Model 3900 Downflow

Service Manual

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

Table of Contents

IMPORTANT PLEASE READ:

- 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.
- 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 potable water systems only.
- 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.
- If daytime operating pressure exceeds 80 psi, nighttime pressures may exceed pressure limits. A pressure reducing valve must be installed.
- Do not install the unit where temperatures may drop below 32°F (0°C) or above 110°F (43°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 of the vessel and controller, not the membrane. Misapplication of this product may result in failure to properly condition water, or damage to product.
- 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 control valve to maintain proper function.

Job Specification Sheet

Job No. _____

Model No. _____

Water Test _____

Capacity Per Unit _____

Mineral Tank Size _____ Diameter _____ Height _____

Brine Tank Size & Salt Setting per Regeneration _____

2900s Control Valve Specifications

1. Type of Timer
   - A. 7 Day or 12 Day
   - B. 3,750 to 63,750 Gallon Meter or
     18,750 to 318,750 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. A. Hard Water Bypass
   B. No Hard Water Bypass

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 125 p.s.i., water temperature is not to exceed 110° 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:

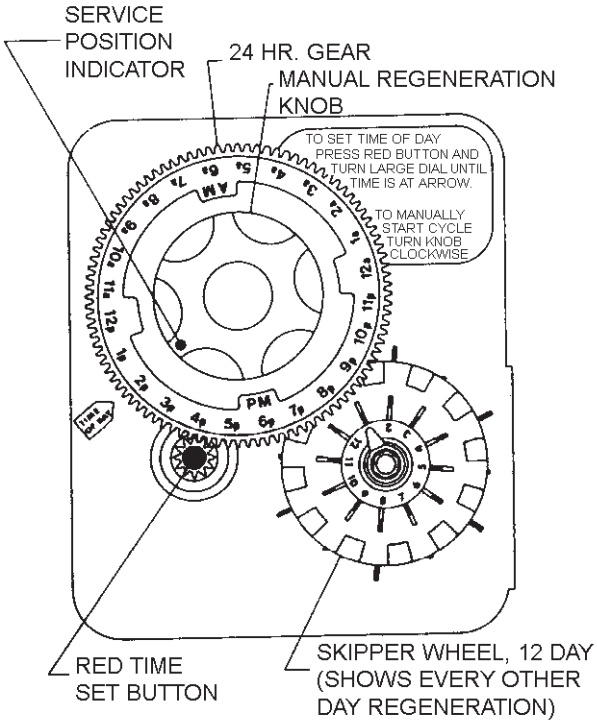
1. Press and hold the red button in to disengage the drive gear.
2. Turn the large gear until the actual time of day is at the time of day pointer.
3. Release the red button to again engage the drive gear.

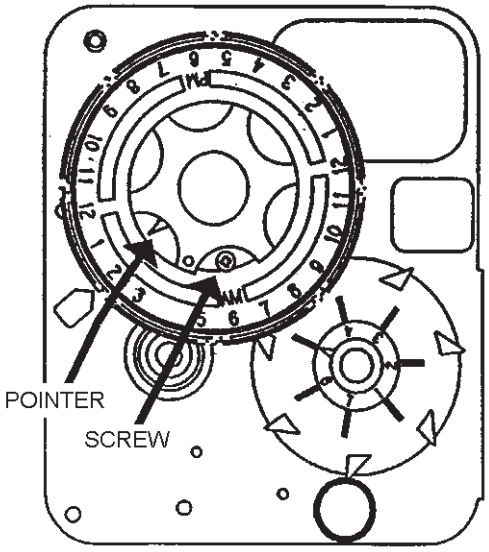
How To Manually Regenerate Your Water Conditioner At Any Time:

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.

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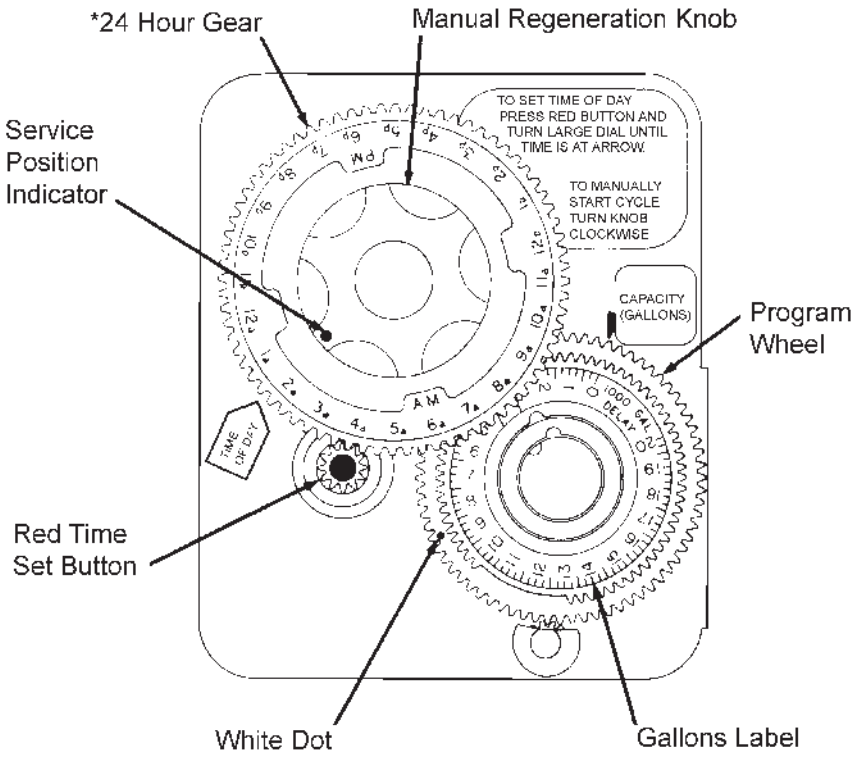
3. The black center knob will make one revolution in the following approximately three hours and stop in the position shown in the drawing.
4. Even though it takes three hours for this center knob to complete one revolution, the regeneration cycle of your unit might be set for only one half of this time.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

Immediate Regeneration Timers:

These timers do not have a 24 hour gear. Setting the gallons on the program wheel and manual regeneration procedure are the same as previous instructions.



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.

Regeneration Cycle Program Setting Procedure - Downflow

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

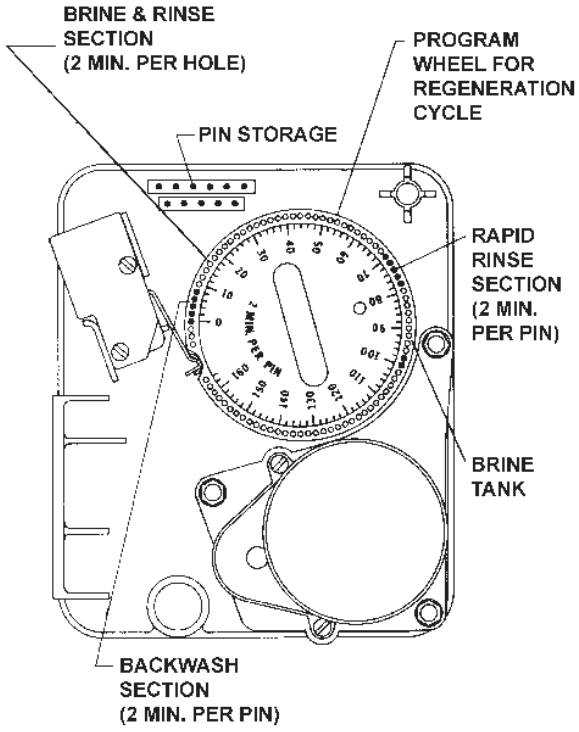
How To Change The Length Of The Backwash Time:

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.

Regeneration Cycle Program Setting Procedure - Upflow

How To Set The Regeneration Cycle Program:

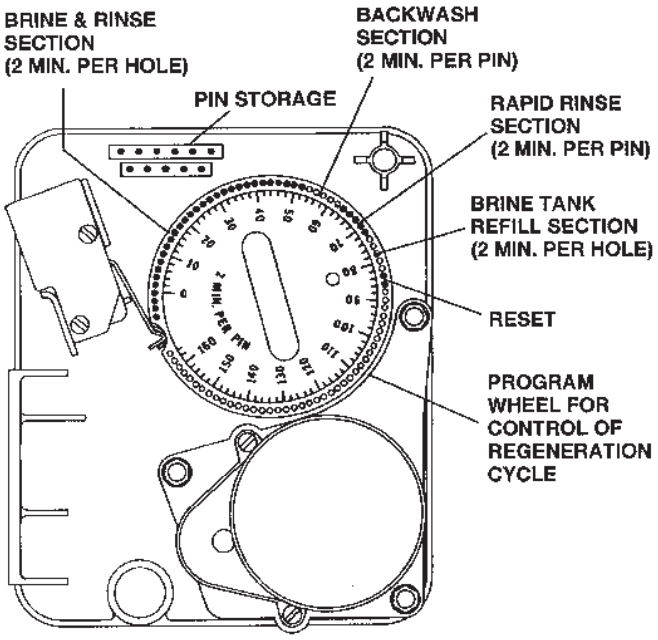
The regeneration cycle program on your water conditioner has been factory preset, however, portions of the cycle or program may be lengthened or shortened in time to suit local conditions.

3200 & 3210 Series Timers (Figure to Right):

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

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.)

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

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How To Change The Length Of Brine And Rinse Time:

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.)

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:

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.)

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.

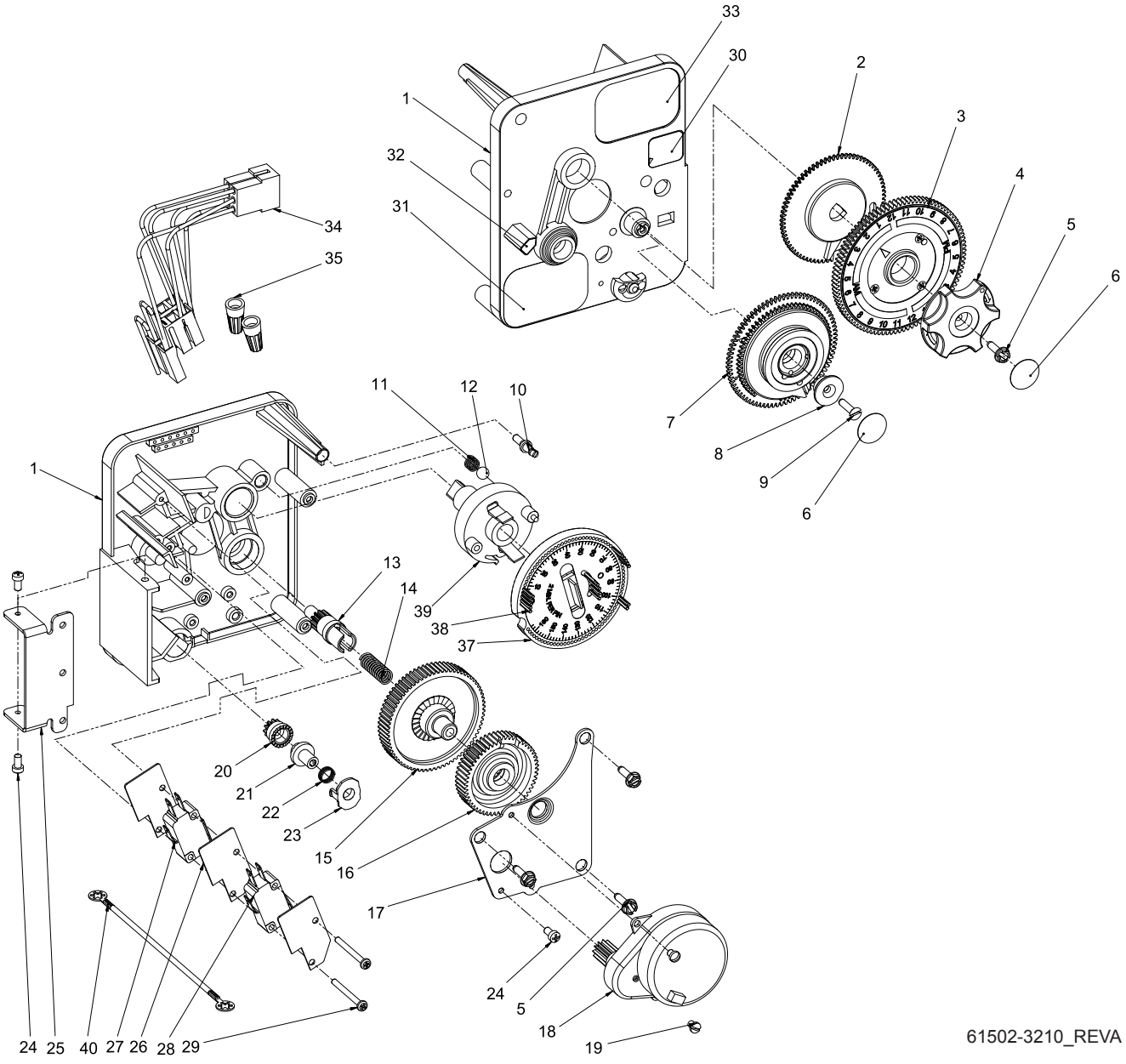
How To Change The Length Of Brine Tank Refill Time:

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.)

To change the length of refill time, move the two pins at the end of the second group of holes as required.

The regeneration cycle is complete when the outer microswitch is tripped by the two pin set at end of the brine tank refill section. The program wheel, however, will continue to rotate until the inner micro-switch drops into the notch on the program wheel.

3210 Timer Assembly



For Service Assembly Numbers, See the Back of this Manual

3210 Timer Assembly

Item No.	Quantity	Part No.	Description
1	1	13870	Housing, Timer, 3200
2	1	13802	Gear, Cycle Actuator
3	1	40096-02	Dial 2AM 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	60405-50	Program Wheel, w/2” Std Label
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” 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, 5600
19	1	13278	Screw, Fillister Hd, 6-32 x .156
20	1	13830	Pinion, Program Wheel Drive
21	1	13831	Clutch, Drive Pinion
22	1	14276	Spring, Meter, Clutch
23	1	14253	Retainer, Clutch Spring
24	3	11384	Screw, Phil, 6-32 x 1/4
25	1	13881	Bracket, Hinge Timer
26	3	14087	Insulator
27	1	10896	Switch, Micro
28	1	15320	Switch, Micro, Timer
29	2	11413	Screw, Pan Hd Mach, 4-40 x 1 1/8
30	1	14198	Label, Indicator
31	1	15465	Label, Caution
32	1	14007	Label, Time of Day
33	1	14045	Label, Instruction
34	1	13902	Harness, 3200
35	2	40422	Nut, Wire, Tan
36	1	15354-01	Wire, Ground, 4”
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	15354-01	Wire, Ground 4”

For Service Assembly Numbers, See the Back of this Manual

Powerhead Assembly

For Service Assembly Numbers, See the Back of this Manual

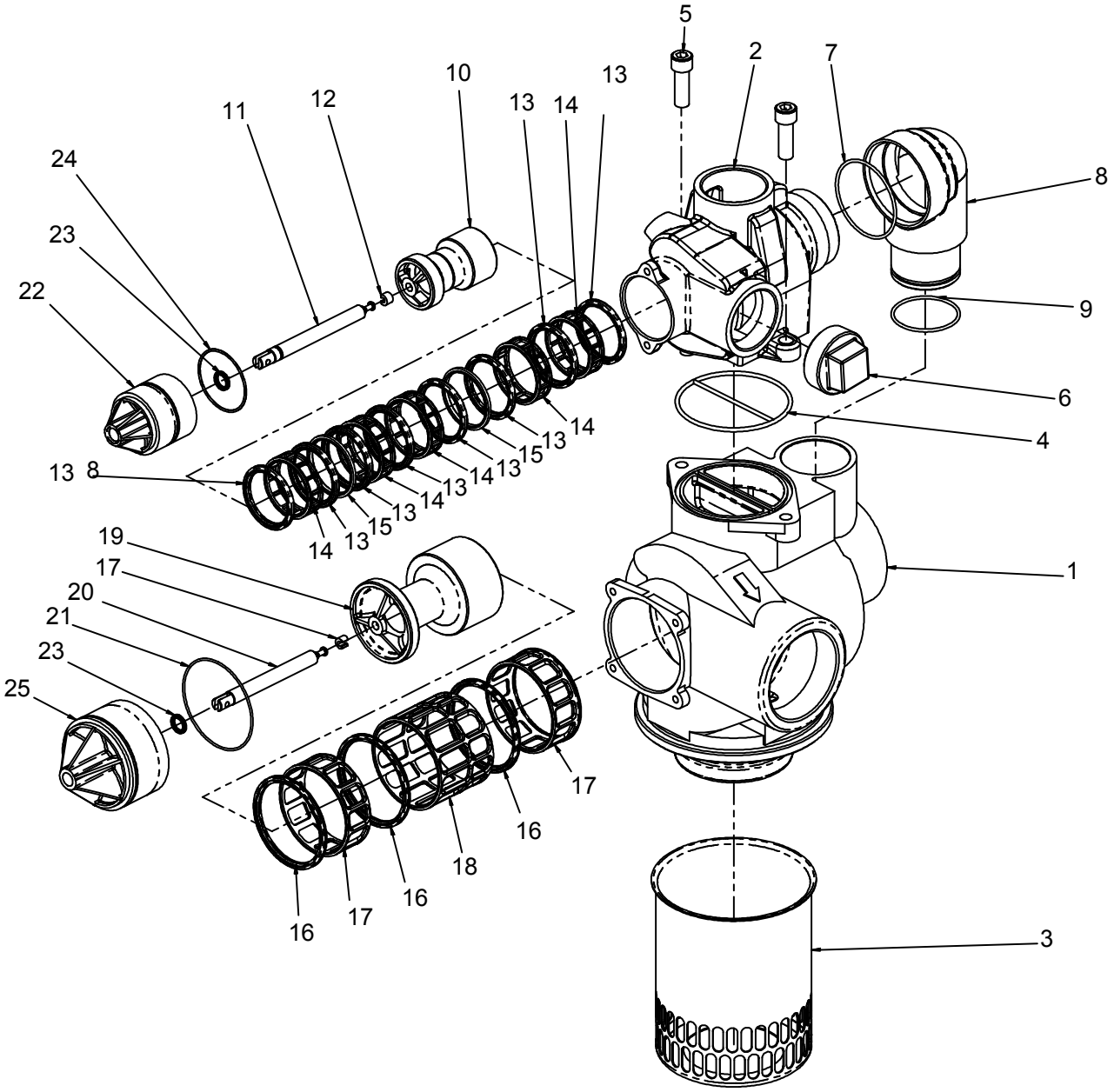
For Service Assembly Numbers, See the Back of this Manual

Powerhead Assembly

For Service Assembly Numbers, See the Back of this Manual

For Service Assembly Numbers, See the Back of this Manual

Control Valve Assembly



For Service Assembly Numbers, See the Back of this Manual

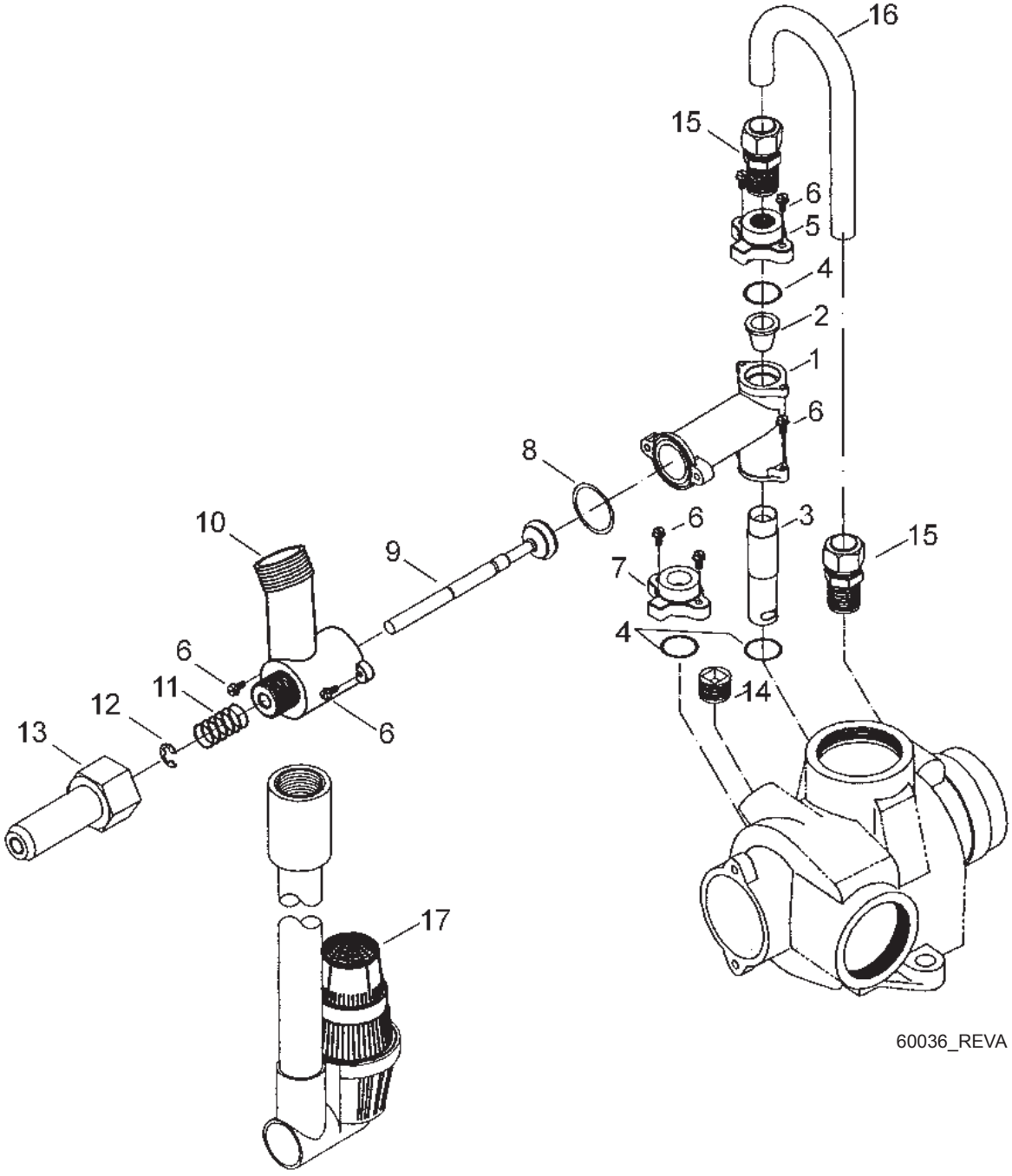
Item No.	Quantity	Part No.	Description
1	1	16067-02	VALVE BODY,3900,AUX TAP
2	1	15114	VALVE BODY,3150
3	1	16258	FLOW STRAIGHTENER,3900
4	1	15112	SEAL,3150 ADAPTER BASE
5	2	40118	SCREW,SCKT HD,1/2-13 UNC
6	1	16088	PLUG,BRASS,2”,NPT,3900
7	1	16078	O-RING,-149,3900
8	1	16074	COUPLING,ADAPTER,3900
9	1	16077	O-RING,-140
10	1	16130	PISTON,HIGH BACKWASH
11	1	15125	ROD,PISTON,3150
12	2	14818	RING,PISTON ROD,SNAP
13	8	11720	SEAL,PISTON,2900/3150
14	5	10369	SPACER,2”,2900/3150
15	2	10368	SPACER,NARROW,3150/3900
16	4	16068	SEAL,3900
17	2	16069	SPACER,3900
18	1	16070	SPACER,3900
19	1	16071	SPACER,3900
20	1	16072	ROD,PISTON,3900,LOWER
21	1	16076	O-RING,-042,3900
22	1	15118-01	PLUG,END,3150,NATURAL,MACHINED
23	2	11242	QUAD RING,-112,560CD
24	1	14922	O-RING,-035,PISTON
25	1	16073-01	PLUG,END,NATURAL

3900 Mounting Kits (Options):

	60190	Flange Kit, Park & Structural
	60192	Flange Kit, Welded
	60193	Flange Kit, 6” Threaded
	61417	Fixed Sidemount (NPT)
	61417-22	Fixed Sidemount (BSP)

For Service Assembly Numbers, See the Back of this Manual

1800 Brine Assembly



For Service Assembly Numbers, See the Back of this Manual

Item No.	Quantity	Part No.	Description
1	1	16340	Body, Injector, 1800 D/F
2	1	15128-xx	Injector Nozzle
3	1	15127-xx	Injector Throat
4	3	15246	O-ring, -116
5	1	16341-01	Cap, Injector, 1800
6	8	12473	Screw, Hex Wsh, 10-24 x 5/8
7	1	16341-02	Plug, Injector, 1800
8	1	13303-01	O-ring, -021, 560CD
9	1	16497-01	Stem Assy, 1800, Brine Valve
10	1	18713	Brine Valve Body, 1800
11	1	11772	Spring, 3150 Brine Valve
12	1	11774	Ring, Retaining
13	1	16498-01	Stem Guide Assy, Brine
14	1	16387	Plug, Pipe, 1/2” NPT
15	2	18702	Fitting, Tube, 1/2 NPT 5/8
16	1	18703	Tube, Brine, 5/8 OD Annealed
17	1	60009-00	Air Check, #900, Commercial Less Fittings
		60009-01	Air Check, #900, Commercial, HW Less Fittings
Not Shown	1		Flow Control (Specify Flow Rate)

Option Without Brine Valve

1 ..... 16605 ..... Retainer Plate
1 ..... 19860 ..... Fitting, Brine Valve, 1800

Delete: Items 9 through 16

Injector Throat

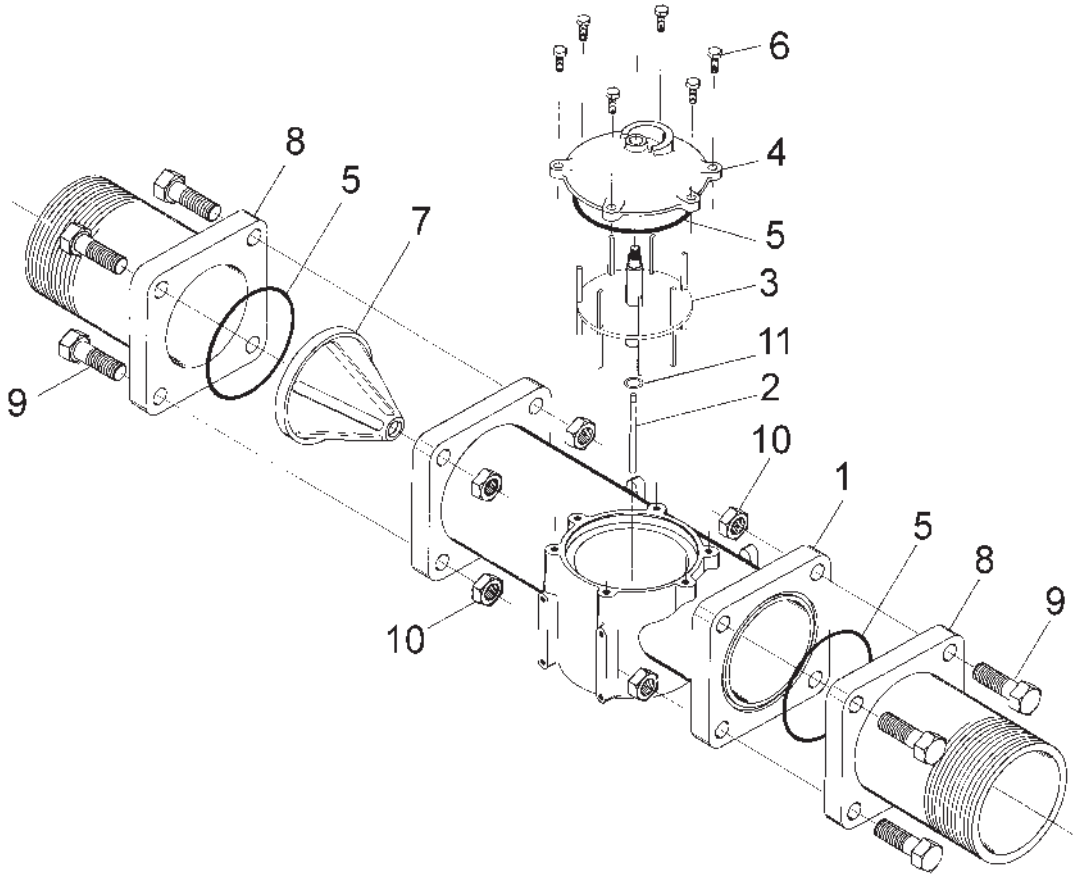
15127-04	#4	Green
15127-05	#5	Red
15127-06	#6	White
15127-07	#7	Blue
15127-08	#8	Yellow
15127-09	#9	Violet
15127-10	#10	Black

Injector Nozzle

15128-04	#4	Green
15128-05	#5	Red
15128-06	#6	White
15128-07	#7	Blue
15128-08	#8	Yellow
15128-09	#9	Violet
15128-10	#10	Black

For Service Assembly Numbers, See the Back of this Manual

3” Brass Meter Assembly



Item No.	Quantity	Part No.	Description
1	1	16254	Meter Body
2	1	16279	Impeller Shaft
3	1	16575	Impeller Assembly
4	1	16400	Meter Cover Assembly - Std.
	1	16401	Meter Cover Assembly - Ext. Range
5	3	15707	O-Ring - 236
6	6	12112	Screw - Hex Hd.
	6	15886	Screw - Hex Hd. (Metric)
7	1	16280	Flow Straightener
8	2	16328	Connecting Flange
9	8	40118	Screw - Hex Hd.
	8	17122	Screw - Hex Hd. (Metric)
10	8	16386	Nut - 1/2-13
11	1	16574	Stainless Steel Washer

For Service Assembly Numbers, See the Back of this Manual

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

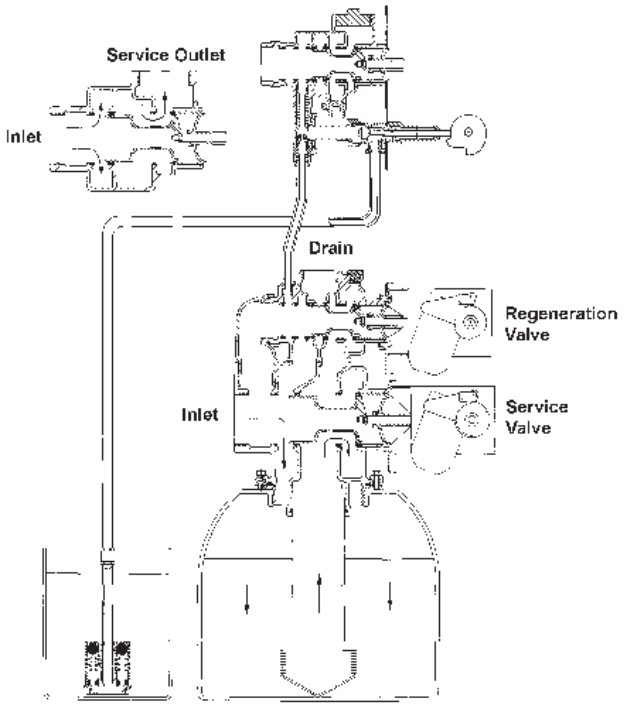
Problem: Softener delivers hard water

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

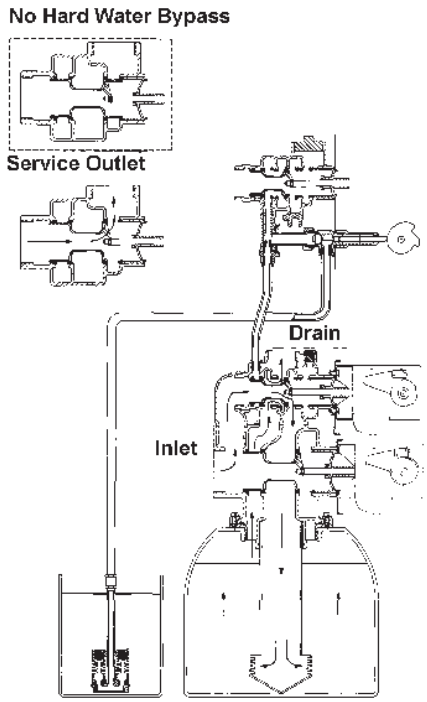
Reason: Program wheel is not rotating with meter output.
Correction: Pull cable out of meter cover and rotate manually. Program wheel must move without binding and clutch must give positive clicks when program wheel strikes regeneration stop. If it does not, replace timer.

Reason: Meter is not measuring flow.
Correction: Check meter with meter checker.

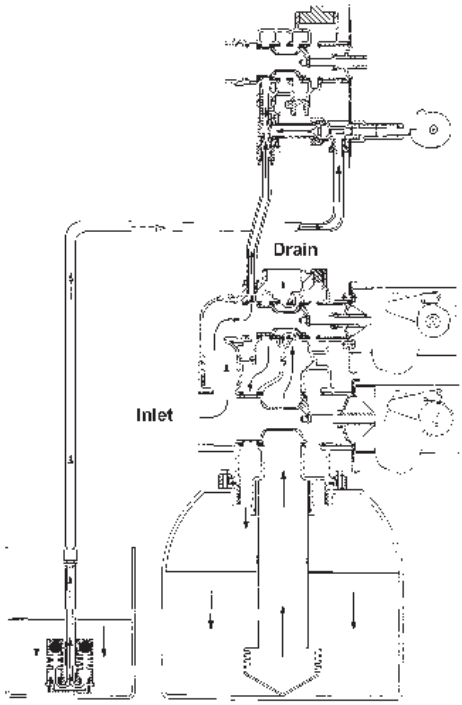
1 Service Position



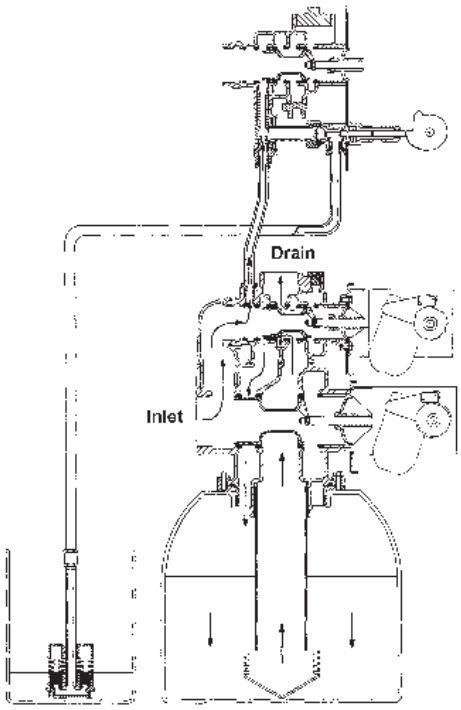
2 Backwash Position



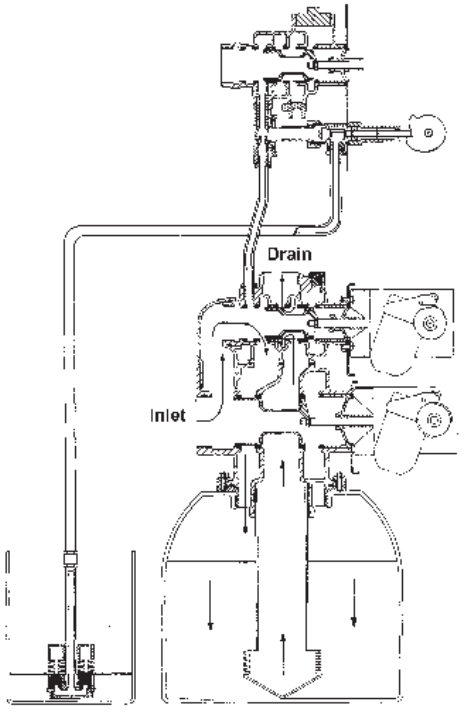
3 Brine Position



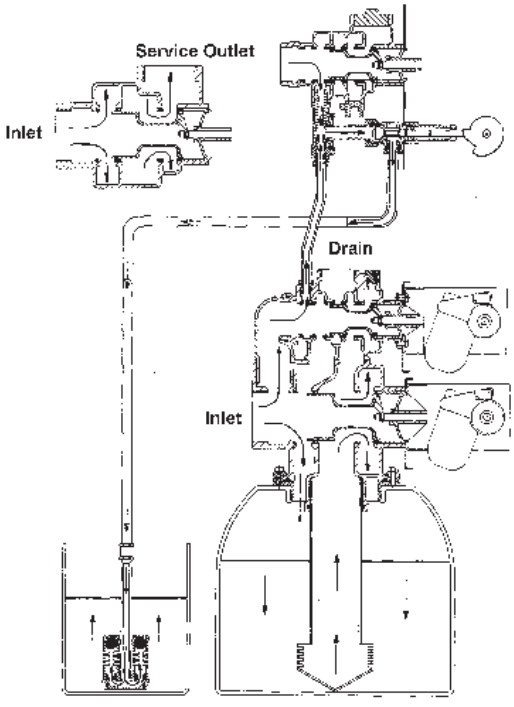
4 Slow Rinse Position

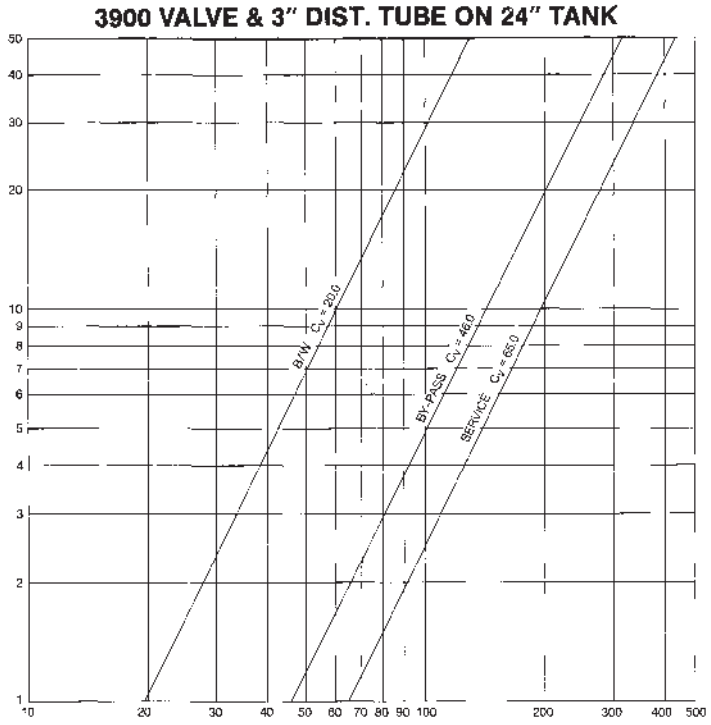


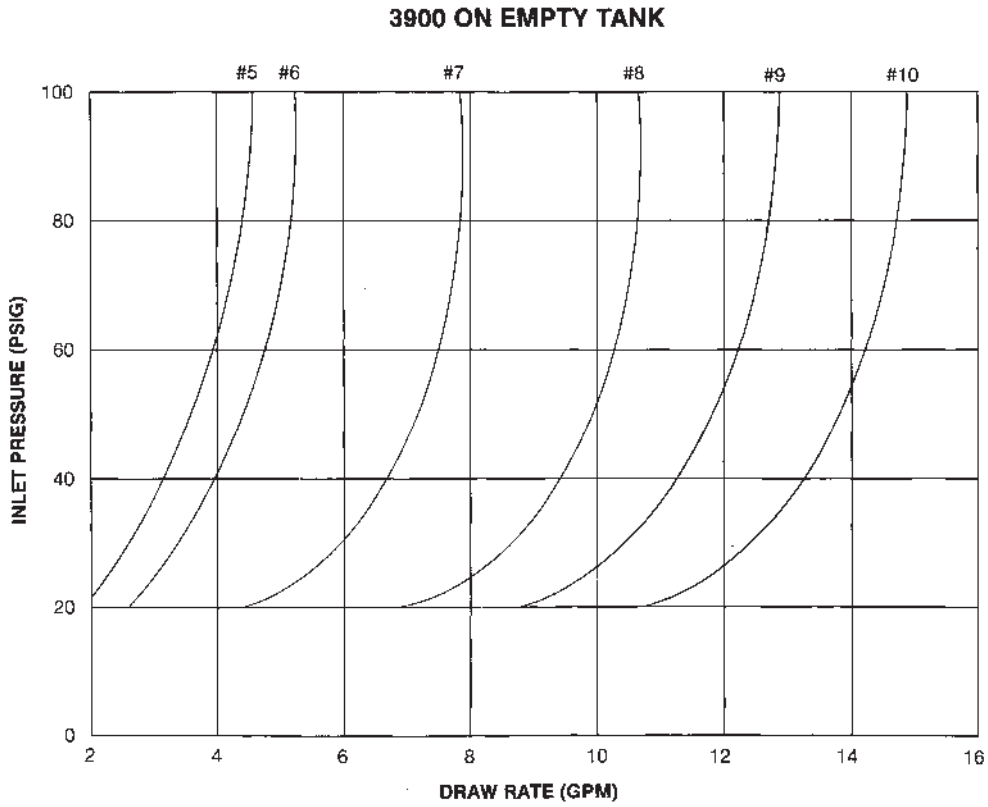
5 Rapid Rinse



6 Brine Tank Refill Position




3900 VALVE & 3" DIST. TUBE ON 24" TANK
B/N Cv = 20.0
BY-PASS Cv = 46.0
SERVICE Cv = 65.0
50
40
30
20
10
9
8
7
6
5
4
3
2
1
10
20
30
40
50
60
70
80
90
100
200
300
400
500


3900 ON EMPTY TANK
#5
#6
#7
#8
#9
#10
INLET PRESSURE (PSIG)
100
80
60
40
20
0
2
4
6
8
10
12
14
16
DRAW RATE (GPM)

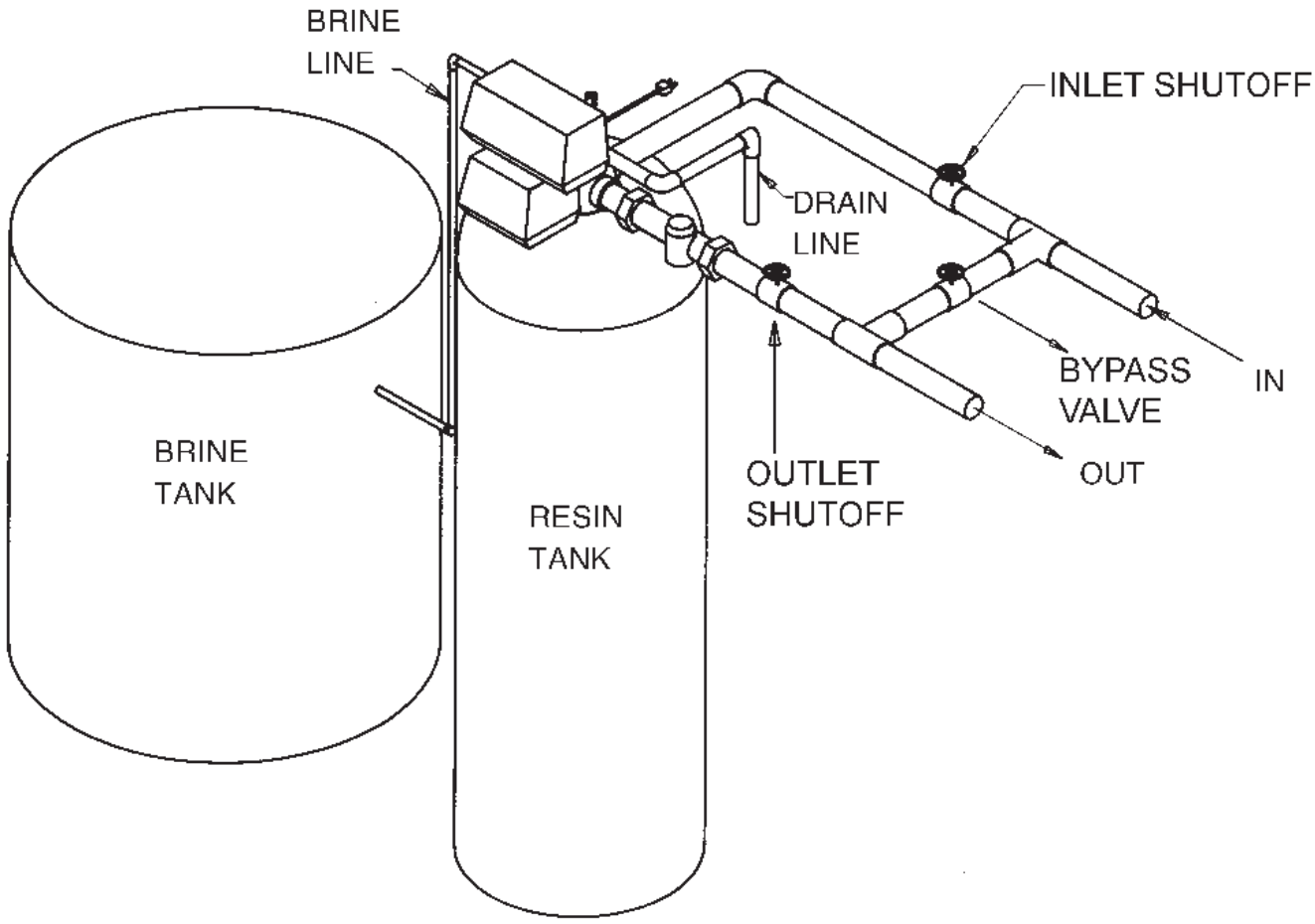
Typical Timer Settings

Tank Dia. / Volume of Resin	B/W Rate-GPM	B/W Time Min.	1800 Inj. Size	Brine and Slow Rinse Time-Minutes @ 6# Per Ft³ 35 PSI	@ 6# Per Ft³ 60 PSI	@ 6# Per Ft³ 90 PSI	@ 10# Per Ft³ 35 PSI	@ 10# Per Ft³ 60 PSI	@ 10# Per Ft³ 90 PSI	@ 15# Per Ft³ 35 PSI	@ 15# Per Ft³ 60 PSI	@ 15# Per Ft³ 90 PSI	Fast Rinse Time	Brine Refill Rate GPM	Brine Tank Refill Time-Minutes @ 6# Per Ft³	@ 10# Per Ft³	@ 15# Per Ft³
24" / 10 Ft³	15	10	4	42	30	26	68	50	46	102	76	64	10	2	6	16	26
30" / 15 Ft³	25	10	5	36	26	24	62	42	40	96	68	64	10	5	6	10	16
36" / 20 Ft³	35	10	6	34	28	28	58	48	48	84	68	68	10	5	8	14	20
42" / 30 Ft³	50	10	7	36	26	26	58	44	44	92	70	70	10	10	6	10	16
48" / 42 Ft³	70	10	8	34	34	34	56	56	56	76	76	76	10	15	6	10	14
54 / 55 Ft³	80	10	9	40	34	34	60	50	50	90	76	76	10	15	8	12	18
60" / 70 Ft³	100	10	10	46	36	34	68	54	52	102	80	78	10	20	8	12	18

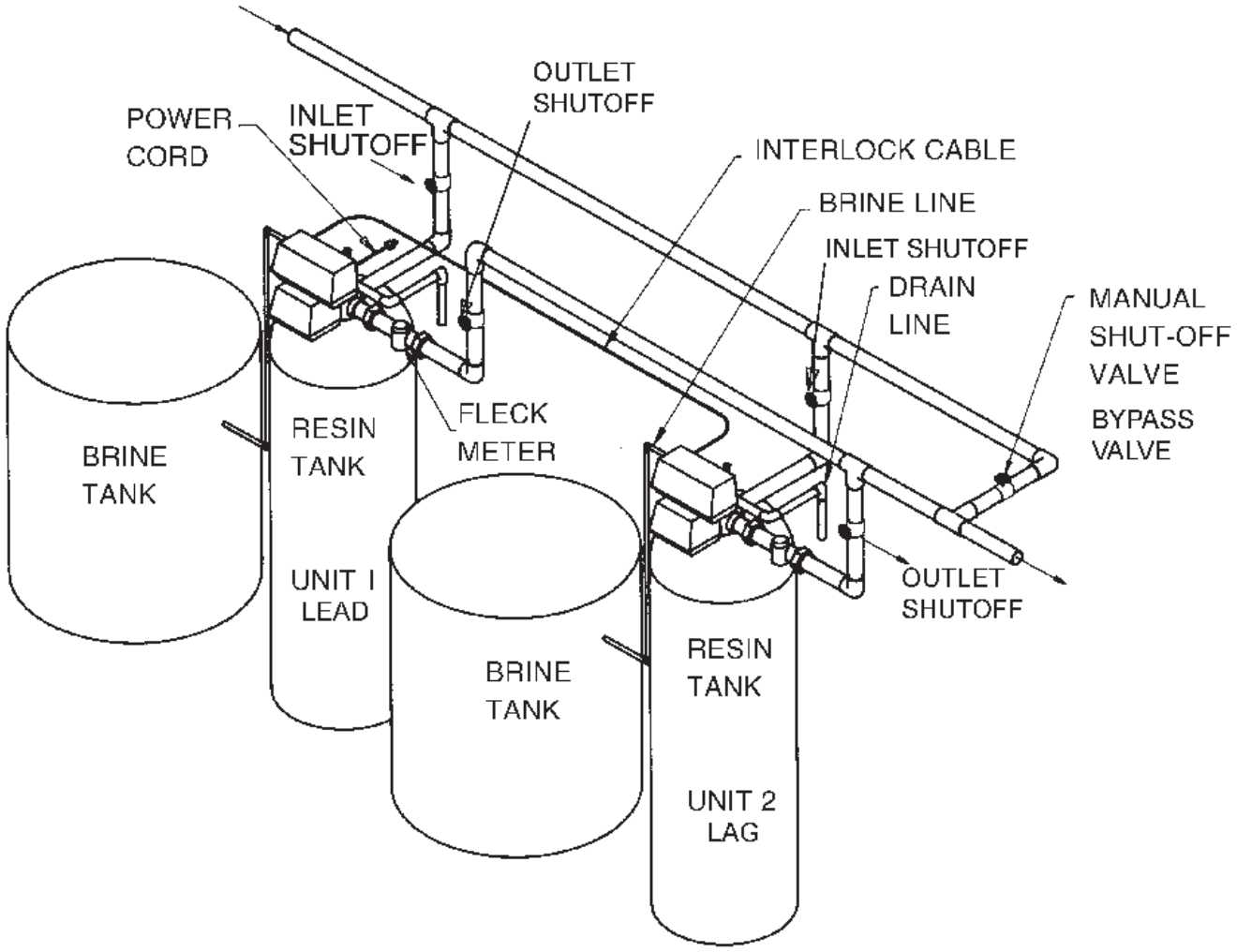
WITH MODEL 2350 SAFETY BRINE VALVE

48" / 42 Ft³	70	10	8	34	34	34	56	56	56	76	76	76	10	10	9	16	22
54" / 55 Ft³	80	10	9	40	34	34	60	50	50	90	76	76	10	10	12	18	28
60" / 70 Ft³	100	10	10	46	36	34	68	54	52	102	80	78	10	10	16	24	36

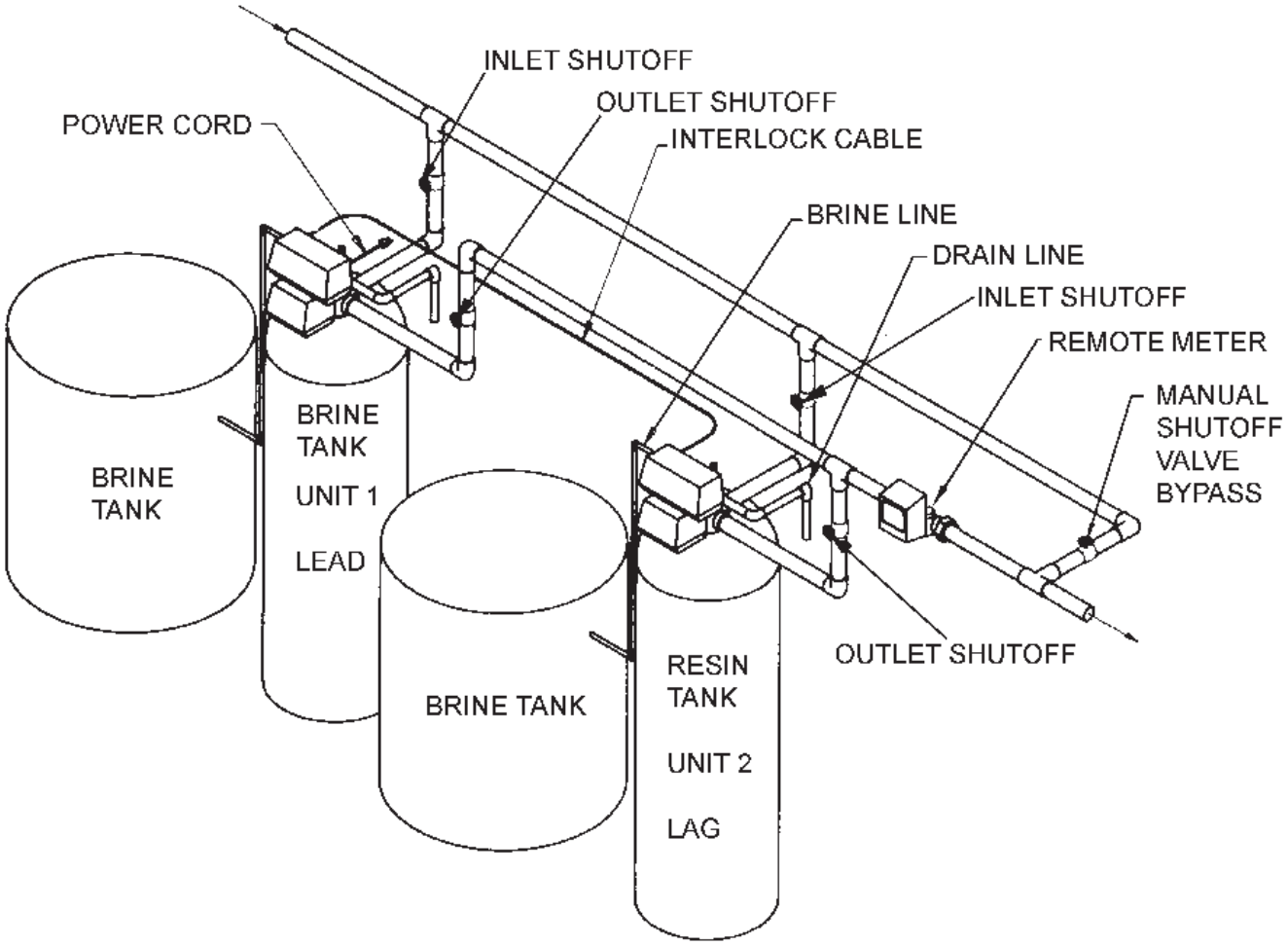
System #4 - Typical Single Tank Installation With Optional Meter



System #5 - Interlock - Typical Twin Tank Installation With Optional Meter Interlock And No Hard Water Bypass



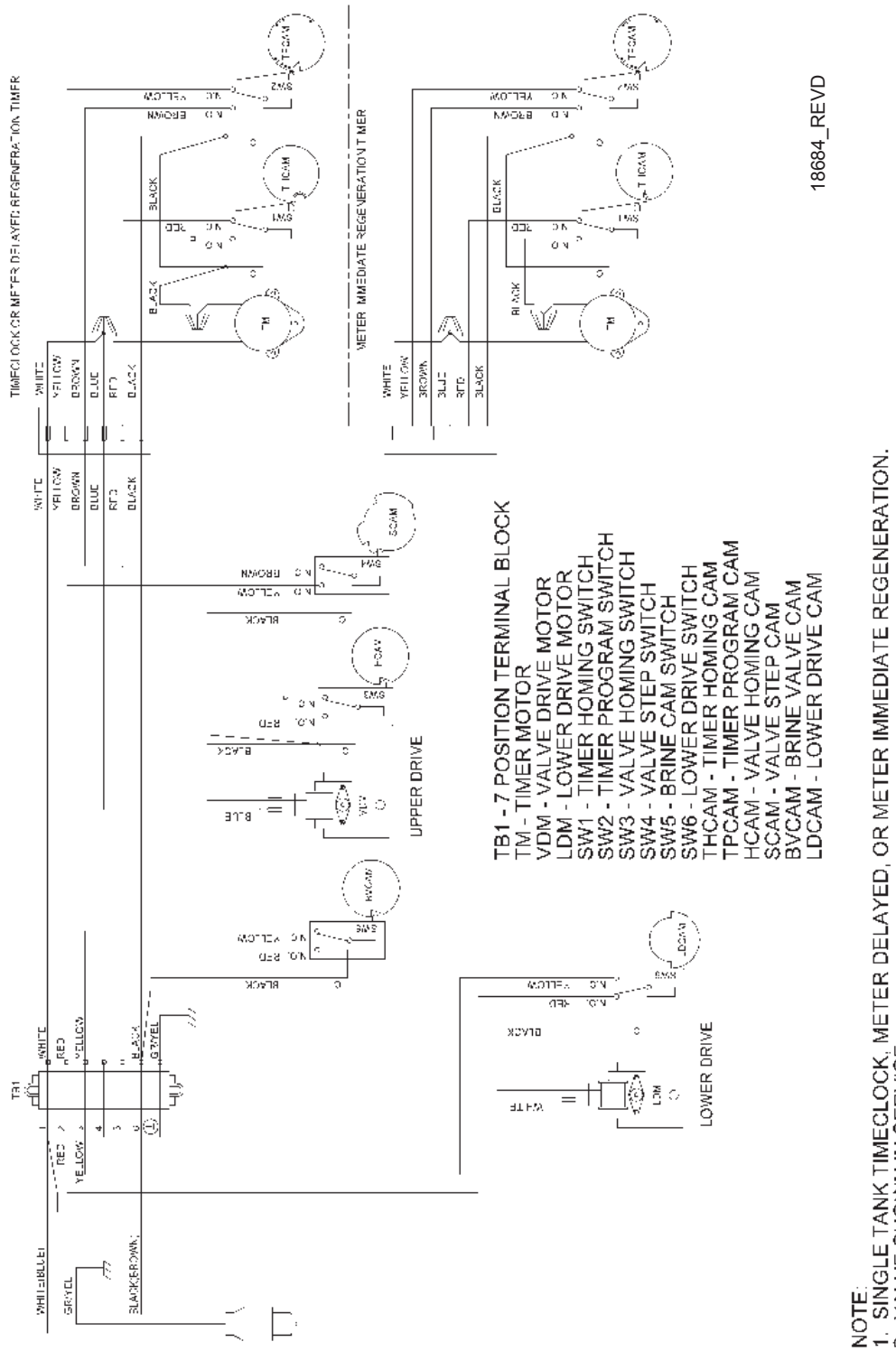
System #6 - Twin Series Regeneration & System #7 - Twin Alternator Installation



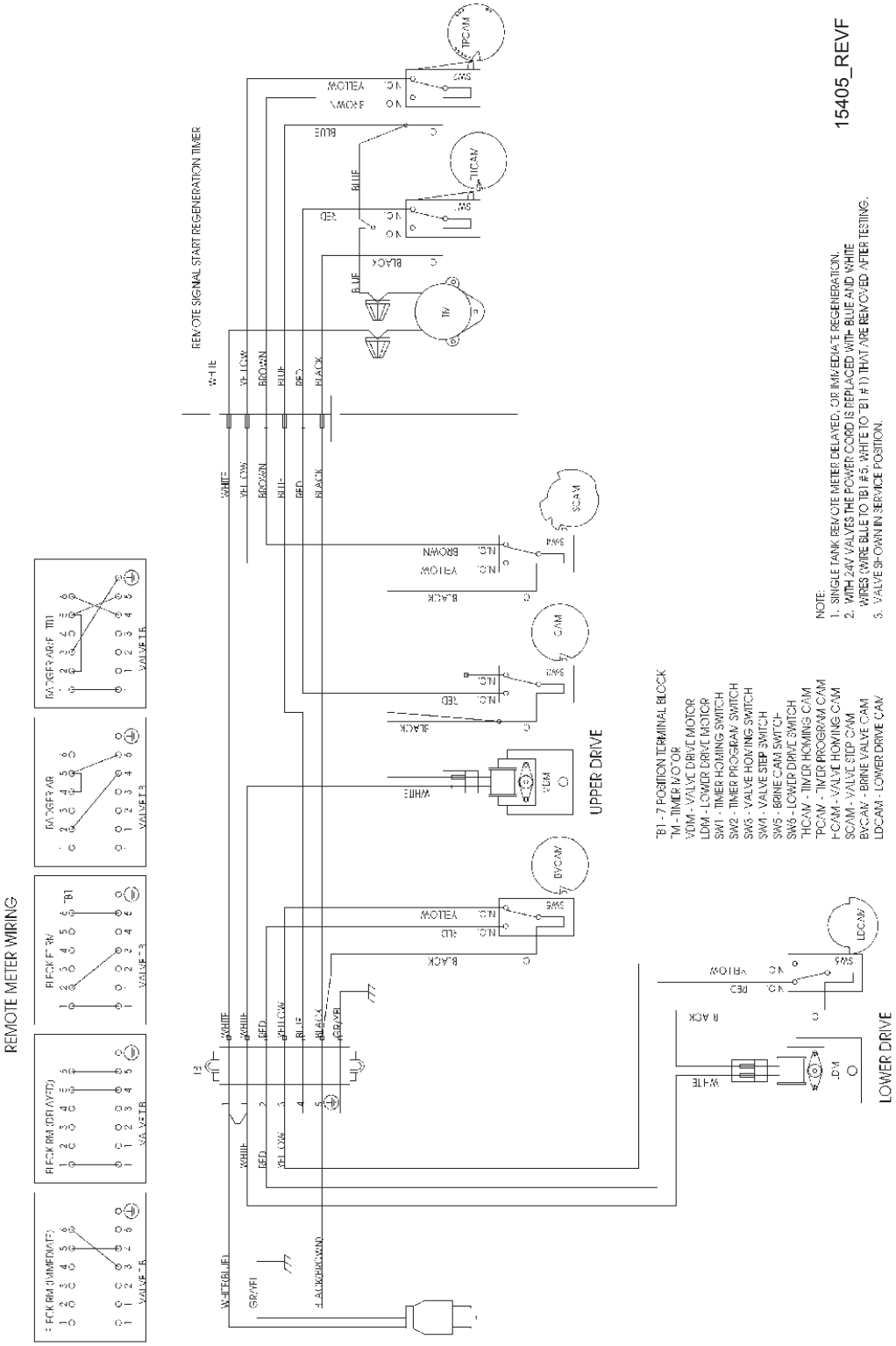
NOTE: On System 7, the power cord is on unit 2.

NOTE: System 7 can run with either one or two brine tanks. Two brine tanks should be used if regeneration is less than 4 hours.

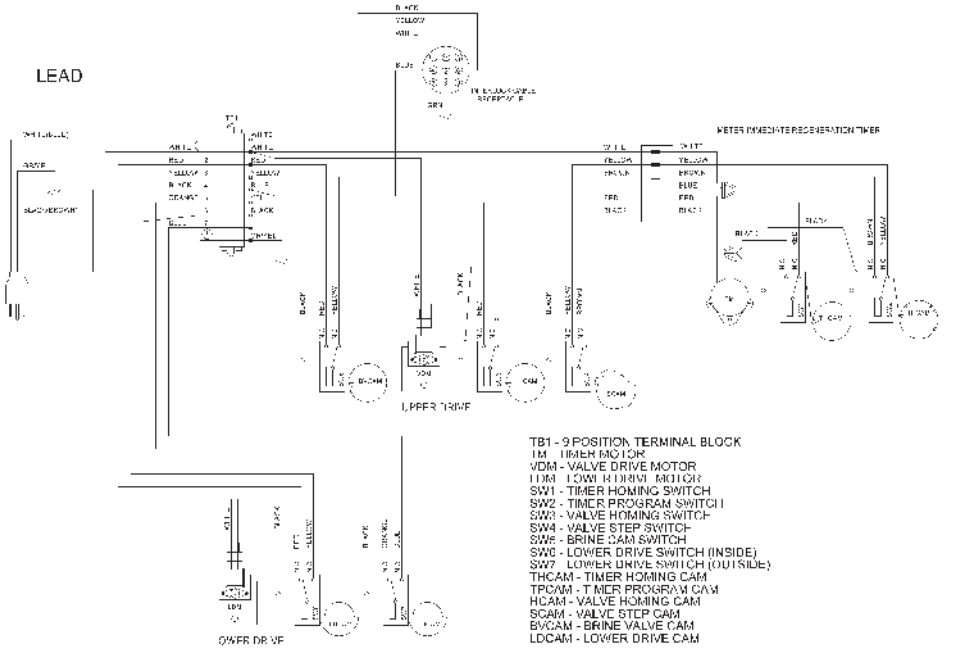
System #4 - Single Valve Regeneration Immediate and Delayed Valve Wiring



System #4 - With Remote Signal Start Valve Wiring

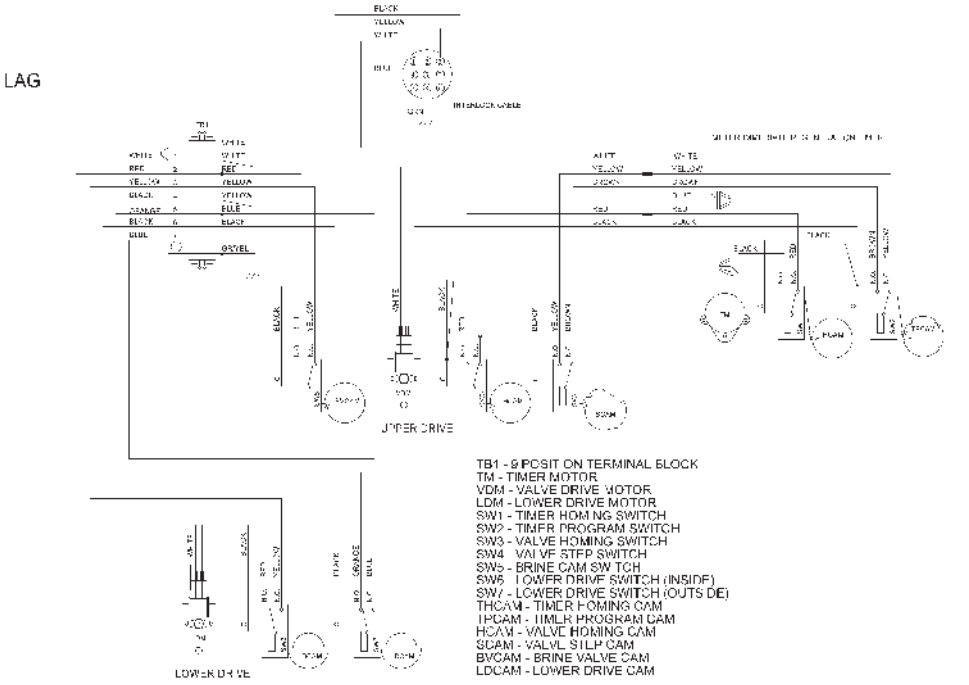


System #5 - Interlocked Regeneration Valve Wiring



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

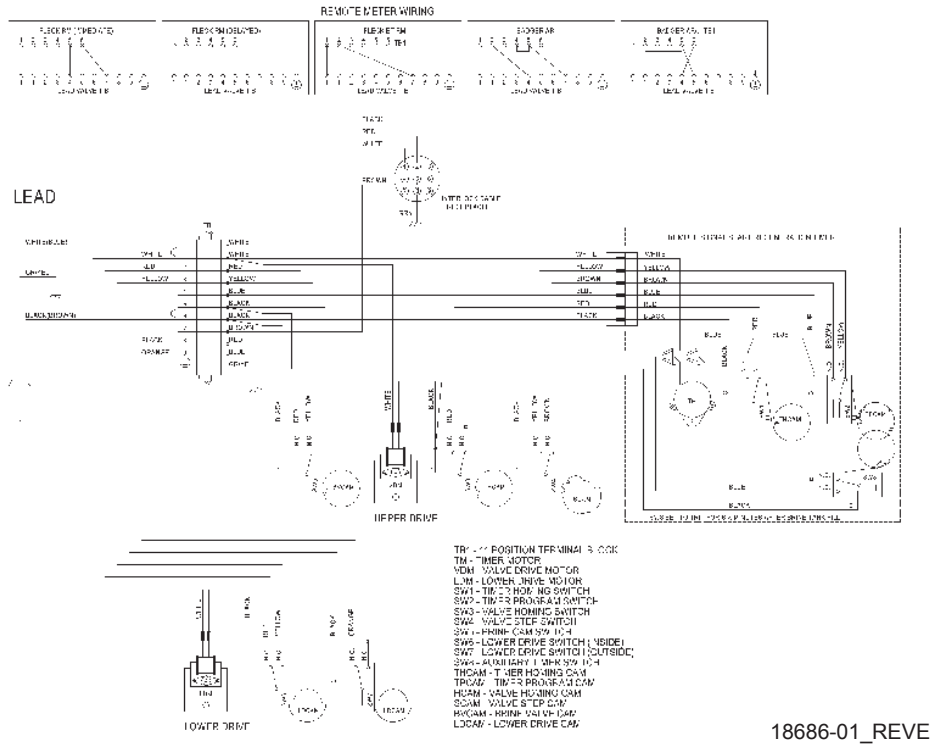
18685-01_REVD



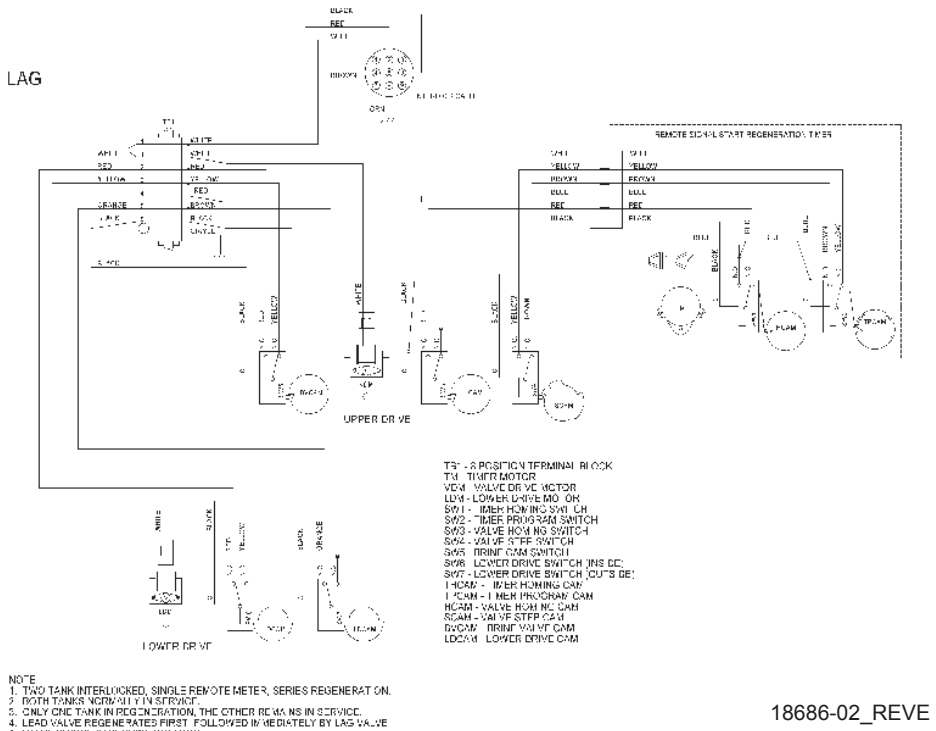
NOTE:
1. TWO TANK INTERLOCKED, INDIVIDUAL METER, IMMEDIATE REGENERATION
2. BOTH TANKS NORMALLY IN SERVICE. ONLY ONE TANK IN REGENERATION, THE OTHER REMAINS IN SERVICE.
3. VALVE SHOWN IN SERVICE

18685-02_REVD

System #6 - Series Regeneration Valve Wiring

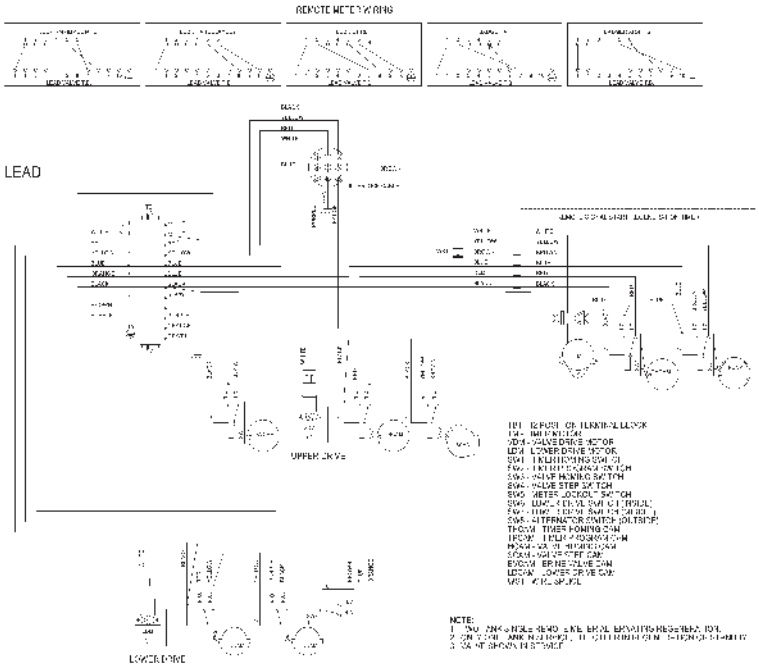


18686-01_REVE

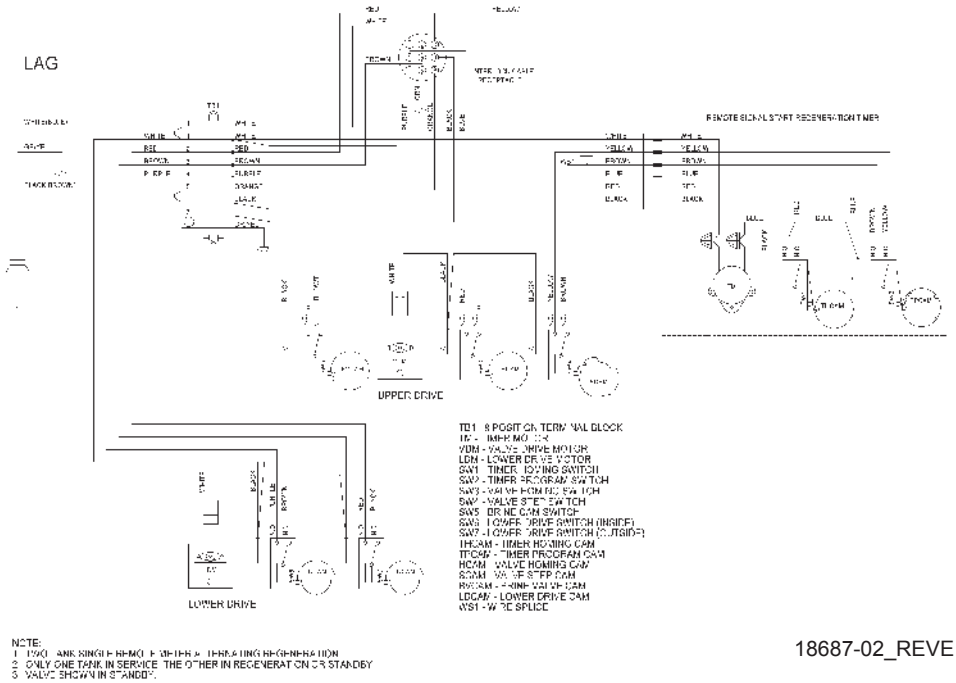


18686-02_REVE

System #7 - Alternating Regeneration Valve Wiring

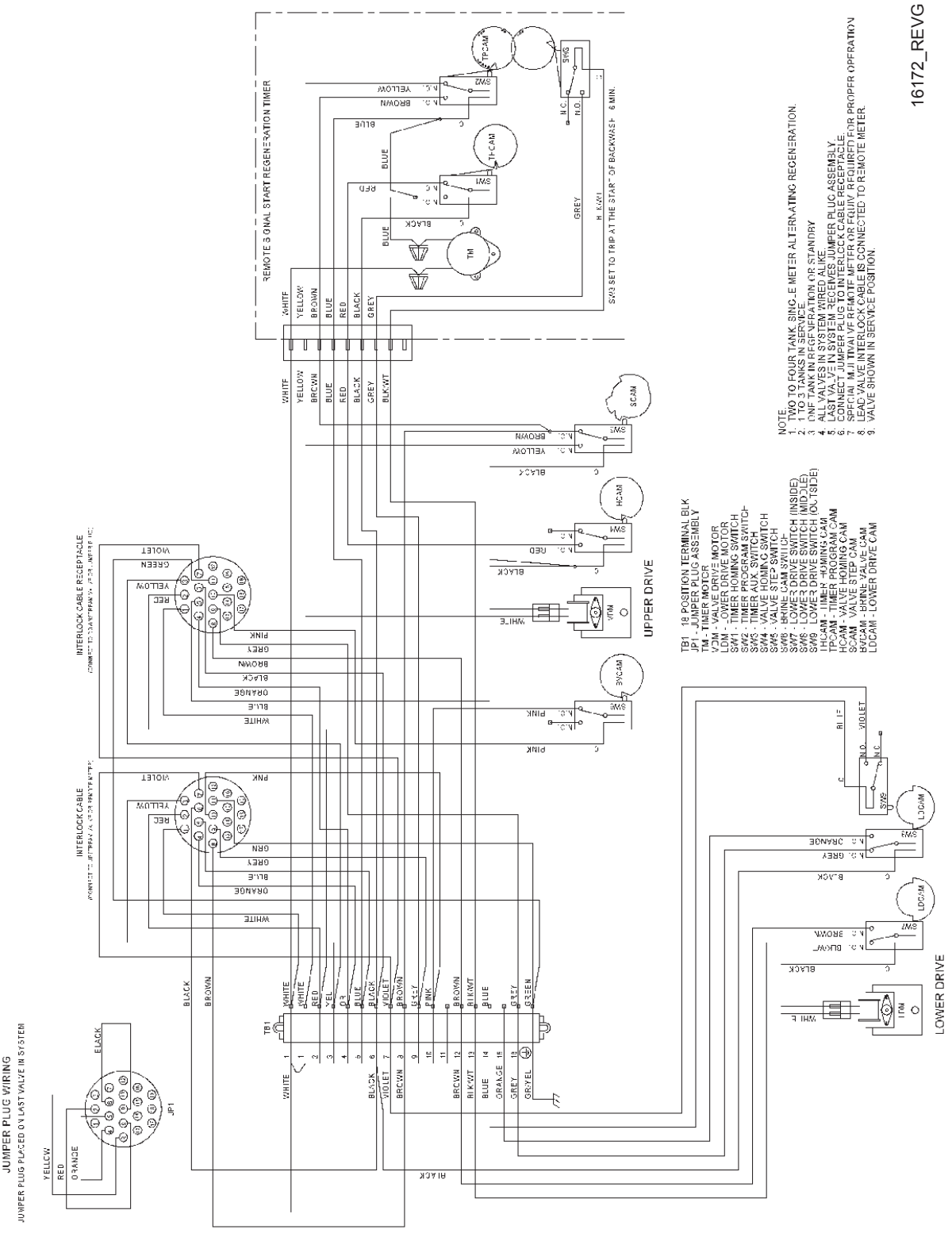


18687-01_REVE



18687-02_REVE

System #7 - Alternating Regeneration Valve Wiring



Service Assemblies

60036-02 ... 1800 Brine Valve

1	11772	Spring
1	11774	Retaining Ring
1	18713	Brine Valve Body
1	16497-01	Brine Stem Assembly
1	16498-01	Stem Guide Assembly

60277 ..... 1800 Injector Assembly

4	12473	Screw - Hex Hd.
1	15127	Injector Throat
1	15128	Injector Nozzle
2	15246	O-Ring -116
1	16340	Injector Body
1	16341-01	Injector Cover

60106-00 ... 3900 Upper Piston Assembly

1	14818	Clip Piston Rod
1	14922	O-Ring - 035
1	15125	Piston Rod
1	16130	Piston
1	16398-0	End Plug Assembly

60107-00 ... 3900 Lower Piston - Hard Water By-Pass

1	14818	Clip Piston Rod
1	16071	Piston
1	16072	Piston Rod
1	16076	O-Ring - 042
1	16399-01	End Plug Assembly - White

60107-10 ... 3900 Lower Piston - No Hard Water By-Pass

1	14818	Clip Piston Rod
1	16082	Piston - No Hard Water By-Pass
1	16072	Piston Rod
1	16076	O-Ring - 042
1	16399-11	End Plug Assembly - Black

60131 ..... 3900 Upper Seal Kit

2	10368	Spacer
5	10369	Spacer - Port
8	11720	Seal

60132 ..... 3900 Lower Seal Kit

4	16068	Seal
2	16069	Spacer - Narrow
1	16070	Spacer - Wide

60132-01 ... 3900 Lower Seal Kit, Hot Water

4	16068	Seal
2	16069-01	Spacer, Narrow, Hot Water
1	16070-01	Spacer, Wide, Hot Water

60057-01 ... 3900 Upper Drive Motor Assembly - 115 V.

4	10302	Insulator - Switch
3	10872	Screw - Hex Hd.
1	11080	Screw - Flat Hd.
3	10218	Switch
2	10300	Screw - Hex Hd.
1	15120	Bracket - Motor Mounting
1	16044	Drive Motor - 115 V.
1	16052	Bushing
1	17797	Bracket - Switch Mounting
2	12624	Screw - Pan Hd.

60058-01 ... 3900 Lower Drive Motor Assembly ..... 115 V. System #4

2	10302	Insulator - Switch
3	10872	Screw - Hex Hd.
1	11080	Screw - Flat Hd.
1	10218	Switch
2	10300	Screw - Hex Hd.
2	11805	Screw - Pan Hd.
1	16044	Drive Motor - 115 V.
1	17797	Bracket - Switch Mounting
1	16086	Bracket - Motor Mounting