPM                        |
| 60029-020 ..... | Brine Valve, 1600, Short Stem .50 GPM                        |
| 60029-020 ..... | Brine Valve, 1600, Short Stem 1.0 GPM                        |
| 60029HW.....    | Brine Valve, 1600, Short Stem Hot Water                      |
| 60034-xx.....   | 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) |

### Cam Assemblies

|                |                            |
|----------------|----------------------------|
| 60160-40 ..... | Drive Cam Assy, Std, 2850s |
|----------------|----------------------------|

### Covers

|                 |                             |
|-----------------|-----------------------------|
| 60219-xx.....   | Environmental               |
| 60232-xx.....   | Designer 2 Piece            |
| 60232-110 ..... | Cover, Designer, 1 Pc Black |

### Drain Line Flow Controls

|               |   |
|---------------|---|
| 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)     |

### Drive Assemblies

|                |  |
|----------------|--|
| 60050-25 ..... | Drive Assy, 2850s, STF, 120V Softener/Filter |
|----------------|--|

### Injector Assemblies (Complete)

|               |  |
|---------------|--|
| 60080.....    | 1600 Injector Assembly                                 |
| 60381.....    | 1700 Injector Assembly                                 |
| 60480-xx..... | 1600 - 3/8-inch Brine (Specify size of injector)       |
| 60481-xx..... | 1600 Brass - 3/8-inch Brine (Specify size of injector) |
| 60483-xx..... | 1700 - 1/2-inch Brine (Specify size of injector)       |

### Meters

|                |   |
|----------------|---|
| 61933-10 ..... | 1-1/2" NPT Stainless Steel Meter Assembly, Standard Range |
| 61933-11 ..... | 1-1/2" NPT Stainless Steel Meter Assembly, Extended Range |
| 61933-20 ..... | 1-1/2" BSP Stainless Steel Meter Assembly, Standard Range |
| 61933-21 ..... | 1-1/2" BSP Stainless Steel Meter Assembly, Extended Range |
| 61560-01 ..... | Meter Assy, In-Line, w/1-inch NPT Plstc Connector         |
| 61560-07 ..... | Meter Assy, In-Line, w/1-inch NPT Brass Connector         |
| 61560-09 ..... | Meter Assy, In-Line, w/ 1-1/2 inch NPT Brass Connector    |

### Piston Assemblies

|                  |  |
|------------------|--|
| 61630-00 .....   | Piston Assy., 2850s, HW BP                               |
| 61630-01HW ..... | Piston Assy., 2850s, HW BP, Hot Water                    |
| 61630-02 .....   | Piston Assy., 2850s, Manual                              |
| 61631-00 .....   | Piston Assy, Filter, 2850s Conversion, NHWBP             |
| 61631-00HW ..... | Piston Assy, Filter, 2850s, Conversion, NHWBP, Hot Water |

### Program Wheel Assemblies

|                |  |
|----------------|--|
| 60405-20 ..... | Program Wheel, w/3/4-inch Ext Label 1-1/2 inch Std Set @ 100 |
| 60405-30 ..... | Program Wheel, w/1-inch Std Label Set @ 50                   |
| 60405-40 ..... | Program Wheel, w/1-inch Ext Label                            |
| 60405-70 ..... | Program Wheel, w/1-inch Ext Label                            |

## **SERVICE ASSEMBLIES** *CONTINUED*

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### **Safety Brine Valves**

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

### **Sales and Service Aids**

|            |   |
|------------|---|
| 42666..... | Literature, 2850s Spec Sheet                            |
| 42319..... | Literature, 2850s S/Manual                              |
| 40717..... | Literature, Catalog Assy, PWT<br>Residential/Commercial |

### **Seal & Spacer Kits**

|               |   |
|---------------|---|
| 61632.....    | Seal & Spacer Kit, 2850s                                    |
| 61632-20..... | Seal & Spacer Kit, 2850s,<br>Hot Water                      |
| 61632-30..... | Seal & Spacer Kit, 2850s, 559 PE,<br>Chemical Resistent Kit |

### **Service Equipment**

|              |                         |
|--------------|-------------------------|
| 16174.....   | Silicone, 2 oz. Tube    |
| 16586-8..... | Silicone, Dow #7 8 Lb   |
| 42227.....   | Stuffer Assy, 2850s     |
| 42228.....   | Puller Tool Assy, 2850s |
| 60460.....   | Meter Checker Kit, Std  |
| 60461.....   | Meter Checker Kit, Ext  |

### **Service Valve Operator Assemblies (SVO)**

|            |                    |
|------------|--------------------|
| 60150..... | SVO Assy, 1600 O/S |
|------------|--------------------|

### **Skipper Wheel Assemblies**

|            |                            |
|------------|----------------------------|
| 14860..... | Skipper Wheel Assy, 7 Day  |
| 14381..... | Skipper Wheel Assy, 12 Day |



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