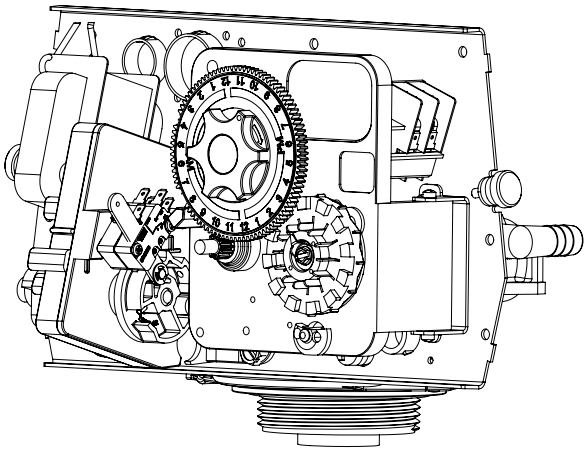
PENTAIR

FLECK® 2510

SERVICE MANUAL



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IMPORTANT PLEASE READ:

- The information, specifications and illustrations in this manual are based on the latest information available at the time of release. The manufacturer reserves the right to make changes at any time without notice.
- This manual is intended as a guide for service of the valve only. System installation requires information from a number of suppliers not known at the time of manufacture. This product should be installed by a plumbing professional.
- This unit is designed to be installed on a potable water system only and is not intended to treat water that is microbiologically unsafe or of unknown quality without adequate disinfection before and after the system.
- This product must be installed in compliance with all state and municipal plumbing and electrical codes. Permits may be required at the time of installation.
- It is established that when daytime water pressure exceeds 80 psi (5.5 bar), the maximum pressure rating of 125 psi (8.6 bar) can be exceeded. A pressure regulator must be installed on this system or warranty is voided.
- Do not install the unit where temperatures may drop below 32°F (0°C) or above 120°F (52°C).
- Do not place the unit in direct sunlight. Black units will absorb radiant heat increasing internal temperatures.
- Do not strike the valve or any of the components.
- Warranty of this product extends to manufacturing defects. Misapplication of this product may result in failure to properly condition water, damage to product, or personal injury.
- A prefilter should be used on installations in which free solids are present.
- In some applications local municipalities treat water with Chloramines. High Chloramine levels may damage valve components.
- Correct and constant voltage must be supplied to the controller to maintain proper function.
- The system is intended to treat only potable quality water. It is not intended as the permanent primary treatment of water from a source that is contaminated, such as from radon, pesticides, insecticides, sewage or wastewater.
- This system is not intended for use by persons (including children) with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
- Children shall not play with the system.
- Cleaning shall not be made by children without supervision.
- Periodic cleaning and maintenance may be required to function properly. See disinfection instructions on page 4.

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 ½ inch Std Range (625 - 10,625 gallon setting)
   - F. 1 ½ 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. **Valve Operating Parameters:**
   Models: 2500, 2510, 2750, 2850

Minimum operating pressure:	20 psi / 1.4 bar / 138 kPa
Maximum operating pressure:	125 psi / 8.61 bar / 861 kPa
Minimum water temperature:	34° F / 1° C
Maximum water temperature:	110° F / 43° C
Maximum Ambient temperature:	120° F / 52° C
Maximum humidity:	75%
Input Voltage:	120 Volts AC / 60 Hz
Maximum Watts:	30 watts
Maximum altitiude:	2000 meters

6. **Timer Program Settings:**
   - A. Backwash:_____Minutes
   - B. Brine and Slow Rinse: _____Minutes
   - C. Rapid Rinse: _____Minutes
   - D. Brine Tank Refill: _____Minutes
   - E. Pause Time: _____Minutes
   - F. Second Backwash: _____Minutes
7. **Drain Line Flow Control: gpm**
8. **Brine Line Flow Controller: gpm**
9. **Injector Size#:**
10. **Piston Type:**
    - A. Hard Water Bypass
    - B. No Hard Water Bypass

INSTALLATION

Water Pressure

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

Electrical Warnings & Caution Statement

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

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

Grounding Instructions

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

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

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

FOR DRY LOCATIONS USE ONLY.

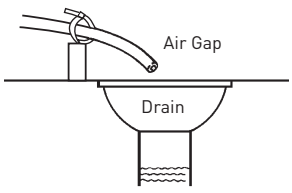
The cover should only be removed during installation set-up and maintenance by a qualified service person.

Existing Plumbing

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

Location of Softener and Drain

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



By-Pass Valves

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

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

INSTALLATION *CONTINUED*

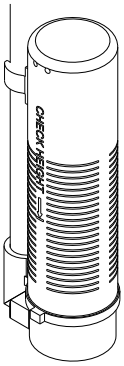
Installation Instructions

1. Place the softener tank where you want to install the unit making sure the unit is level and on a firm base.
2. During cold weather, the installer should warm the valve to room temperature before operating.
3. All plumbing should be done in accordance with local plumbing codes. The pipe size for residential drain line should be a minimum of 1/2 inch (13 mm). Backwash flow rates in excess of 7 gpm (26.5 Lpm) or length in excess of 20 feet (6 m) require 3/4 -inch (19 mm) drain line. Commercial drain lines should be the same size as the drain line flow control.
4. Refer to the dimensional drawing for cutting height of the distributor tube. If there is no dimensional drawing, cut the distributor tube flush with the top of the tank.
5. Lubricate the distributor o-ring seal and tank o-ring seal. Place the main control valve on tank.

NOTE: Only use silicone lubricant.

6. 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.
7. 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.
8. Make sure that the floor is clean beneath the salt storage tank and that it is level.
9. 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.
10. 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.
11. 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.
12. 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

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.

SYSTEM DISINFECTION

Disinfection of Water Softeners

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

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

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

Sodium or Calcium Hypochlorite

Application

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

5.25% Sodium Hypochlorite

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

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

SYSTEM DISINFECTION *CONTINUED*

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

Calcium Hypochlorite

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

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

3200 TIMER SETTING PROCEDURE

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

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

How To Set The Time Of Day

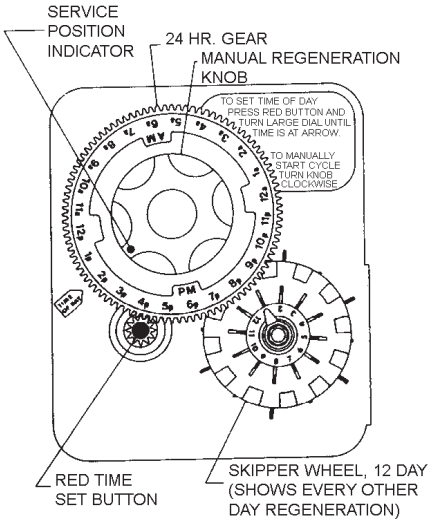
1. Press and hold the red button in to disengage the drive gear.
2. Turn the large gear until the actual time of day is at the time of day pointer.
3. Release the red button to again engage the drive gear.

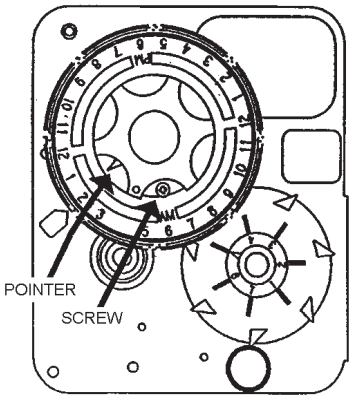
How To Manually Regenerate Your Water Conditioner At Any Time

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

How to Adjust Regeneration Time

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





3200 ADJUSTABLE REGENERATION TIMER

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

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Figure 2

3210 & 3220 TIMER SETTING PROCEDURE

Typical Programming Procedure

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

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

How To Set The Time Of Day

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

How To Manually Regenerate Your Water Conditioner At Any Time

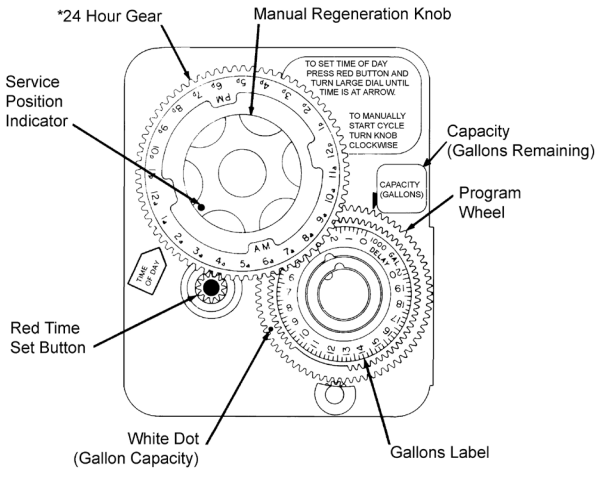
1. Turn the manual regeneration knob clockwise.
2. This slight movement of the manual regeneration knob engages the program wheel and starts the regeneration program.
3. The black center knob will make one revolution in the following approximately three hours and stop in the position shown in the drawing.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

Immediate Regeneration Timers

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

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

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



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

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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.

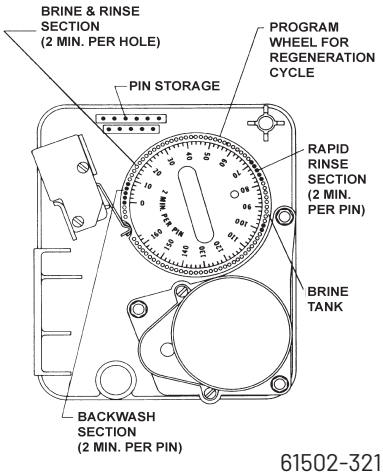

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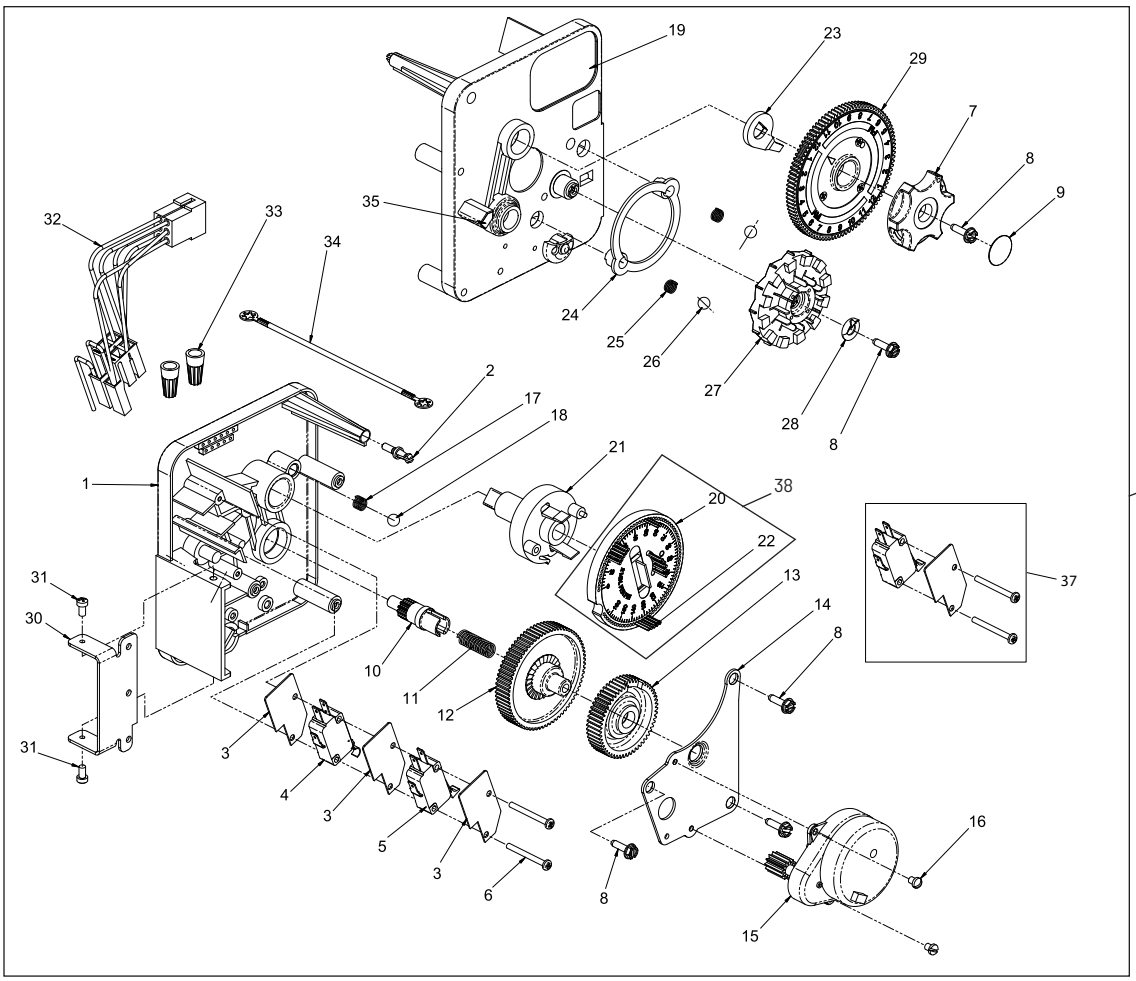
Figure 4

3200 TIME CLOCK TIMER ASSEMBLY



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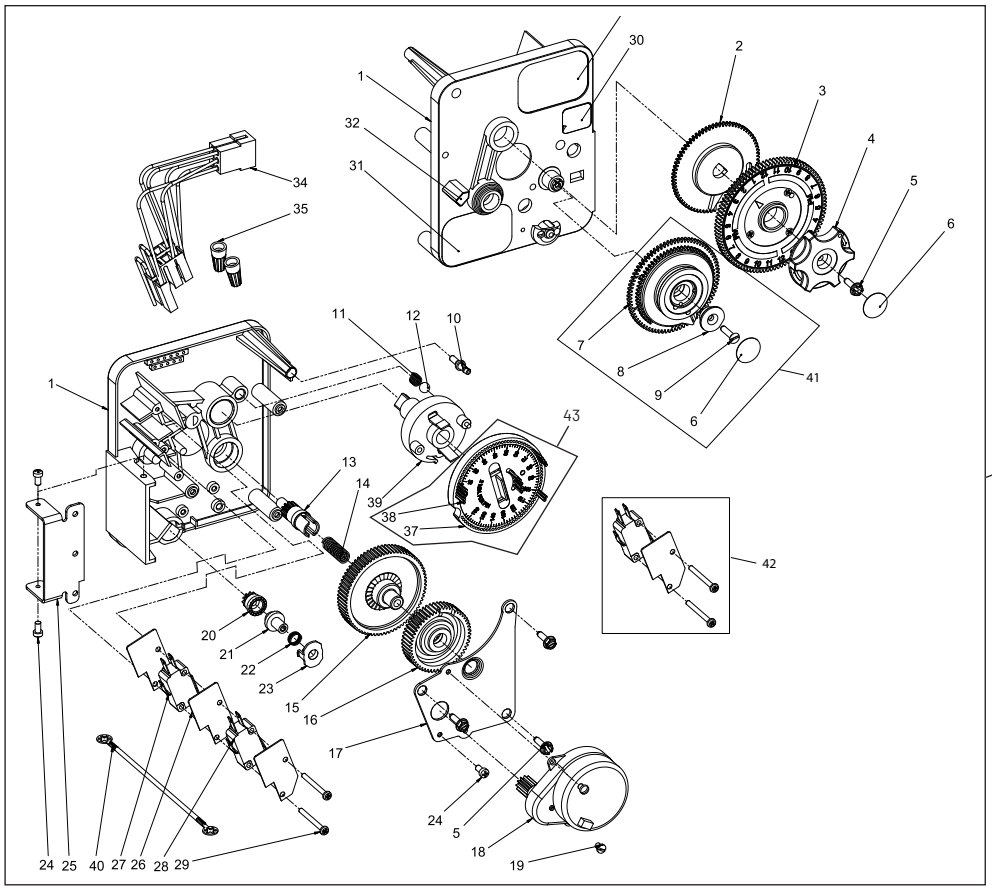
3200 TIME CLOCK TIMER ASSEMBLY *CONTINUED*

Item No.	QTY	Part No.	Description
1	1	13870	Housing, Timer, 3200
2	1	14265	Clip, Sping
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, Fillister Hd 6-32 x .156
17	1	15424	Spring, Detent, Timer
18	1	15066	Ball, 1/4-inch, Delrin
19	1	15465	Label, Caution
20	1	19210	Program Wheel Assy
21	1	13911	Gear, Main Drive, Timer
22	17	41754	Pin, Spring, 1/16 x 5/8 SS, Timer
23	1	13011	Arm, Cycle Actuator
24	1	13864	Ring, Skipper Wheel
25	2	13311	Spring, Detent, Timer
26	2	13300	Ball, 1/4-inch, SS
27	1	14381	Skipper Wheel Assy, 12 Day
		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

*See Powerhead Ordering Guide

3210 METER DELAYED TIMER ASSEMBLY



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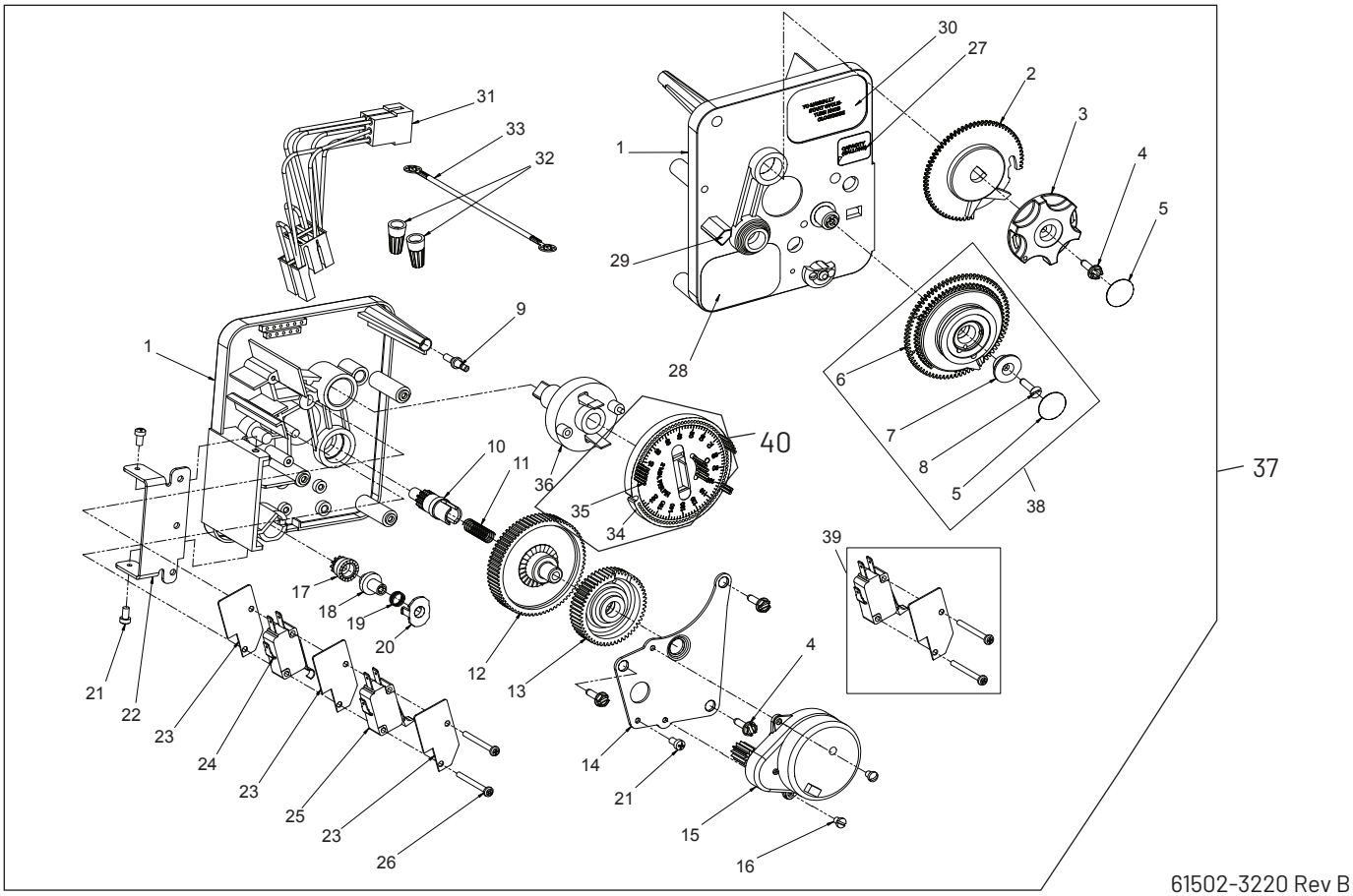
3210 METER DELAYED TIMER ASSEMBLY *CONTINUED*

Item No.	QTY	Part No.	Description
1	1	13870	Housing, Timer, 3200
2	1	13802	Gear, Cycle Actuator
3	1	40096-02	Dial 2 AM Regen Assy, Black
4	1	13886	Knob, 3200
5	4	13296	Screw, Hex Wsh, 6-20 x 1/2
6	2	11999	Label, Button
7	1	13803	Gear, Program Drive Wheel
8	1	13806	Retainer, Program Wheel
9	1	13748	Screw, Flat Head St, 6-20 x 1/2
10	1	14265	Clip, Spring
11	1	15424	Spring, Detent, Timer
12	1	15066	Ball, 1/4-inch Delrin
13	1	13018	Pinion, Idler
14	1	13312	Spring, Idler Shaft
15	1	13017	Gear, Idler
16	1	13164	Gear, Drive
17	1	13887	Plate, Motor Mounting
18	1	18743-1	Motor, 120V, 60Hz 1/30 RPM
		18752-1	Motor, 100V, 50Hz, 1/30 RPM
		18824-1	Motor, 230V, 50Hz, 1/30 RPM
		18826-1	Motor, 24V, 50Hz, 1/30 RPM
		19659-1	Motor, 24V, 60Hz, 1/30 RPM
		19660-1	Motor, 230V, 60Hz, 1/30 RPM
19	1	13278	Screw, Fillister Hd, 6-32 x .156
20	1	13830	Pinion, Program Wheel Drive
21	1	13831	Clutch, Drive Pinion
22	1	14276	Spring, Meter, Clutch
23	1	14253	Retainer, Clutch Spring
24	3	11384	Screw, Phil, 6-32 x 1/4
25	1	13881	Bracket, Hinge Timer
26	3	14087	Insulator
27	1	10896	Switch, Micro
28	1	15320	Switch, Micro, Timer
29	2	11413	Screw, Pan Hd Mach, 4-40 x 1 1/8

Item No.	QTY	Part No.	Description
30	1	14198	Label, Indicator
31	1	15465	Label, Caution
32	1	14007	Label, Time of Day
33	1	14045	Label, Instruction
34	1	13902	Harness, 3200
35	2	40422	Nut, Wire, Tan
36	1	15354-01	Wire, Ground, 4 inches
37	1	19210	Program Wheel Assy
38	17	41754	Pin, Spring, 1/16 x 5/8 SS, Timer
39	1	13911	Gear, Main Drive, Timer
40	1	*	Complete 3210 Meter Delayed Timer Assembly
41		60405-10	Program Wheel, w/3/4-inch STD Label 0-2,100 gal
		60405-20	Program Wheel, w/3/4-inch EXT Label 0-10,000 gal
		60405-11	Program Wheel, w/3/4-inch STD Metric Label 0-8 m3
		60405-21	Program Wheel, w/3/4-inch EXT Range 0-40 m3
42		60320-02	Switch Kit, 3200/9000 Timer Auxiliary, Optional
43		61420-03	Program Wheel, Gear Assy, Filter 2 Min Per Pin
		61420-04	Program Wheel, Gear Assy, Softener, 2 Min Per Pin

*See Powerhead Ordering Guide

3220 METER IMMEDIATE TIMER ASSEMBLY



61502-3220 Rev B

3220 METER IMMEDIATE TIMER ASSEMBLY *CONTINUED*

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

*See Powerhead Ordering Guide

2510 SXT VALVE

Item No.	QTY	Part No.	Description
1	1	251006-001	2510, SOF, DNF, CLK, SXT-, 24-60, CW 2--, .50, LES, NA2, 1650, HWBP
		251006-002	2510, SOF, DNF, M34, SXT-, 24-60, CW 1--, .50, LES, NA2, 1600, HWBP
		251006-004	2510, SOF, DNF, M34, SXT-, 24-60, CW 1--, .50, LES, NA2, 1650, HWBP
		251006-005	2510, SOF, DNF, M34, SXT-, 24-60, CW 1--, .50, LES, NA2, 1600, HWBP
		251006-006	2510, SOF, DNF, M34, SXT-, 24-60, CW 1--, .50, LES, NA2, 1600, HWBP
		251006-003	2510, FIL, DNF, CLK, SXT-, 24-60, CW BWF, BWF, LES, NA2, BWF-, HWBP

2510 MANUAL VALVE

Item No.	QTY	Part No.	Description
1	1	251011-002	2510, SOF, DNF, MAN, MAN-, MAN--, CW 1--, MAN, LES, NA2, MAN-, HWBP
		251011-001	2510, FIL, DNF, MAN, MAN-, MAN--, CW BWF, BWF, LES, NA2, BWF-, HWBP

2510 ELECTROMECHANICAL SOFTENER METER

Item No.	QTY	Part No.	Description
1	1	251002-001	2510, SOF, DNF, M34, MDEL, 12060, CW 1--, .50, LES, NA2, 1650, HWBP
		251002-002	2510, SOF, DNF, M34, MDEL, 12060, CW 1--, .50, LES, NA2, 1650, HWB,
		251002-003	2510, SOF, DNF, M34, MDEL, 12060, CW 2PV, .50, LES, NA2, 1600, HWB,

2510 ELECTROMECHANICAL SOFTENER TIME CLOCK

Item No.	QTY	Part No.	Description
1	1	251001-002	2510, SOF, DNF, CLK, 12DA, 12060, CW 1--, .50, LES, NA2, 1650, HWBP
		251001-006	2510, SOF, DNF, CLK, 12DA, 12060, CW 1--, .50, LES, NA2, 1650, HWBP
		251001-007	2510, SOF, DNF, CLK, 12DA, 12060, CW 2PV, .50, LES, NA2, 1600, HWBP

2510 ELECTROMECHANICAL FILTER TIME CLOCK

Item No.	QTY	Part No.	Description
1	1	251001-001	2510, FIL, DNF, CLK, 12DA, 12060, CW BWF, BWF, LES, NA2, BWF-, HWBP
		251001-003	2510, FIL, DNF, CLK, 12DA, 12060, CW BWF, BWF, LES, NA2, BWF-, HWBP
		251001-008	2510, FIL, DNF, CLK, 12DA, 12060, CW BWF, BWF, LES, NA2, BWF-, NWBP
		251000-001	2510, FIL, DNF, CLK, 7DAY, 12060, CW BWF, BWF, LES, NA2, BWF-, HWBP

NOTE: Above part numbers DO NOT include the following parts.

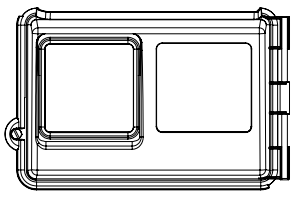
Cover
Bypass Assembly
Yoke Assembly
DLFC with Retainer
Flow Washers

See accessory page for options.

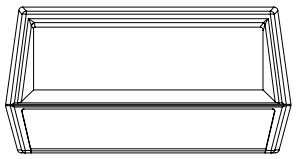
2510 VALVE ACCESSORIES

Covers

60219-02 ..... Cover Assy, Environmental, Black w/clear window
60219-12 ..... Cover Assy, Environmental, Black w/black window
60232-110 ..... Cover, Designer, 1 pc. Black
60232-310 ..... Cover, Designer, Gray/Black



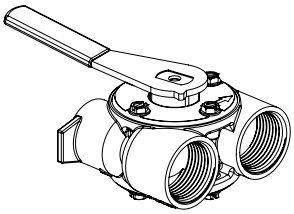
COVER, ENVIRONMENTAL



COVER, DESIGNER

Bypasses

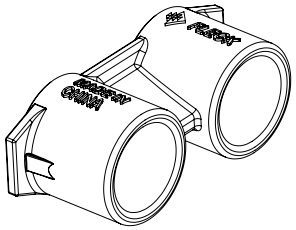
60041SS ..... 1" Bypass, SS, NPT
60040SS ..... 3/4" Bypass, SS, NPT
60049..... Bypass, Plastic



BYPASS

Yokes

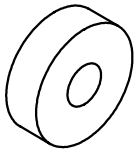
19620-01..... Yoke Assy, 3/4", r/angle, 90 deg.
18706..... 1" Yoke, Plastic NPT
18706-10 ..... 1" Yoke, Plastic BSP
18706-02 ..... 3/4" Yoke, Plastic NPT
18706-12 ..... 3/4" Yoke, Plastic BSP
13708-40 ..... 1" Yoke, Sweat
41026-01 ..... 1" Yoke, SS, NPT
42690..... 3/4" Yoke, Sweat
41027-01 ..... 3/4" Yoke, SS, NPT



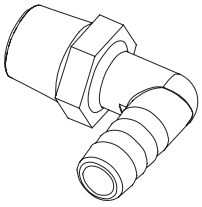
YOKE

Washers

19153 ..... Washer, Flow, 0.6 GPM
19152 ..... Washer, Flow, 0.8 GPM
12085 ..... Washer, Flow, 1.2 GPM
19150 ..... Washer, Flow, 1.3 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
19147 ..... Washer, Flow, 4.5 GPM
12092 ..... Washer, Flow, 5.0 GPM
17814..... Washer, Flow, 6.0 GPM
12408 ..... Washer, Flow, 7.0 GPM



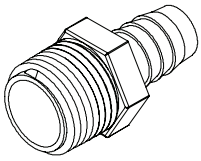
WASHER



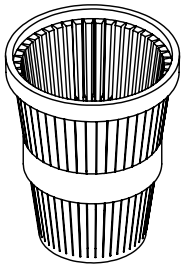
DRAIN ELBOW

Drain Elbows

19699..... 1/2" Drain Elbow, 45
13121..... 5/8" Drain Elbow, 90



HOSE BARBS



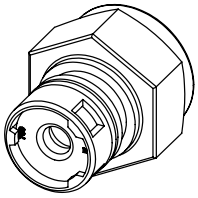
COLLECTOR

Hose Barbs

13308..... 1/2" Straight Hose Barb
13308-01..... 5/8" Straight Hose Barb

Collectors

18280 ..... Top Collector, 1.050
18280-01..... Top Collector, 1.050 Wide
18280-02 ..... Top Collector, 1.050 Narrow



DLFC

DLFC

60705-00 ..... DLFC, Plastic, Blank
60706-8.0..... DLFC, QC x 3/4"F, 8.0 GPM
60706-9.0..... DLFC, QC x 3/4"F, 9.0 GPM
60706-10 ..... DLFC, QC x 3/4"F, 10 GPM
60706-12 ..... DLFC, QC x 3/4"F, 12 GPM
60706-15 ..... DLFC, QC x 3/4"F, 15 GPM

2510 VALVE CONVERSION ASSEMBLIES

BLFC

60010-25 ..... BLFC, 1650, .25 GPM, Plastic (0.75 lbs NaCl/min)
60010-50 ..... BLFC, 1650, .50 GPM, Plastic (1.5 lbs NaCl/min)
60010-100..... BLFC, 1650, 1.0 GPM, Plastic (3 lbs NaCl/min)
60020-25 ..... BLFC, .25 GPM 1600
60020-50 ..... BLFC, .50 GPM 1600
60020-100..... BLFC, 1.0 GPM 1600

Brine Valves

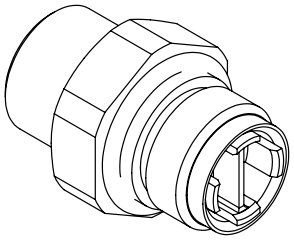
60011 ..... Brine Valve, 1650, Less BLFC
60011-000 ..... Brine Valve, 1650, Short Stem, 0.125 GPM Less Tube
60011-010 ..... Brine Valve, 1650, Short Stem, 0.25 GPM Less Tube
60011-020..... Brine Valve, 1650, Short Stem, 0.50 GPM Less Tube
60011-030..... Brine Valve, 1650, Short Stem, 1.0 GPM Less Tube
60029..... Brine Valve, 1650, Short Stem, Brass, Less BLFC
60029-01 ..... Brine Valve, 1600, Short Stem, Less BLFC, Less Sm Parts
60029-010 ..... Brine Valve, 1600, Short Stem, 0.25 GPM
60029-020 ..... Brine Valve, 1600, Short Stem, 0.50 GPM
60029-030 ..... Brine Valve, 1600, Short Stem, 1.0 GPM

Injector Nozzles

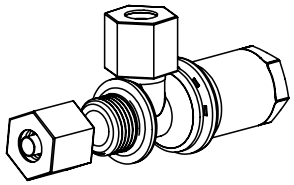
10913-0..... Nozzle, Injector, #0, Red (8" Tank)
10913-00..... Nozzle, Injector, #00, Violet (7" Tank)
10913-000..... Nozzle, Injector, #000, Brown (6" Tank)
10913-1..... Nozzle, Injector, #1, White (9" & 10" Tank)
10913-2..... Nozzle, Injector, #2, Blue (12" Tank)
10913-3..... Nozzle, Injector, #3, Yellow (13" Tank)
10913-4..... Nozzle, Injector, #4, Green (14" Tank)
10913BLK..... Nozzle, Injector, Black (Filter)
12973-0 ..... Nozzle, Injector, #0, PVC
12973-1..... Nozzle, Injector, #1, PVC
12973-2 ..... Nozzle, Injector, #2, PVC
12973-3 ..... Nozzle, Injector, #3, PVC
12973-4 ..... Nozzle, Injector, #4, PVC

Injector Throats

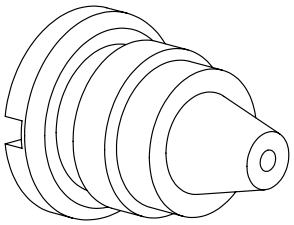
10914-0..... Throat, Injector, #0, Red (8" Tank)
10914-00..... Throat, Injector, #00, Violet (7" Tank)
10914-000..... Throat, Injector, #000, Brown (6" Tank)
10914-1 ..... Throat, Injector, #1, White (9" & 10" Tank)
10914-2..... Throat, Injector, #2, Blue (12" Tank)
10914-3..... Throat, Injector, #3, Yellow (13" Tank)
10914-4..... Throat, Injector, #4, Green (14" Tank)
12974-0 ..... Throat, Injector, #0, PVC
12974-1..... Throat, Injector, #1, PVC
12974-2 ..... Throat, Injector, #2, PVC
12974-3 ..... Throat, Injector, #3, PVC
12974-4 ..... Throat, Injector, #4, PVC



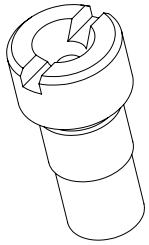
BLFC



BRINE VALVE



INJECTOR NOZZLE

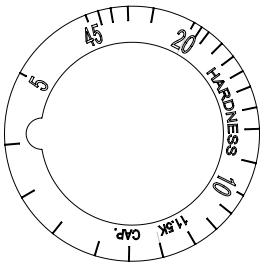


INJECTOR THROAT

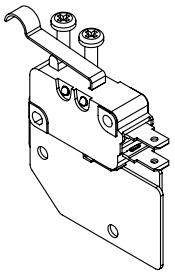
2510 VALVE CONVERSION ASSEMBLIES

Labels

14214 ..... Label, 13K
14076 ..... Label, 16K
13969 ..... Label, 18K
14046 ..... Label, 21K
13961 ..... Label, 24K
14047 ..... Label, 26K
14180 ..... Label, 28K
13962 ..... Label, 30K
14048 ..... Label, 32K
13971 ..... Label, 36K
14073 ..... Label, 40K
13974 ..... Label, 45K
14239 ..... Label, 48K
14074 ..... Label, 50K
14034 ..... Label, 60K
14183 ..... Label, 70K



LABEL

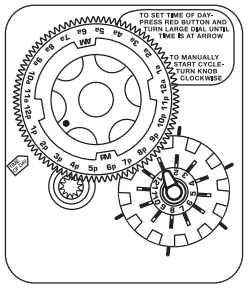

SWITCH

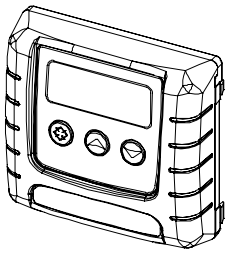
Switch

60320-12 ..... Switch Kit, 1500 thru 2850 SPG Drive Motor

Timers/Powerheads (see Powerhead/Timer Ordering Guide)

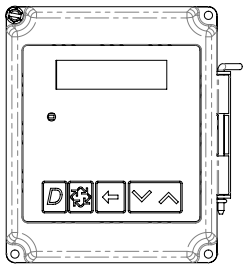
60303-XX ..... 3200 7 Day Timer
60304-XX ..... 3200 12 Day Timer
60306-XX ..... 3200 Meter Delayed Timer

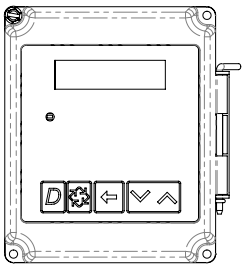

TIMERS, 3200


TIMER ASSY, SXT

Timers

42778 ..... Timer Assy, SXT, 2510/2750/2850
42466-01 ..... Timer Assy, XT, Right Hinged
42466-11 ..... Timer Assy, NXT, Right Hinged


TIMER ASSY, XT

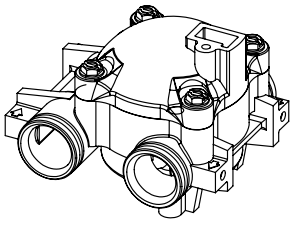

TIMER ASSY, NXT

Miscellaneous

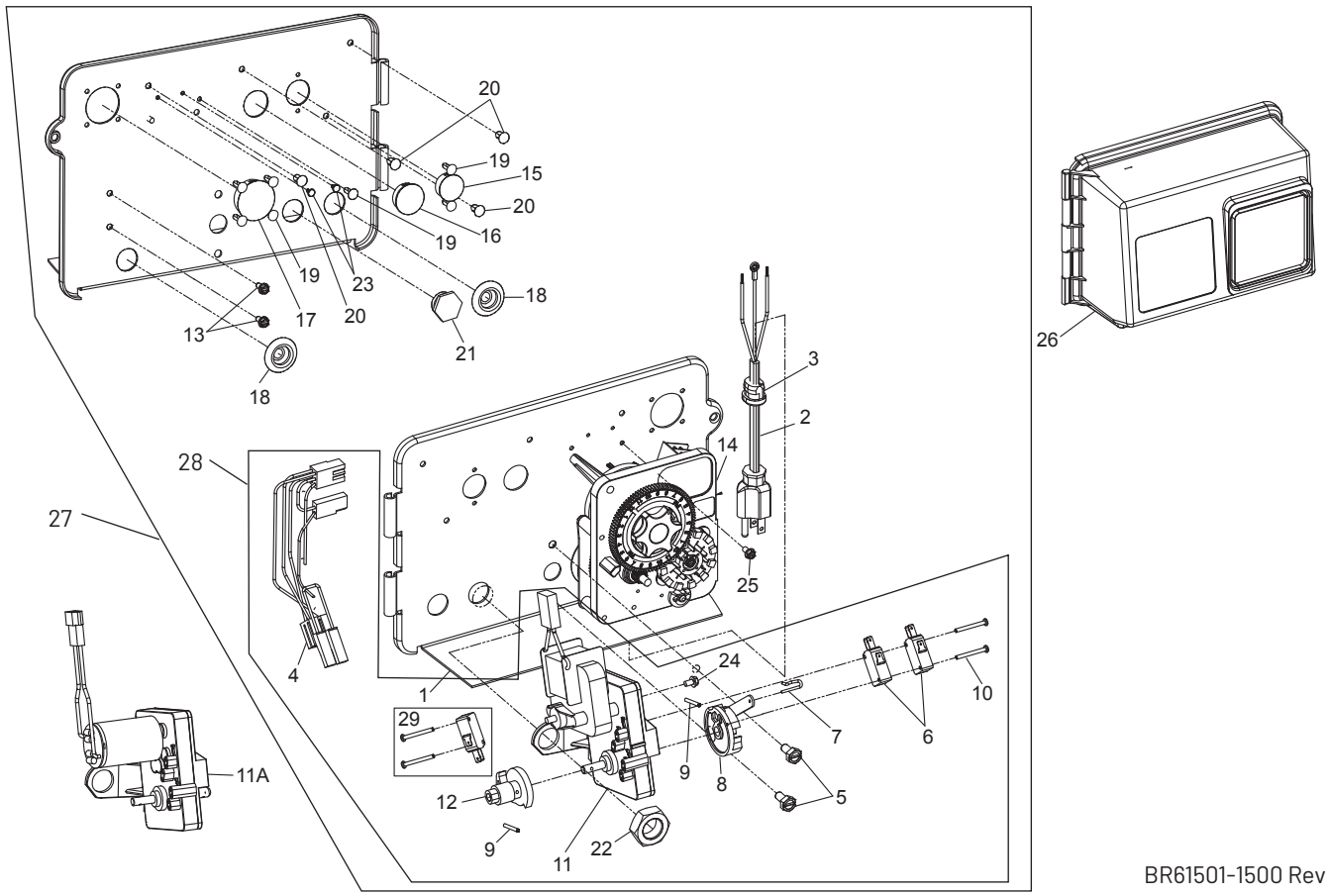
60374 ..... Flat Cap Assy, 1600
10269 ..... Nut, Jam,, 3/4-16
43560 ..... Fitting, Brine Valve, Steel

Meters

15495 ..... Meter Cable, 13.87"
15307 ..... Tube, Cable Guide, 2750
60088-180 ..... Meter Assy, 3/4" Dual Port, Slip, Std, Rt Ang/180, Plas, Pdl, w/clps
60089-180 ..... Meter Assy, 3/4" Dual Port, Slip, Ext, Rt Ang/180, Plas, Pdl, w/clps
60086-50 ..... Meter Assy, 3/4" Dual Port, Slip Elec, Plas, Pdl, w/clps
19121-01 ..... Meter Cable Assy, SE, Paddle
60626 ..... Meter Assy, Turbine, Electronic 3/4" with clips and screws
19791-02 ..... Meter Cable Assy, Turbine/SXT


METER ASSY, PADDLE

POWERHEAD ASSEMBLY (ENVIRONMENTAL)



BR61501-1500 Rev C

POWERHEAD ASSEMBLY (ENVIRONMENTAL) *CONTINUED*

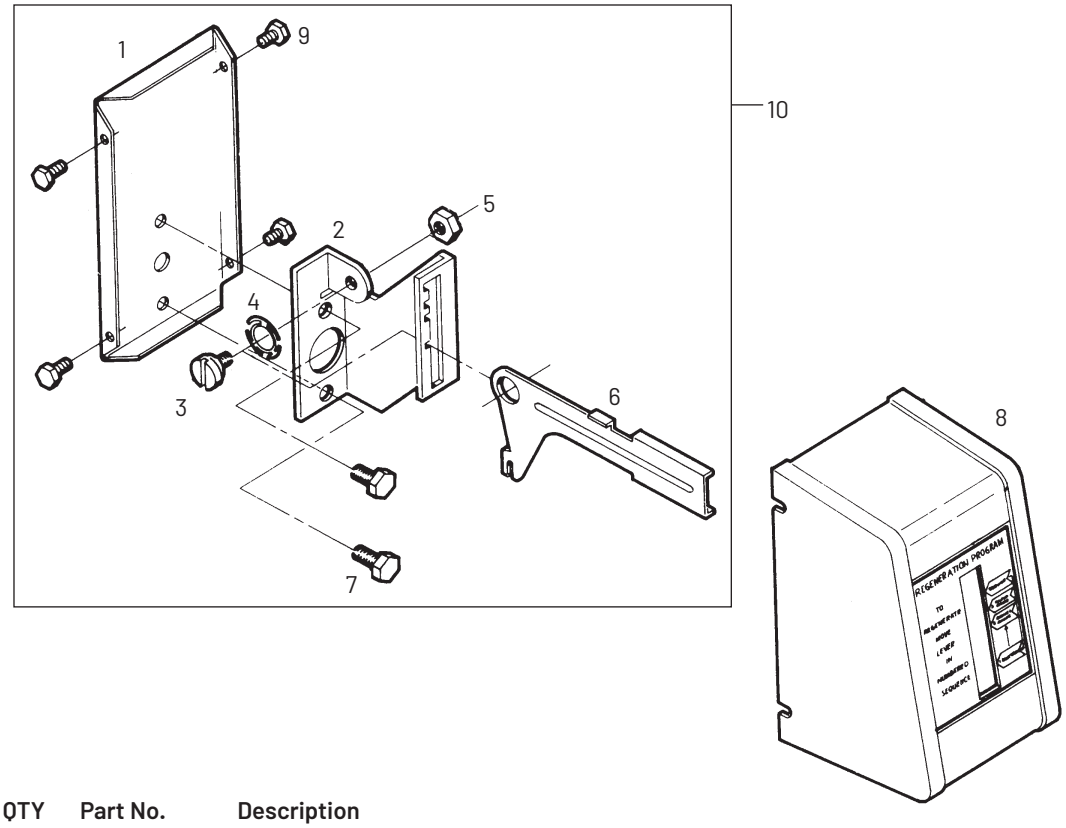
Item No.	QTY	Part No.	Description
1	1	18697-15	Backplate, Hinged
2	1	11838	Power Cord, 6-feet, North American, Flat
		19303-01	Power Cord, 6-feet, Austrailian
		19885-01	Power Cord, 6-feet, Japanese
		11545-01	Power Cord, 6-feet, European
3	1	13547	Strain Relief, Cord
4	1	40400	Harness, Drive Designr/ Envirmtl
5	2	10231	Screw, Slot Hex 1/4-20 x 1/2 35 in-lbs ±20%
6	2	10218	Switch, Micro
7	1	10909	Pin, Connecting Rod Spring
8	1	60160-15	Drive Cam Assy, STF, Blue, 2900
9	2	10338	Pin, Roll, 3/32 x 7/8
10	2	14923	Screw, Pan Hd MACH, 4-40 x 1 5.0 in-lbs ±10%
11	1	41543	Motor, Drive, 115V/60 Hz
		41545	Motor, Drive, 220V, 50-60Hz, SP, Fam 1
11A		42579	Motor, Drive, 24 VAC/DC, 50-60 Hz, Fam 1
12	1	12777	Cam, Shut-off Valve
13	2	10300	Screw, Hx Wash Head, 8 x 3/8 20 in-lbs ±20%
14	1	3200	Timer Assy, 3200 7 or 12 Day
			3210 Meter Delay
			3220 Meter Immediate
15	1	15806	Hole Plug, (HeyCo)
16	1	16493	Plug, Hole, HeyCo, .88 Dia
17	1	17421	Plug, 1.20 Hole
18	2	19691	Plug, .750 Dia. Hole, Flush
19	7	19800	Plug (Hole Size: Dia .140)
20	4	19801	Plug, Dia .190
21	1	43560	Fitting, Brine Valve (Used on Filter Valves)
22	1	10269	Nut, Jam, 3/4-16 (Used on FIlter Valves)
23	2	41581	Plug, Hole .125 Dia, White
24	1	10872	Screw, Hex WSH, 8-32 x 5/16 20 IN-LBS ±20%
25	1	14202-01	Screw, Hex Washer #8-32 x 5/16 Hand Tighten
26	1	60219-02	Cover Assy, Environmental, Black, Clear Window
		60219-12	Cover Assy, Environmental, Black, Black Window
27	1	*	Powerhead Assembly
28	1	60050-23	Drive Motor Assy, 24 VAC/DC, 50-60 Hz FAM 1
		60050-21	Drive Motor Assy, 115V/60 Hz
		60050-22	Drive Motor Assy, 220V, 50-60 Hz SP FAM1
29		60320-12	Switch Kit, 1500-2850 Drive Motor

Not Shown:

1	15441	Cable Guide Assy, 2510
1	15495	Meter Cable, 13.87 inches

*See Powerhead Ordering Guide

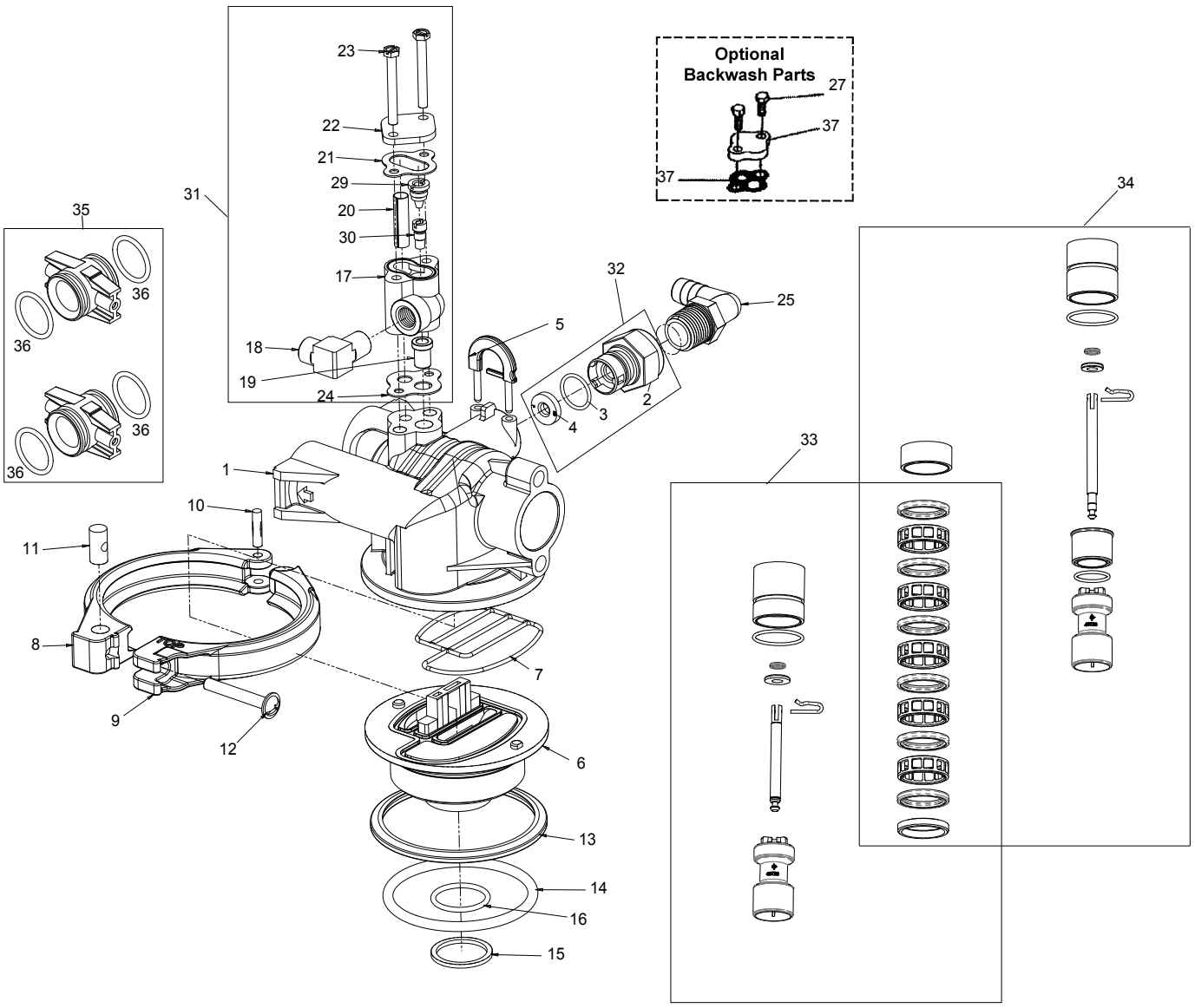
MANUAL POWERHEAD ASSEMBLY



60409 Rev A

Item No.	QTY	Part No.	Description
1	1	12593	Backplate, Manual
2	1	12592	Bracket, Lever Position
3	1	12596	Screw, Spec Mach, 1/4 - 20 x 1/2
4	1	12707	Washer, Spring
5	1	11235	Nut, Hex, 1/4 - 20, Mach Screw, Zinc
6	1	12594	Lever, Valve Position
7	2	10231	Screw, Slot Hex, 1/4 - 20 x 1/2 18-8 SS
8	1	60224-32	Cover Assy, Manual, Filter
	1	60224-33	Cover Assy, Manual, Softener
9	4	10300	Screw, Slot Hex Wsh, 8-18 x 3/8 Type "B" RC44-47
10		60409	Powerhead Assy, Manual
Not Shown:			
	1	10909	Pin, Link

CONTROL VALVE ASSEMBLY



61500-2510 Rev B

Item No.	QTY	Part No.	Description
1	1	19328	Valve Body, 2510
2	1	11385-01	Housing, Flow Control, Plastic
3	1	11183	O-ring, -017
4	1	12408	Washer, Flow, 7.0 GPM
5	1	18312	Retainer, Drain
6	1	19322	Adapter Base, 2510
7	1	19936	Seal, 2510, Base
8	1	19899	Clamp, Female, 2510
9	1	19900	Clamp, Male, 2510
10	1	40000	Pin, Hinge, Clamp
11	1	19998	Pivot, Clamp, 2510
12	1	40057	Screw, Comb Hd, 114-20, 2-inch
13	1	19197	Ring, Slip
14	1	18303	O-ring, -336

Item No.	QTY	Part No.	Description
15	1	13030	Retainer, Dist Tube, O-ring
16	1	13304	O-ring, -121
17	1	17776	Body, Injector, 1600
18	1	10328	Fitting, Elbow, 90 Deg. 1/4-inch NPT x 3/8-inch Tube
19	1	16221	Disperser, Air
20	1	10227	Screen, Injector
21	1	10229	Gasket, Injector Cap, 1600
22	1	11893	Cap, Injector, SS
23	2	10692	Screw, Slot Hex Hd, 10-24 x 1-5/8-inch
24	1	14805	Gasket, Injector Body, 1600/1700
25	1	12338	Fitting, Elbow, 90 Deg.

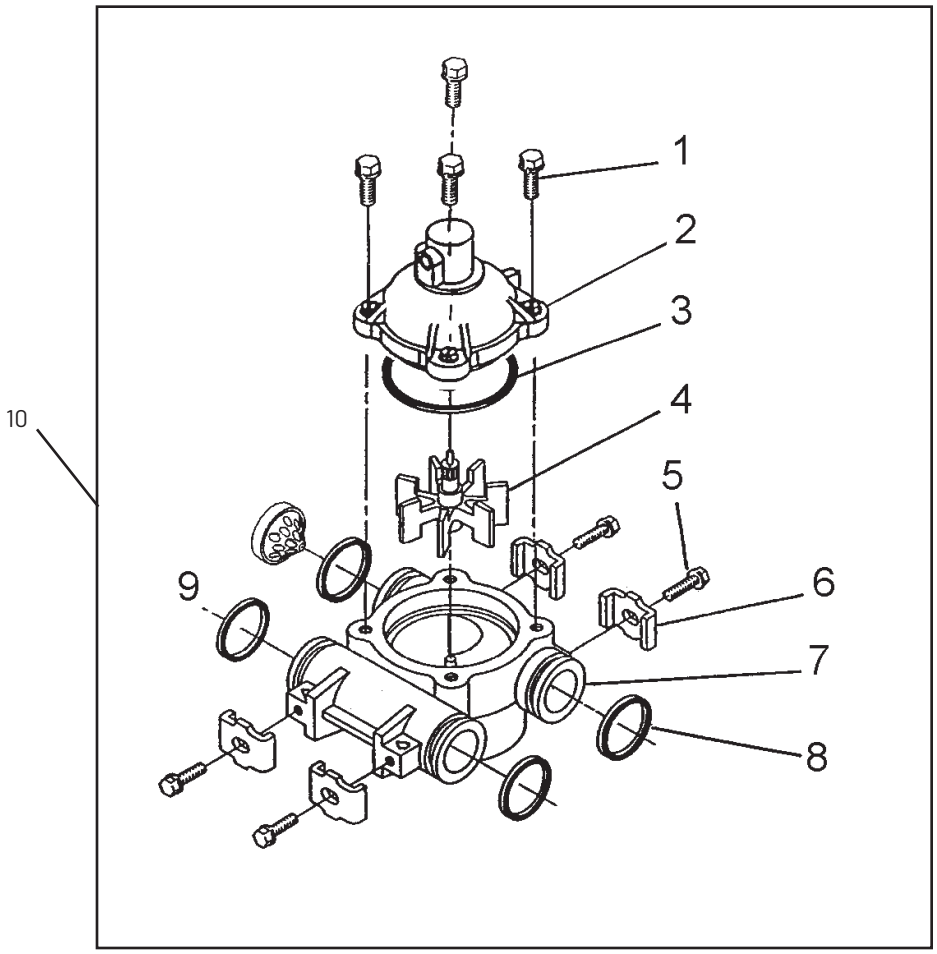
CONTROL VALVE ASSEMBLY *CONTINUED*

Item No.	QTY	Part No.	Description
			1/2-inch NPT x 1/2-inch Barb
26	1	11893	Cap, Injector, Stainless Steel
		10228	Cap, Injector, Brass
27	1	15137	Screw, Hex Wsh Mach, 10-24 x 3/8
28	1	10757	Spacer, End
29	1	12973-0	Nozzle, Injector, #0, PVC
		12973-1	Nozzle, Injector, #1, PVC
		12973-2	Nozzle, Injector, #2, PVC
		12973-3	Nozzle, Injector, #3, PVC
		12973-4	Nozzle, Injector, #4, PVC
		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
30	1	12974-0	Throat, Injector, #0, PVC
		12974-1	Throat, Injector, #1, PVC
		12974-2	Throat, Injector, #2, PVC
		12974-3	Throat, Injector, #3, PVC
		12974-4	Throat, Injector, #4, PVC
		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
31	1	60480-000	Injector Assy, 1600 #00, Plastic
		60480-00	Injector Assy, 1600 #0, Plastic
		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
32	1	60705-00	DLFC, Plastic Blank
		60705-06	DLFC, Plastic 0.60 gpm
		60705-08	DLFC, Plastic 0.80 gpm
		60705-10	DLFC, Plastic 1.0 gpm
		60705-12	DLFC, Plastic 1.2 gpm
		60705-13	DLFC, Plastic 1.3 gpm
		60705-15	DLFC, Plastic 1.5 gpm
		60705-17	DLFC, Plastic 1.7 gpm
		60705-20	DLFC, Plastic 2.0 gpm
		60705-24	DLFC, Plastic 2.4 gpm
		60705-30	DLFC, Plastic 3.0 gpm
		60705-35	DLFC, Plastic 3.5 gpm
		60705-40	DLFC, Plastic 4.0 gpm
		60705-45	DLFC, Plastic 4.5 gpm
		60705-50	DLFC, Plastic 5.0 gpm
		60705-60	DLFC, Plastic 6.0 gpm
		60705-70	DLFC, Plastic 7.0 gpm
		60706-8.0	DLFC, QC x 3/4-inch F, 8.0 gpm
		60706-9.0	DLFC, QC x 3/4-inch F, 9.0 gpm
		60706-10	DLFC, QC x 3/4-inch F, 10 gpm
		60706-12	DLFC, QC x 3/4-inch F, 12 gpm
		60706-15	DLFC, QC x 3/4-inch F, 15 gpm
		60706-20	DLFC, QC x 3/4-inch F, 20 gpm
33	1	61670-01	Piston Kit, 2510/2750
		62044	Piston Kit, 2750, Hot Water
34	1	61670-02	Piston Kit, 2510/2750, NHWBP
35	2	19228-01	Adapter Assy, Coupling w/O-ring
36	4	13305	O-ring, -119
37	1	14805	Gasket, Injector Body, 1600/1700

Not Shown

1	11098	Stuffer Tool Assy, 2510/2750
1	13061	Puller Assy, Port Ring 2510/2750
1	12874	Hook, Seal

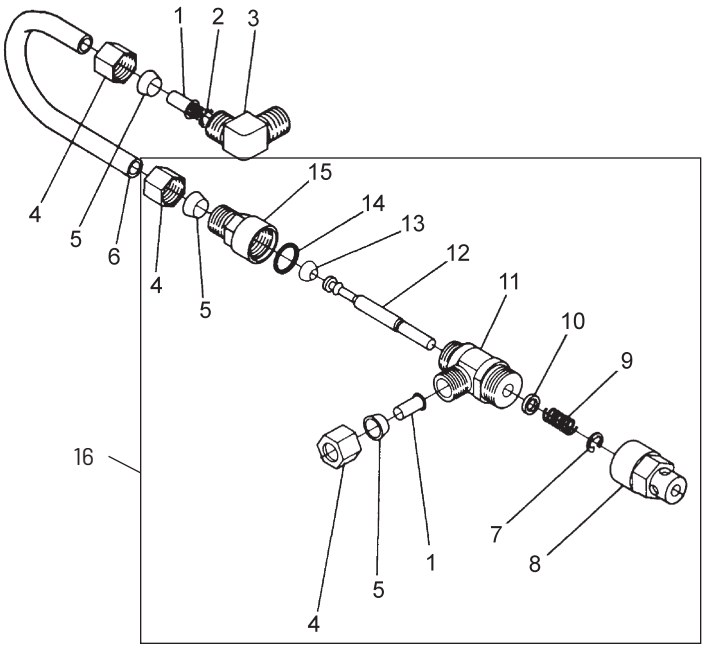
METER ASSEMBLY



60088 Rev E

Item No.	QTY	Part No.	Description
1	4	12473	Screw - Meter Cover Assembly, 10-24 x 5/8-inch
2	1	15659	Meter Cover Assy. - Ext., Rt. Angle (Not Shown)
		15452	Meter Cap Assy, 3/4-inch to 2-inch , Std, Rt Ang/90, Plastic Paddle
3	1	13847	O-ring - Meter Cover Assembly, -137
4	1	13509	Impeller
5	4	13314	Screw - Adapter Clip, 8-18 x 0.6-inch
6	4	13255	Adapter Clip
7	1	13821	Meter Body
8	4	13305	O-ring - Meter Body, -119
9	1	14613	Flow Straightener
10	1	60088-180	Meter Assy, 3/4-inch Dual Port, Slip Std, RT Angle/180 Plastic Paddle Wheel, w/clips
		60089-180	Meter Assy, 3/4-inch Dual Port, Slip, EXT, RT Angle/180 Plastic Paddle Wheel, w/clips
		60086-50	Meter Assy, 3/4-inch Dual Port, Slip, Elec, Plas, Pdl, w/clips

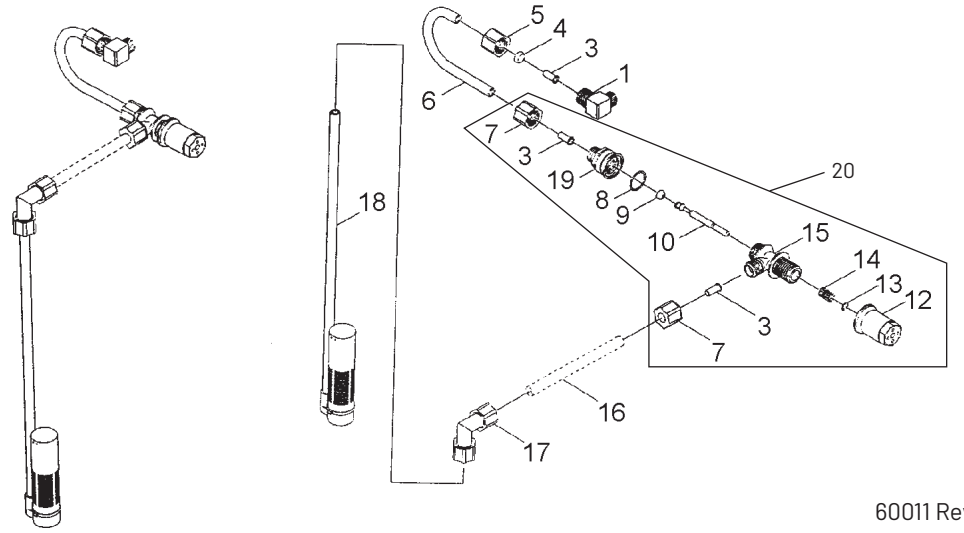
1600 BRINE SYSTEM ASSEMBLY



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-inch NPT x 3/8Tube
4	3	10329	Fitting, Tube, 3/8 Nut, Brass
5	3	10330	Fitting, Sleeve, 3/8 Celcon
6	1	16508-01	Tube, Brine Valve, 2850/2900s
		12774	Tube, Brine Valve, 1500
		40027	Tube, Brine Valve, 2510, HWBP
		14428	Tube, Brine Valve, 1600/1650, NHWBP
		15221-01	Tube, Brine Valve, 2750/2900
		42184	Tube, Brine Valve, 2850s
		41683	Tube, Brine Valve, UF, 2900S 1600/1650
7	1	10250	Ring, Retaining
8	1	11749	Guide, Brine Valve Stem
9	1	10249	Spring, Brine Valve
10	1	12550	Quad Ring, -009
11	1	12748	Brine Valve Body Assy, 1600 w/Quad Ring
12	1	12552-02	Brine Valve Stem, 1600, with Seat
13	1	12626	Seat, Brine Valve
14	1	11982	O-ring, -016
15	1	60020-25	BLFC, .25 GPM, 1600
		60020-50	BLFC, .50 GPM, 1600
		60020-100	BLFC, 1.0 GPM, 1600
16	1	60029-010	Brine Valve, 1600 Short Stem, 0.25 gpm
		60029-020	Brine Valve, 1600 Short Stem, 0.50 gpm
		60029-030	Brine Valve, 1600 Short Stem, 1.00 gpm

1650 BRINE SYSTEM

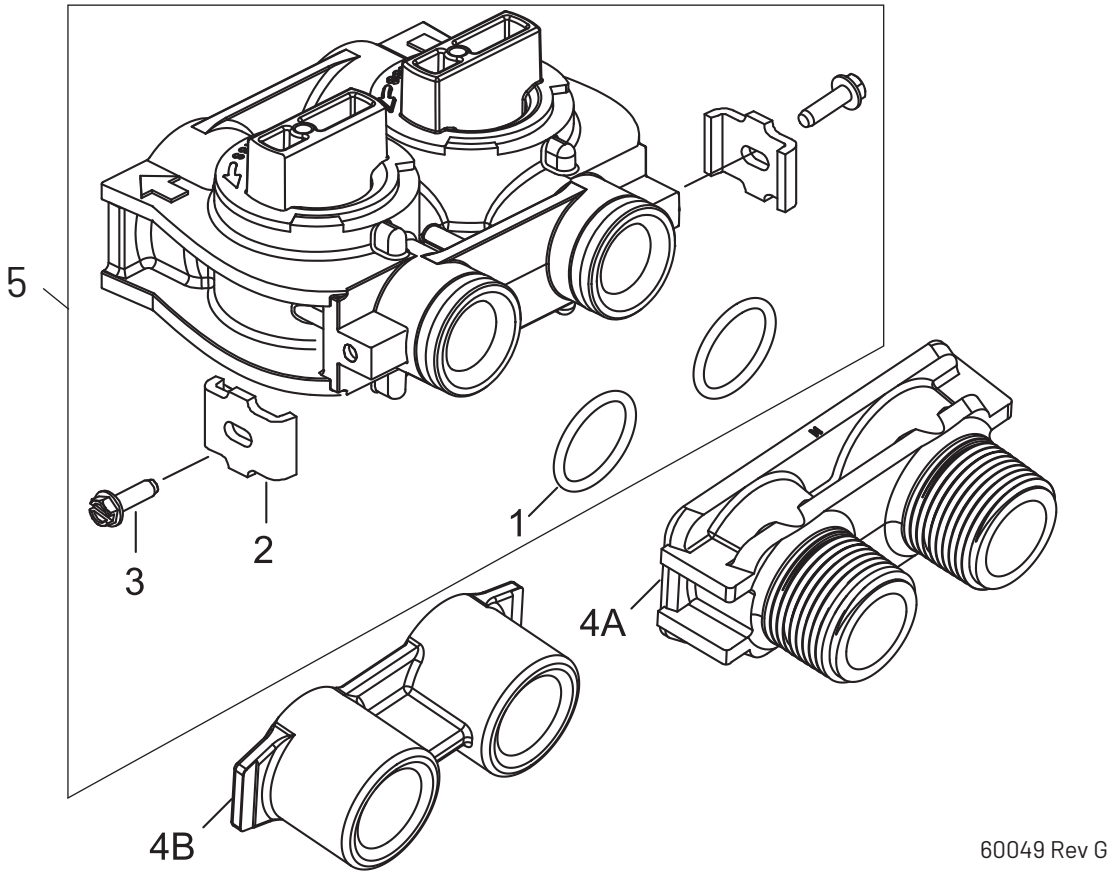


60011 Rev D

Item No.	QTY	Part No.	Description
1	1	10328	Elbow, 90 1/4 NPT x 3/8
3	3	10332	Insert, 3/8
4	1	10330	Sleeve, 3/8 Nut Brine
5	1	10329	Tube Fitting, 3/8 Nut Brine
6	1	16508-01	Tube, Brine Valve, 2850/2900s
		12774	Tube, Brine Valve, 1500
		40027	Tube, Brine Valve, 2510, HWBP
		14428	Tube, Brine Valve, 1600/1650, NHWBP
		15221-01	Tube, Brine Valve, 2750/2900
		42184	Tube, Brine Valve, 2850s
		41683	Tube, Brine Valve, UF, 2900S 1600/1650
7	2	19625	Assy., GFN Nut
8	1	16924	O-ring, -018
9	1	12626	Seat, Brine Valve
10	1	12552	Brine Valve Stem, 1600
12	1	17906	Guide, Brine Valve Stem
13	1	10250	Retaining Ring
14	1	10249	Spring, Brine Valve
15	1	17884	Brine Valve Body Assy., Plastic
17	1	12794	Elbow, 3/8 Tube Poly, White
18	1	60002	#500 Air Check

Item No.	QTY	Part No.	Description
19			**60010-25 BLFC Assy. (Parts)**
	1	17907	Housing
	1	12128	.25 GPM Label
	1	12094	.25 Flow Washer
	1	12098	Retainer
			60010-50 BLFC Assy. (Parts)
	1	17907	Housing
	1	10759	.50 GPM Label
	1	12095	.50 Flow Washer
	1	12098	Retainer
			60010-100 BLFC Assy. (Parts)
	1	17907	Housing
	1	10760	1.0 GPM Label
	1	12097	1.0 Flow Washer
	1	12098	Retainer
20		60011-010	Brine Valve, 1650, Short Stem, 0.25 gpm
		60011-020	Brine Valve, 1650, Short Stem, 0.50 gpm
		60011-030	Brine Valve, 1650, Short Stem, 1.00 gpm

BYPASS VALVE ASSEMBLY (PLASTIC)

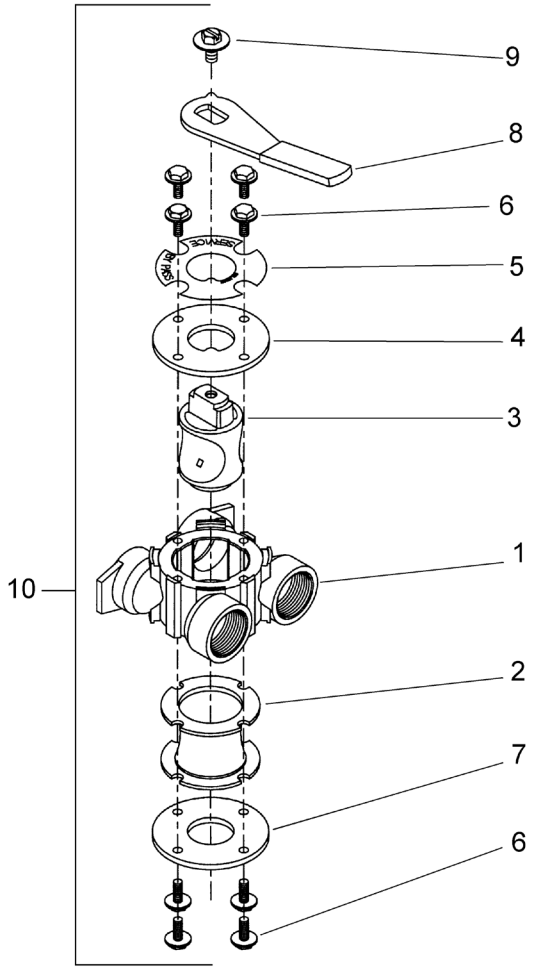


60049 Rev G

Item No.	QTY	Part No.	Description
1	2	13305	O-ring, -119
2	2	13255	Clip, Mounting
3	2	13314	Screw, Slot Ind Hex, 8-18 x .60
4A	1	18706	Yoke, 1-inch , NPT, Plastic
		18706-02	Yoke, 3/4-inch , NPT, Plastic
4B	1	13708-40	Yoke, 1-inch , Sweat
		42690	Yoke, 3/4-inch, Sweat, Brass
		41027-01	Yoke, 3/4-inch , NPT, Cast, Machined
		41026-01	Yoke, 1-inch , NPT, Cast, Machined, SS
		18706-10	Yoke, 1-inch , BSP, Plastic
		18706-12	Yoke, 3/4-inch , BSP, Plastic
		19620-01	Yoke Assy, 3/4-inch , R/ Angle, 90 Deg
5	1	60049	Bypass Plastic
*	2	19228-01	Adapter Assy, Coupling, w/O-rings

*Not Shown

BYPASS VALVE ASSEMBLY (METAL)

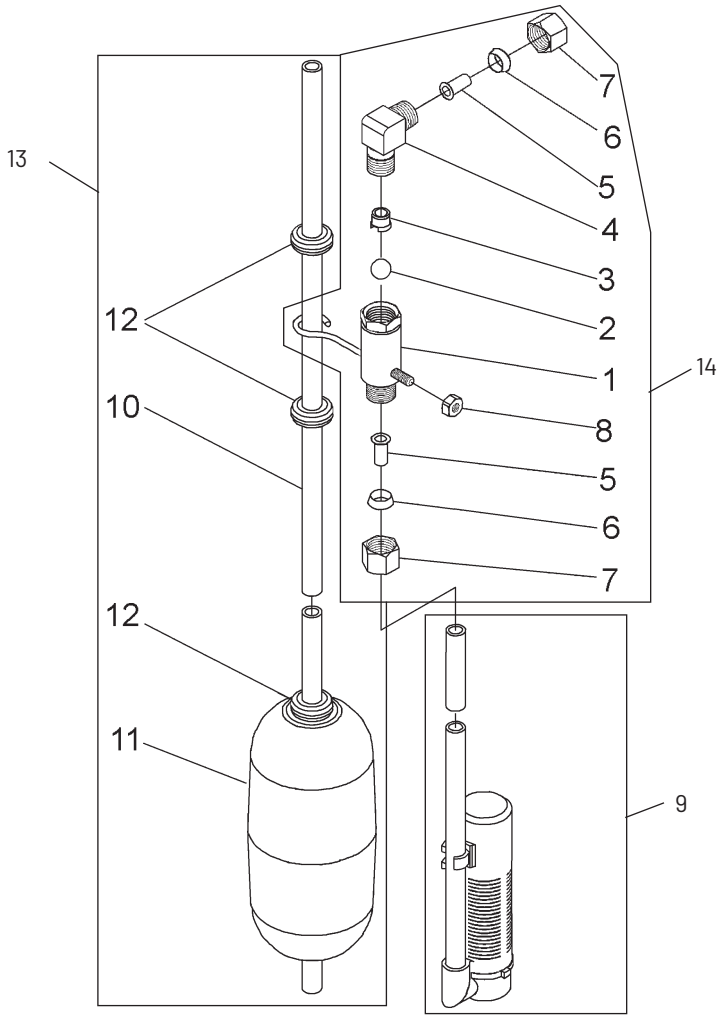


60040SS Rev T
60041SS Rev U

Item No.	QTY	Part No.	Description
1	1	40614	Bypass Body, 3/4-inch
		40634	Bypass Body, 1-inch , SS
2	1	14105	Seal, Bypass, 560CD
3	1	11972	Plug, Bypass
4	1	11978	Side Cover
5	1	13604-01	Label
6	8	15727	Screw, 10-24 x 0.5-inch
7	1	11986	Side Cover
8	1	11979	Lever, Bypass
9	1	11989	Screw, Hex Head, 1/4-14 x 1.5-inch
10	1	60040SS	Bypass Valve, 5600, 3/4-inch NPT Blk Grip Lever, SS
	1	60041SS	Bypass Valve, 5600, 1-inch NPT Blk Grip Lever, SS
*	2	19228-01	Adapter Assy, Coupling, w/O-rings

*Not Shown

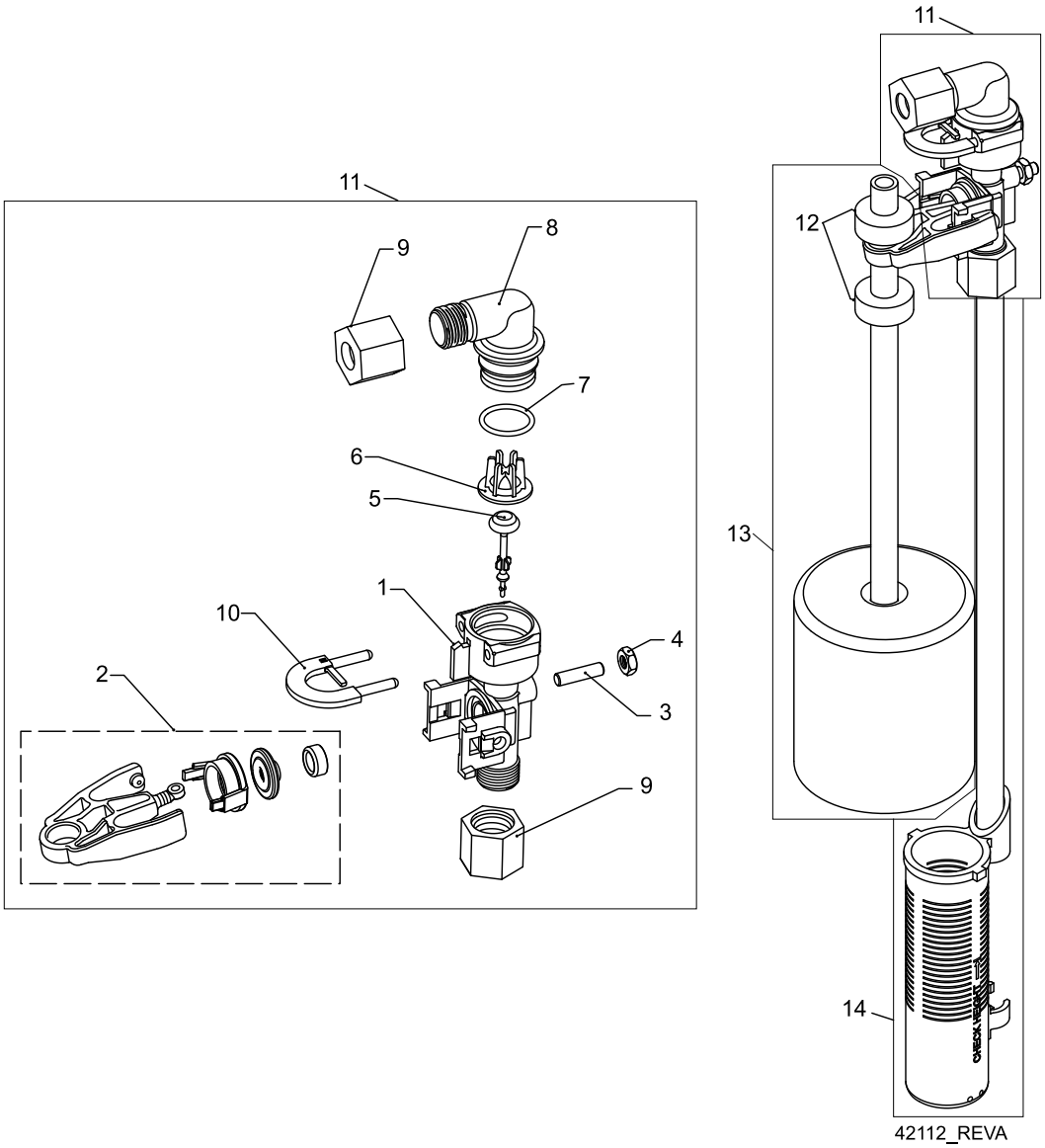
2300 SAFETY BRINE VALVE



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
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
1	1	19645	Body, Safety Brine Valve, 2310
2	1	19803	Safety Brine Valve Assy
3	1	19804	Screw, Sckt Hd, Set, 10-24 x .75
4	1	19805	Nut, Hex, 10-24, Nylon Black
5	1	19652-01	Poppet Assy, SBV w/O-ring
6	1	19649	Flow Dispenser
7	1	11183	O-ring, -017
8	1	19647	Elbow, Safety Brine Valve
9	2	19625	Nut Assy, 3/8-inch Plastic
10	1	18312	Retainer, Drain
11	1	60014	Safety Brine Valve Assy, 2310
12	2	10150	Grommet, .30 Dia
13	1	60068-8.06	Float Assy, 2310, w/8.06-inch Rod
		60068-10.5	Float Assy, 2310, w/10.5-inch Rod
		60068-11.5	Float Assy, 2310, w/11.5-inch Rod
		60068-20	Float Assy, 2310, w/20-inch Rod
		60068-30	Float Assy, 2310, w/30-inch Rod
14	1	60002-10	Air Check, #500, American Hydro
		60002-11.38	Air Check, #500, 11.38 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

SEAL & SPACER TOOLS & REPLACEMENT

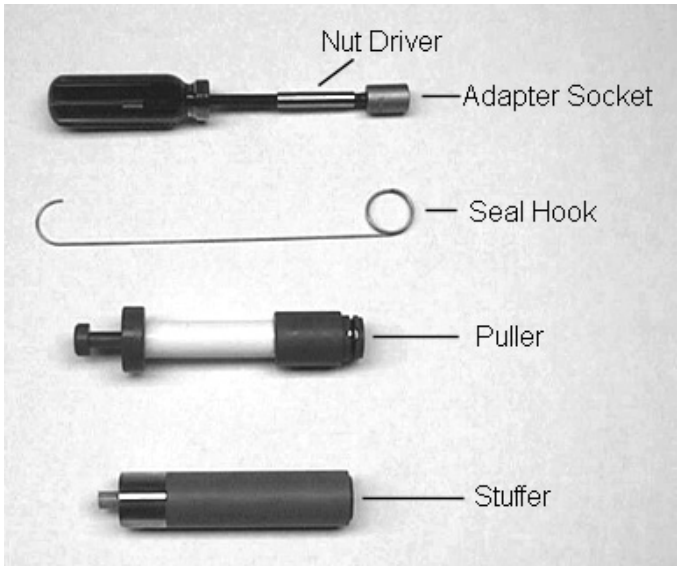


Figure 5

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.

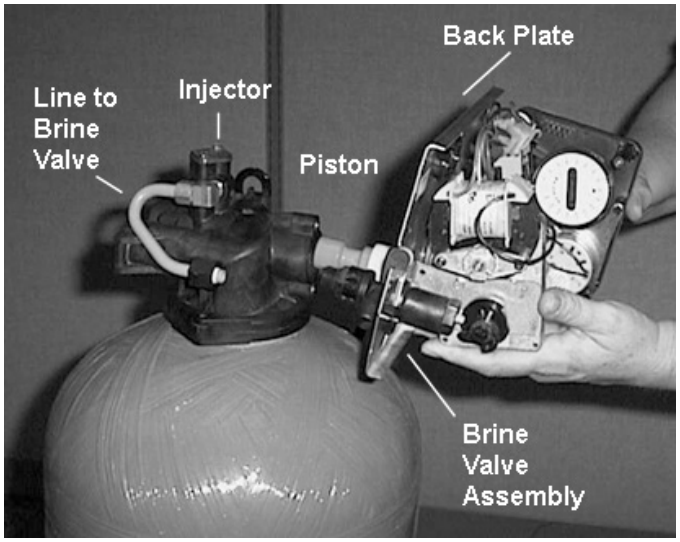


Figure 6

SEAL & SPACER TOOLS & REPLACEMENT

CONTINUED

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

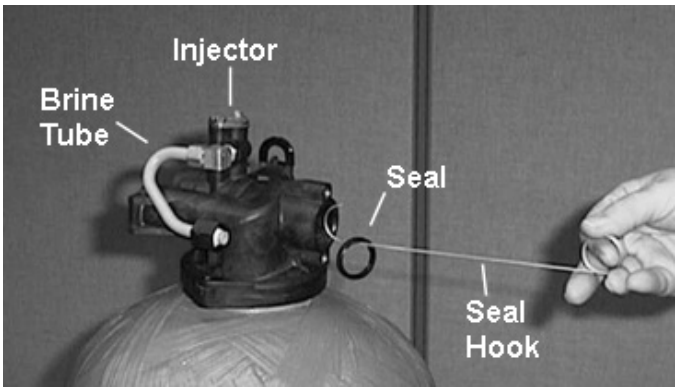


Figure 7

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.

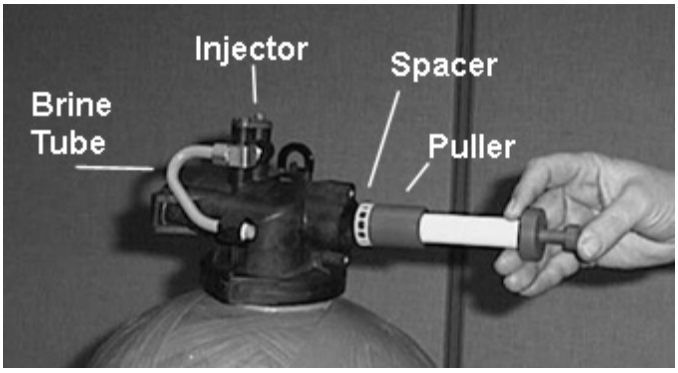


Figure 8

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 5). 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 body.

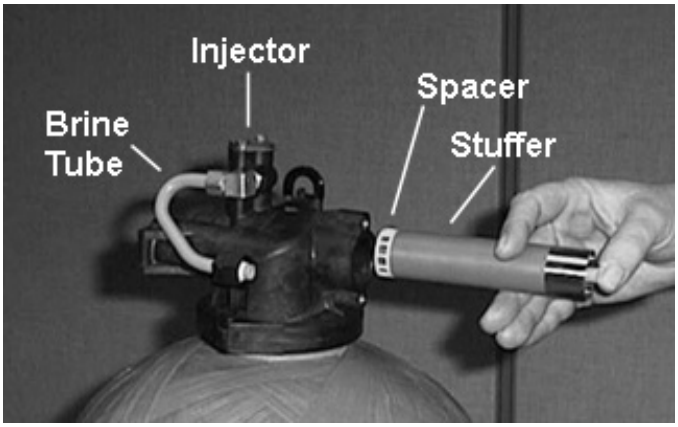


Figure 9

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.

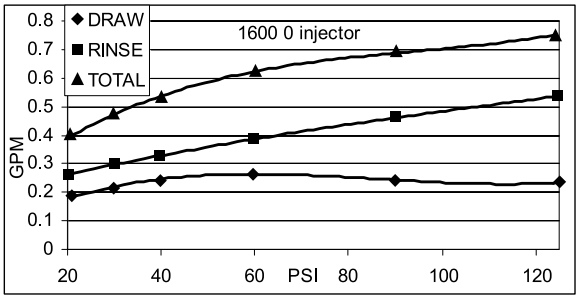
Reason: Meter is not measuring flow.

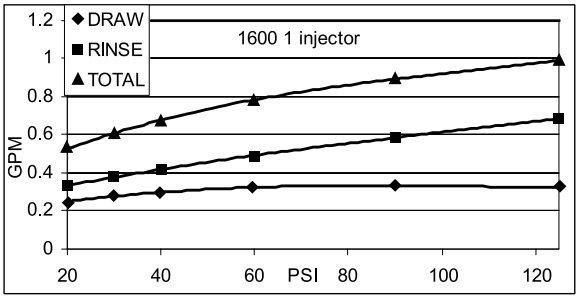
Correction: Check meter with meter checker.

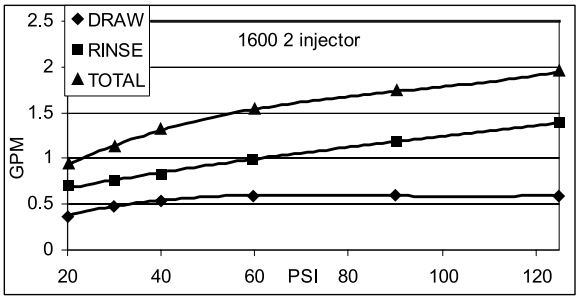
TROUBLESHOOTING

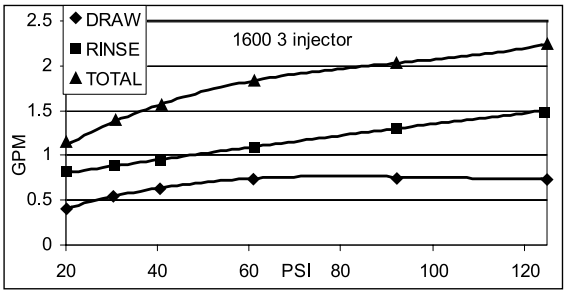
Problem	Cause	Correction
Water conditioner fails to regenerate.	Electrical service to unit has been interrupted	Assure permanent electrical service (check fuse, plug, pull chain, or switch)
	Timer is defective.	Replace timer.
	Power failure.	Reset time of day.
Hard water.	By-pass valve is open.	Close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

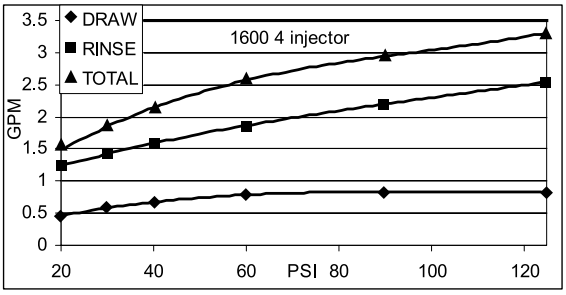
FLOW DATA & INJECTOR DRAW RATES



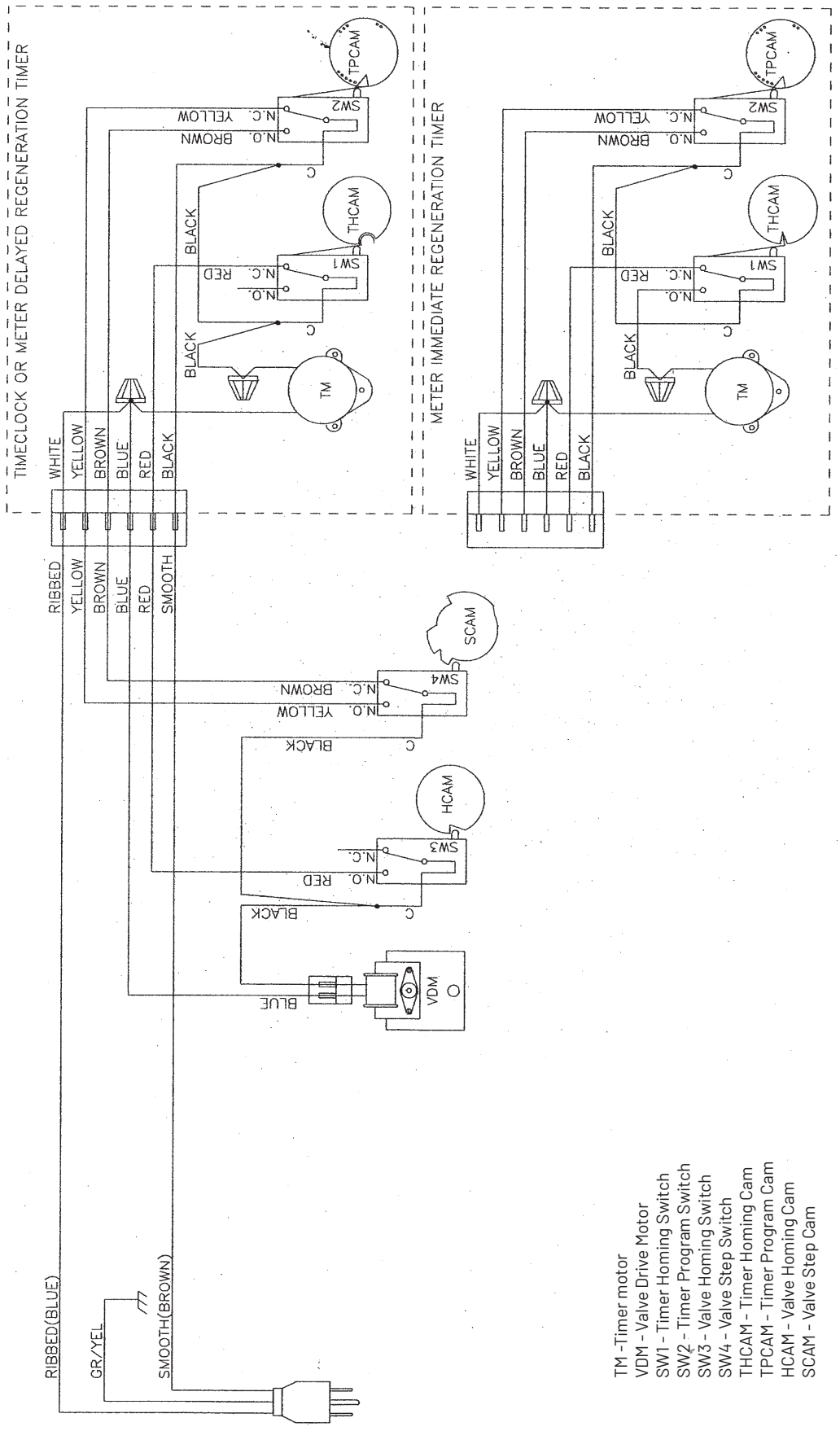








TR20391_REVA



TM -Timer motor
VDM - Valve Drive Motor
SW1 - Timer Homing Switch
SW2 - Timer Program Switch
SW3 - Valve Homing Switch
SW4 - Valve Step Switch
THCAM - Timer Homing Cam
TPCAM - Timer Program Cam
HCAM - Valve Homing Cam
SCAM - Valve Step Cam

NOTE:
1. Single Tank Timeclock, Meter Delayed, or Meter Immediate Regeneration
2. Valve Shown In Service Position.

19201 Rev C

SERVICE ASSEMBLIES

24 Hour Gear Assemblies
40096-02 ..... Dial 2AM Regen Assy, Black
40096-24 ..... Dial 12AM Regen Assy, Black
60519-02 ..... Gear Assy, 3200 24 Hour 2 Times/Day
60519-03 ..... Gear Assy, 3200, 24 Hour 3 Times/Day
60519-04 ..... Gear Assy, 3200, 24 Hour 4 Times/Day
60519-06 ..... Gear Assy, 3200, 24 Hour (12:00) 6 Times/Day

Brine Line Flow Control (BLFC)
60010-25 ..... BLFC, 1650, .25 GPM, Plastic
60010-50 ..... BLFC, 1650, .50 GPM, Plastic
60010-100..... BLFC, 1650, 1.0 GPM, Plastic

Brine Valves
60011-010..... Brine Valve, 1650, Short Stem, .25 GPM, Less Tube
60011-030..... Brine Valve, 1650, Short Stem, 1.0 GPM, Less Tube

Bypasses
60049..... Bypass Plastic Assy
60040SS ..... Bypass Valve, 5600, 3/4-inch NPT
60041SS ..... Bypass Valve, 5600, 1-inch NPT

Cam
60160-15 ..... Drive Cam Assy, STF, Blue

Clamp
60503..... Clamp Ring Assembly, 2510

Coupling
60510..... Adapter Coupling Assy, 5600

Drain Line Flow Controls
60705-00..... DLFC, Plastic, Blank
60705-06..... DLFC, Plastic, .60 GPM
60705-08..... DLFC, Plastic, .80 GPM
60705-10 ..... DLFC, Plastic, 1.0 GPM
60705-12 ..... DLFC, Plastic, 1.2 GPM
60705-13..... DLFC, Plastic, 1.3 GPM
60705-15..... DLFC, Plastic, 1.5 GPM
60705-17..... DLFC, Plastic, 1.7 GPM
60705-20..... DLFC, Plastic, 2.0 GPM
60705-24..... DLFC, Plastic, 2.4 GPM
60705-30..... DLFC, Plastic, 3.0 GPM
60705-35..... DLFC, Plastic, 3.5 GPM
60705-40..... DLFC, Plastic, 4.0 GPM
60705-45..... DLFC, Plastic, 4.5 GPM
60705-50..... DLFC, Plastic, 5.0 GPM
60705-60..... DLFC, Plastic, 6.0 GPM
60705-70..... DLFC, Plastic, 7.0 GPM
60705-8.0..... DLFC, QC x 3/4-inch F, 8.0 GPM
60705-9.0..... DLFC, QC x 3/4-inch F, 9.0 GPM
60705-12 ..... DLFC, QC x 3/4-inch F, 12.0 GPM
60705-15..... DLFC, QC x 3/4-inch F, 15.0 GPM

Drives
60050-21 ..... Drive Assy, 2750, STF, 120V Softener

Injectors
60480-xx..... 1600 Injector Assy (Specify size of Injector)

Meters
60088-180 ..... Meter Assy, 3/4-inch Dual Port, Slip Std, Rt Ang/180 Plastic Paddle w/clps
60089-180 ..... Meter Assy, 3/4-inch Dual Port, Slip Ext, Rt Ang/180 Plastic Paddle w/clps

Piston, Seal, and Spacer Kits
61670-01 ..... Piston Kit 2510/2750
61670-02..... Piston Kit, 2510, 2750, NHWBP
62044..... Piston Kit, 2750, Hot Water
61671-02 ..... NHWBP Conversion Kit, 2510

Program Wheels
60405-10 ..... Program Wheel, w/3/4-inch Std Label Set @ 21
60405-15 ..... Program Wheel, w/3/4-inch Std Label w/ People Label Set @ 21

Safety Brine (2300)
60028-30 ..... Float Assy, 2350, 30-inch , White
60027-FFA ..... Safety Brine Valve Body, 2300 Fitting Facing Arm
60027-FFS ..... Safety Brine Valve Body, Fitting Facing Stud

Sales and Service Aids
40097..... Literature, 2510, S/Manual
16510 ..... Literature, 2510, Spec Sheet

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

Yokes
13708-40 ..... Yoke, 1-inch , Sweat
13708-45..... Yoke, 3/4-inch , Sweat
18706..... Yoke, 1-inch , NPT, Plastic
18706-20 ..... Yoke, 3/4-inch , NPT, Plastic
19275..... Yoke, Angle 90 Deg. 3/4-inch , NPT
19275-45..... Yoke, Angle 90 Deg. 3/4-inch Sweat
19620-01..... Yoke Assy, 3/4-inch , R/Angle, 90 Deg w/O-rings, Clips and Screws
40636..... Yoke, 1-1/4 inch, NPT
40636-49..... Yoke, 1-1/4 inch, Sweat
41026-01 ..... Yoke, 1-inch , NPT, SS
41027-01 ..... Yoke, 3/4-inch , NPT, Cast, Machd

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

PENTAIR

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