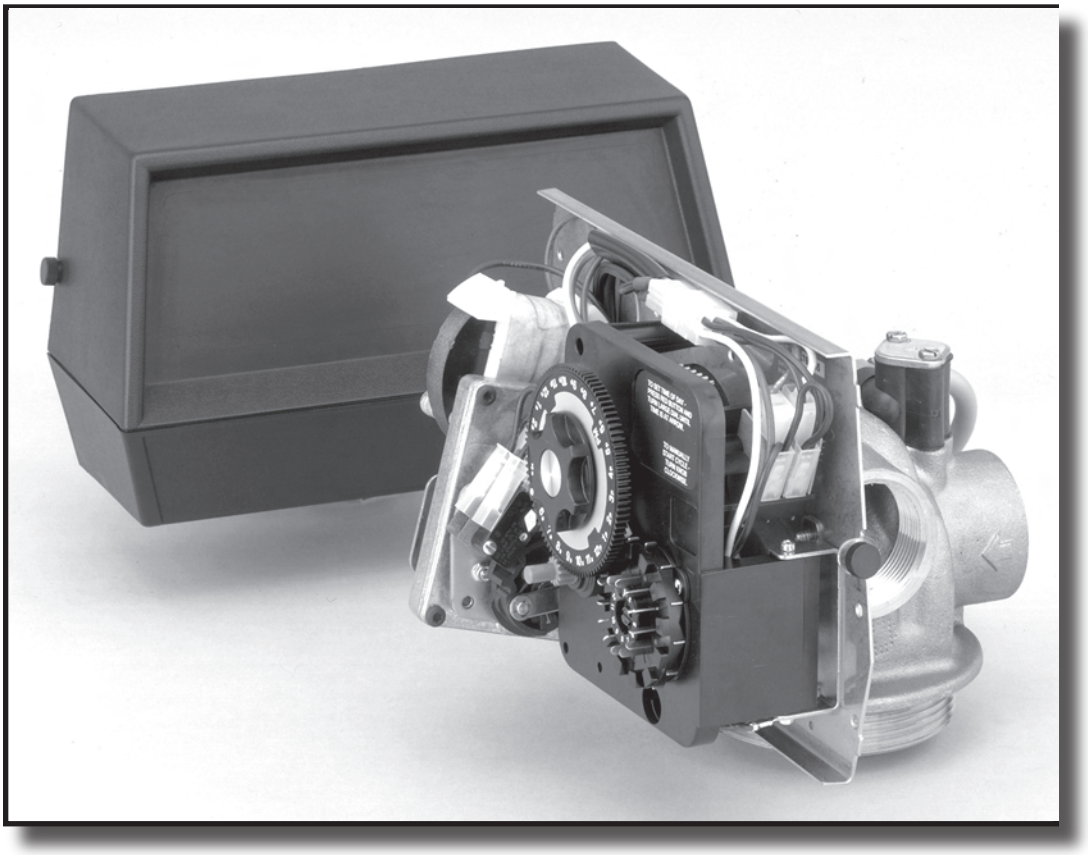
Model 2850

Service Manual



IMPORTANT: Fill in Pertinent Information on Page 3 for Future Reference

Table of Contents

IMPORTANT: The information, specifications and illustrations in this manual are based on the latest information available at the time of printing. The manufacturer reserves the right to make changes at any time without notice.

Job Specification Sheet

*Job No. _____

*Model No. _____

*Water Test _____

*Capacity Per Unit _____

*Mineral Tank Size _____ Diameter _____ Height

*Brine Tank Size & Salt Setting per Regeneration _____

*2850 Control Valve Specifications

1. Type of Timer
   A. 7 Day or 12 Day
   B. *625 to 10,625 Gallon Meter or
      *3,125 to 53,125 Gallon Meter or
      *Other _____
   C. Meter Wiring Package
      1. System #4 - 1 Tank, 1 Meter, Immediate or Delayed Regeneration
      2. System #5 - 2 Tanks, 2 Meters, Interlock
      3. System #6 - 2 Tanks, 1 Meter, Series Regeneration
      4. System #7 - 2 Tanks, 1 Meter, Alternator
2. Timer Program Settings
   A. Backwash _____ Minutes
   B. Brine & Slow Rinse _____ Minutes
   C. Rapid Rinse _____ Minutes
   D. Brine Tank Refill _____ Minutes
3. Drain Line Flow Control _____ gpm
4. Brine Line Flow Controller _____ gpm
5. Injector Size # _____
6. Service Valve Operation Units (SVO)
   Size of Service Valve _____

General Commercial Pre-Installation Check List

WATER PRESSURE: A minimum of 25 pounds of water pressure is required for regeneration valve to operate effectively.

ELECTRICAL FACILITIES: A continuous 115 volt, 60 Hertz current supply is required. Make certain the current supply is always hot and cannot be turned off with another switch.

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.

BY-PASS VALVES: Always provide for the installation of a by-pass valve.

CAUTION: Water pressure is not to exceed 120 p.s.i., water temperature is not to exceed 100° F, 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. (Maximum 4 feet apart for twin units)
2. All plumbing should be done in accordance with local plumbing codes. The pipe size for the drain line should be the same size as the drain line flow control connection. Water meters are to be installed on soft water outlets. Twin units with 1 meter shall be installed on common soft water outlet of units.
3. Solder joints near the drain must be done prior to connecting the Drain Line Flow Control fitting. Leave at least 6” between the DLFC and solder joints when soldering when the pipes are connected on the DLFC. Failure to do this could cause interior damage to the DLFC.
4. Teflon tape is the only sealant to be used on the drain fitting. The drain from twin units may be run through a common line.
5. Make sure that the floor is clean beneath the salt storage tank and that it is level.

6 Place approximately 1” of water above the grid plate (if used) in your salt tank. Salt may be placed in the unit at this time.

7. 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.

8. Place the by-pass in service position.
9. Manually index the softener control into “service” position and let water flow into the mineral tank. When water flow stops, close inlet valve, place control in “backwash” position to relieve head of air, then gradually open inlet valve to purge remaining air in tank. Return control to service position.
10. Electrical: All electrical connections must be connected according to codes. Use electrical conduit if applicable. Plug into power supply.

3200 Timer Setting Procedure

How To Set Days On Which Water Conditioner Is To Regenerate:

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:

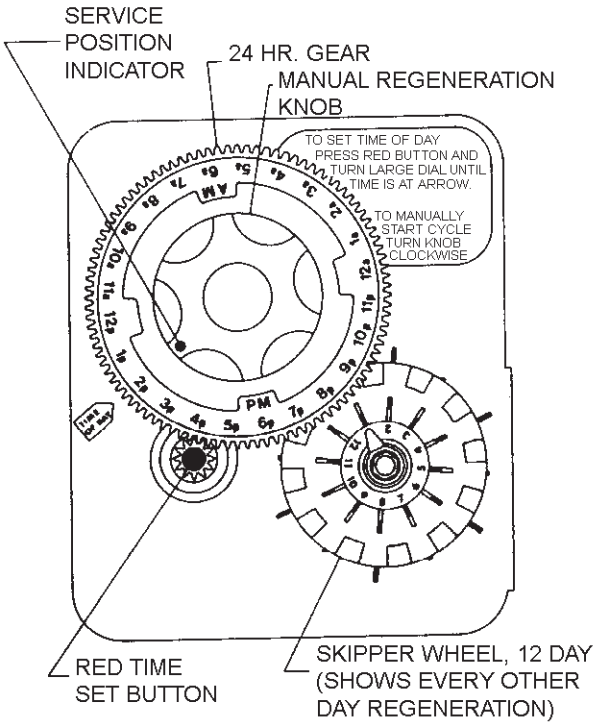
1. Press and hold the red button in to disengage the drive gear.
2. Turn the large gear until the actual time of day is at the time of day pointer.
3. Release the red button to again engage the drive gear.

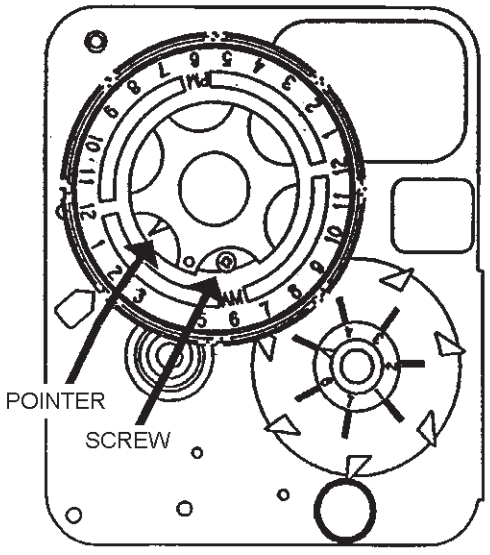
How To Manually Regenerate Your Water Conditioner At Any Time:

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 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

3210 Timer Settings

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.

NOTE: Drawing shows 8,750 gallon setting. The capacity (gallons) arrow denotes remaining gallons exclusive of fixed reserve.

How To Set The Time Of Day:

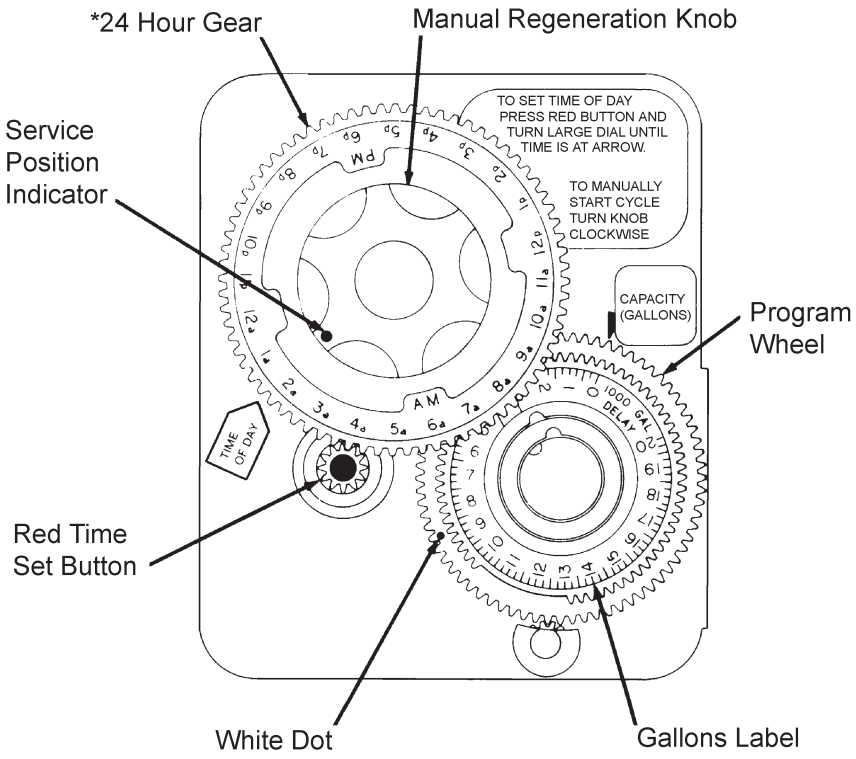
1. Press and hold the red button in to disengage the drive gear.
2. Turn the large gear until the actual time of day is opposite the time of day pointer.
3. Release the red button to again engage the drive gear.

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.



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.

3200 & 3210 Timer Series

Regeneration Cycle Program Setting Procedure

(Brine Tank Refill Separate from Rapid Rinse)

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 & 3210 Series Timers (Figure to Right)

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 for 3200 & 3210 Timer

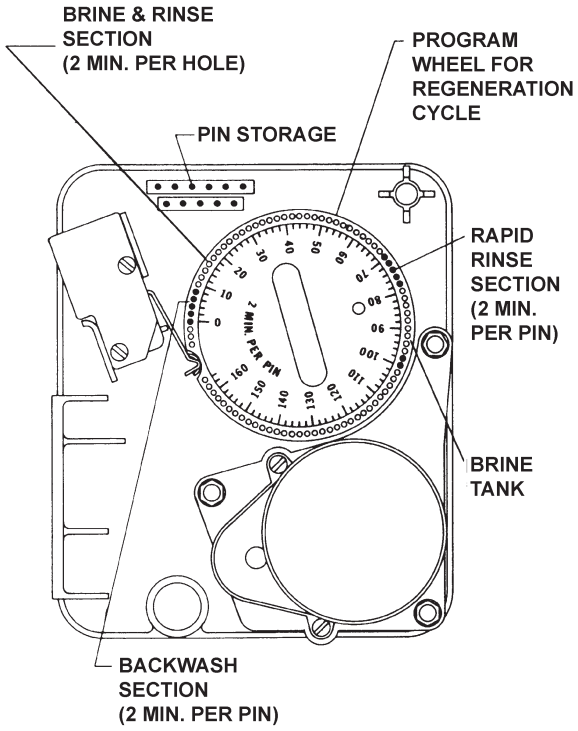
How To Change The Length Of The Backwash Time:

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.

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.



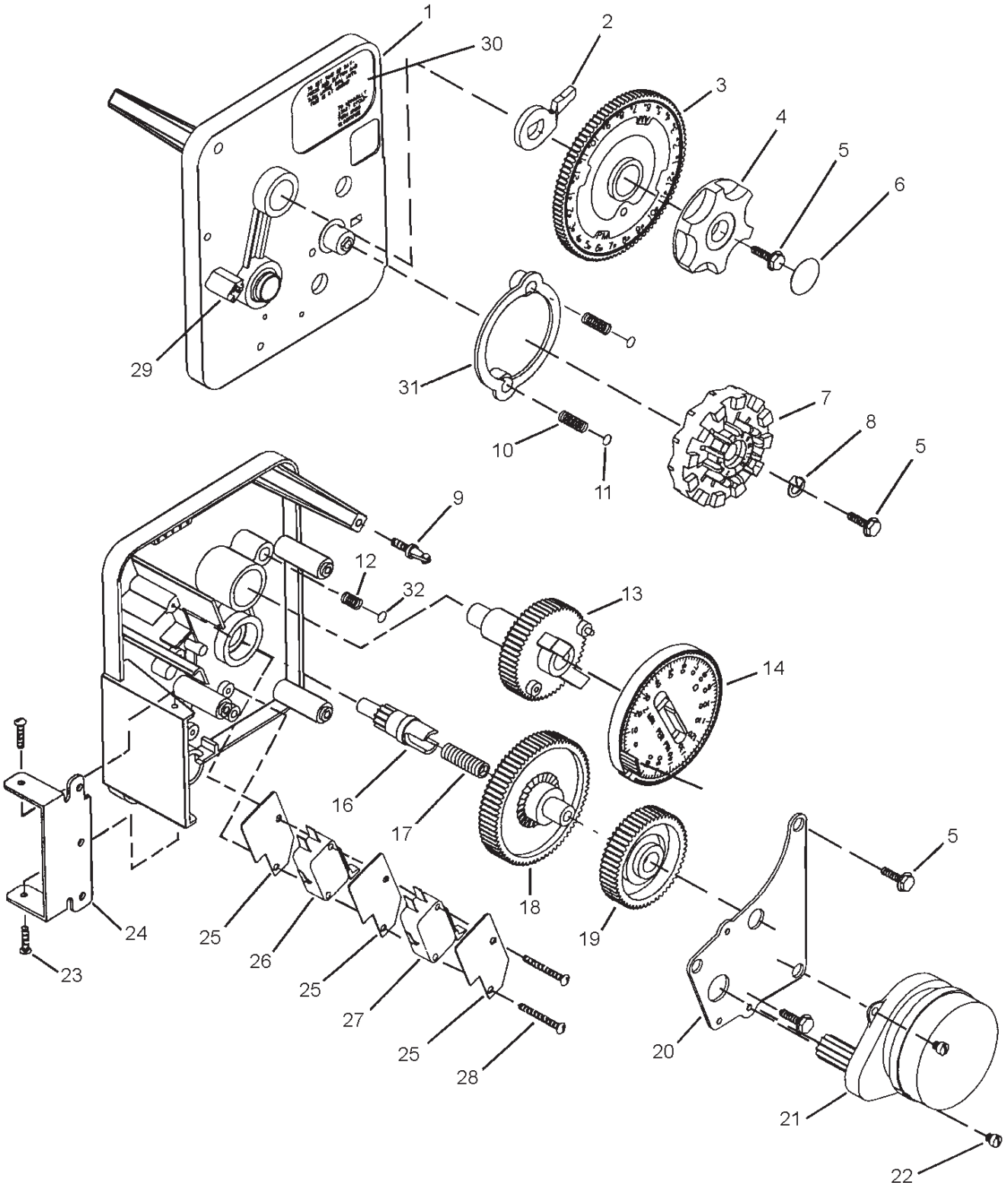
How To Change The Length Of Rapid Rinse:

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.

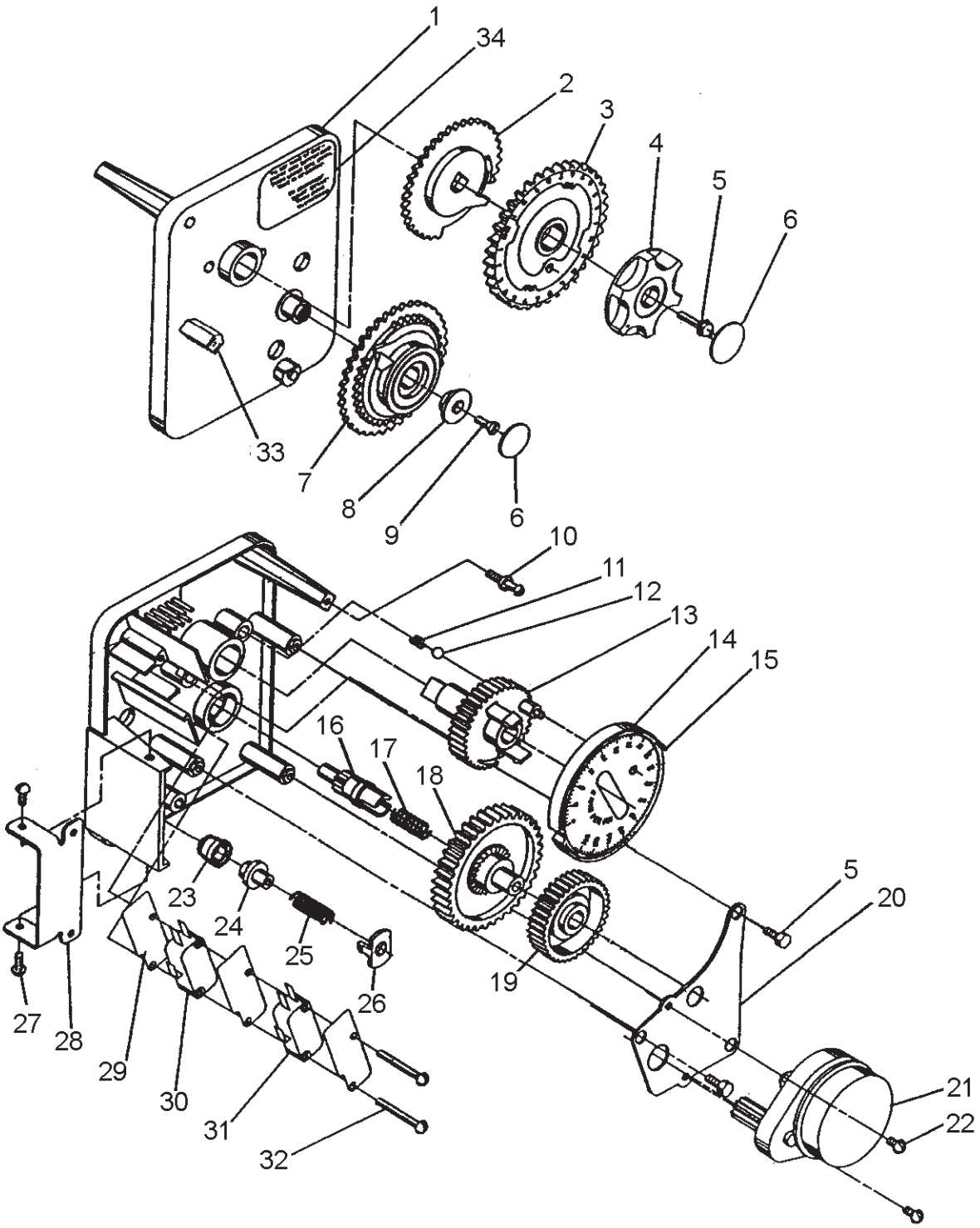
3200 Timer Assembly



3200 Timer Assembly Parts List

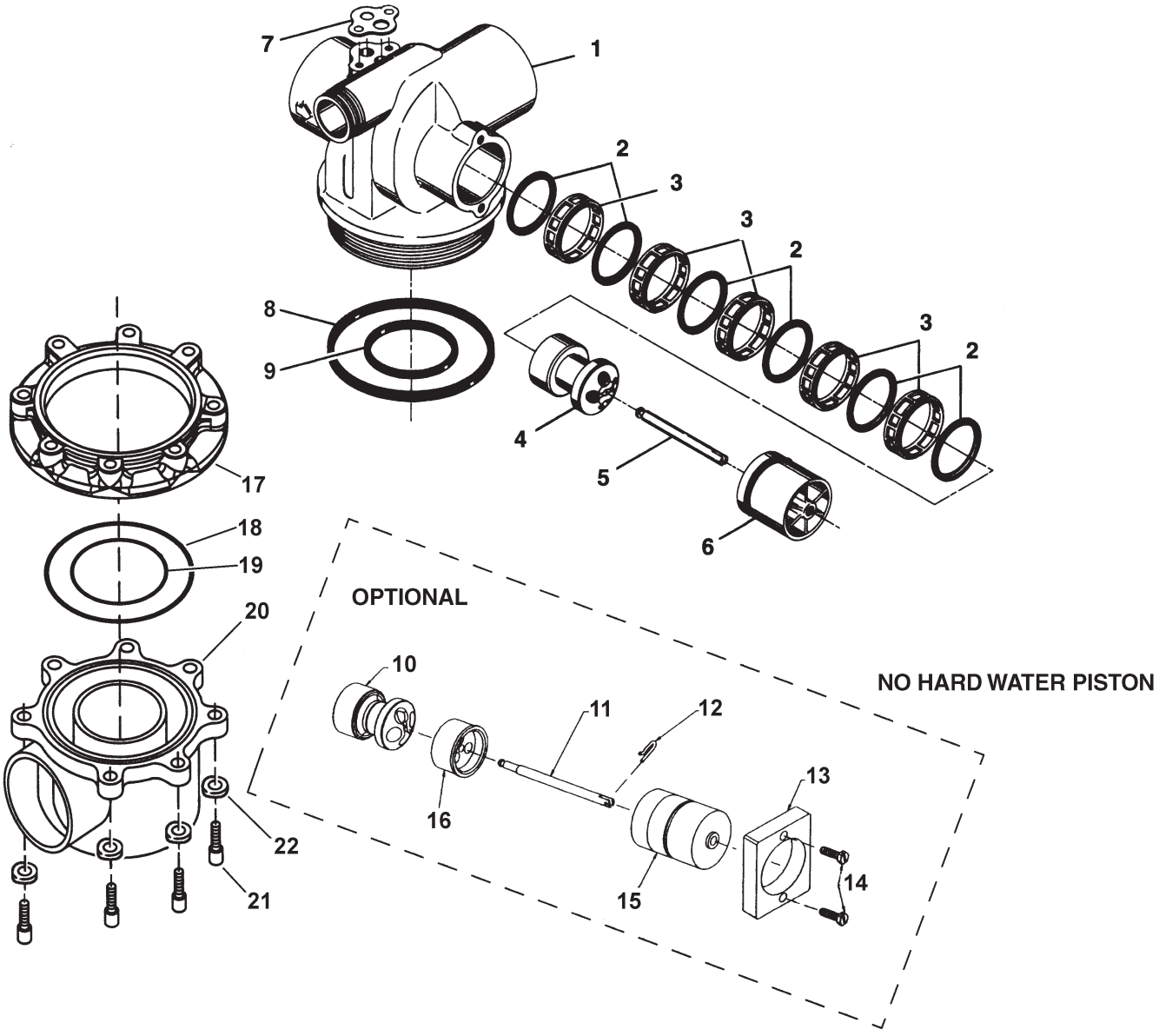
1	1	13870	Housing, Timer, 3200
2	1	13011	Arm, Cycle Actuator
3	1	40096-24	Dial 12AM Regen Assy, Black
		40096-02	Dial 2AM Regen Assy, Black
4	1	13886	Knob, 3200
5	5	13296	Screw, Hex Wsh, 6-20 x 1/2 Type 25 Steel Zinc
6	1	11999	Label, Button
7	1	14381	Skipper Wheel Assy, 12 Day
		14860	Skipper Wheel Assy, 7 Day
8	1	13014	Pointer, Regeneration
9	1	14265	Clip, Spring
10	2	13311	Spring, Detent, Timer
11	2	13300	Ball, 1/4” SS
12	1	15424	Spring, Detent, Timer
13	1	13911	Gear, Main Drive, Timer
14	1	19210	Program Wheel Assy, 3200
15	21	15493	Pin, Spring, 1/16 x 5/8 SS
16	1	13018	Pinion, Idler
17	1	13312	Spring, Idler Shaft
18	1	13017	Gear, Idler
19	1	13164	Gear, Drive
20	1	13887	Plate, Motor Mounting
21	1	18743-1	Motor, 120V, 60Hz 1/30 RPM, 5600
		19659-1	Motor, 24V, 60 Hz 1/30 RPM
22	2	13278	Screw, Phil Hd Mach, 6-32 x 1/8 Steel Zinc
23	3	11384	Screw, Phil, 6-32 x 1/4 Zinc
24	1	13881	Bracket, Hinge Timer
25	3	14087	Insulator
26	1	10896	Switch, Micro
27	1	15320	Switch, Micro, Timer
28	2	11413	Screw, Pan Hd Mach, 4-40 x 1 1/8 MS Steel Zinc
29	1	14007	Label, Time of Day
30	1	14045	Label, Instruction
31	1	13864	Ring, Skipper Wheel
32	1	15066	Ball, 1/4” Delrin
Not Shown	1	13902	Harness, 3200
Not Shown	2	40422	Nut, Wire, Tan
Not Shown	1	15354-01	Wire, Ground 4”

3210 Timer Assembly



Item No.	Quantity	Part No.	Description
1	1	13870-01	Housing Assembly, Timer, 3210
2	1	13802	Gear, Cycle Actuator
3	1	40096-24	Dial 12AM Regen Assy, Black
		40096-02	Dial 2AM Regen Assy, Black
4	1	13886	Knob, 3200
5	4	13296	Screw, Hex Wsh, 6-20 x 1/2 Type 25 Steel Zinc
6	2	11999	Label, Button
7	1	60405-15	Program Wheel, w/3/4” Std Label with People Label Set
		60405-50	Program Wheel, w/2” Std Label Set @ 21
8	1	13806	Retainer, Program Wheel
9	1	13748	Screw, Flt Hd St, 6-20 x 1/2 Type 25 316 S.S.
10	1	14265	Clip, Spring
11	1	15424	Spring, Detent, Timer
12	1	15066	Ball, 1/4” Delrin
13	1	13911	Gear, Main Drive, Timer
14	1	19210	Program Wheel Assy
15	21	15493	Pin, Spring, 1/16 x 5/8 SS
16	1	13018	Pinion, Idler
17	1	13312	Spring, Shaft
18	1	13017	Gear, Idler
19	1	13164	Gear, Drive
20	1	13887	Plate, Motor Mounting
21	1	18743	Motor, 120V, 60Hz, 1/30 RPM, 5600
		19659-1	Motor, 24V, 60Hz, 1/30 RPM
22	2	13278	Screw, Phil Hd Mach, 6-32 x 1/8 Steel Zinc
23	1	13830	Pinion, Program Wheel Drive
24	1	13831	Clutch, Drive Pinion
25	1	14276	Spring, Meter Clutch
26	1	14253	Retainer, Clutch Spring
27	3	11384	Screw, Phil, 6-32 x 1/4 Zinc Rolling Screw
28	1	13881	Bracket, Hinge Timer
29	3	14087	Insulator
30	1	10896	Switch, Micro
31	1	15320	Switch, Micro, Timer
32	2	11413	Screw, Pan Hd Mach, 4-40 x 1 1/8 MS Steel Zinc
33	1	14007	Label, Time of Day,
34	1	14045	Label, Instruction
Not Shown	1	13902	Harness, 3200
Not Shown	2	40422	Nut, Wire, Tan
Not Shown	1	15354-01	Wire, Ground 4”
Not Shown	1	15465	Label, Caution
Not Shown	1	14198	Label, Indicator

Control Valve with 1700 Injector Assembly



Control Valve with 1700 Injector Assembly Parts List

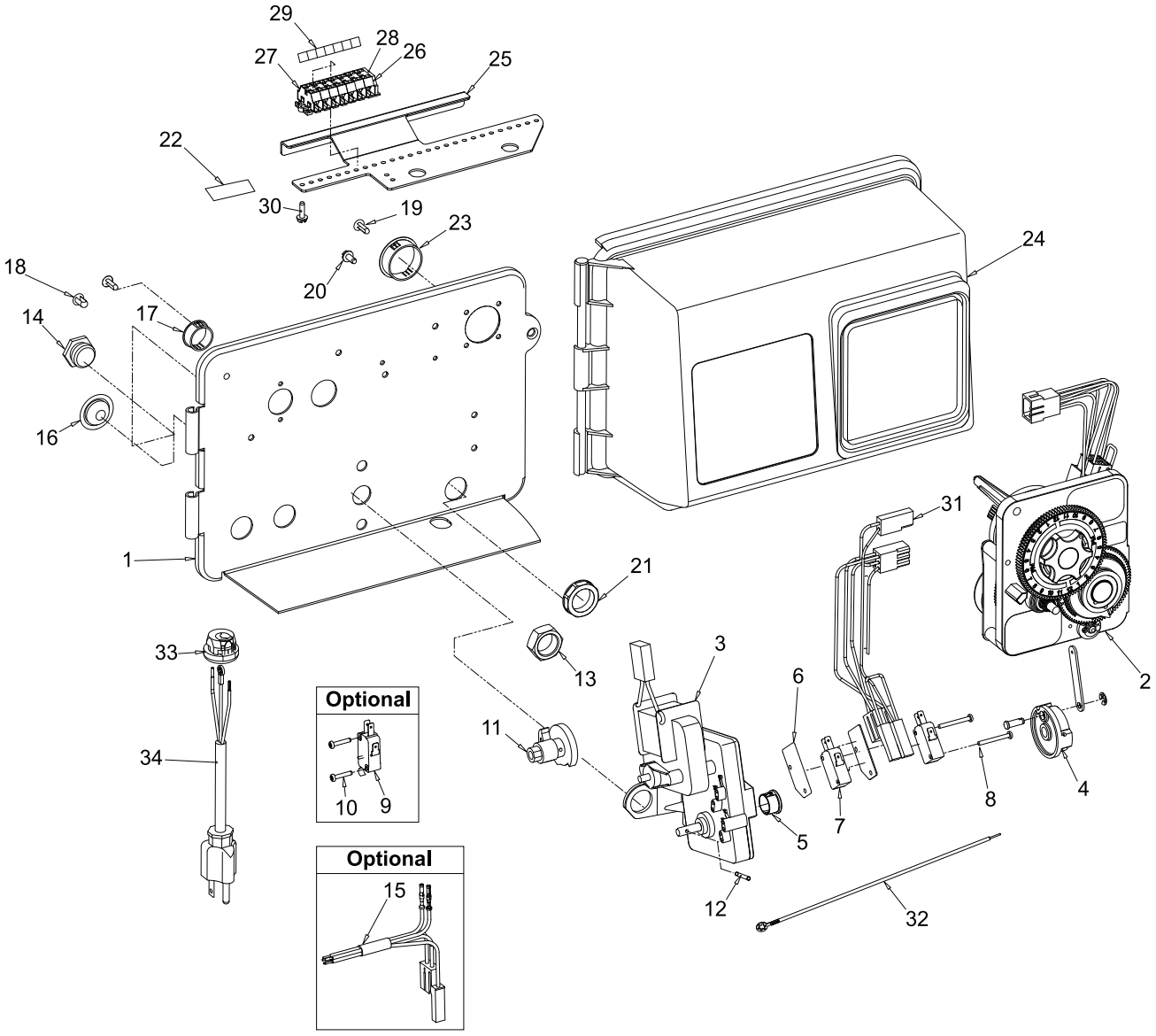
Item No.	Quantity	Part No.	Description
1	1	16250	Valve Body, 2850
		16250-01	Valve Body, 2850, Machd
2	6	16101	Seal, 2850
3	5	16638	Spacer, 9500/2850
4	1	16092	Piston, 2850
5	1	16436	Piston, 2850
6	1	16395	End Plug Assy, 2850
		16395-01	End Plug Assy, 2850, Hot Water
7	1	14805	Gasket, Injector Body, 1600/1700
8	1	16455	O-ring, -347
*9	1	13577	O-ring, -226
10	1	19606	Piston, 2850, NHWBP
11	1	19300	Rod, Piston, 2850
12	1	10909	Pin, Link
13	1	19339	Spacer, 2850, NHWBP
14	2	13386	Screw, Hex Hd Mach, 1/4 - 20x1
15	1	16395-02	End Plug Assy/2850, NHWBP
16	1	19298-01	Piston Assy, 2850, NHWBP, O-ring
Not Shown	1	60366-xx	DLFC 1” NPT (not shown) - specify size
Not Shown	1	17996	Disperser, Air, Injector
Not Shown	1	19608-15	Disperser, Commercial 1 1/2” 2850/2900/9500

Optional Side Mount:

17	1	40316	Adapter, Sidemount
18	1	40368	O-ring, -160, Sidemount, Flange
19	1	40372	O-ring, -142
20	1	40310	Base, 2850/2900/3930, Rotating
21	7	19768	Screw, Hex Hd, 3/8-16x1, Cap 18-8
22	7	40375	Washer, Flat, 3/8, Type A, N-SERS

*** Do not use O-ring if control is side mounted.**

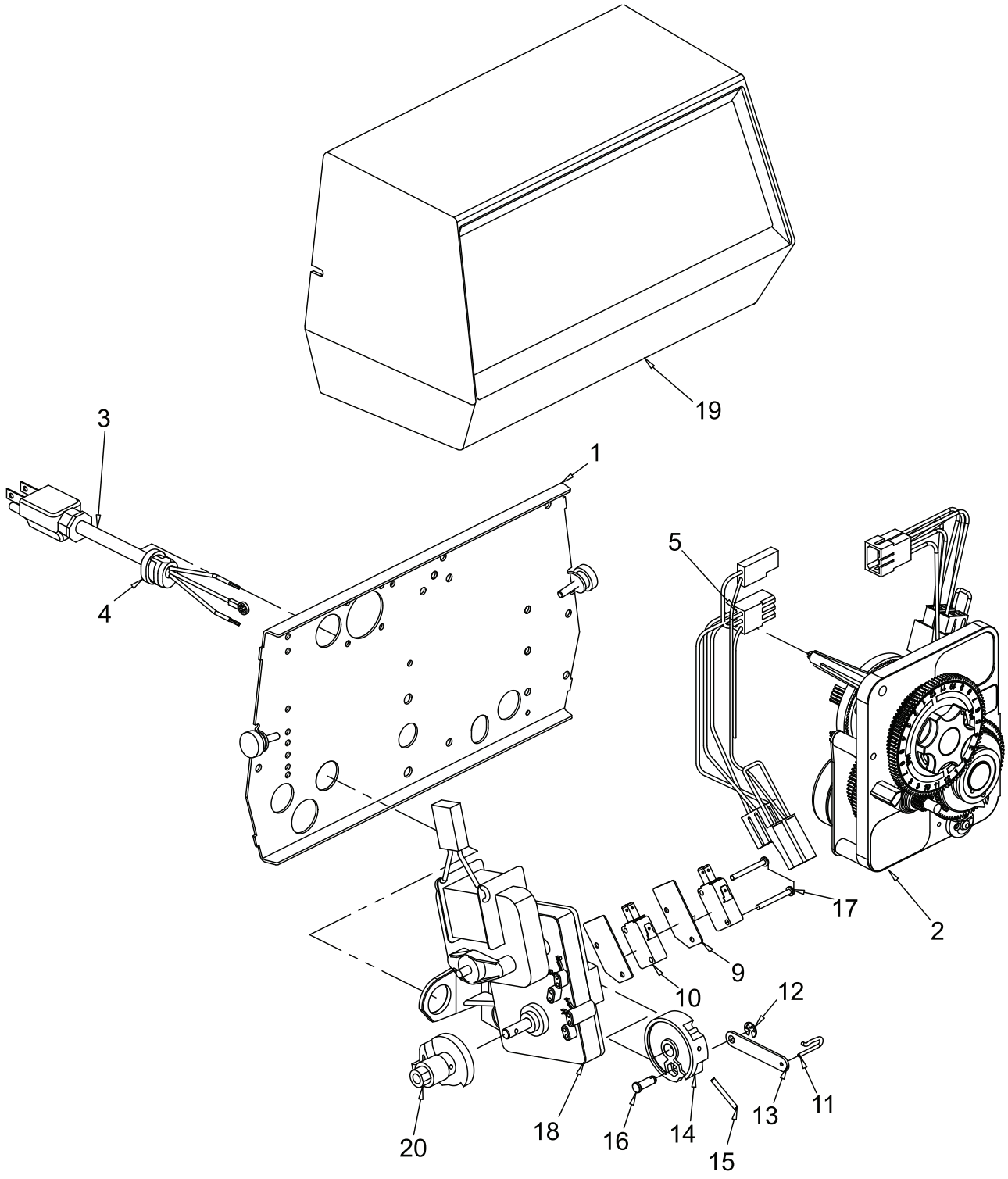
Environmental Power Head Assembly



Environmental Power Head Assembly Parts List

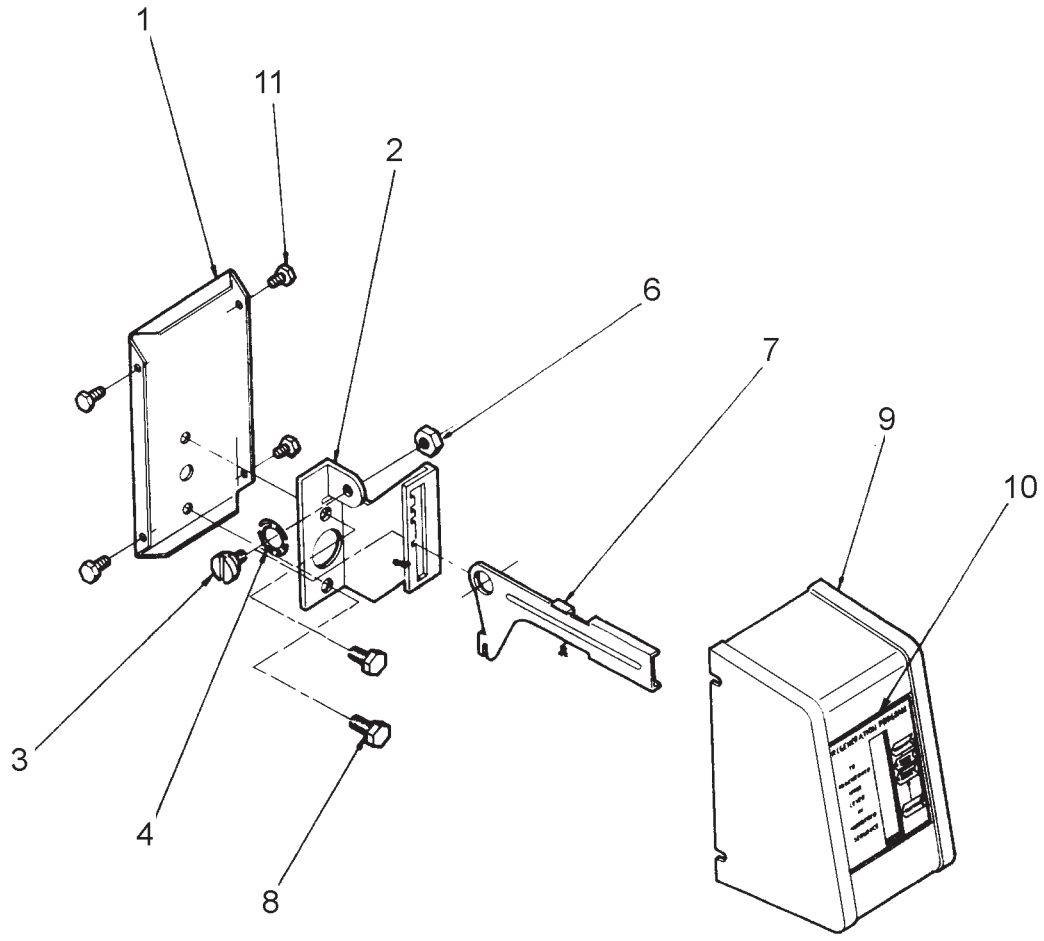
Item No.	Quantity	Part No.	Description
1	1	18697-15	Backplate, Hinged
2		3200 Clock Timer Assy	3200 Clock Timer Assy
		3200 Meter Timer Assy	3200 Meter Timer Assy
3	1	41543	Motor, Drive, 115V, 50/60 Hz
		41544	Motor, Drive, 24V, 50/60 Hz
		41545	Motor, Drive, 230V, 50/60 Hz
4	1	60160-10	Drive Cam Assy, STF, Black
5	1	17904	Bushing, Heyco 1/2, Heyco #2073
6	3	10302	Insulator, Limit Switch
7	2	10218	Switch, Micro
8	2	14923	Screw, Pan Hd Mach, 4-40 X 1 MS Steel Zinc
9	1	10896	Switch, MIcro
10	2	11805	Screw, Rd Hd, 4-40 X 5/8 TYPE 1 Steel Zinc
11	1	12472	Cam Assy, Tri-Stack, After RR
		12777	Cam, Shut-Off Valve
		15770	Cam Assy, Special Tri-Stack, After Brine Fill
		15805	Cam, SVO
12	2	10338	Pin, Roll 3/32 x 7/8
13	1	10269	Nut, Jam, 3/4-16
14	1	10712	Fitting, Brine Valve
15	1	14822	Harness, 2900
16	2	19691	Plug, .750 Dia Recessed, Black
17	1	15806	Plug, Hole, Heyco #2693
18	1	19801	Plug, .190 Dia, White Heyco 0307
19	7	19800	Plug, .140 Dia, White Heyco 0304
20	4	10300	Screw, Slot Hex Wsh, 8-18 X 3/8 Type “B” RC 44-47
21	1	18691-02	Nut, Conduit Fitting 1/2”
22	1	40038-03	Label, Voltage, 120V, 3200ET
23	1	17421	Plug, 1.20 Hole Heyco #2733
24	1	60219-02	Cover Assy, Environmental, Black w/Clear Window
25	1	19772	Bracket, Terminal Block
26	1	40174	Terminal Block, Green/Yellow Commercial, 809-260/141
27	6	41084	Terminal Block, Segment, Gray
28	1	41085	Endplate, Terminal Block, Gray
29	2	15250	Label, Terminal Strip
30	2	13296	Screw, Hex Wsh, 6-20 6-20 x 1/2 Type 25 Steel Zinc
31	1	40400	Harness, Drive, Designer/Environmental
32	1	40175-01	Wire, Ground, Commercial Valves
33	1	13547	Strain Relief, Flat Cord Heyco #30-1
		13547-01	Strain Relief, Euro Round Cord
		13547-02	Strain Relief, U.S. Round
34	1	11545	Powercord, 4’ European, Black
		19303	Powercord, 8’, Australian
		40084-12	Powercord, 12’ US, Round, 120V, Sys 5, 6, 7 & 2900/3150/3900
		40085-12	Powercord, 12’ US, Round, 240V

Control Drive Assembly

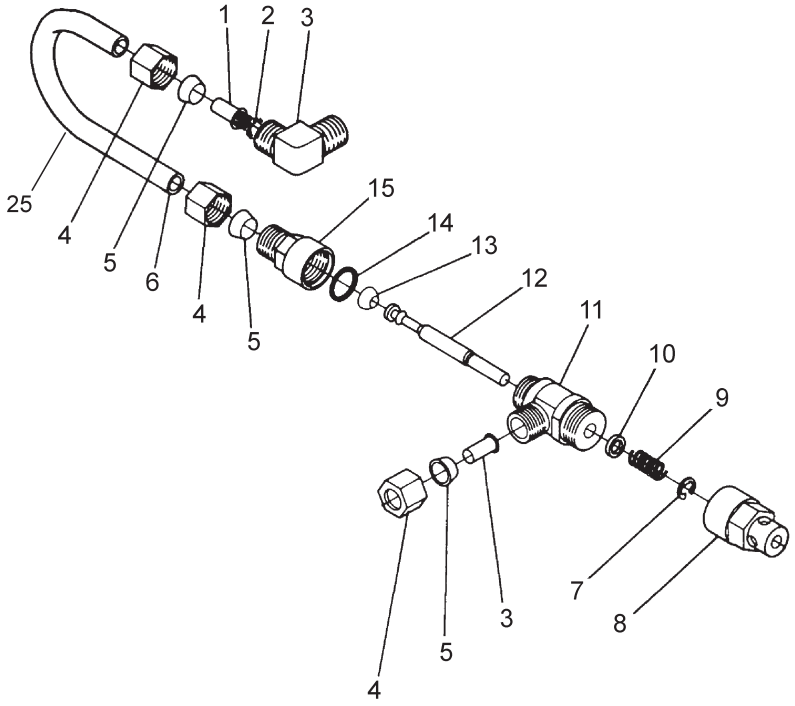


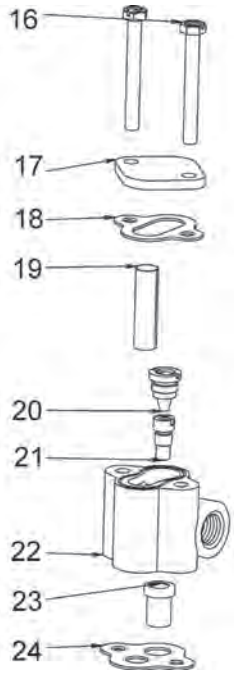
Item No.	Quantity	Part No.	Description
1	1	40264	Backplate, SS/SVO, w/T Screws
2	1		Timer - 3200 7 Day - 3200 12 Day - 3210 Meter
3	1	40084-12	Power Cord, 12' US, Round, 120V Sys 5, 6, 7 & 2900/3150/3900 #4
4	1	13547	Strain Relief, Flat Cord Heyco #30-1
5	1	40400	Harness, Drive, Designr/Envirmtl
6	5	10872	Screw, Hex Wsh, 8-32 x 17/64 18-8 S.S.
7	1	10774	Bracket, Motor Mounting
8	2	10231	Screw, Slot Hex, 1/4 - 20 x 1/2 18-8 S.S.
9	2	10302	Insulator, Limit Switch
10	2	10218	Switch, Micro
11	1	10909	Pin, Link
12	1	10250	Ring, Retaining
13	1	10621	Link
14	1	12576	Cam, Drive STF
		12102	Cam, Rapid Rinse
15	2	10338	Pin, Roll 3/32 x 7/8
16	1	13366	Bearing, Drive
17	2	14923	Screw, Pan Hd Mach, 4-40 x 1 MS Steel Zinc
18	1	40384	Motor, Drive, 115V, 60Hz, Sp, Fam1
		40385	Motor, Drive, 24V, 50/60 Hz, Sp Fam 1
		40386	Motor, Drive, 220V, 50/60 Hz, Sp Fam 1
19	1	60232-110	Cover, Designer, 1 pc. Black
20	1	12777	Cam, Shut-Off Valve
		10815	Cam, Brine Valve, RR
		12472	Cam Assy, Tri-Stack, After RR (Not Shown)
Not Shown	2	10300	Screw, Slot Hex Wsh, 18-8 3/8 Type "B"
Not Shown	1	12114	Bracket, Motor Outboard, Coated
Not Shown	2	15742	Screw, Cover
Not Shown	2	15833	Stand-Off
Not Shown	2	19367	Screw, Designer Cover, Thumb 8-32 Black

Manual Drive Assembly & Parts List



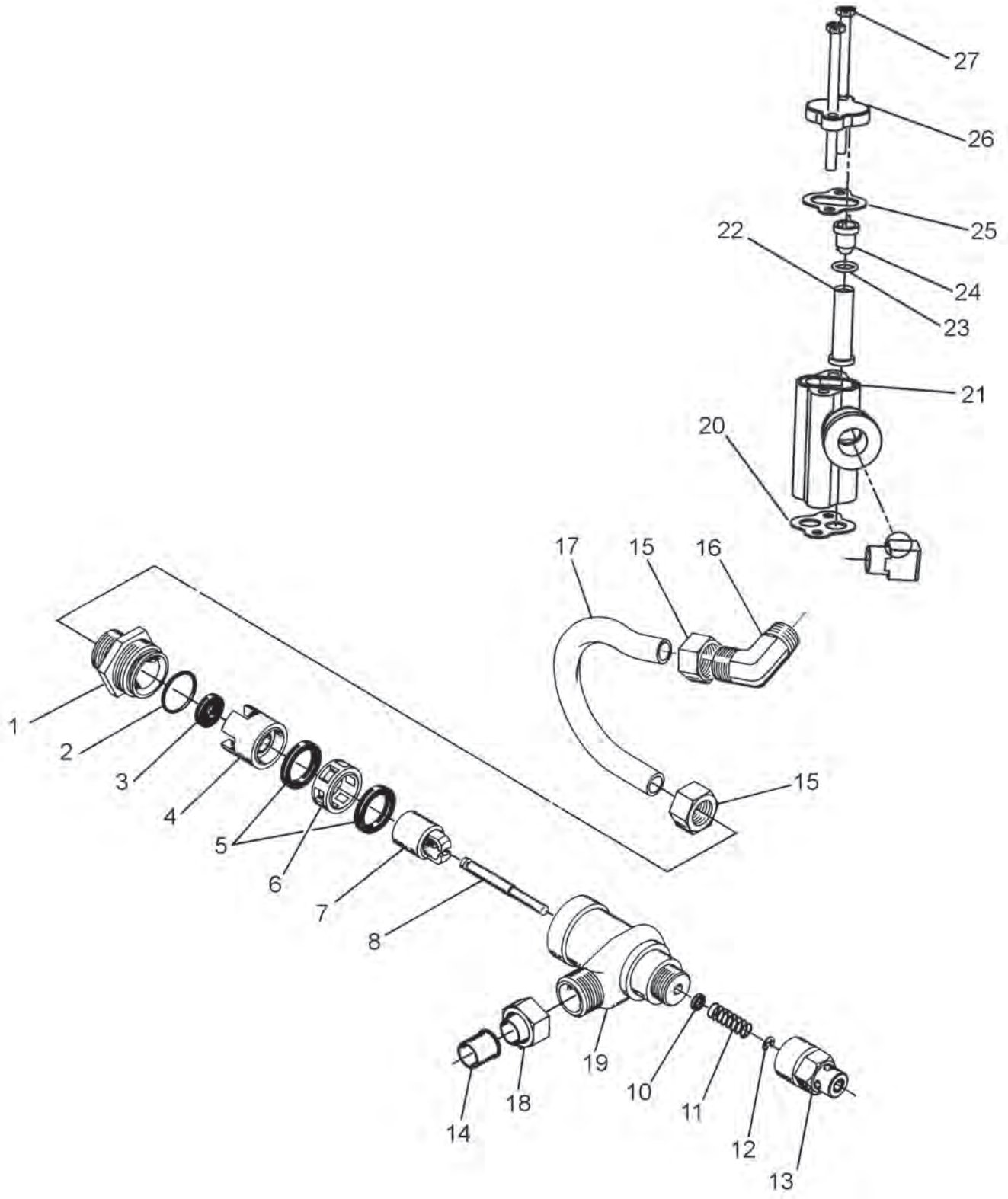
Item No.	Quantity	Part No.	Description
1	1	12593	Backplate, Manual
2	1	12592	Bracket, Lever Position
3	1	12596	Screw, Spec Mach, 1/4 - 20 x 1/2
4	1	12707	Washer, Spring
Not Shown	1	10909	Pin, Link
6	1	11235	Nut, Hex, 1/4 - 20, Mach Screw, Zinc
7	1	12594	Lever, Valve Position
8	2	10231	Screw, Slot Hex, 1/4 - 20 x 1/2 18-8 S.S.
9	1	60224-xx	Cover, Manual Control
10	1	12597	Label, Manual Valve, Softener
		14219	Label, Manual Valve, Filter
11	4	10300	Screw, Slot Hex Wsh, 8-18 x 3/8 Type “B” RC44-47





Item No.	Quantity	Part No.	Description
1	1	10328	Fitting, Elbow, 90 Deg. 1/4 PT x 3/8T
2	1	12767	Screen, Brine
3	2	10332	Fitting, Insert, 3/8
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, 2850/1600
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	Brine Valve Stem, 1600
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	2	10692	Screw, Slot Hex Hd, 10 - 24X 18-8 S.S.
17	1	11893	Cap, Injector, SS
18	1	10229	Gasket, Injector Cap, 1600
19	1	10227	Screen, Injector
20	1	10913	Nozzle, Injector
21	1	10914	Throat, Injector
22	1	17776	Body, Injector, 1600
23	1	16221	Disperser, Air
24	1	14805	Gasket, Injector Body, 1600/1700
25	1	10329	Fitting, Tube, 3/8 Nut, Brass
		10330	Fitting, Sleeve, 3/8 Celcon
		10332	Fitting, Insert, 3/8

1700 Brine System Assembly

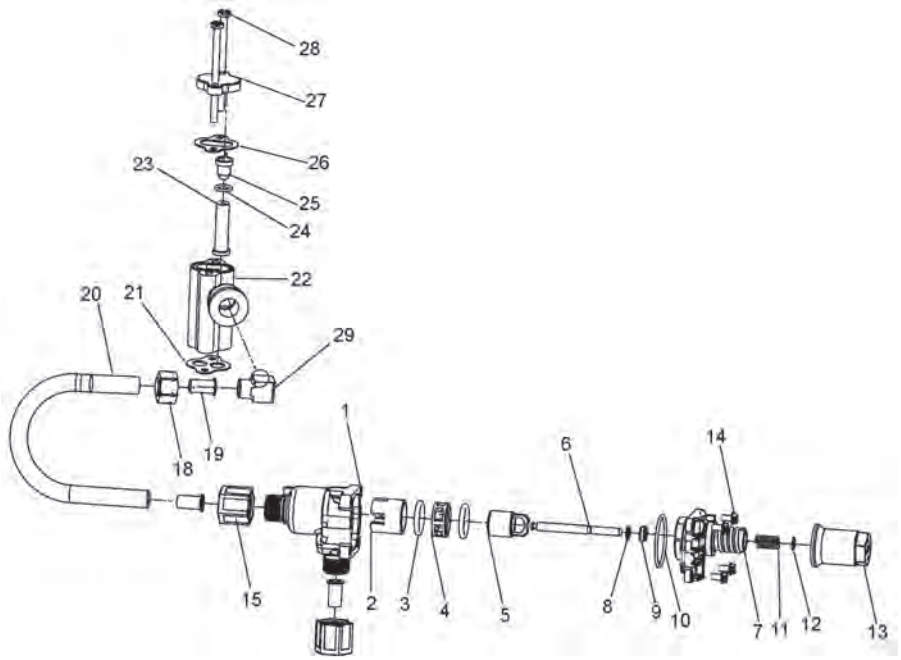


1700 Brine System Assembly Parts List

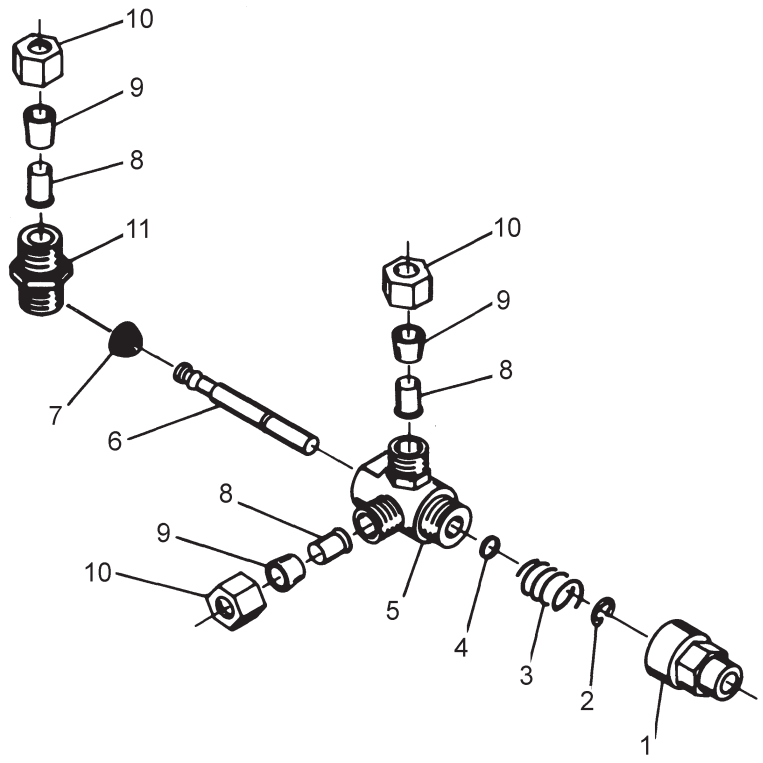
Item No.	Quantity	Part No.	Description
1	1	14792	Plug, End, Brine Valve
2	1	13201	Quad Ring, -020
3	1	12085	Washer, Flow, 1.2 GPM
		12086	Washer, Flow, 1.5 GPM
		12087	Washer, Flow, 2.0 GPM
		12088	Washer, Flow, 2.4 GPM
		12089	Washer, Flow, 3.0 GPM
		12090	Washer, Flow, 3.5 GPM
		12091	Washer, Flow, 4.0 GPM
		12092	Washer, Flow, 5.0 GPM
4	1	14785-01	Retainer, Flow Control
5	2	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”, Tube
15	2	15414	Nut, 2900, w/Sleeve
16	1	15413	Fitting, Elbow, Male, 1/2T x 3/8 NPT
17	1	16460	Tube, Brine, 2850, 9.123”
		19338	Tube, Brine, 2850, NHWBP
		15414	Nut, 2900, w/Sleeve
18	2	16123	Nut, Brass
19	2	16124	Fitting, Sleeve, Delrin
20	1	16974	Fitting, Plstc, Female, 3/4 x 3/4 Slip - Not Shown
21	1	17777	Body, Injector, 1700
22	1	*14802	Throat, Injector
23	1	17777	Body, Injector, 1700
24	1	*14801	Nozzle, Injection
25	1	10229	Gasket, Injector Cap, 1600
26	1	11893	Cap, Injector, SS
		10228	Cap, Injector
27	2	14804	Screw, Hex Hd Mach, 10 - 24 x 2 3/4” 18-8 SS

NOTE: Item number 26 (11893) is used on injector sizes 2 through 5C. Part number 10228 is used on injector sizes 6C and 7C.

1710 Brine System Assembly & Parts List

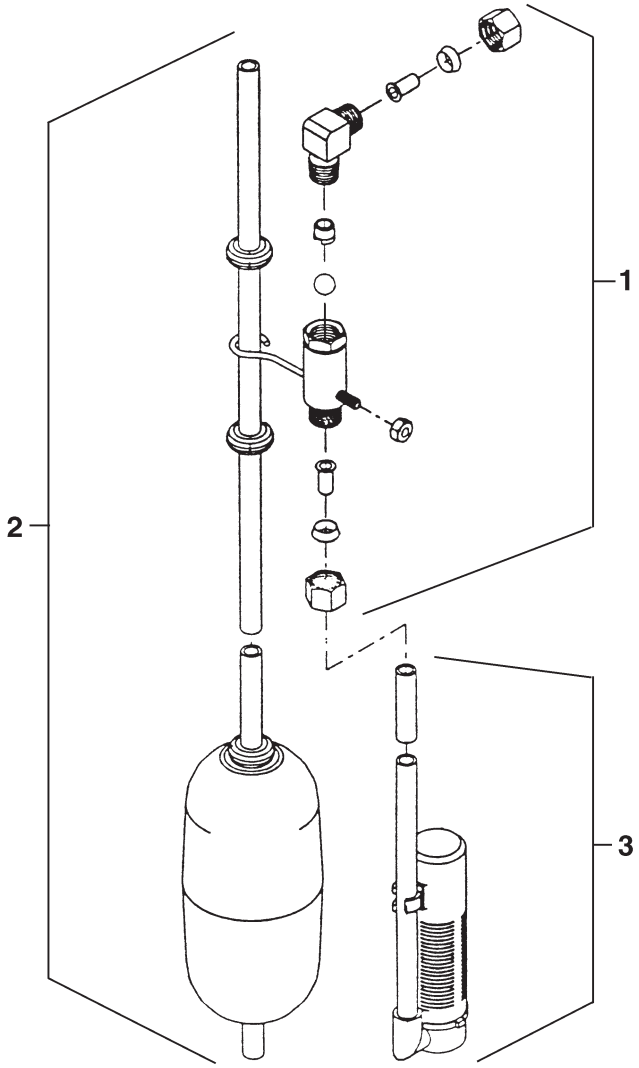


Item No.	Quantity	Part No.	Description
1	1	41202	Brine Valve, 1700, Plastic, Top
2	1	14785-01	Retainer, Flow Control
3	1	14811	O-Ring, -210, 560CD, Brine
4	1	14798	Spacer, 1700, Brine
5	1	14795	Piston, Brine Valve
6	1	41203	Stem, Brine, 1710, Plastic, 2900
7	1	41201	Brine Valve, 1700, Plastic, Bottom
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 18-8 S.S.
15	2	41056	Nut Assembly, 1/2” Plastic
Not Shown	1	19151	Washer, Flow, 1.0 Gpm
18	1	15414	Nut, 2900, w/Sleeve
19	1	15415	Fitting, Insert, 1/2”, Tube
20	1	16460	Tube, Brine, 2850, 9.123”
21	1	19925	Gasket, Injector Body, 1700
22	1	17777-03	Body, Injector, 1700
23	1	14802-++C	Throat, Injector
24	1	13771	O-ring, -012
25	1	14801-++C	Nozzle, Injector
26	1	10229	Gasket, Injector Cap, 1600
27	1	10228	Cap, Injector
28	2	14804	Screw, Hex Head Mach, 10 - 24 x 2 3/4 18-8 S.S.
29	1	15413	Fitting, Elbow, Male, 1/2T X 3/8NPT



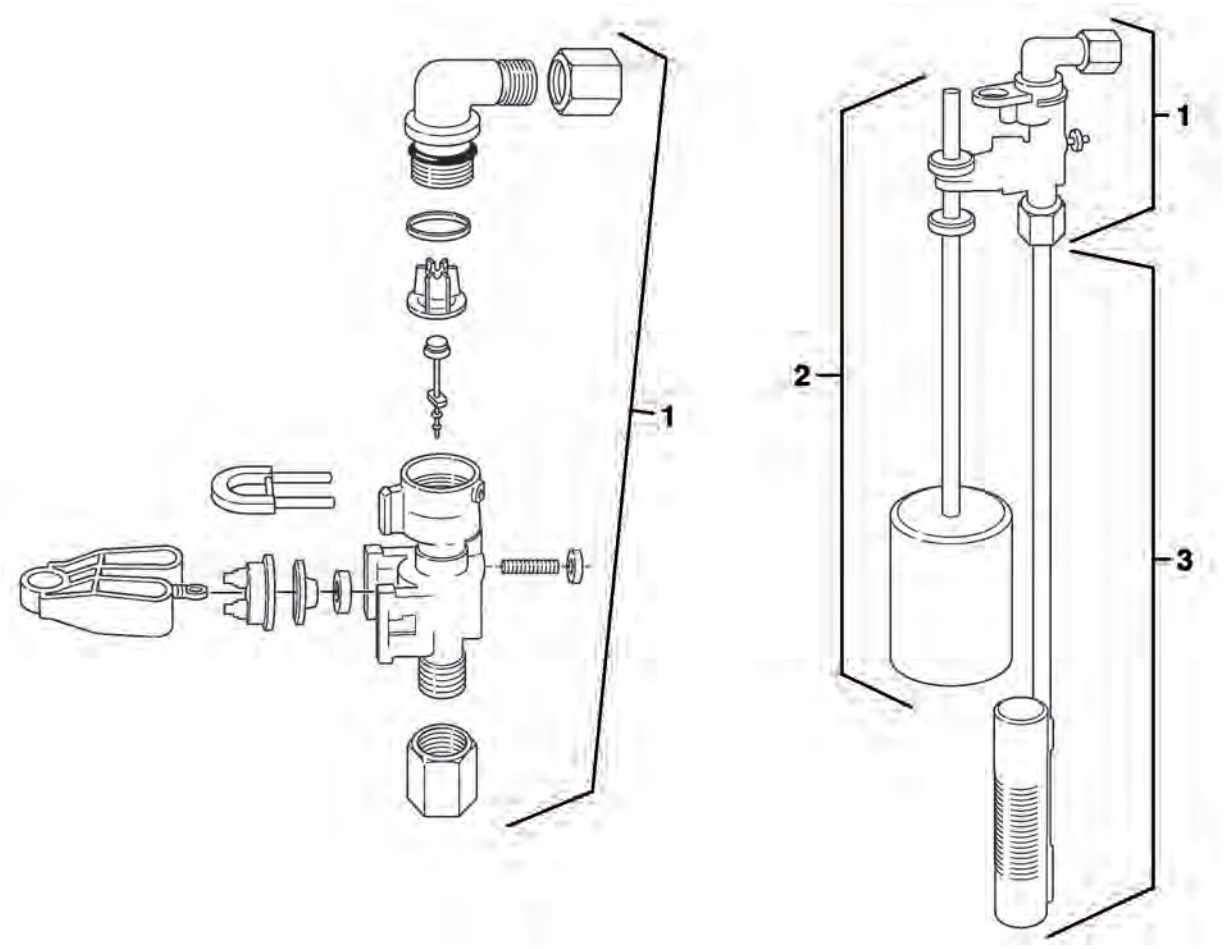
Item No.	Quantity	Part No.	Description
1	1	11749	Guide, Brine Valve Stem
2	1	10250	Ring, Retaining
3	1	10249	Spring, Brine Valve
4	1	12550	Quad Ring, -009
5	1	10785	SVO Body Assy Brass Valves
6	1	12552	Brine Valve Stem, 1600
7	1	12626	Seat, Brine Valve
8	3	10332	Fitting, Insert, 3/8
9	3	10330	Fitting, Sleeve, 3/8 Celcon
10	3	10329	Fitting, Tube, 3/8 Nut, Brass
11	1	10331	Fitting, Compression, 1/4” x 3/8”

2300 Safety Brine Valve Assembly & Parts List



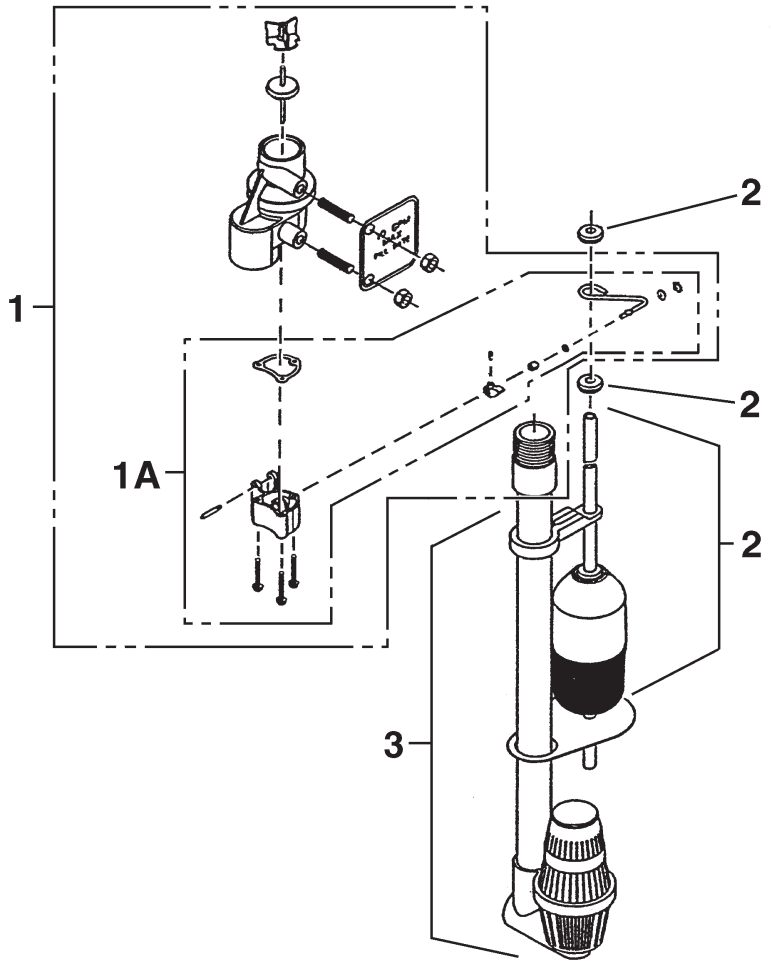
Item No.	Quantity	Part No.	Description
1	1	60027-FFA	Safety Brine Valve Body, 2300 Fitting Facing Arm
		60027-FFS	Safety Brine Valve Body Fitting Facing Stud
2	1	60028-30	Float Assy, 2300, 30”, Blue/White
		60026-30SAN	Float Assy, 2350, 30”, HW
3	1	60002-34	Air Check, #500, 34” Long
		60003-34	Air Check, #500, HW, 34” Tube

2310 Safety Brine Valve Assembly & Parts List

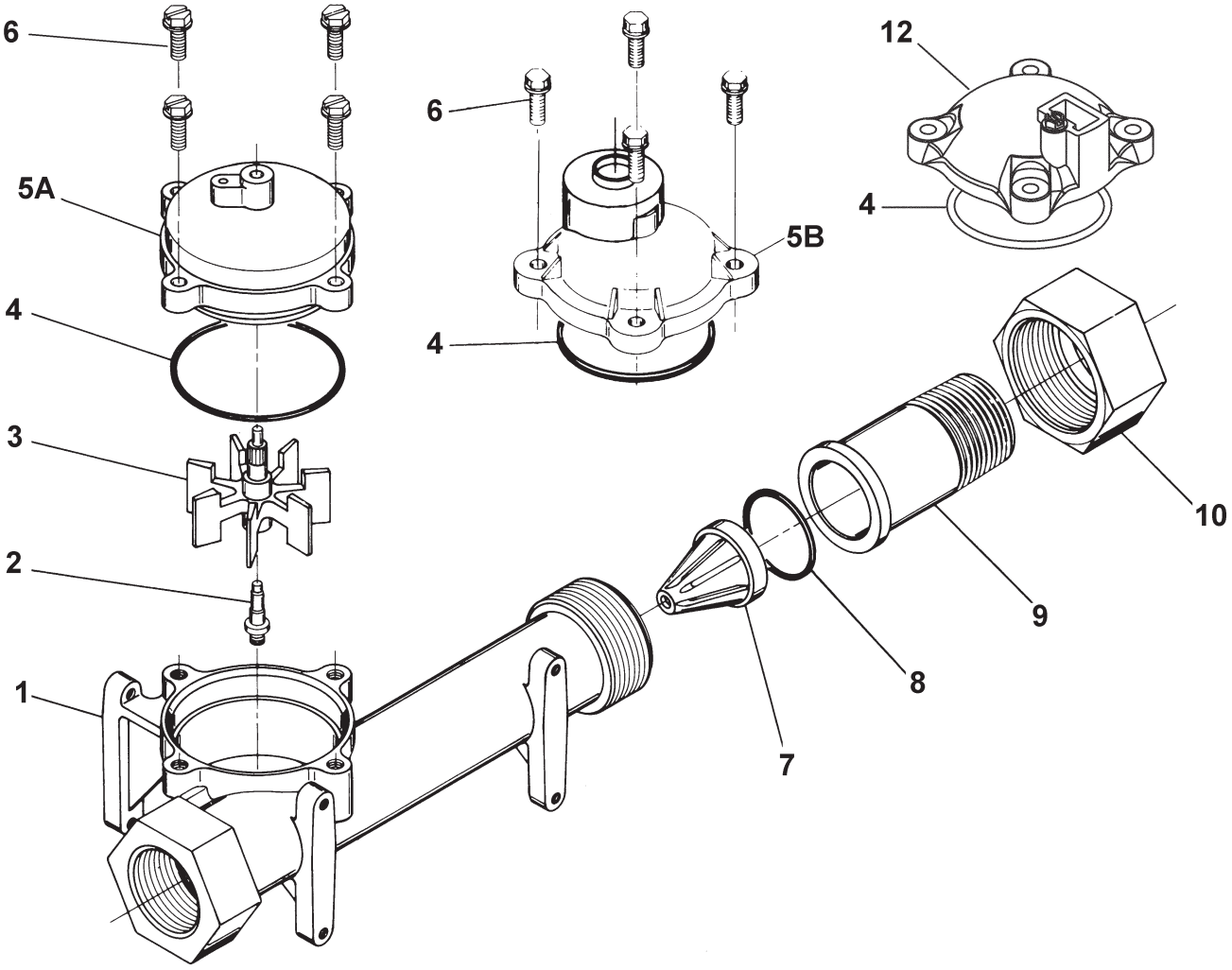


Item No.	Quantity	Part No.	Description
1	1	60014	Safety Brine Valve Assy, 2310
2	1	60068	Float Assy, 2310, w/30” Rod
		60026-30	Float Assy, 2350, 30” Red/Wht
3	1	60002-34	Air Check, #500, 34” Long

2350 Safety Brine Valve Assembly & Parts List

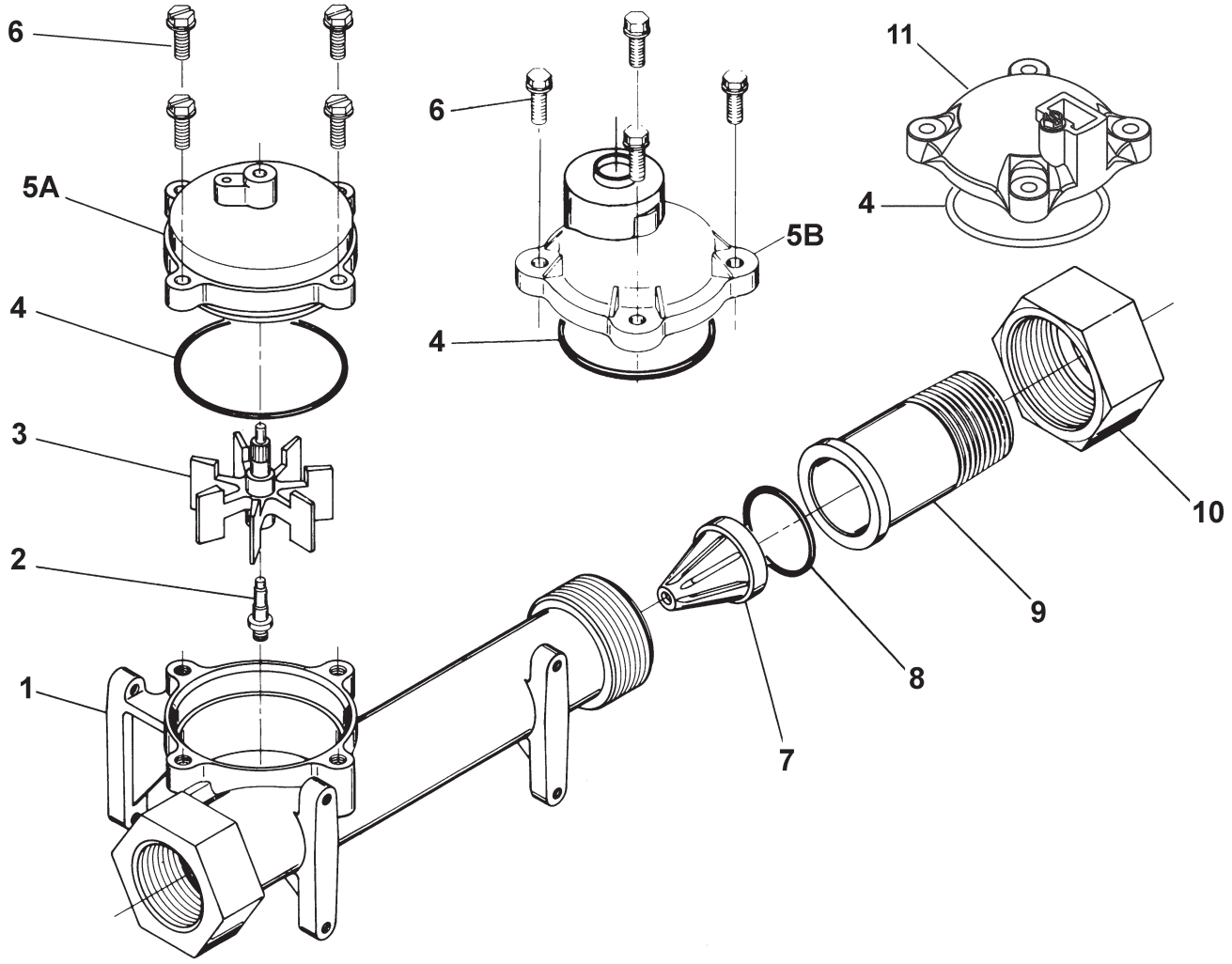


Item No.	Quantity	Part No.	Description
1	1	60038	Safety Brine Valve, 2350
1A	1	61024	Actuator Assy, 2350 Brine
2	1	60026-30	Float Assy, 2350, 30” Red/Wht
		60026-30SAN	Float Assy, 2350, 30”, HW
3	1	60009-00	Air Check, #900, Commercial Less Fittings
		60009-01	Air Check, #900, Commercial, HW Less Fittings
Not Shown	1	18603	Fitting Assy, 900 Air Check 2350
Not Shown	1	18602	Fitting Assy, 900 Air Check



Item No.	Quantity	Part No.	Description
1	1	14959	Body, Meter, 2750
2	1	13882	Post, Meter Impeller
3	1	13509	Impeller, Meter
4	1	13847	O-ring, -137, Std/560CD, Meter
5A	1	15218	Meter Cap Assy
5B	1	15237	Meter Cap Assy, Ext
6	4	12112	Screw, Hex Hd Mach, 10-24 x 1/2 18-8 S.S.
7	1	14960	Flow Straightener, 1”
8	1	13287	O-ring, -123
9	1	14961	Fitting, 1” Quick Connector
10	1	14962	Nut, 1” Meter, Q/C
11	1	15308	Fitting, Coupling, 1”, Brass (not shown)
12	1	14716	Meter Cap Assy, ET/NT

1 1/2” Meter Assembly & Parts List



Item No.	Quantity	Part No.	Description
1	1	17569	Body, Meter, 2850/9500
2	1	13882	Post, Meter Impeller
3	1	13509	Impeller, Meter
4	1	13847	O-Ring, -137, Std/560CD, Meter
5A	1	15218	Meter Cap Assy
5B	1	15237	Meter Cap Assy, Ext
6	4	12112	Screw, Hex Hd Mach, 10-24 x 1/2 18-8 S.S.
7	1	17542	Flow Straightener, 1 1/2”
8	1	12733	O-Ring, -132
9	1	17544	Fitting, 1 1/2” Quick Connector
10	1	17543	Nut, 1 1/2”, Q/C
11	1	14716	Meter Cap Assy, ET/NT
Not Shown	1	17790	Sleeve, Meter, 1 1/2” x 1”

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" Long
60003-34 ..... Air Check, #500, HW, 34" Tube
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
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

60160-20 ..... Drive Cam Assy, Std

Covers

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

Drain Line Flow Controls

60366-xx ..... 1" FNPT x 3/4" FNPT (Specify flow control .6 - 7.0)
60701-xx ..... 1" FNPT x 1" FNPT (Specify flow control 8.0 - 25.0)
60702-xx ..... 1" FNPT x 1" MNPT (Specify flow control 8.0 - 25.0)
60708-xx ..... 1" FNPT x 3/4" FNPT (Specify flow control 8.0 - 25.0)
60721-xx ..... 1" FNPT x 1" FNPT (Specify flow control .6 - 7.0)

Drive Assemblies

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

Injector Assemblies (Complete)

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

Meters

60613 ..... Meter Assy, 2750, Electronic 1"
60610-01 ..... Meter, 2850/9500, 1 1/2" Std
60610-02 ..... Meter, 2850/9500, 1 1/2" Ext
60391 ..... Meter Assy, 2750
60392 ..... Meter Assy, 2750, 1" Ext
60614 ..... Meter Assy, 2850/9500, Electronic 1 1/2" Meter

61560-01 ..... Meter Assy, In-Line, w/1” NPT Plstc Connector
61560-07 ..... Meter Assy, In-Line, w/1” NPT Brass Connector
61560-09 ..... Meter Assy, In-Line, w/ 1 1/2” NPT Brass Connector

Piston Assemblies

60105 ..... Piston Assy, 2850
60105-001 ..... Piston Assy., 2850, 560CD
60105-01 ..... Piston Assy., 2850, Hot Water
60114-00 ..... Piston Assy, Filter, 2850 Conversion, NHWBP
60114-01 ..... Piston Assy, 2850, NHWBP
60114-02 ..... Piston Assy, 2850, 1600 Conversion, NHWBP
60114-03 ..... Piston Assy, 2850, 1700 Conversion, NHWBP

Program Wheel Assemblies

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

Safety Brine Valves

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

Sales and Service Aids

16698 ..... Literature, 2850 Spec Sheet
16510 ..... Literature, 2850 S/Manual
40717 ..... Literature, Catalog Assy, PWT Residential/Commercial

Seal & Spacer Kits

60129 ..... Seal & Spacer Kit, 2850
60129-20 ..... Seal & Spacer Kit, 2850, Natural
60129-30 ..... Seal & Spacer Kit, 2850

Service Equipment

16174 ..... Silicone, 2 oz. Tube
16586-8 ..... Silicone, Dow #7 8 Lb
16516 ..... Stuffer Assy, 2850/9500
17623 ..... Puller Tool Assy, 2850/9500
60460 ..... Meter Checker Kit, Std
60461 ..... Meter Checker Kit, Ext

Service Valve Operator Assemblies (SVO)

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

Skipper Wheel Assemblies

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

Problem	Cause	Correction
1. Water conditioner fails to regenerate.	A. Electrical service to unit has been interrupted	A. Assure permanent electrical service (check fuse, plug, pull chain, or switch)
	B. Timer is defective.	B. Replace timer.
	C. Power failure.	C. Reset time of day.
2. Hard water.	A. By-pass valve is open.	A. Close by-pass valve.
	B. No salt is in brine tank.	B. Add salt to brine tank and maintain salt level above water level.
	C. Injector screen plugged.	C. Clean injector screen.
	D. Insufficient water flowing into brine tank.	D. Check brine tank fill time and clean brine line flow control if plugged.
	E. Hot water tank hardness.	E. Repeated flushings of the hot water tank is required.
	F. Leak at distributor tube.	F. Make sure distributor tube is not cracked. Check O-ring and tube pilot.
	G. Internal valve leak.	G. Replace seals and spacers and/or piston.
3. Unit used too much salt.	A. Improper salt setting.	A. Check salt usage and salt setting.
	B. Excessive water in brine tank.	B. See problem 7.
4. Loss of water pressure.	A. Iron buildup in line to water conditioner.	A. Clean line to water conditioner.
	B. Iron buildup in water conditioner.	B. Clean control and add mineral cleaner to mineral bed. Increase frequency of regeneration.
	C. Inlet of control plugged due to foreign material broken loose from pipes by recent work done on plumbing system.	C. Remove piston and clean control.
5. Loss of mineral through drain line.	A. Air in water system.	A. Assure that well system has proper air eliminator control. Check for dry well condition.
	B. Improperly sized drain line flow control.	B. Check for proper drain rate.
6. Iron in conditioned water.	A. Fouled mineral bed.	A. Check backwash, brine draw, and brine tank fill. Increase frequency of regeneration. Increase backwash time.
7. Excessive water in brine tank.	A. Plugged drain line flow control.	A. Clean flow control.
	B. Plugged injector system.	B. Clean injector and screen.
	C. Timer not cycling.	C. Replace timer.
	D. Foreign material in brine valve.	D. Replace brine valve seat and clean valve.
	E. Foreign material in brine line flow control.	E. Clean brine line flow control.

Problem	Cause	Correction
8. Softener fails to draw brine.	A. Drain line flow control is plugged.	A. Clean drain line flow control.
	B. Injector is plugged.	B. Clean injector
	C. Injector screen plugged.	C. Clean screen.
	D. Line pressure is too low.	D. Increase line pressure to 20 P.S.I.
	E. Internal control leak	E. Change seals, spacers, and piston assembly.
	F. Service adapter did not cycle.	F. Check drive motor and switches.
9. Control cycles continuously.	A. Misadjusted, broken, or shorted switch.	A. Determine if switch or timer is faulty and replace it, or replace complete power head.
10. Drain flows continuously.	A. Valve is not programming correctly.	A. Check timer program and positioning of control. Replace power head assembly if not positioning properly.
	B. Foreign material in control.	B. Remove power head assembly and inspect bore. Remove foreign material and check control in various regeneration positions.
	C. Internal control leak.	C. Replace seals and piston assembly.

General Service Hints For Meter Control

Problem: Softener delivers hard water

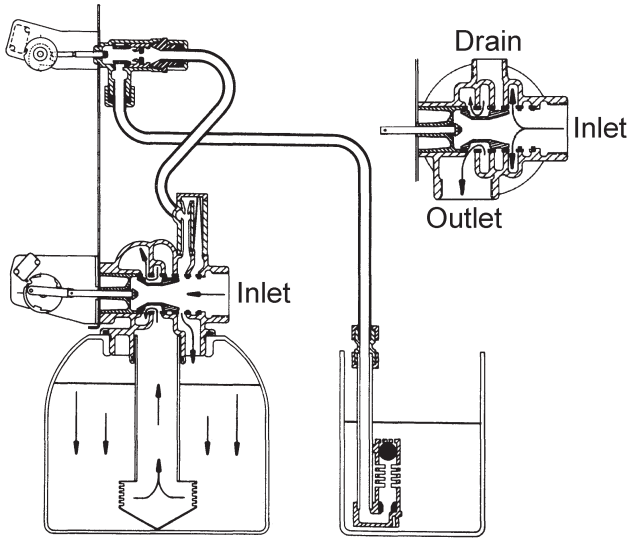
Reason: Reserve capacity has been exceeded.
Correction: Check salt dosage requirements and reset program wheel to provide additional reserve.

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.

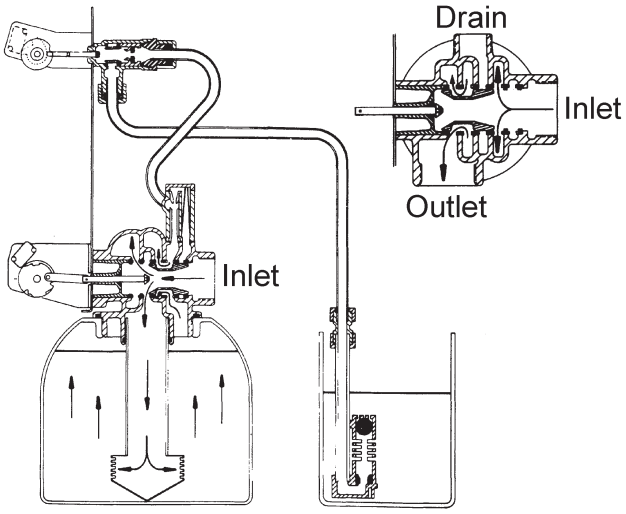
Water Conditioner Flow Diagrams

1 Service Position



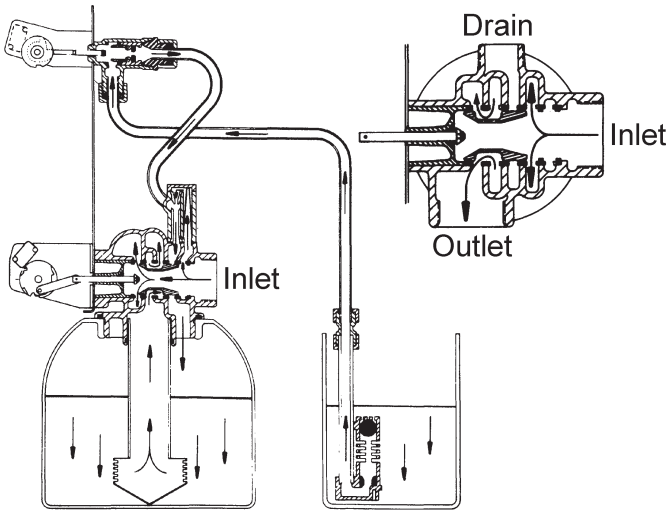
Hard water enters unit at valve inlet and flows down through the mineral in the mineral tank. Conditioned water enters center tube through the bottom distributor, then flows up through the center tube, around the piston, and out the outlet of the valve.

2 Backwash Position



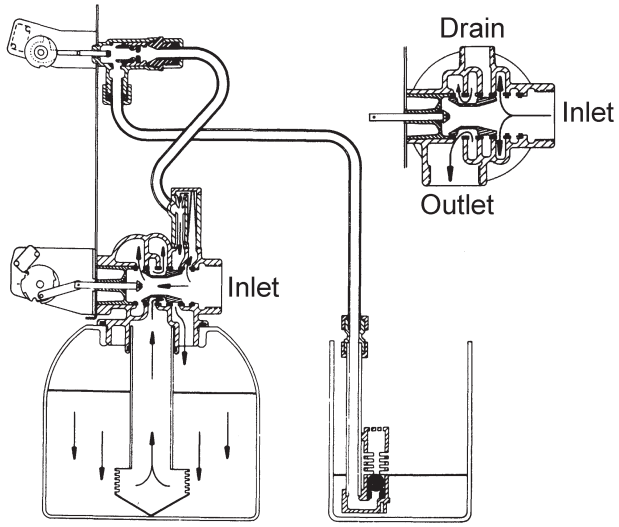
Hard water enters unit at valve inlet, flows through piston, down center tube, through bottom distributor, and up through the mineral, around the piston and out the drain line.

3 Brine Position



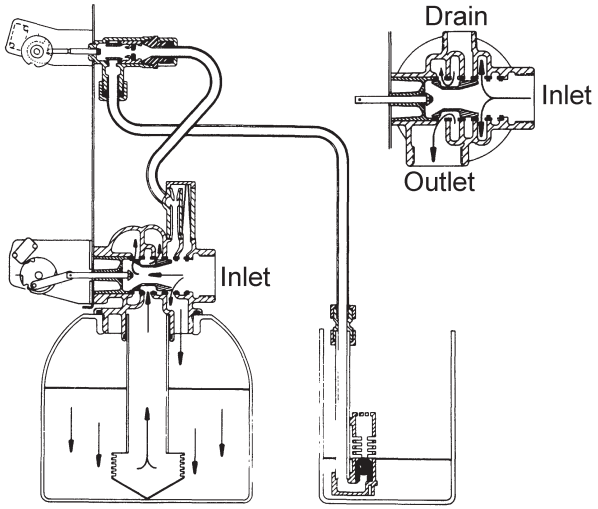
Hard water enters unit at valve inlet, flows up into injector housing and down through nozzle and throat to draw brine from the brine tank, brine flows down through mineral and enters the center tube through bottom distributor and out through the drain line.

4 Slow Rinse Position



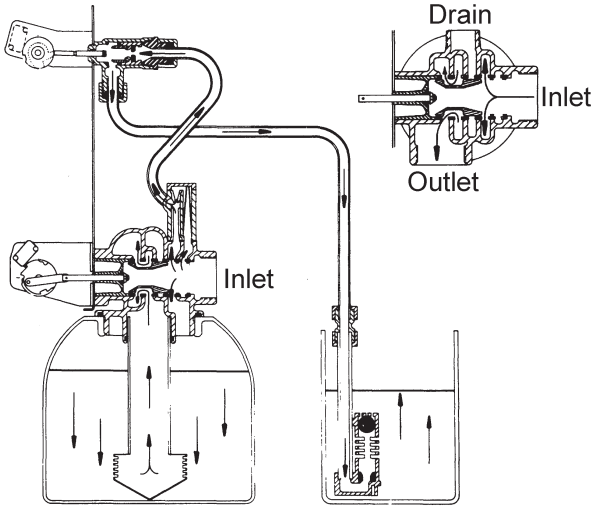
Hard water enters unit at valve inlet, flows up into injector housing and down through nozzle and throat, around the piston, down through mineral, enters center tube through bottom distributor, flows up through center tube, around piston and out through drain line.

5 Rapid Rinse

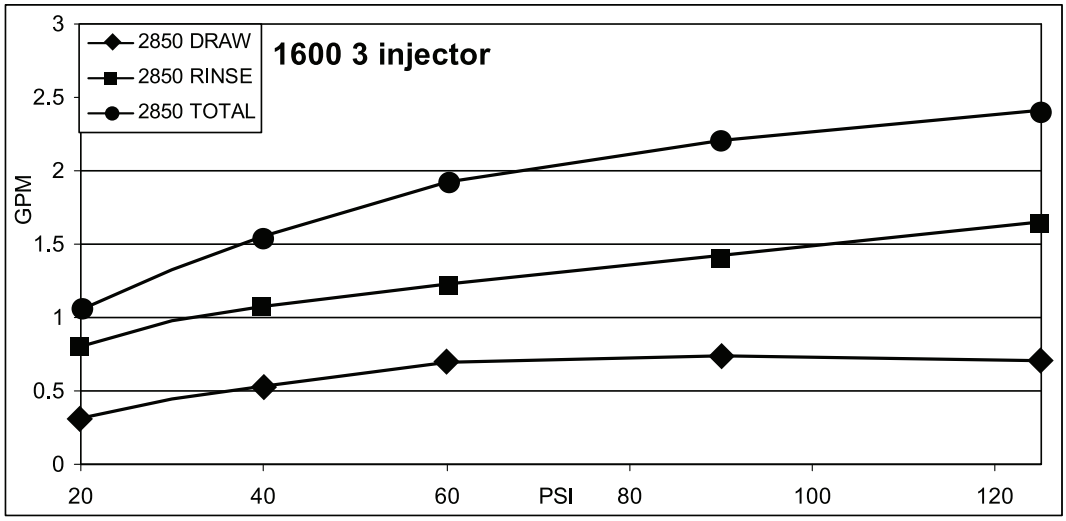


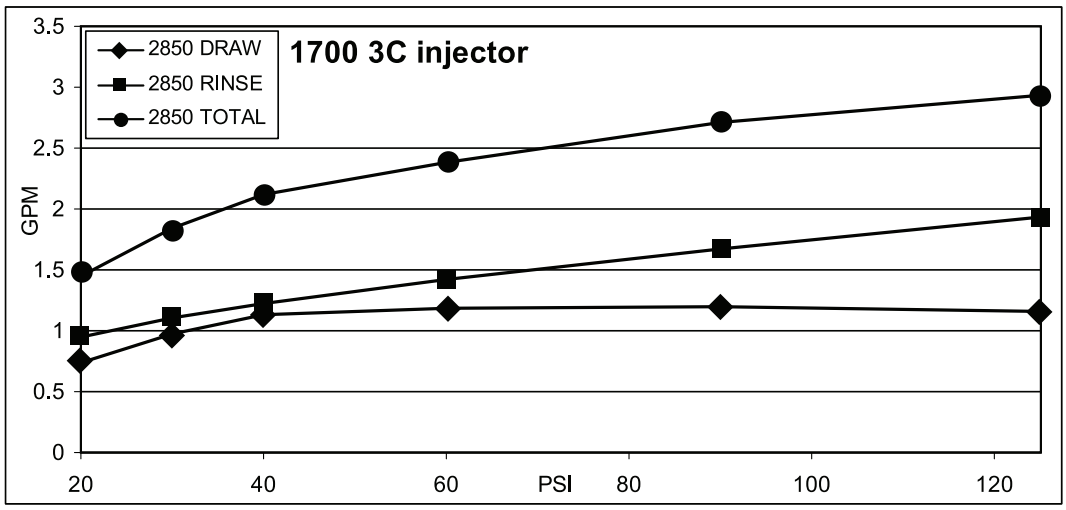
Hard water enters unit at valve inlet, flows directly from inlet down through mineral into center tube bottom distributor and up through center tube, around piston and out through the drain line.

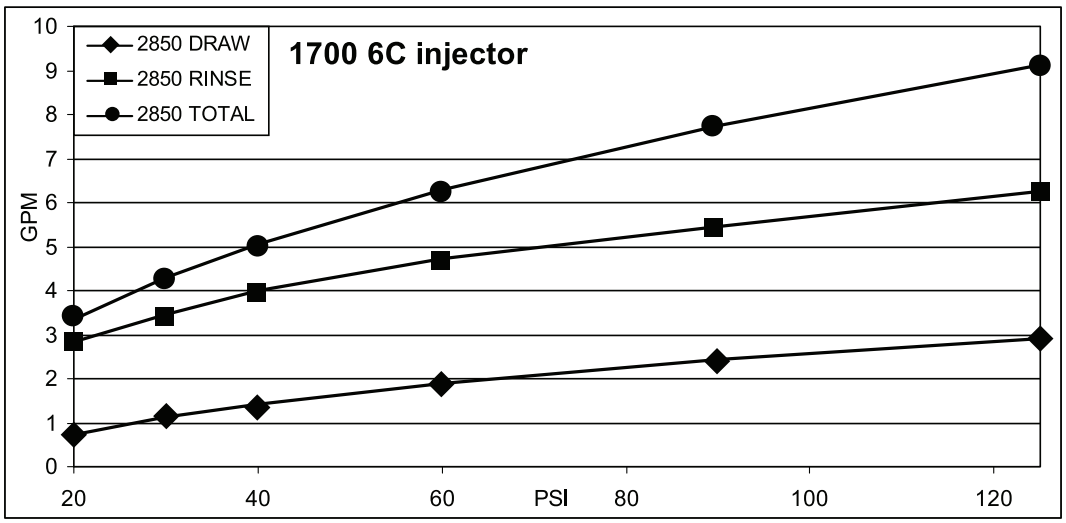
6 Brine Tank Refill Position



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

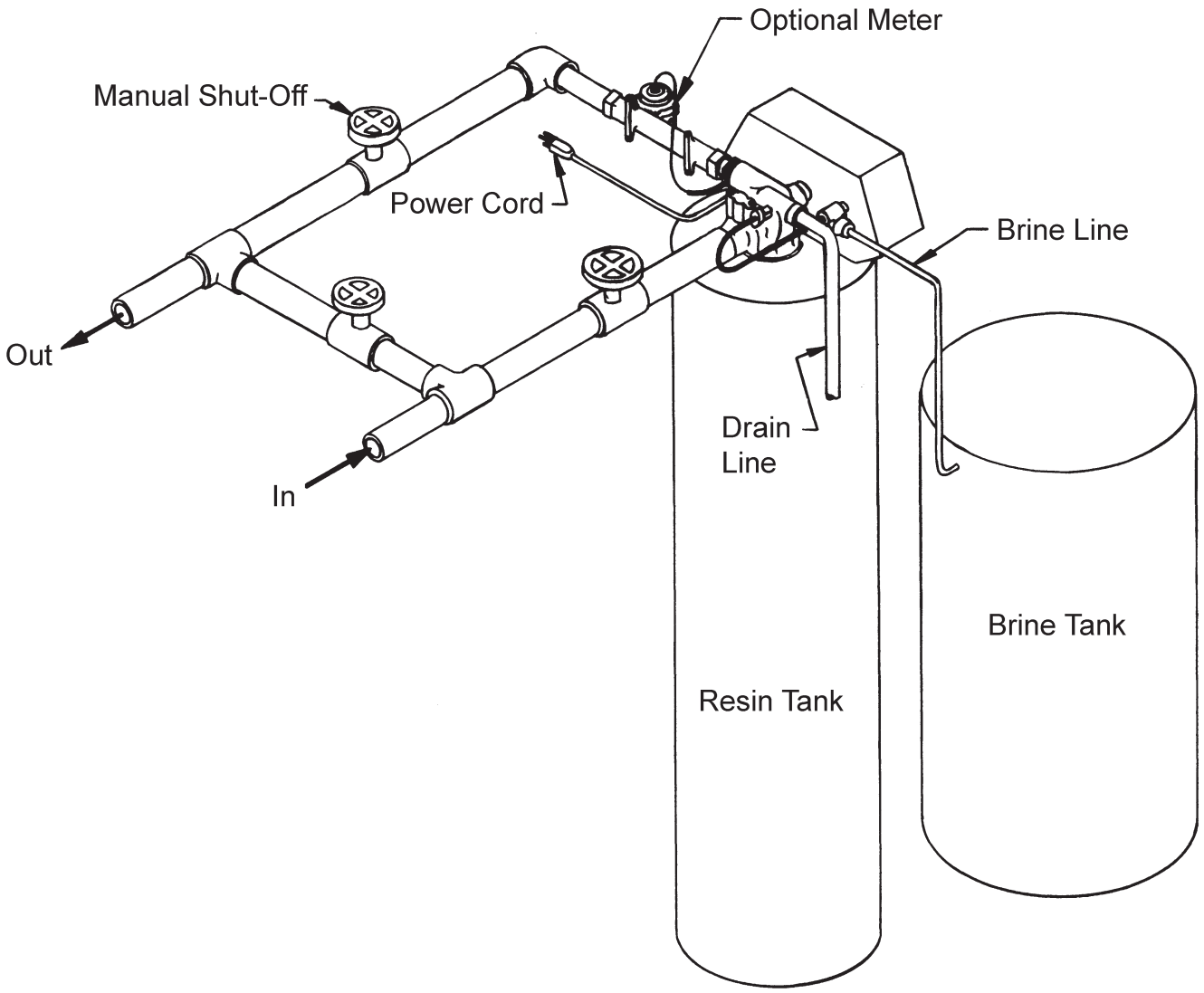

2850 DRAW
2850 RINSE
2850 TOTAL
1600 3 injector
GPM
PSI
0
0.5
1
1.5
2
2.5
3
20
40
60
80
100
120


2850 DRAW
2850 RINSE
2850 TOTAL
1700 3C injector
GPM
PSI
0
0.5
1
1.5
2
2.5
3
3.5
20
40
60
80
100
120

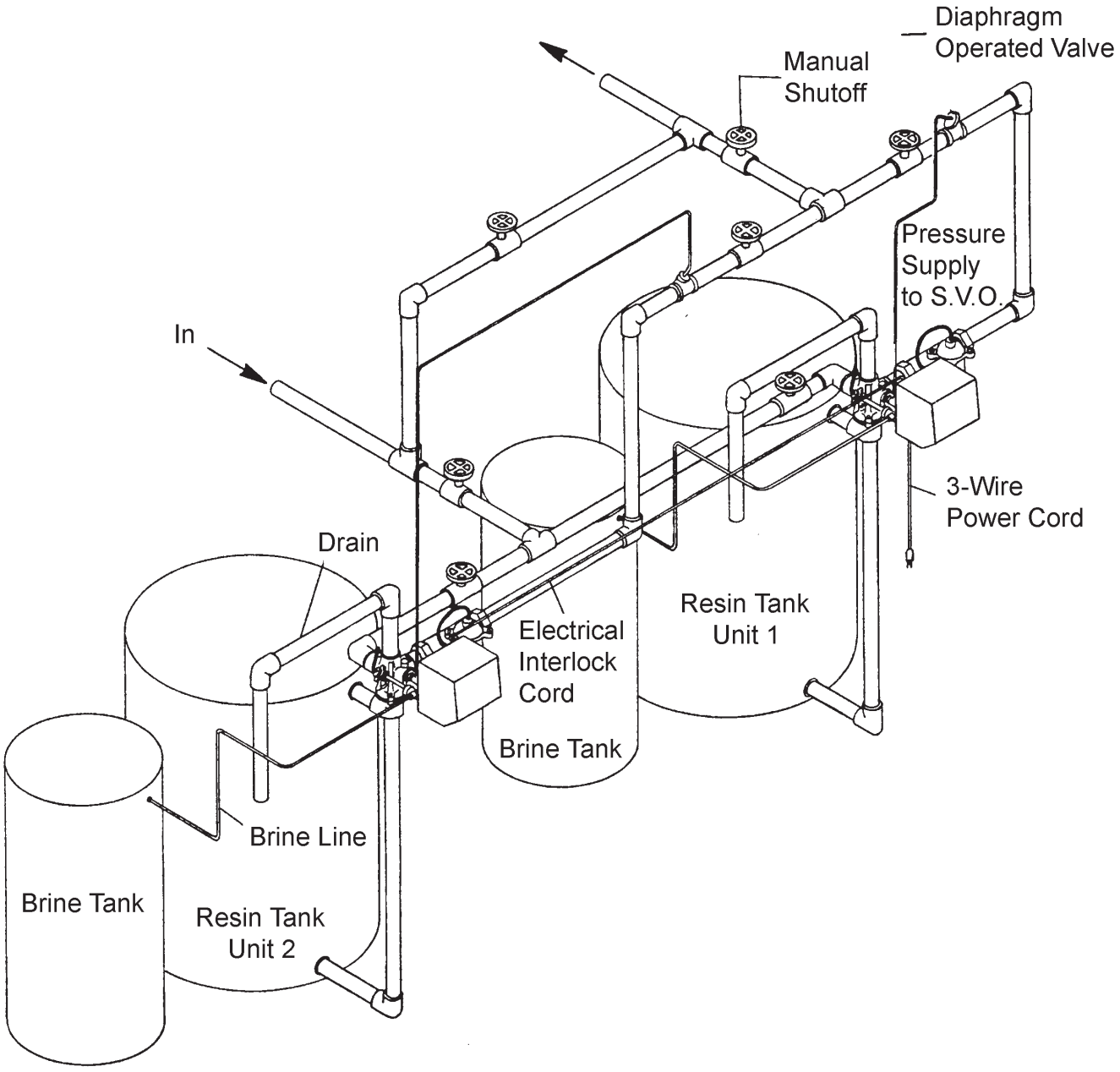

2850 DRAW
2850 RINSE
2850 TOTAL
1700 6C injector
GPM
PSI
0
1
2
3
4
5
6
7
8
9
10
20
40
60
80
100
120

TR20393

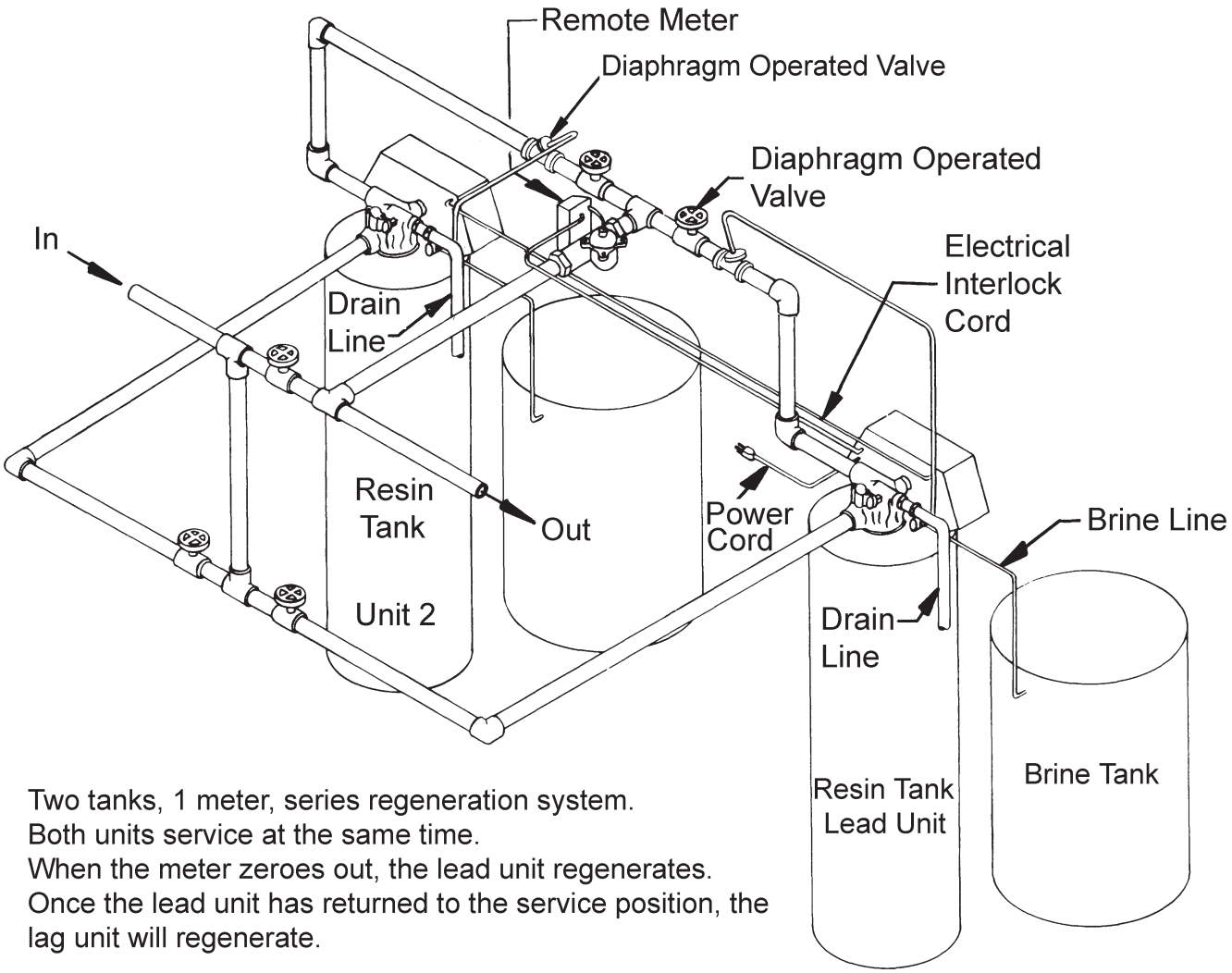
System #4 - Typical Single Tank Installation with Optional Meter



System #5 Interlock - Typical Twin Tank Installation with Optional Meter Interlock and No Hard Water Bypass

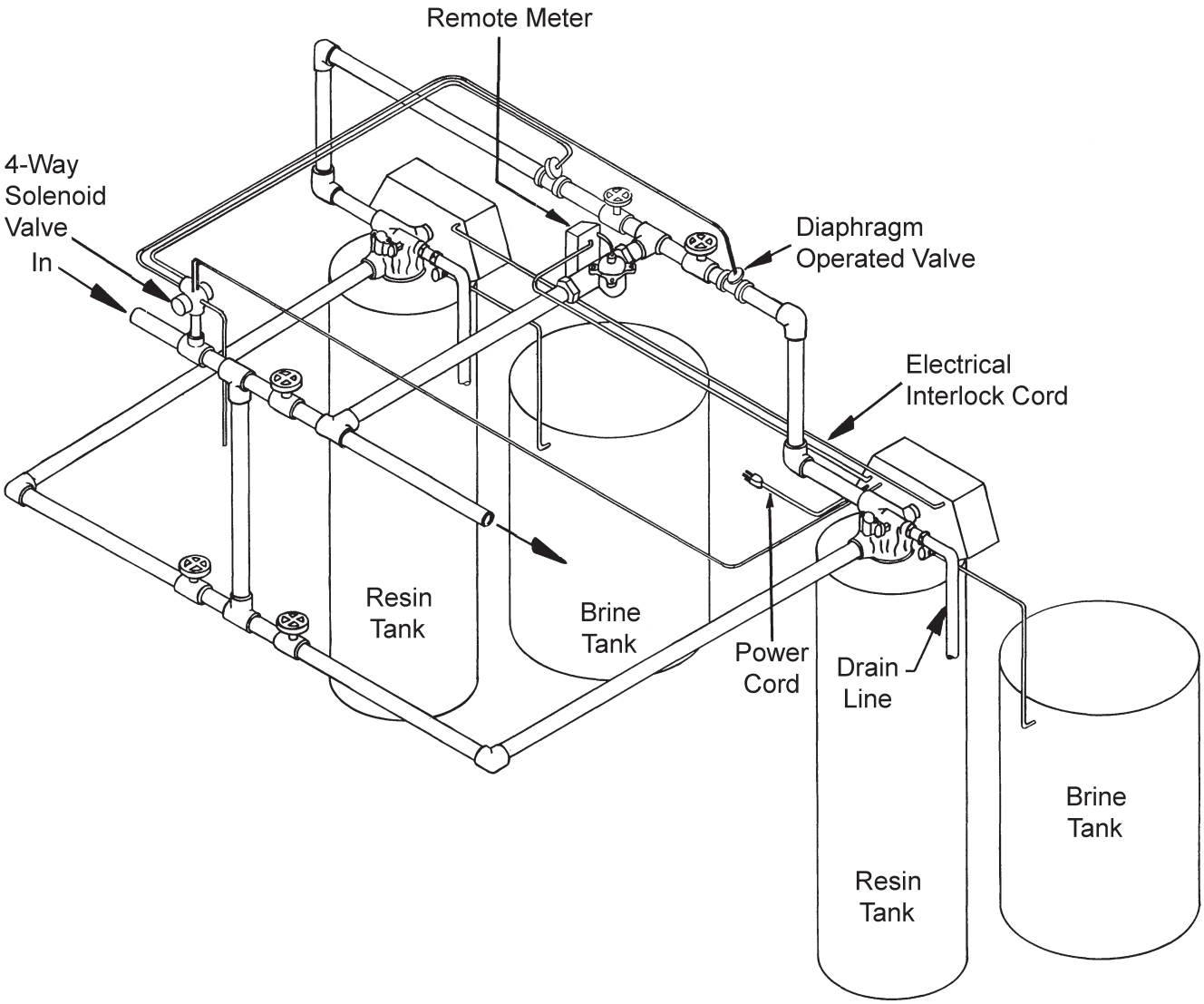


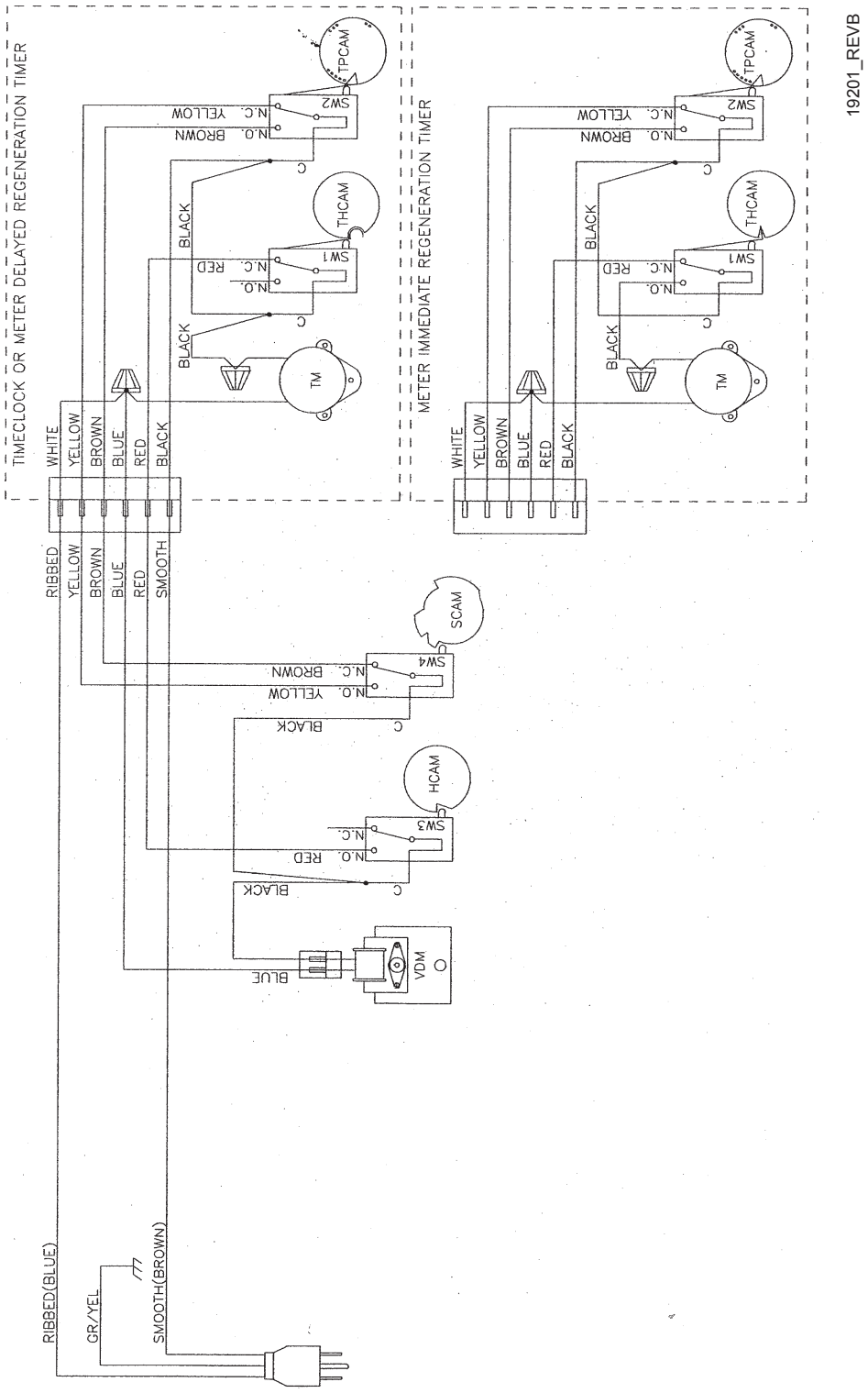
System #6 - Twin Series Regeneration Installation with a Remote Meter



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.

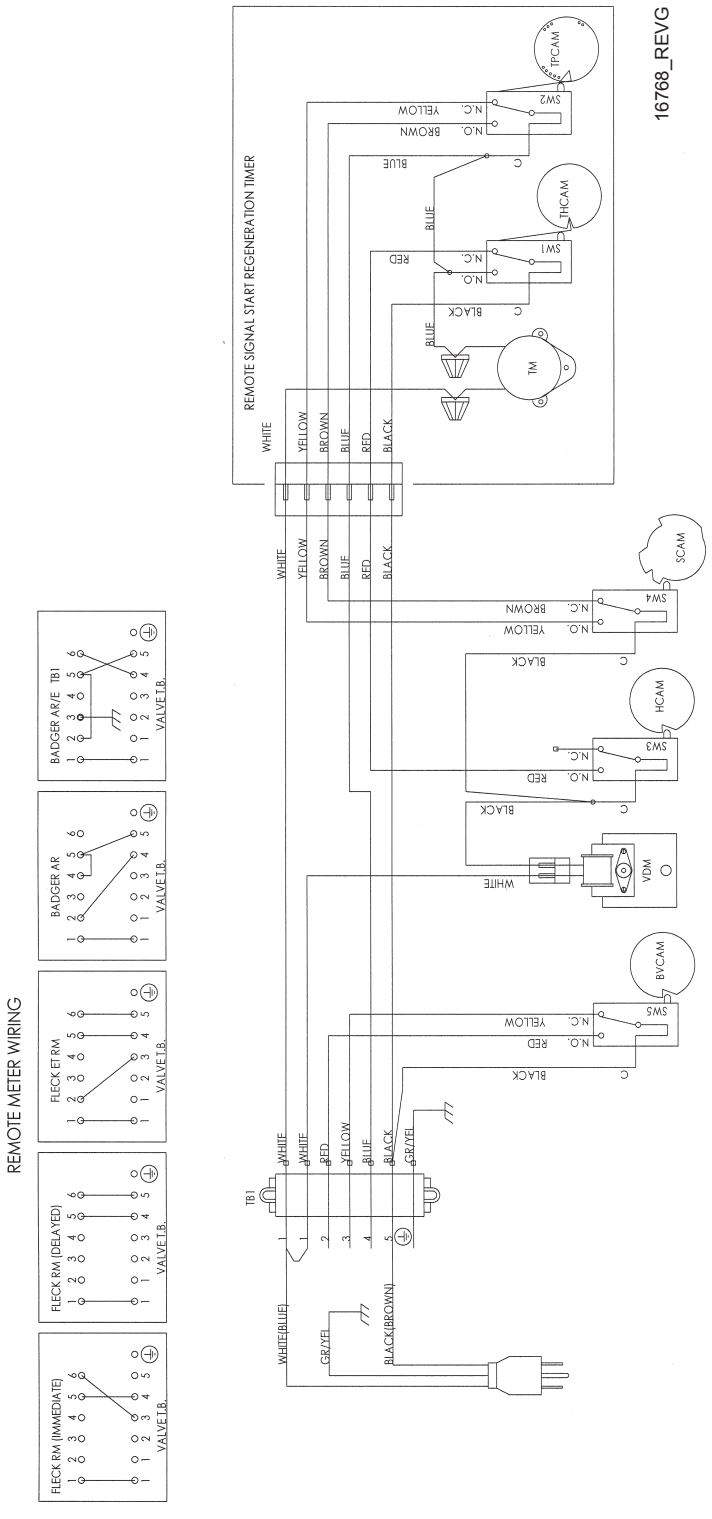
System #7 - Twin Alternator Installation with a Remote Meter




TIMECLOCK OR METER DELAYED REGENERATION TIMER
METER IMMEDIATE REGENERATION TIMER
19201_REV.B
TPCAM
SW2
N.C. YELLOW
N.O. BROWN
C
THCAM
SW1
N.C. RED
N.O.
BLACK
TM
WHITE
YELLOW
BROWN
BLUE
RED
BLACK
RIBBED
SMOOTH
SCAM
SW4
HCAM
SW3
VDM
BLUE
RIBBED(BLUE)
GR/YEL
SMOOTH(BROWN)

System #4 - with Remote Starter

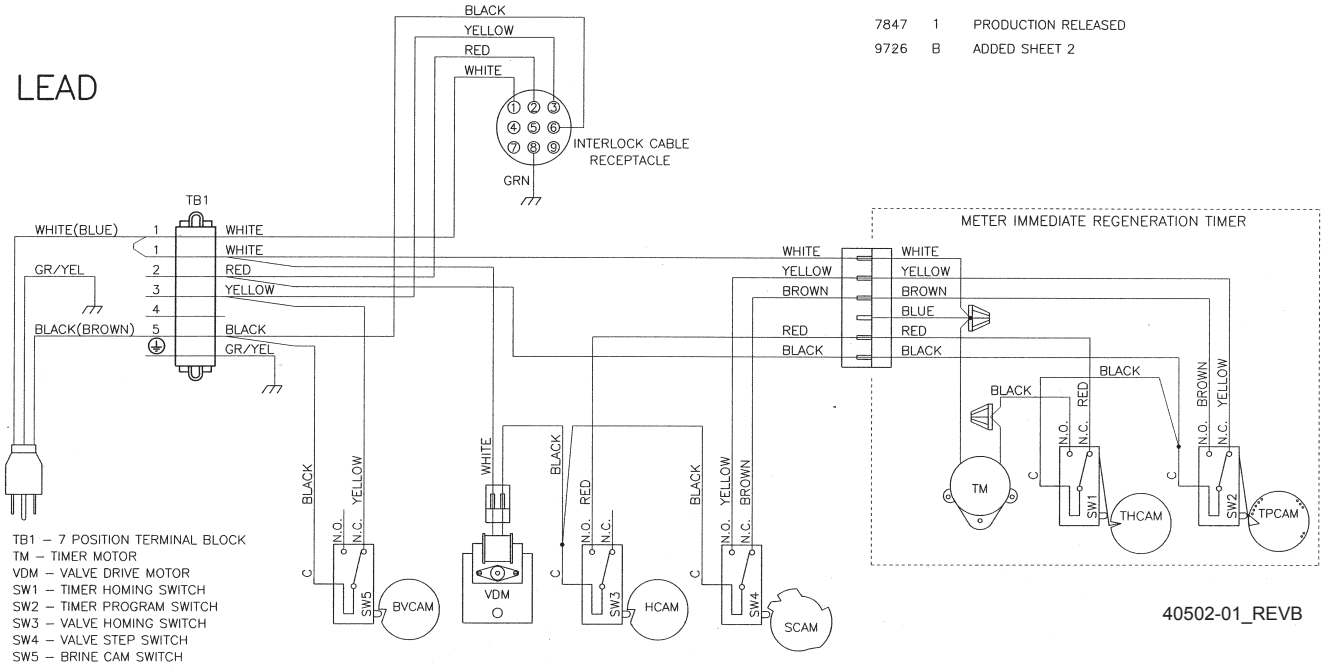
Valve Wiring



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
THCAM - 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.

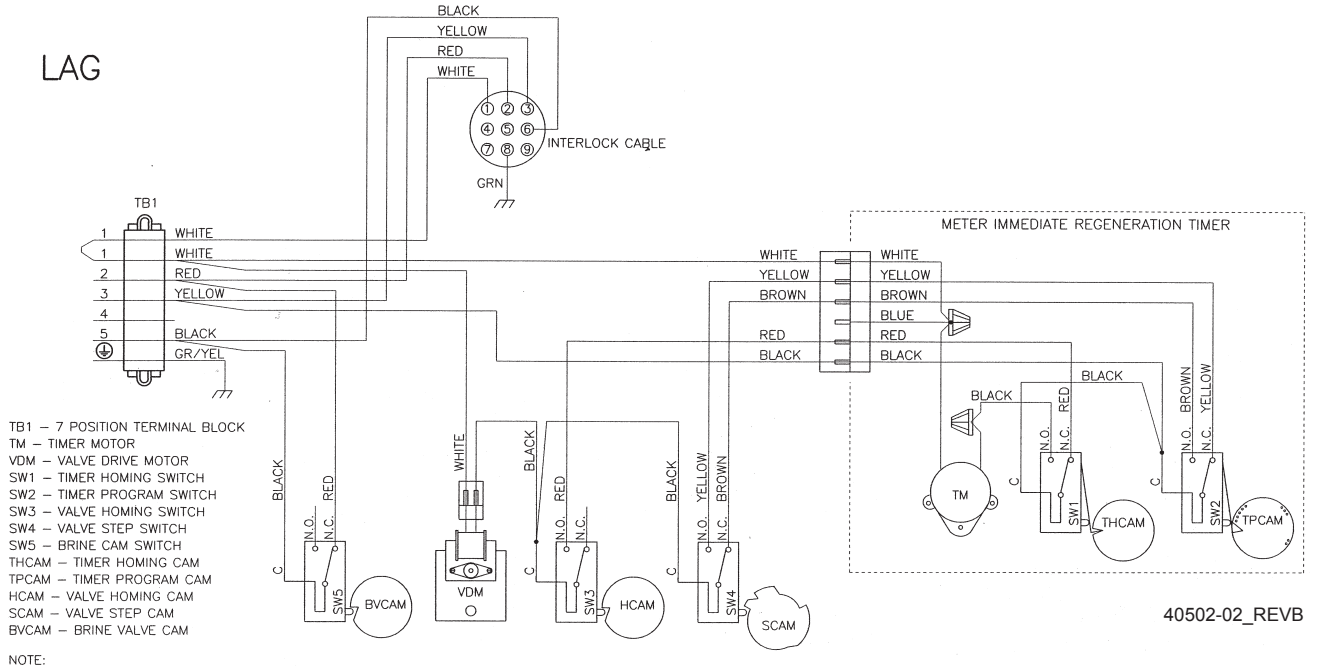
7847	1	PRODUCTION RELEASED
9726	B	ADDED SHEET 2



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_REVB



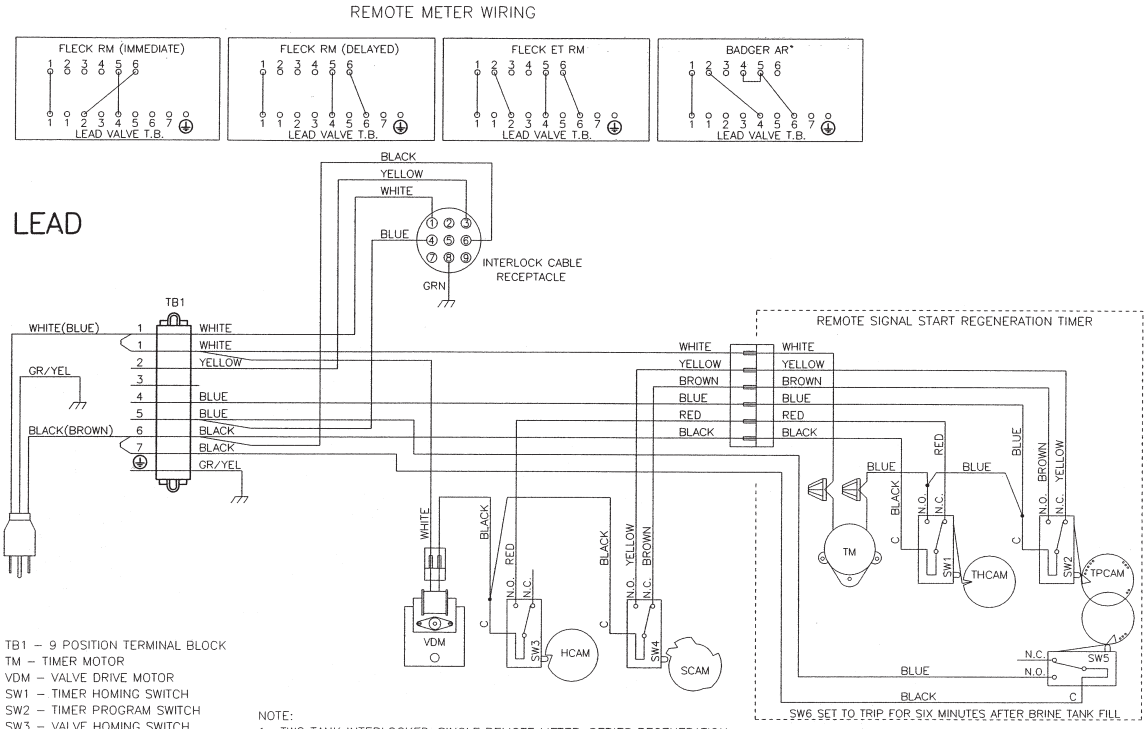
TB1 – 7 POSITION TERMINAL BLOCK
TM – TIMER MOTOR
VDM – VALVE DRIVE MOTOR
SW1 – TIMER HOMING SWITCH
SW2 – TIMER PROGRAM SWITCH
SW3 – VALVE HOMING SWITCH
SW4 – VALVE STEP SWITCH
SW5 – BRINE CAM SWITCH
THCAM – TIMER HOMING CAM
TPCAM – TIMER PROGRAM CAM
HCAM – VALVE HOMING CAM
SCAM – VALVE STEP CAM
BVCAM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

System #6 - Series Regeneration

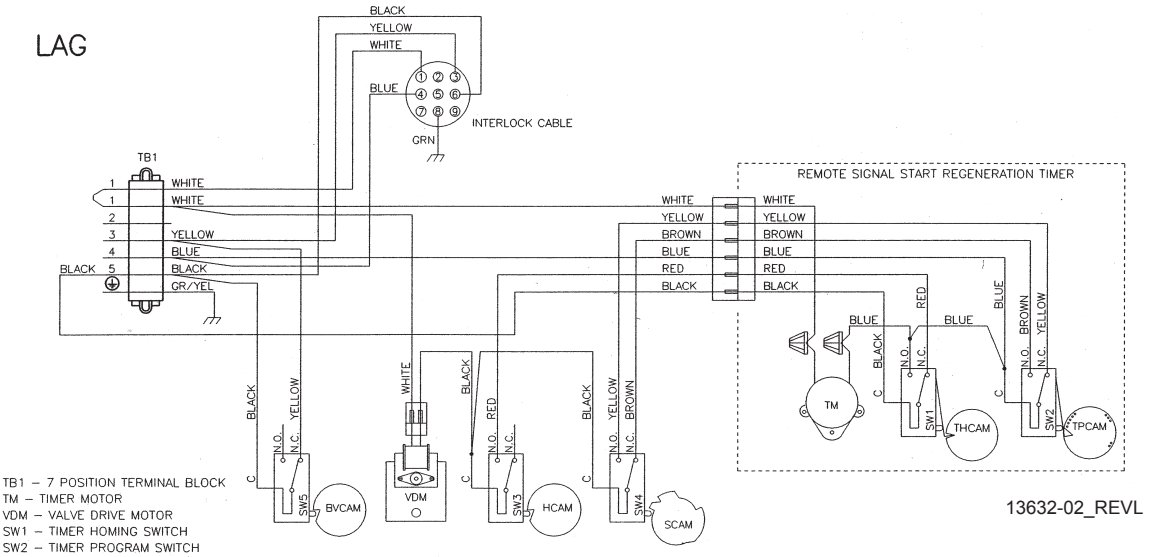
Valve Wiring



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.

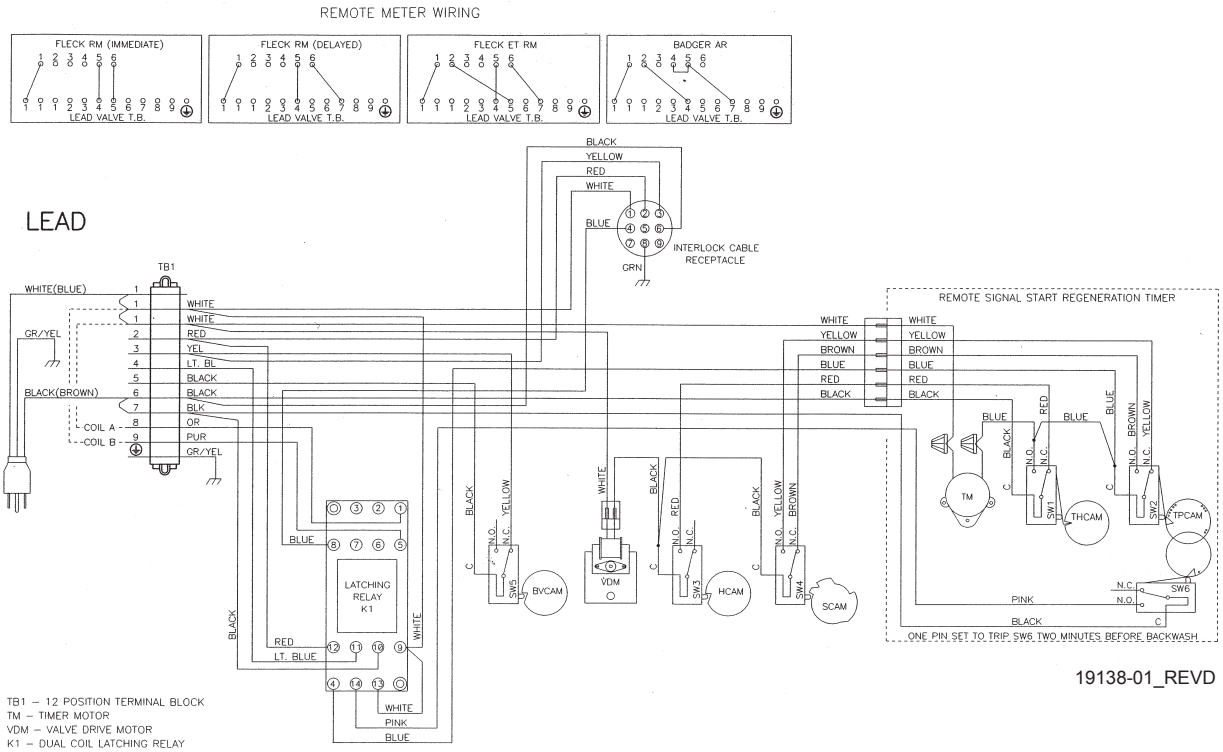
13632-01_REVK



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_REVL

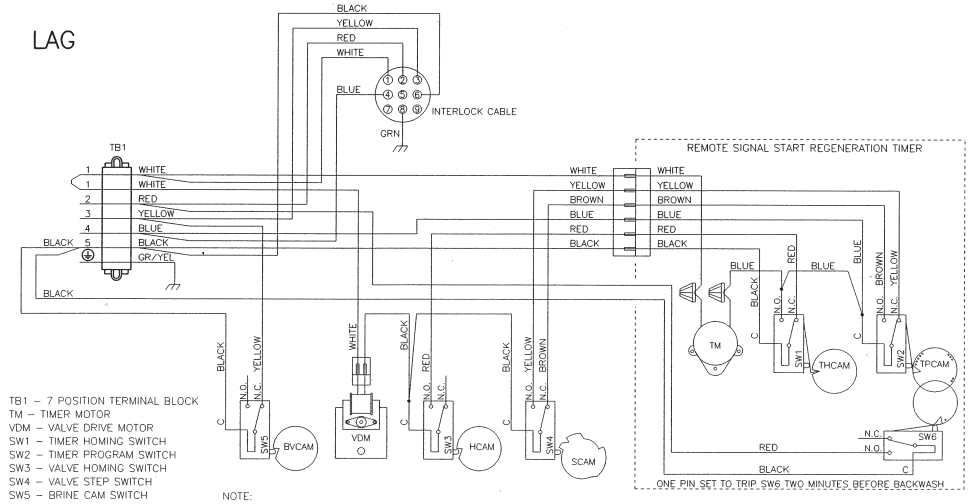


19138-01_REVD

TB1 – 12 POSITION TERMINAL BLOCK
TM – TIMER MOTOR
VDM – VALVE DRIVE MOTOR
K1 – DUAL COIL LATCHING RELAY
– 24V P/N 17018
– 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
HCAM – 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 CLOSES THE DIAPHRAGM VALVES OF LAG UNIT.
COIL B CLOSES THE DIAPHRAGM VALVES OF LEAD UNIT.
3. VALVE SHOWN IN SERVICE POSITION.



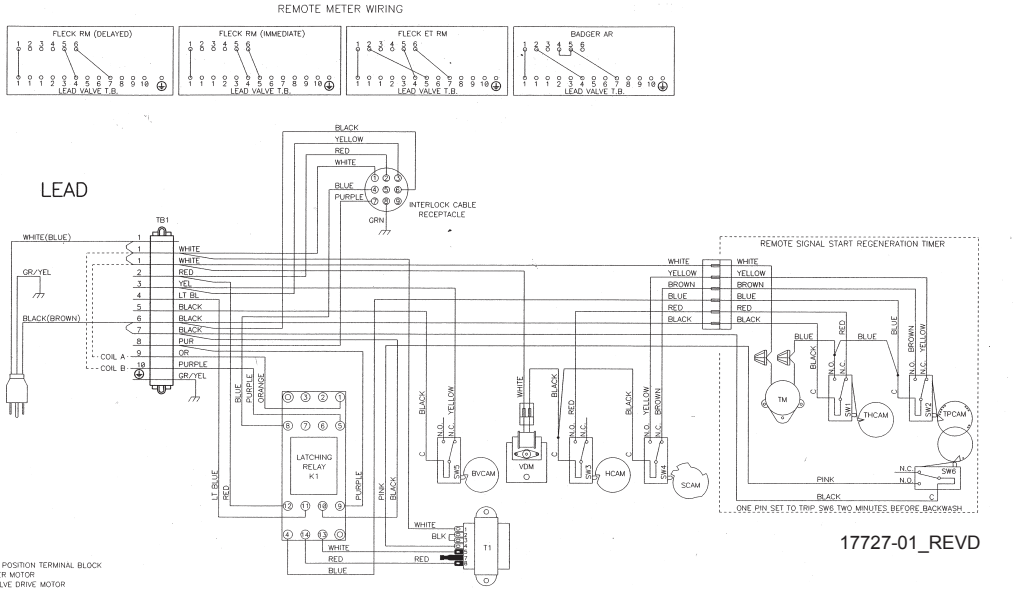
19138-02_REVD

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
HCAM – 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 CLOSES THE DIAPHRAGM VALVES OF LAG UNIT.
COIL B CLOSES THE DIAPHRAGM VALVES OF LEAD UNIT.
3. VALVE SHOWN IN SERVICE POSITION.

System #7 - Alternating Regeneration

24V / 120V / 3-Way Solenoid Output Valve Wiring

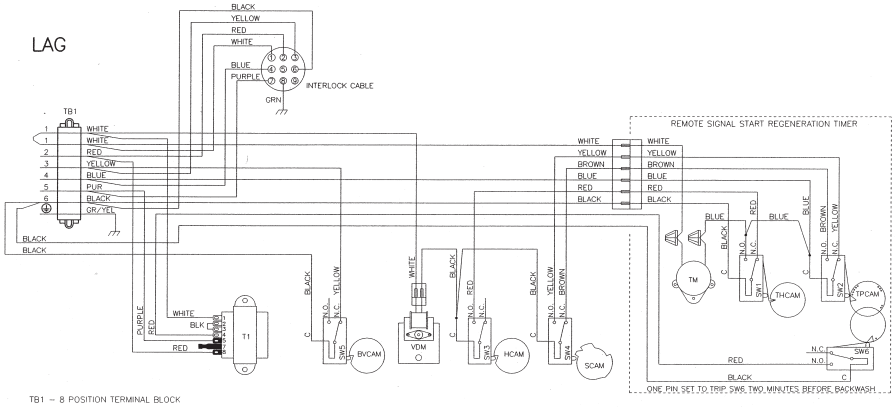


17727-01_REVD

TB1 – 13 POSITION TERMINAL BLOCK
TM – TIMER MOTOR
VDM – VALVE DRIVE MOTOR
K1 – 120V DUAL COIL LATCHING RELAY P/N 16807
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
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 CLOSES THE DIAPHRAGM VALVES OF LAG UNIT. COIL B CLOSES THE DIAPHRAGM VALVES OF LEAD UNIT.
3. VALVE SHOWN IN SERVICE POSITION.



17727-02_REVD

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
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 CLOSES THE DIAPHRAGM VALVES OF LAG UNIT. COIL B CLOSES THE DIAPHRAGM VALVES OF LEAD UNIT.
3. VALVE SHOWN IN SERVICE POSITION.

P/N 16510 Rev. F 02/06