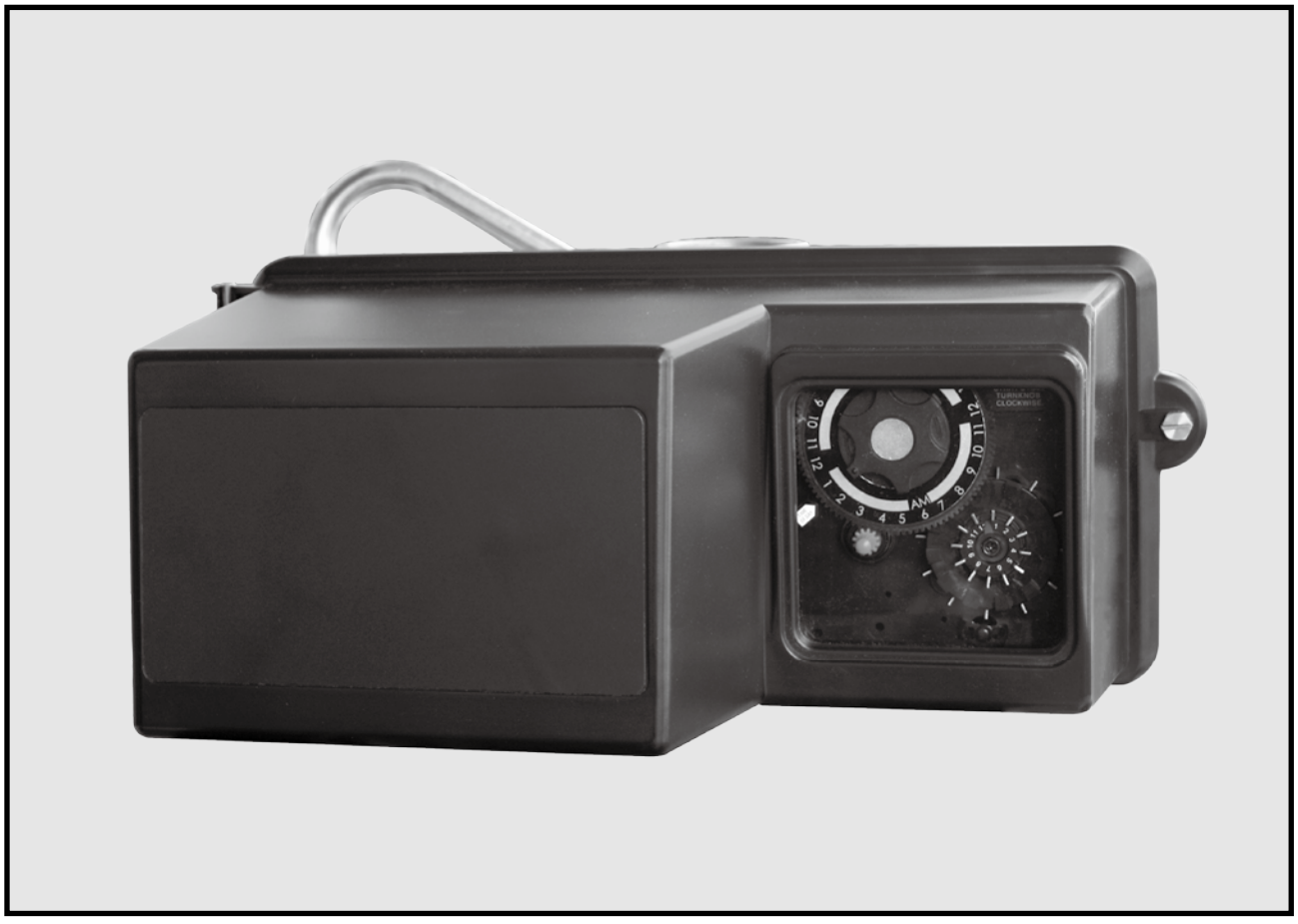
F60 Downflow Brining

Service Manual



IMPORTANT: Fill in pertinent information on page 3 for future reference.

MODEL F60

Job Specification Sheet

Job No. _____

Model No. _____

Water Test _____

Capacity Per Unit _____

Mineral Tank Size ._____ DiaMeter _____ Height

Brine Tank Size &Salt Setting per Regeneration:_____

Control Valve Specifications

1. Type of Timer (see pages 8-11)

   A) 7 Day or 12 Day

   B) 1,250 to 21,250 Gallon Meter or

   6,250 to 106,250 Gallon Meter or

   Other _____

   C) Meter Wiring Package

      1. System #4 - 1 Tank; 1 Meter; Immediate or Delayed Regeneration
      2. System #5 - 2Tanks; 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 _____ min.

   B) Brine & Slow Rinse _____ min.

   C) Rapid Rinse _____ min.

   D) Brine Tank Refill _____ min.

3. Drain Line Flow Controller _____ gpm
4. Brine Line Flow Controller _____ gpm
5. Injector Size # _____
6. Service Valve Operation Units (SVO)

   Size of Service Valve _____

MODEL F60

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. (Other voltages available.) 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 7 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) one Meter shall be installed on common soft water outlet of units.
3. Make sure that the floor is clean beneath the salt storage tank and that it is level.
4. Place approximately 13 of water above the grid plate (if used) in your salt tank Salt may be placed in the unit at this time.
5. 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.
6. Place the by-pass in service position.
7. 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.
8. Electrical: All electrical connections must be connected according to codes. Use electrical conduit if applicable. Plug into power supply.

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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:

Press and hold the red button in to disengage the drive gear. Turn the large gear until the actual time of day is at the time of day pointer.

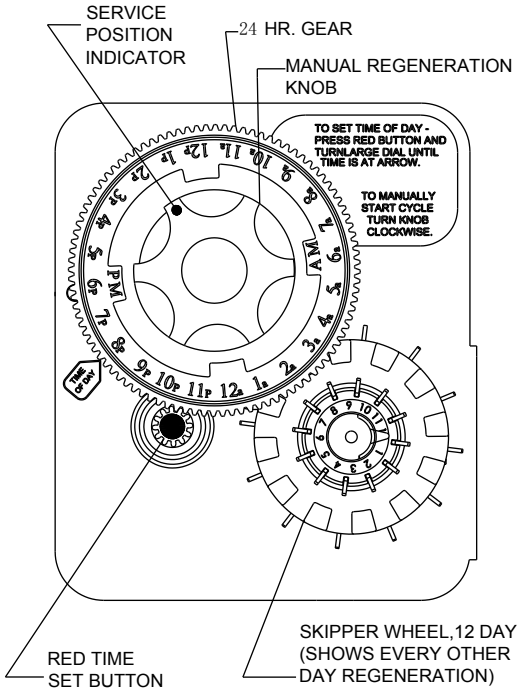
Release the red button to again engage the drive gear.

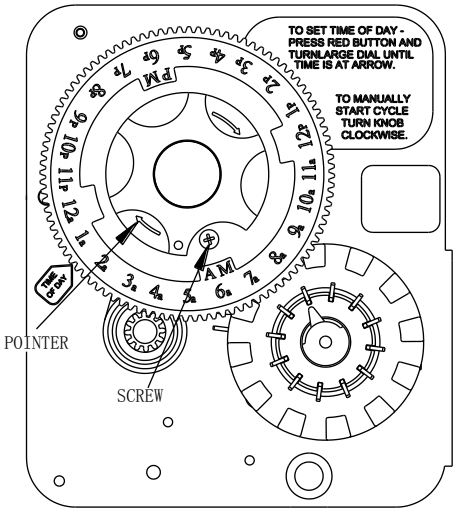
How To Manually Regenerate Your Water Conditioner At Any Time:

Turn the manual regeneration knob clockwise.

This slight movement of the manual regeneration knob engages the program wheel and starts the regeneration program.The black center knob will make one revolution in the following approximately

three hours and stop in the position shown in the drawing. Even thought 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.In any event, conditioned water may be drawn after rinsewater 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.

MODEL F60

Regeneration Cycle Program Setting Procedure

How To Set Regeneration Cycle Program:
The regeneration cycle program on your water conditioner has been factory preset, however, portions of the cycle orprogram may be lengthened or shortened in time to suitlocal conditions.

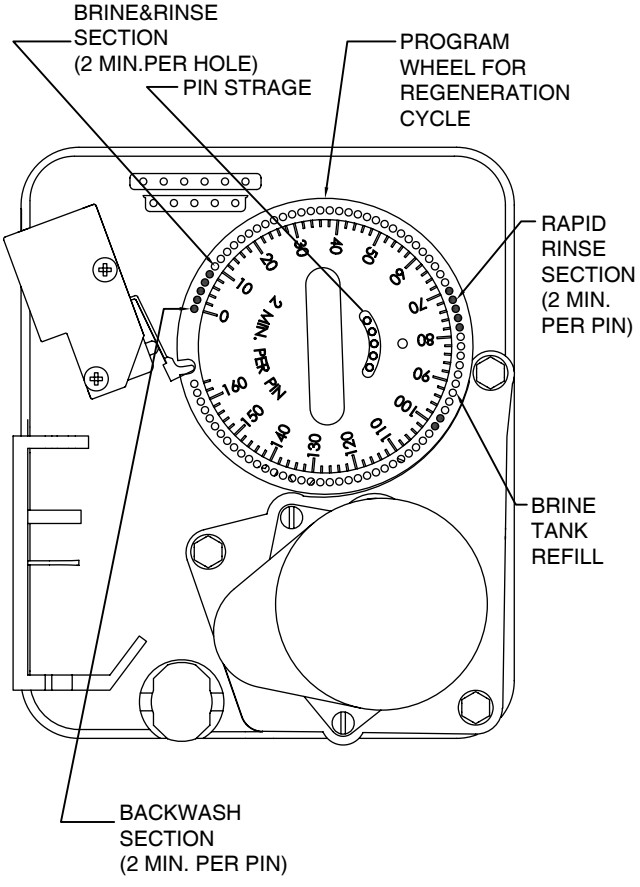
3200 & 3210 Series Timers (Figure to Right)
To expose cycle program wheel, grasp timer in upper left Hand corner and pull, releasing snap retainer and swinging timer to the right.
To change the regeneration cycle program, the program wheel must be removed. Grasp program wheel and squeeze protruding lugs 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
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 equal the backwash time in minutes.

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 microswitch drops into the notch on the program wheel.



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Commercial Demand Regeneration Control Timer Settings

Typical Programming Procedure

Calculate the gallon capacity of the system, subtract the necessary reserve requirement and set the gallons required by lifting the gallon dial and rotating it so that the number of gallons required is aligned with the white dot on program wheel gear. Release and check for firm engagement with gear.

Note, drawing shows 8,750 gallon setting. The capacity (gallons) arrow denotes remaining gallons exclusive of fixed reserve.

Note:

To set Meter capacity at initial start-up either

1. Rotate manual regeneration knob one full revolution.

—or—

2. Rotate program wheel manually clockwise or counter clockwise and align white dot with capacity arrow.

This procedure must be followed any time the program wheel setting is changed.

How To Set The Time Of Day:

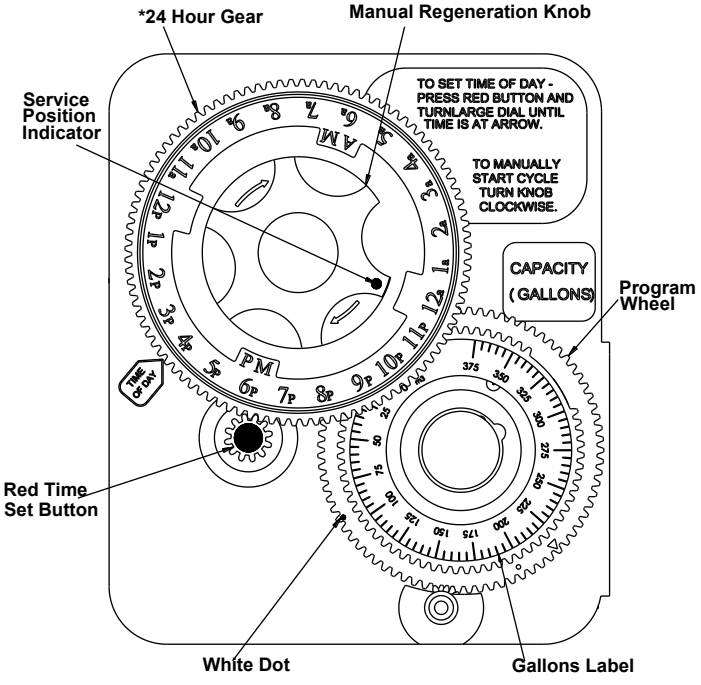
1. Press and hold the red button in to is engage the 24 hour gear.
2. Turn the 24 hour gear until the actual time of day is at the time of day pointer
3. Release the red button to again engage the 24 hour gear.

How To Manually Regenerate Your Water Conditioner At Any Time:

1. Turn the manual regeneration knob clockwise one “click.”
2. This slight movement of the manual regeneration knob engages the program wheel and starts the generation 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.



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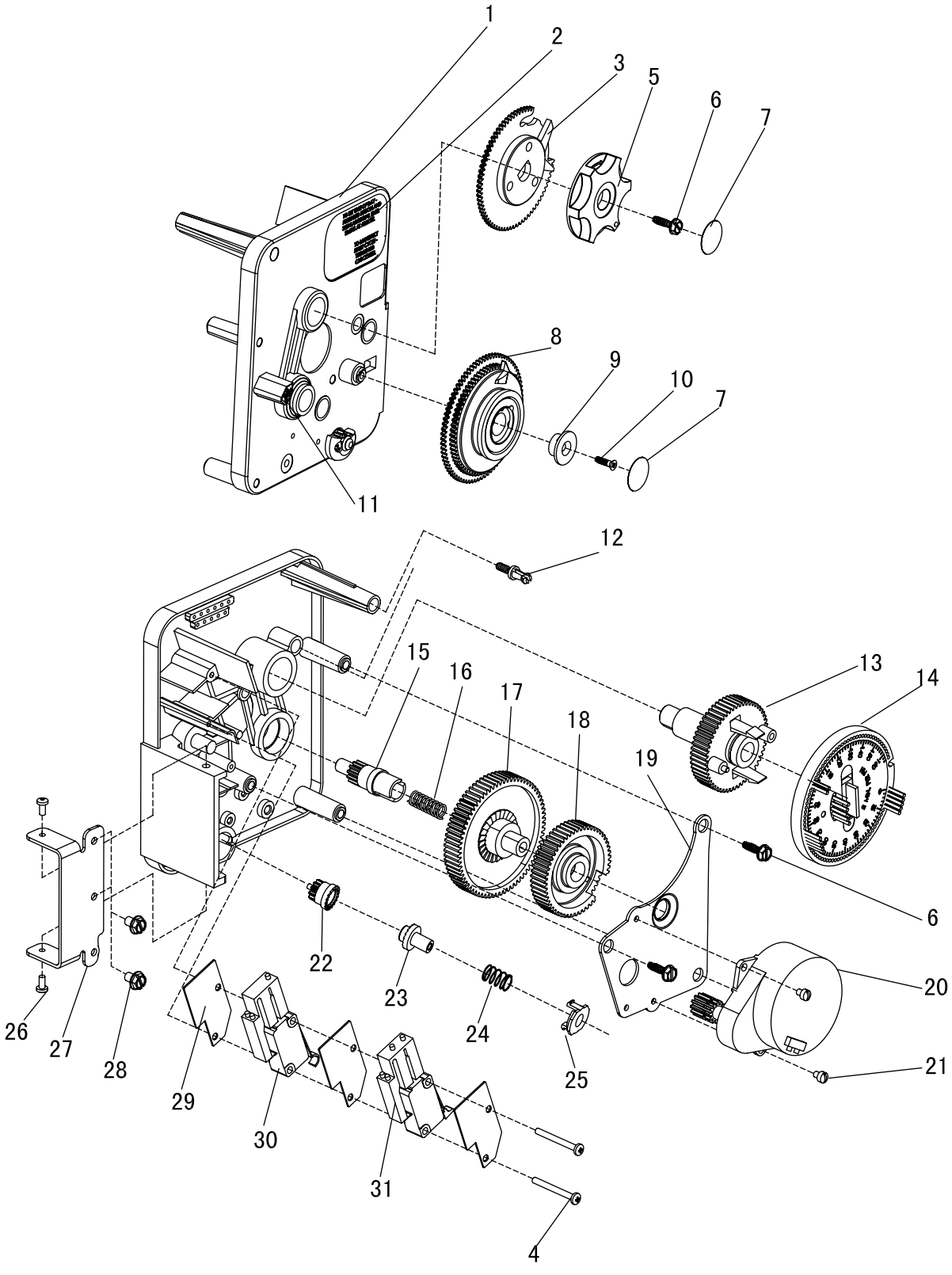
Timer Assembly



MODEL F60

Timer Assembly Parts List

Item No.	Quantity	Part No.	Description
1	1	H13870-01	Timer Housing
2	1	H14045	Decal – Instructions
3	1	H13802	Cycle Actuator Gear
4	2	H11413	Screw - Switch Mounting
5	1	H13886-01	Knob
6	4	H13296	Screw - Timer Knob & Motor Plate Mtg.
7	2	H11999	Button Decal
8	1	H60405-50	Program Wheel Assembly, 21,000
9	1	H13806	Program Wheel Retainer
10	1	H13748	Screw - Program Wheel Mtg.
11	1	H14007	Decal - Time of Day
12	1	H14265	Spring Clip
13	1	H15055	Main Drive Gear
14	1	H19210-05	Program Wheel
15	1	H13018	Idler Shaft
16	1	H13312	Spring - Idler
17	1	H13017	Idler Gear
18	1	H13164	Drive Gear
19	1	H13887	Motor Mounting Plate
20	1	H18743	Motor - 110V., 60 Hz.
		H19659	Motor - 24V., 60 Hz.
		H18824	Motor - 220V., 50 Hz.
21	2	H13278	Screw - Motor Mounting
22	1	H14502	Drive Pinion - Program Wheel
23	1	H14501	Clutch - Drive Pinion
24	1	H14276	Spring
25	1	H14253	Spring Retainer
26	3	H11384	Screw - Timer Hinge & Ground Wire
27	1	H13881	Hinge Bracket
28	2	H66012	Screw
29	3	H14087	Insulator
30	1	H10896	Switch
31	1	H15320	Switch

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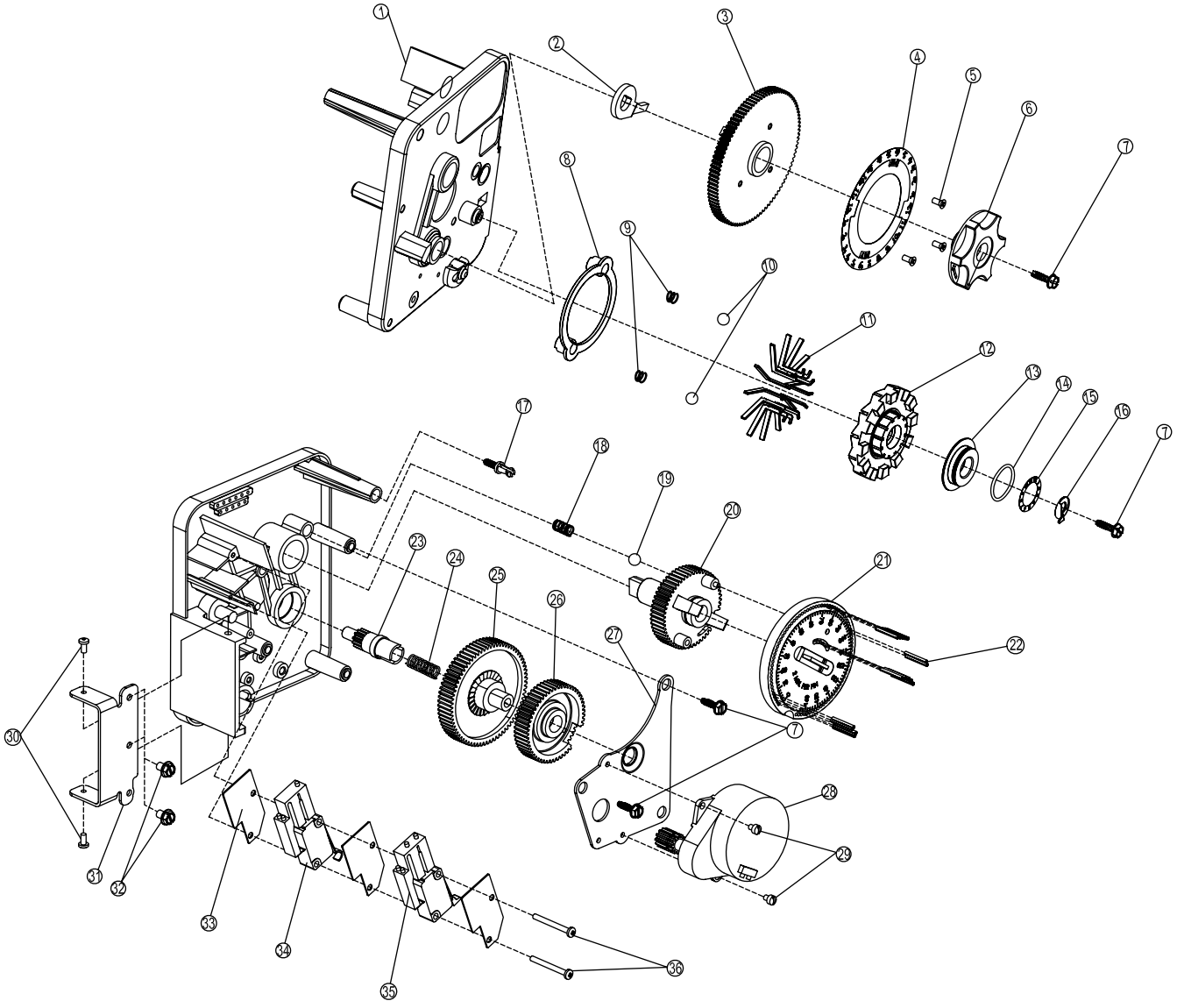
Timer Assembly



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Timer Assembly Parts List

Item No.	Quantity	Part No.	Description
1	1	H13870-01	Timer Housing Assembly
2	1	H13802	Cycle Actuator Gear
3	1	H40096-27	24 Hour Gear Assy, 12 Midnight
		H40096-02	24 Hour Gear Assy, 2 AM
4	1	H52047	Timer Plate
5	3	H66007	Screw
6	1	H13886-01	Knob
7	4	H13296	Screw - Timer Knob & Motor Plate Mtg.
8	1	H13864	Skipper Wheel Ring
9	2	H13311	Spring，Detent，Timer
10	2	H13300	Ball，1/4'' SS
11	12	H52036	Tab
12	1	H14381	Skipper Wheel
13	1	H51073	Ring Plate
14	1	H60027	O-ring18*1.5
15	1	H69054	Labal-SWA
16	1	H51071	Regeneration Pointer
17	1	H14265	Spring Clip
18	1	H15424	Spring - Detent
19	1	H15066	Ball，1/4”Dia
20	1	H13911	Main Drive Gear
21	1	H19210	Program Wheel
22	1	H68000	Roll Pin
23	1	H13018	Idler Shaft
24	1	H13312	Spring - Idler
25	1	H13017	Idler Gear
26	1	H13164	Drive Gear
27	1	H13887	Motor Mounting Plate
28	1	H18743	Motor - 110V., 60 Hz.
		H19659	Motor- 24V., 60 Hz.
		H18824	Motor- 220V., 50 Hz.
29	2	H13278	Screw - Motor Mounting
30	3	H11384	Screw - Timer Hinge & Ground Wire
31	1	H13881	Hinge Bracke
32	2	H66012	Screw
33	3	H14087	Insulator
34	1	H10896	Switch
35	1	H15320	Switch
36	2	H11413	Screw 4-40×1.125

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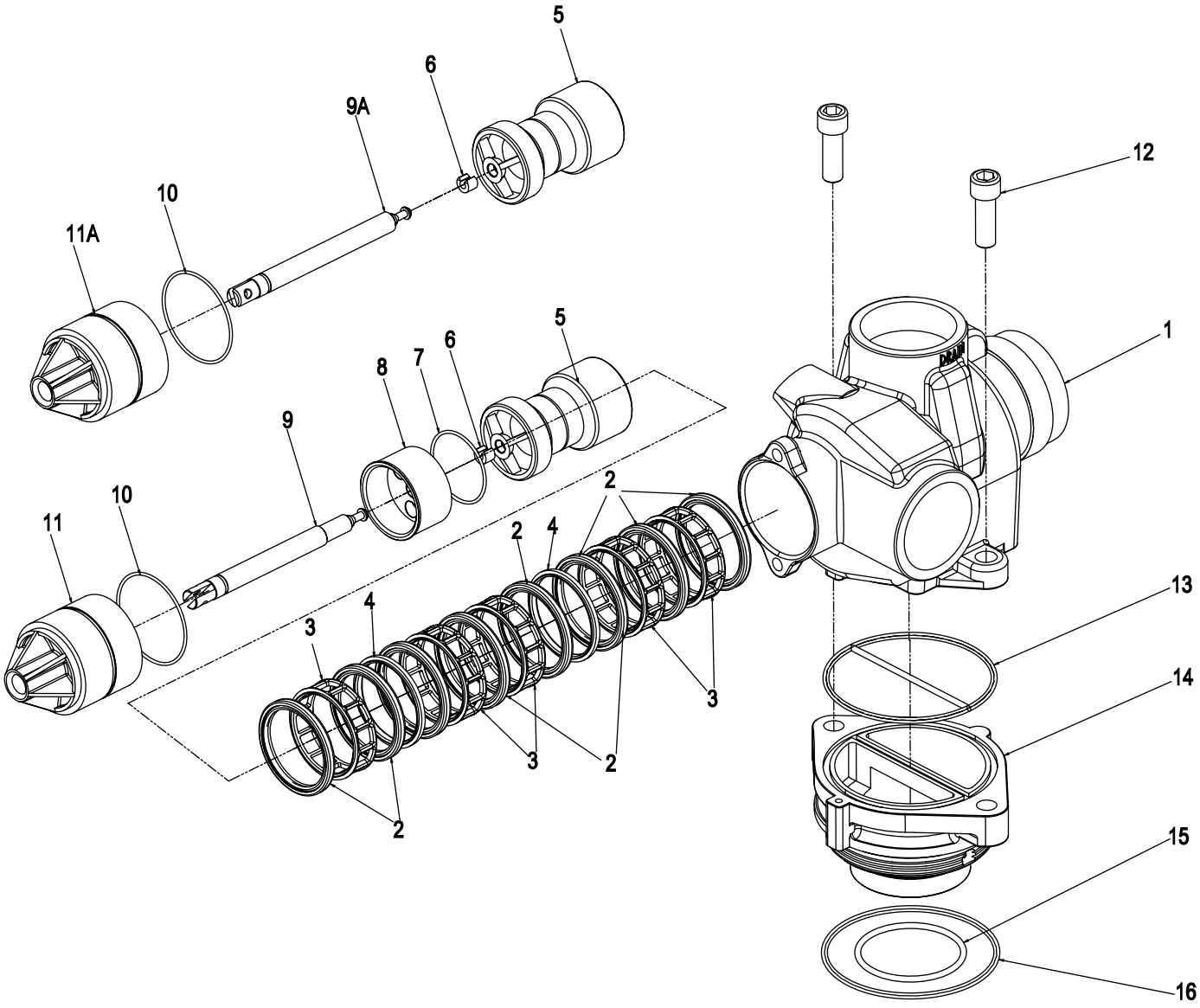
Control Valve Assembly



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Control Valve Parts List

Item No.	Quantity	Part No.	Description
1.	1	H15114	Valve Body
2.	8	H11720	Seal
3.	5	H10369	Spacer - Port
	5	H16141	Spacer - Port Hot Water
4.	2	H10368	Spacer
	2	H10368-01	Spacer - Hot Water
5.	1	H19611-01	Piston . NHWBP
	1	H16130	.Piston
6.	1	H14818	.Clip-Piston Rod
7.	1	H60019	.O-Ring-031
8.	1	H52062	.Piston, F60 Bypass
9.	1	H19708	.Piston Rod, NHWB-P
9A	1	H15125	.Piston Rod
10.	1	H14922	.O-Ring - 035
11.	1	H16398-11	End Plug， Black
11A.	1	H16398-01	End Plug，White
12.	1	H66028	Screw M12×35

Options

13.	1	H15112	Seal
14.	1	H17407	Adapter - Top Mount 4 " - 8 Th'd.
15.	1	H60043	O-Ring – 230
16.	1	H13575	O-Ring – 240

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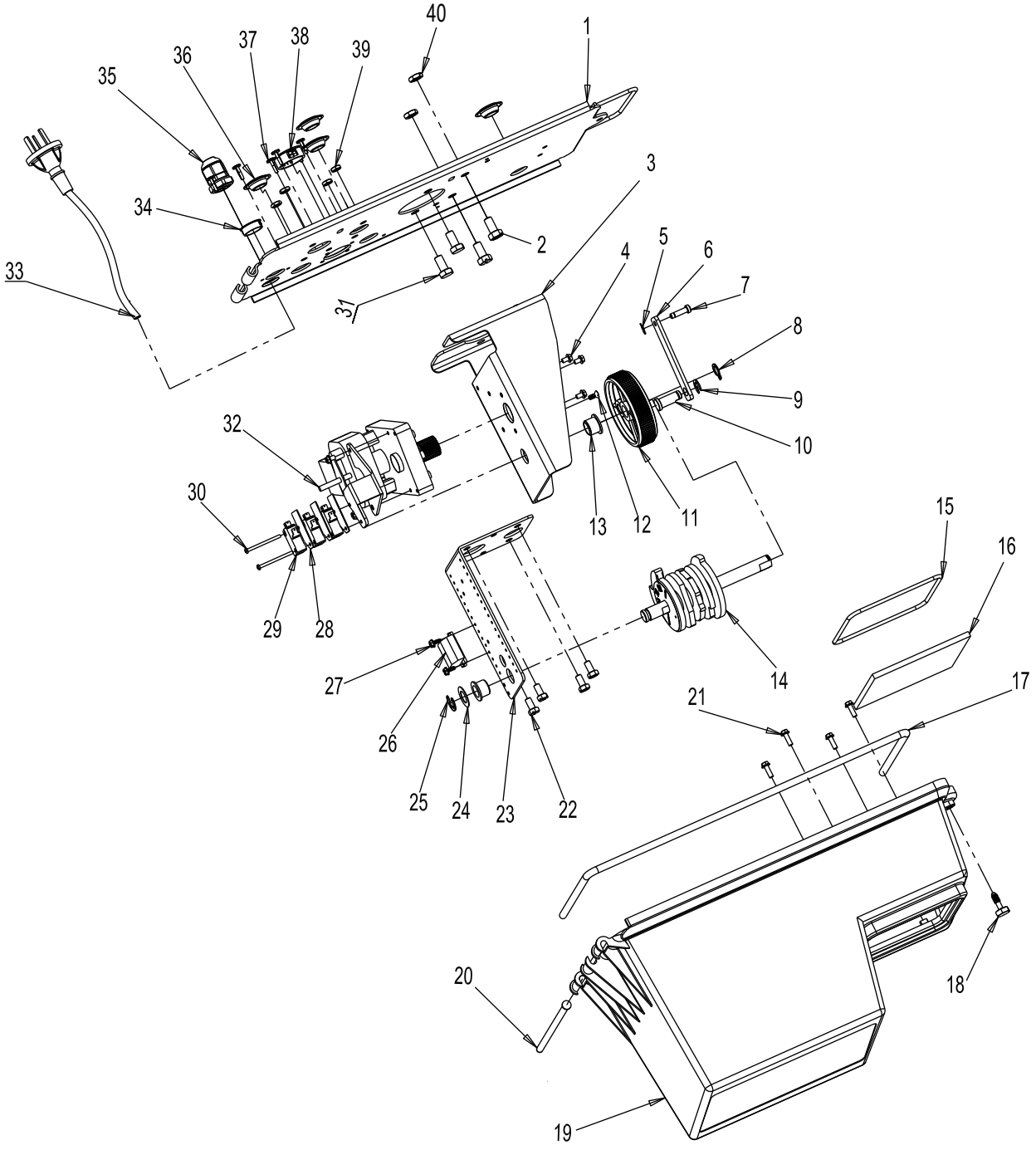
Control Drive Assembly



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Control Drive Assembly Parts List

Item No.	Quantity	Part No.	Description
1	1	H19304-00	Back Plate -01, -02
2	2	H11224	Screw - 5/16-18
3	1	H15120-01	Bracket - Motor Mounting
4	2	H10872	Screw - Hex Hd.
5	1	H16045	clip,F60/F90
6	1	H16047	Drive Link
7	1	H16048	Bearing - Drive Link
8	1	H16050	Retaining Ring
9	1	H11774	Retaining Ring “E”
10	1	H16048	Bearing - Drive Link
11	1	H16046	Drive Gear
12	1	H11080	Screw - Flat Hd.
13	2	H16052	Bushing
14	1	H16494-05	Cam Assembly - Service After RR
	1	H16494-03	Cam Assembly - Service After Brine Refill
15	1	H 18615-02	Seal, Window
16	1	H18745	Window
17	1	H18716-03	Seal, Cover
18	1	H18744	Screw
19	1	H19277-020	Cover, Black
20	1	H17845-03	Pin, Hinge
21	4	H19203	Screw
22	4	H10231	Screw - Hex Hd.1/4-20
23	1	H16053	Bracket - Brine Side
24	1	H16059	Washer
25	1	H16051	Retaining Ring - Bowed “E”
26	1	H15226-*	Terminal Block
27	2	H40133	Screw - Round Hd.
28	3	H10302	Insulator - Switch
29	3	H10218	Switch
30	2	H12624	Screw - Pan Hd.
31	2	H11224	Screw - Hex Hd.5/16-18
32	1	H40390	Drive Motor - 220 V. 50 Hz.
		H40391	Drive Motor - 24 V. 60 Hz.
33	1	H40084-12	Power Cord, 120V, 12FT
34	1	H19691	Plug – 3/4 Hole,Recessed,Black
35	1	H17967	Strain Relief
36	2	H19591	Plug - 7/8 Hole,Recessed,Black
37	1	H17421	Plug,1.20 Hole
38	10	H19800	Plug,0.14Dia,White
39	4	H11235	Nut - 1/4-20
40	2	H16346	Nut - 5/16-18

*Specify number of terminals

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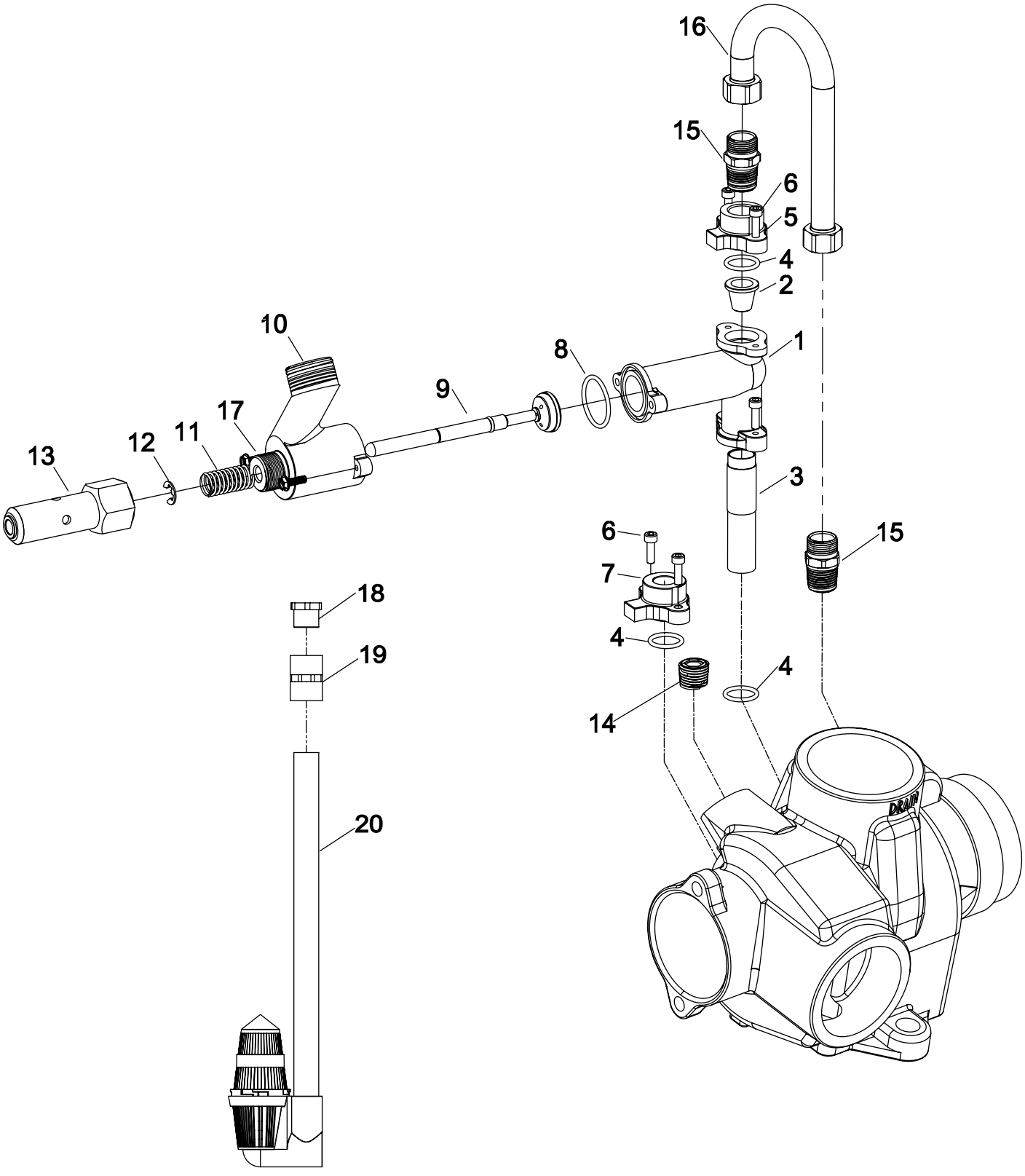
1800 Series Brine System Assembly



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1800 Series Brine System Assembly Parts List

Item No.	Quantity	Part No.	Description
1	1	H16340	Injector Body
2	1	H15128-?	Injector Nozzle
3	1	H15127-?	Injector Throat
4	3	H15246	O-Ring - 116
5	1	H16341-01	Injector Cover
6	6	H12473	Screw - Hex Hd.
7	1	H16341-02	Cover
8	1	H18879	O-Ring - 124
9	1	H16497-01	Brine Stem Assembly
10	1	H18713	Brine Valve Body
11	1	H11772	Spring
12	1	H11774	Retaining Ring
13	1	H16498-01	Stem Guide Assembly
14	1	H16387	Pipe Plug - 1/2 NPT
15	2	H18702	Tube Fitting - Straight
16	1	H18703	Brine Tube
17	2	H66005	Screw
18	1	H16976	1” Slip to 3/4” Reducer
19	1	H16975	1”Female NPT x 1”Slip
20	1	H60009-00	Air Check #900

Option Without Brine Valve

H15246	O-Ring - 116
H16341-02	Cover
H16387	Pipe Plug - 1/2 NPT

Delete: Items 9 thru 16

Injector Throat

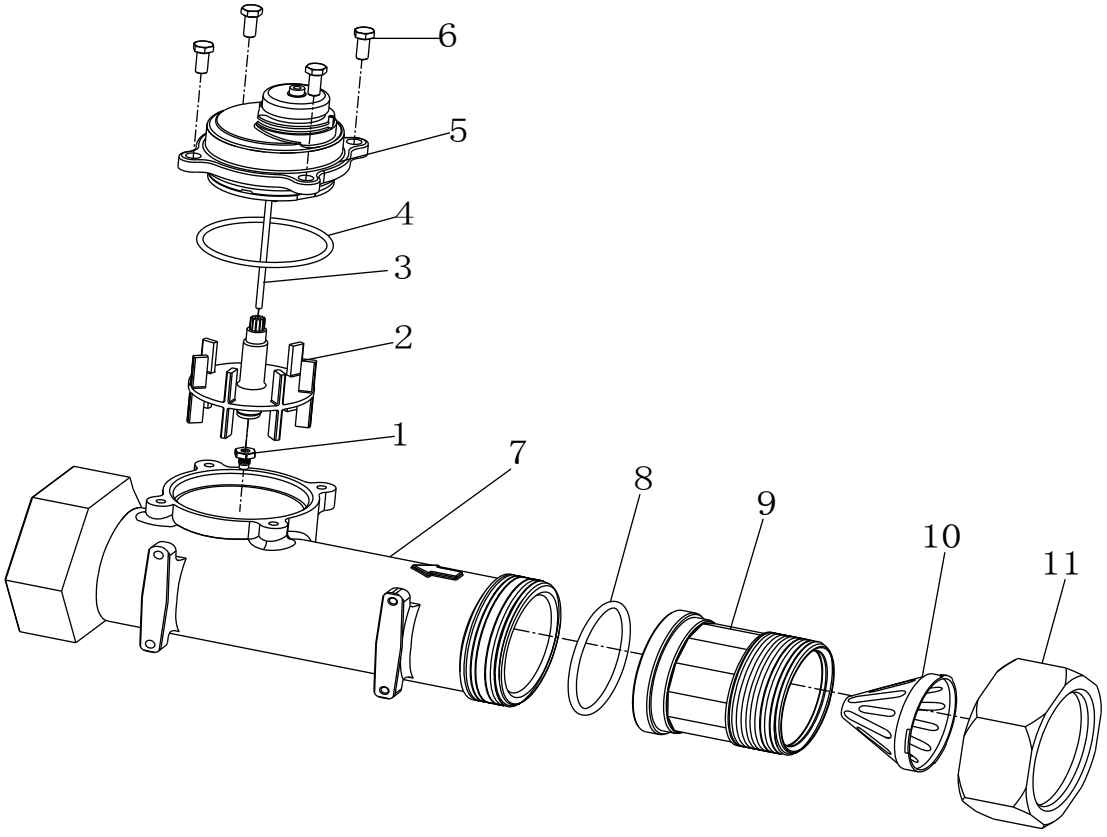
H15127-04	#4	Green
H15127-05	#5	Red
H15127-06	#6	White
H15127-07	#7	Blue
H15127-08	#8	Yellow
H15127-09	#9	Violet
H15127-10	#10	Black

Injector Nozzle

H15128-04	#4	Green
H15128-05	#5	Red
H15128-06	#6	White
H15128-07	#7	Blue
H15128-08	#8	Yellow
H15128-09	#9	Violet
H15128-10	#10	Black

MODEL F60

2”Brass Meter Assembly & Parts List



Item No.	Quantity	Part No.	Description
1	1	H15532	Impeller Shaft Retainer
2	1	H15374	Impeller
3	1	H15432	Impeller Shaft
4	1	H13847	O-Ring – 137,Std/560CD,Meter
5	1	H15237	Meter Cover Assembly (Extened Range)
6	4	H12112	Screw – Hex Hd ,M5×12
7	1	H14456	Meter Body
8	1	H14679	O-Ring – 227,Meter
9	1	H14568	Nipple - Quick Connect
10	1	H14680	Flow Straightener
11	1	H14569	Nut - Quick Connect

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

PROBLEM	CAUSE	CORRECTION
7. Excessive water in brine tank	A. Plugged drain line flow control. B. Plugged injector system. C. Timer not cycling. D. Foreign material in brine valve. E. Foreign material in brine line flow control.	A. Check flow control. B. Clean injector and screen. C. Replace timer. D. Replace brine valve seat and clean valve. E. Clean brine line flow control.
8. Softener fails to draw brine.	A. Drain line flow control is plugged. B. Injector is plugged. C. Line pressure is too low. D. Internal Control Leak.	A. Clean drain line flow control. B. Clean injector. C. Increase line pressure to 25 P.S.I. min. D. Check drive motor and switches.
9. Control cycles continuously.	A. Missadjusted, 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. B. Foreign material in control. C. Internal control leak	A. Check timer program and positioning of control. Replace power head assembly if not positioning properly. B. Remove power head assembly and inspect bore, remove foreign material and check control in various regeneration positions. C. Replace seals and piston assembly.

General Service Hints

Problem: Softener Delivers Hard Water.

Cause could be that . . . Reserve Capacity Has Been Exceeded.

Correction: Check salt dosage requirements and reset program wheel to provide additional reserve.

Cause could be that . . . 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.

Cause could be that . . . Meter Is Not Measuring Flow.

Correction: Check meter with meter checker.

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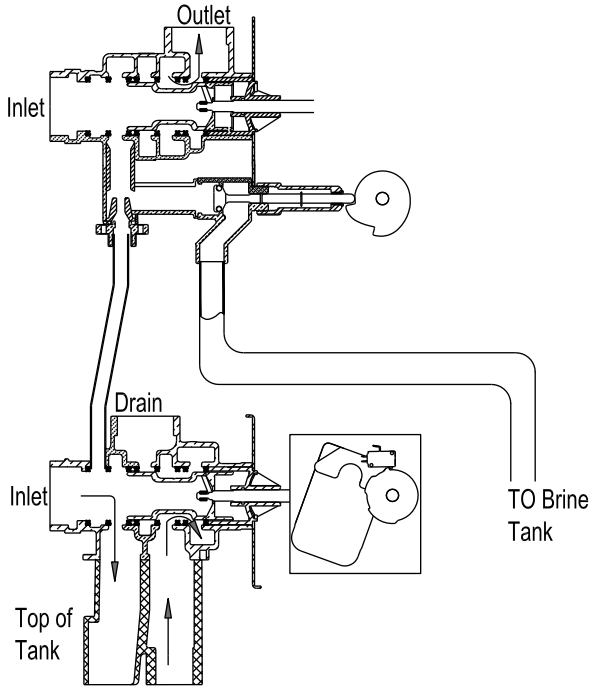
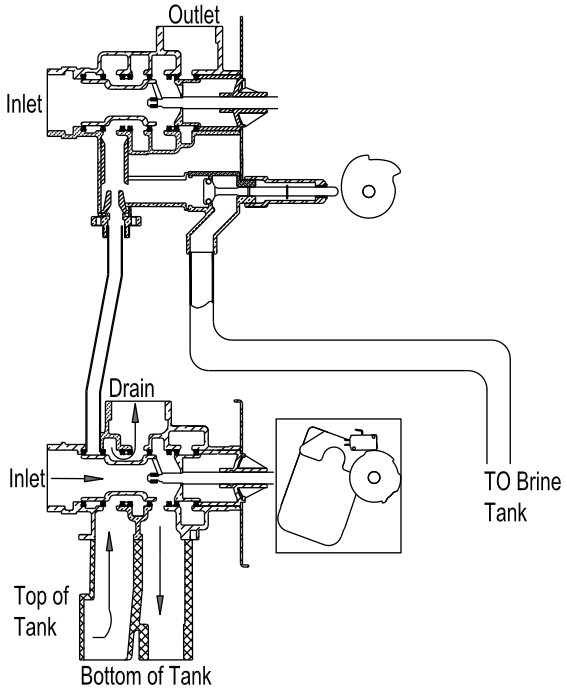
Water Conditioner Flow Diagrams

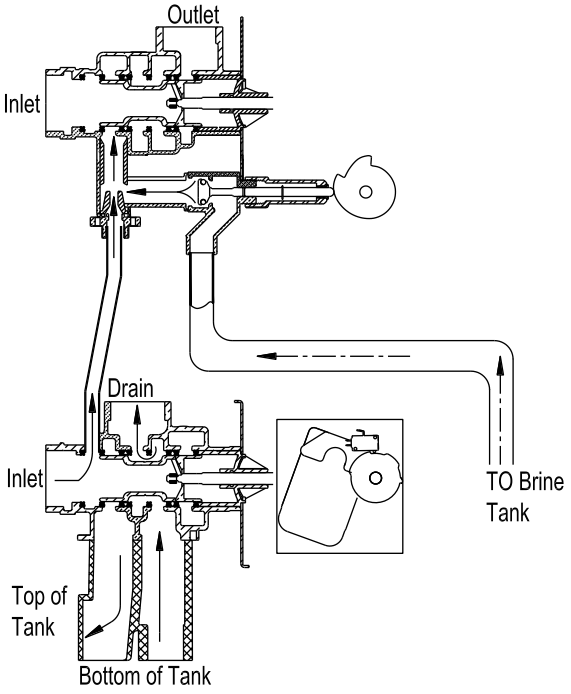
1. Service Position



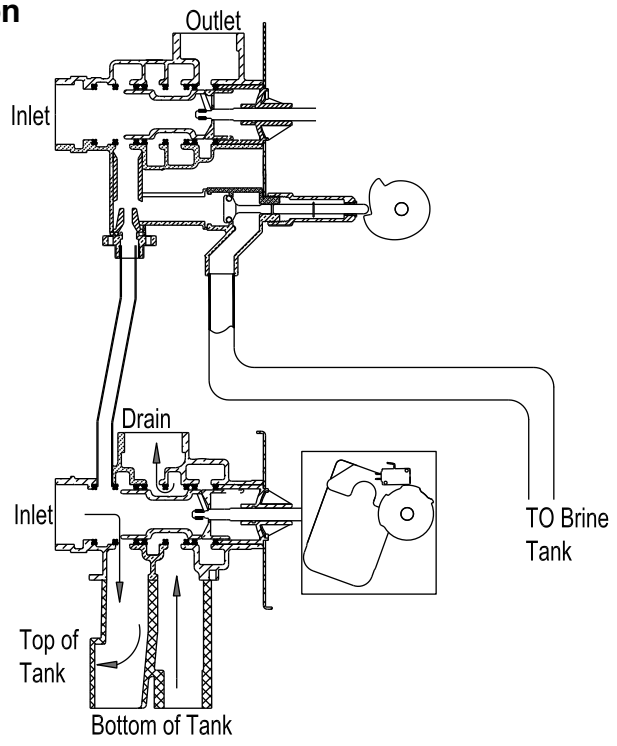
2. Backwash Position



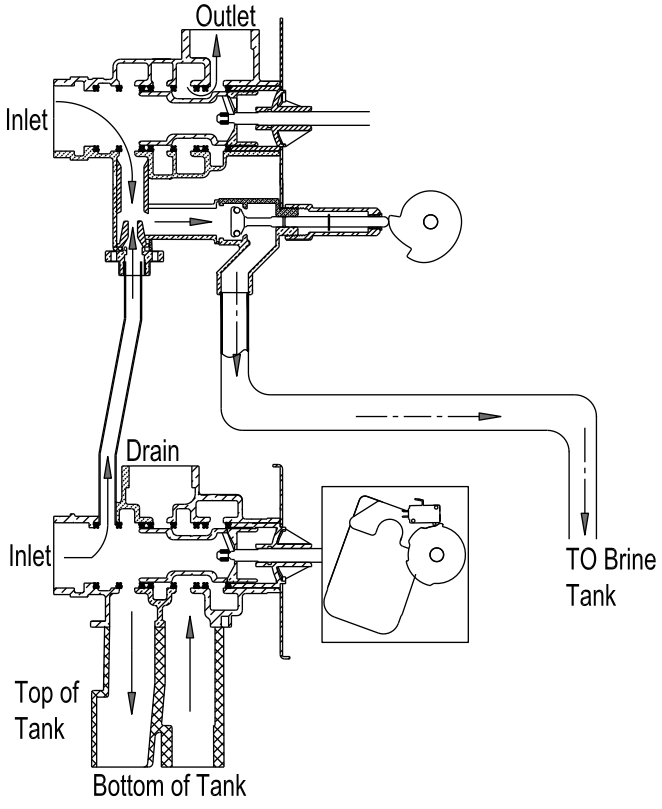
3. Brine and Slow Rinse Position



4 Rapid Rinse Position



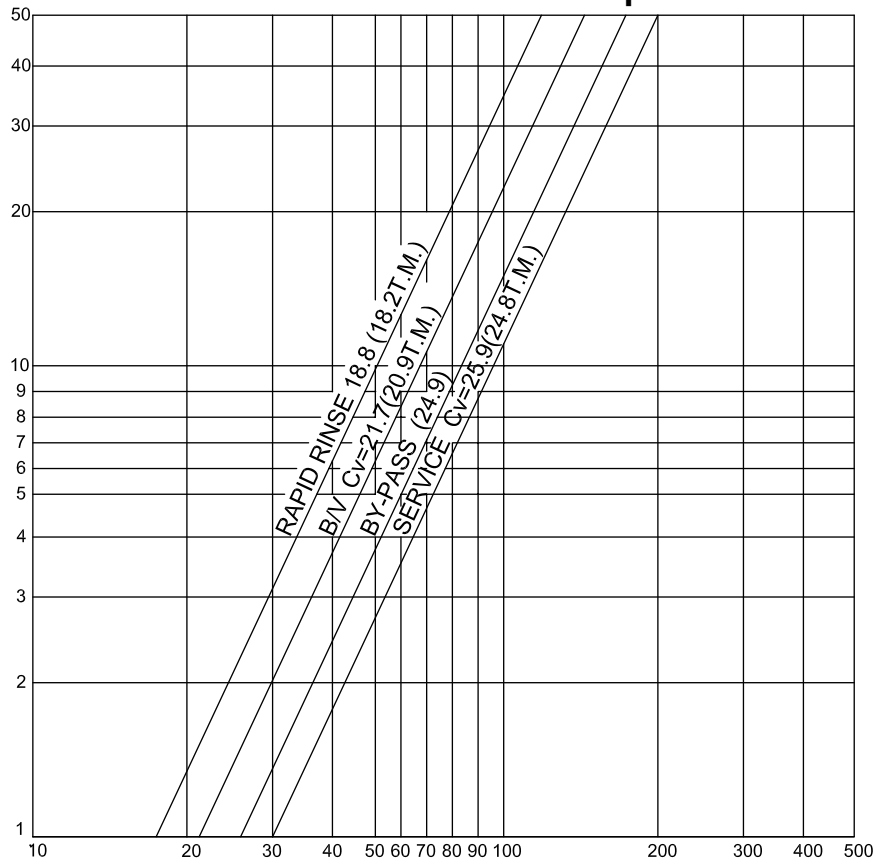
5 Brine Tank Refill Position



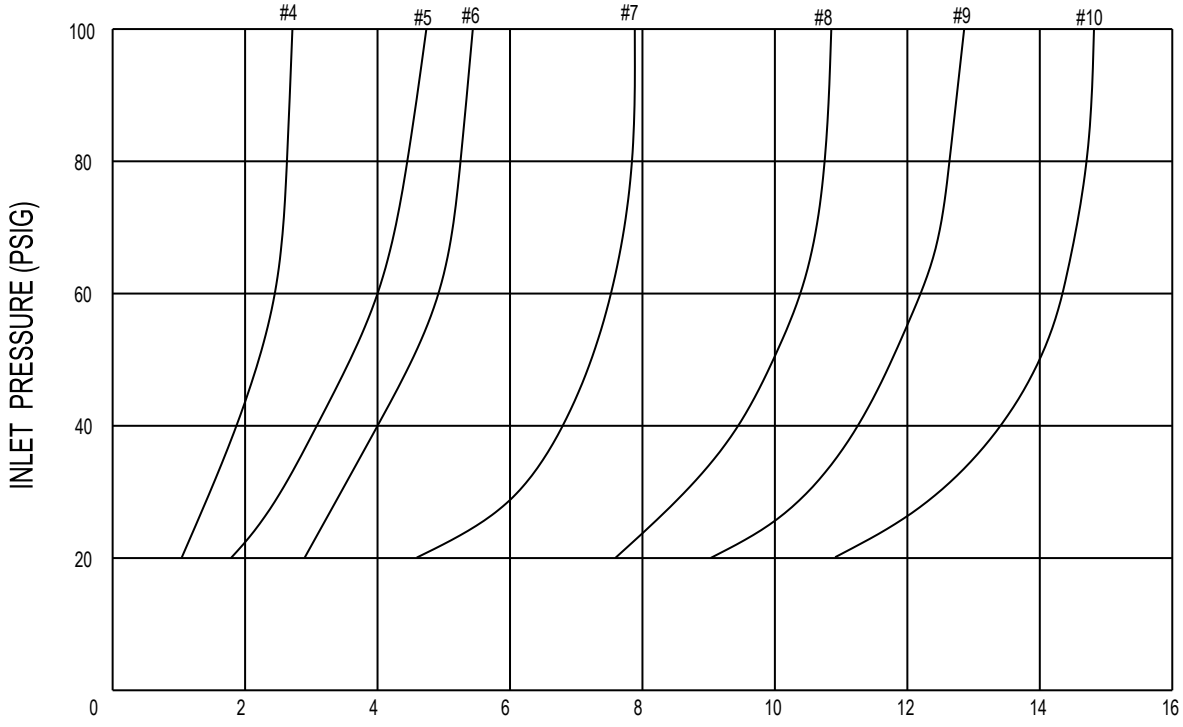
MODEL F60 Downflow

Flow Data & Injector Draw Rates

F60 Vavle side Mount & Top Mount



F60 on Empty Tank



MODEL F60 Downflow

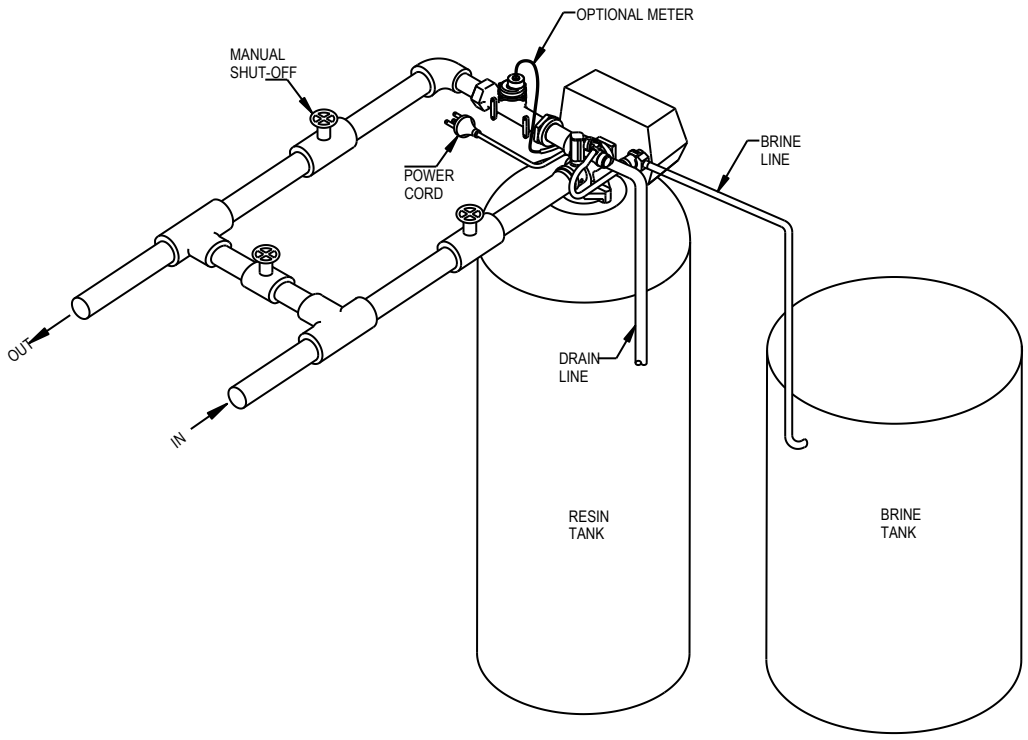
Typical Timer Settings

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

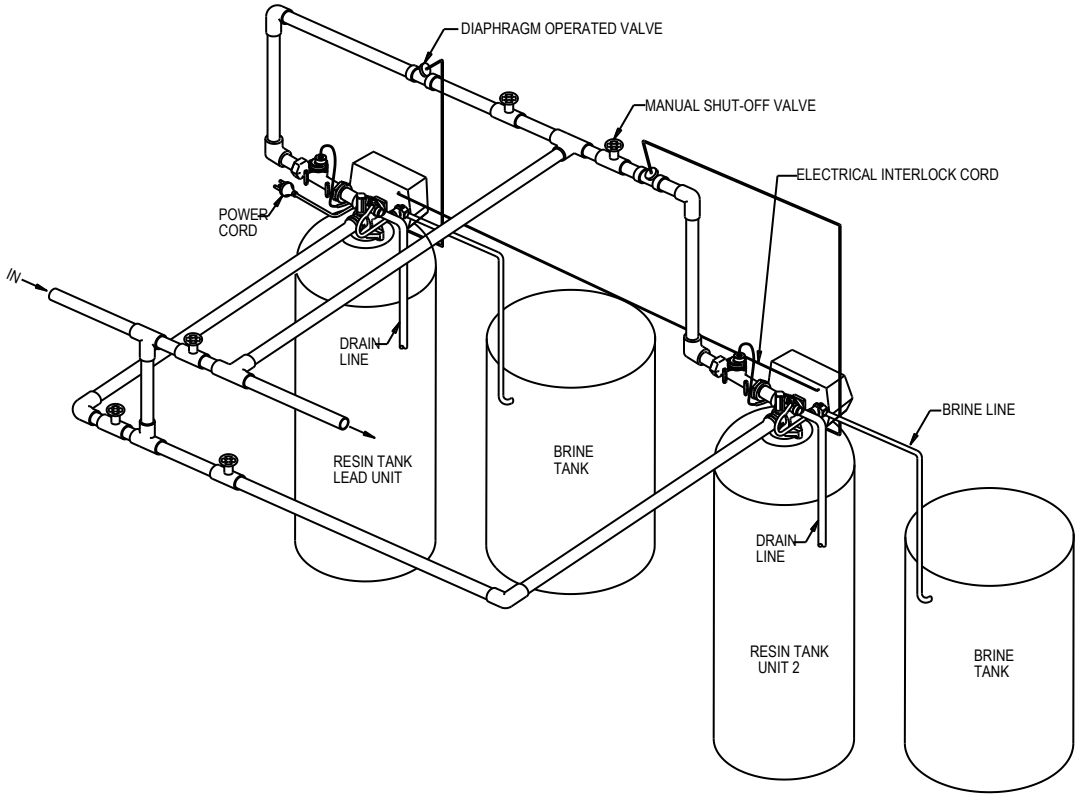
SAFETY BRINE VALVE

48" / 42Ft3	70	10	8	34	34	34	56	56	56	76	76	76	10	10	9	16	22
54" / 55Ft3	80	10	9	40	34	34	60	50	50	90	76	76	10	10	12	18	28
60" / 70Ft3	100	10	10	46	36	34	68	54	52	102	80	78	10	10	16	24	32

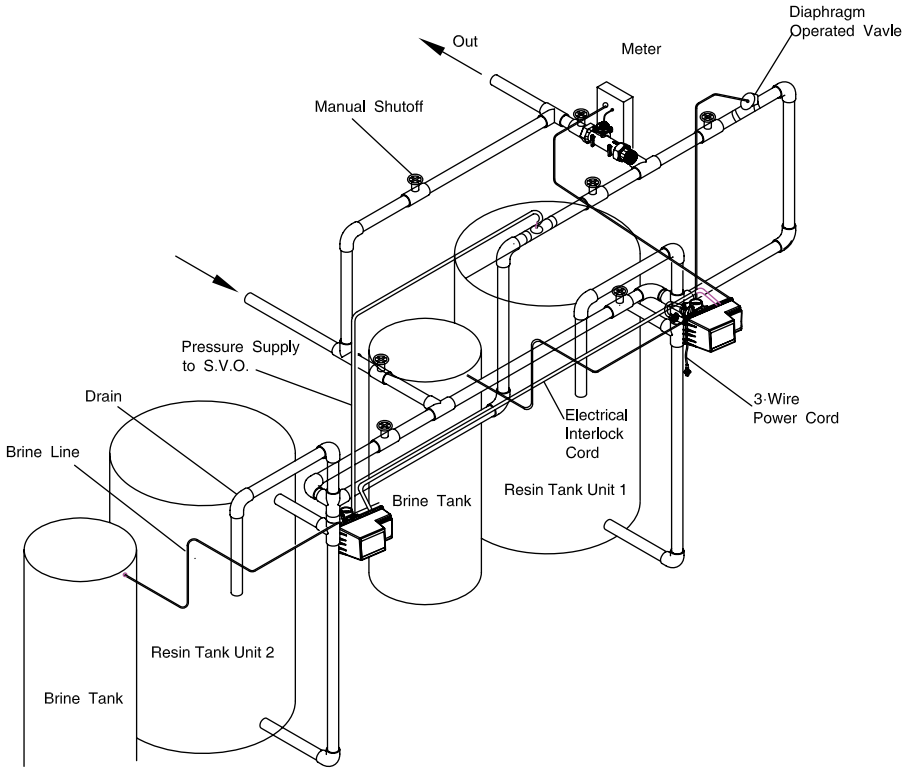
System #4 - Typical Single Tank Installation With Optional Meter



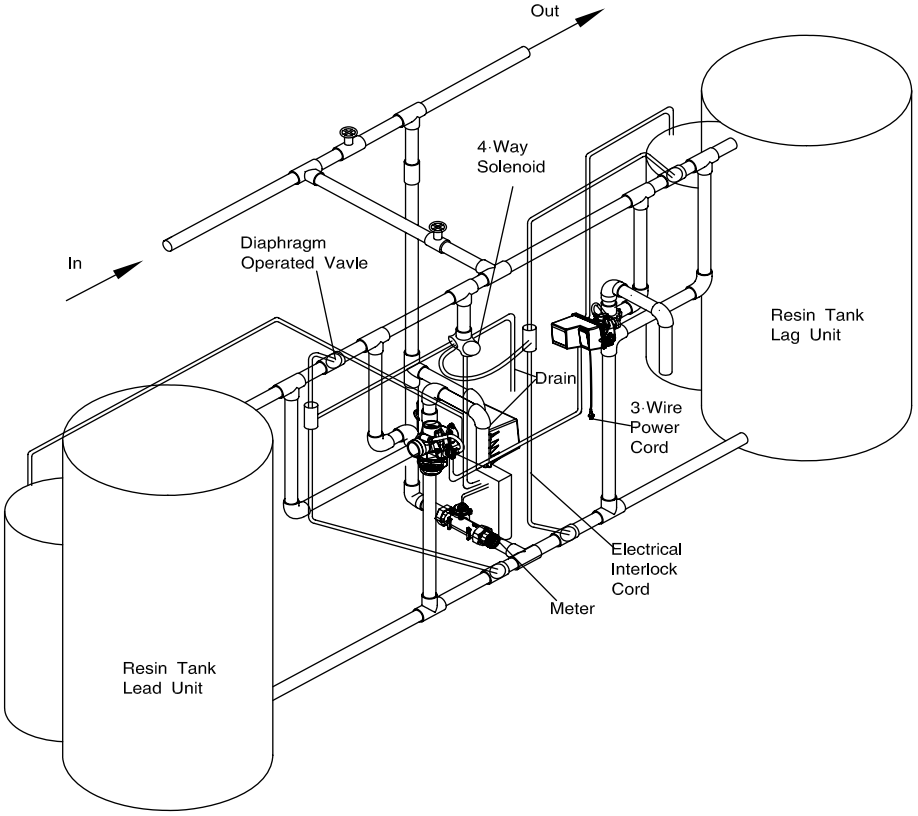
System #5 Interlock - Typical Twin Tank Installation with Optional Meter Interlock and No Hard Water Bypass



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

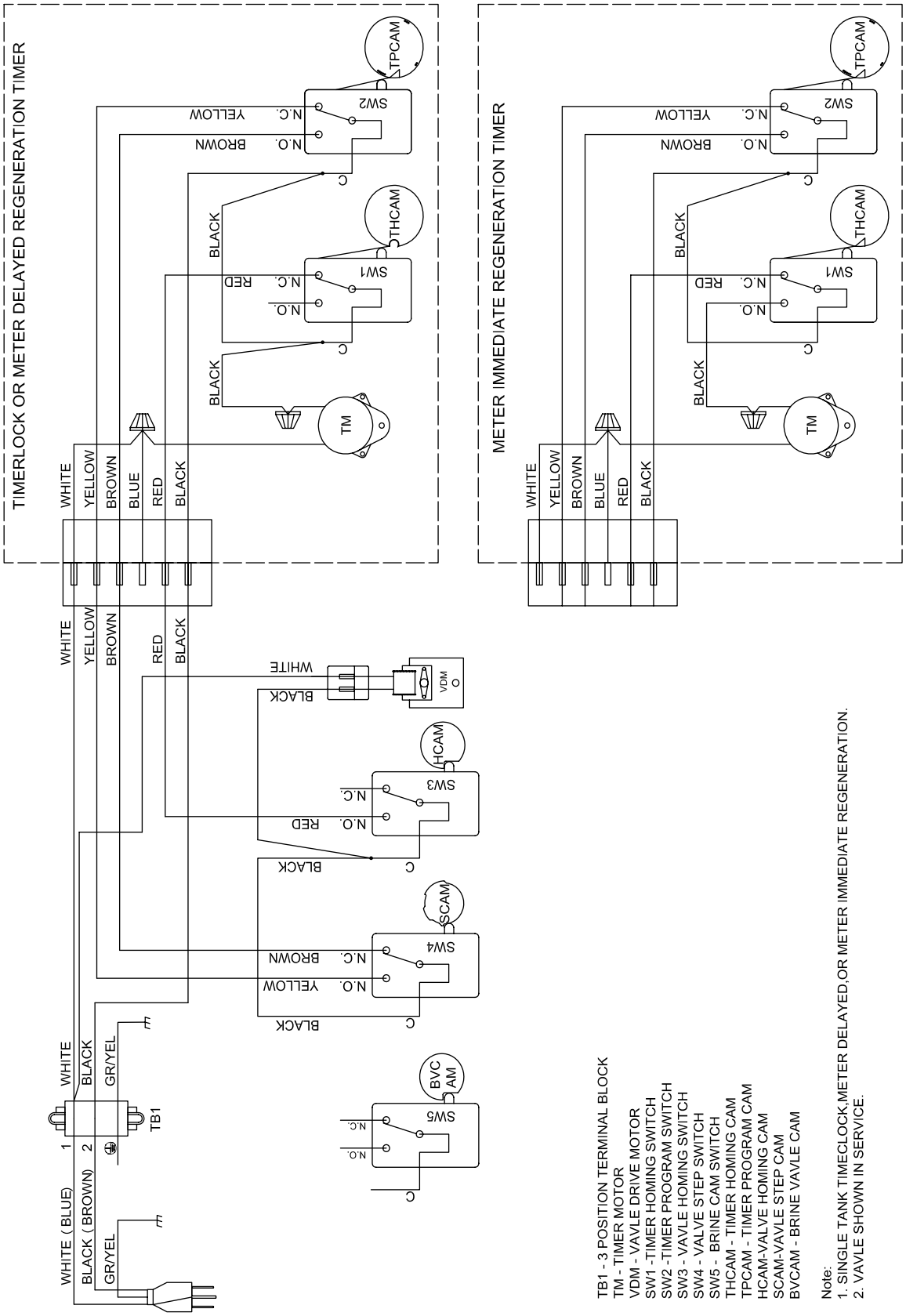


System #7 - Twin Alternator Installation with a Remote Meter



MODEL F60

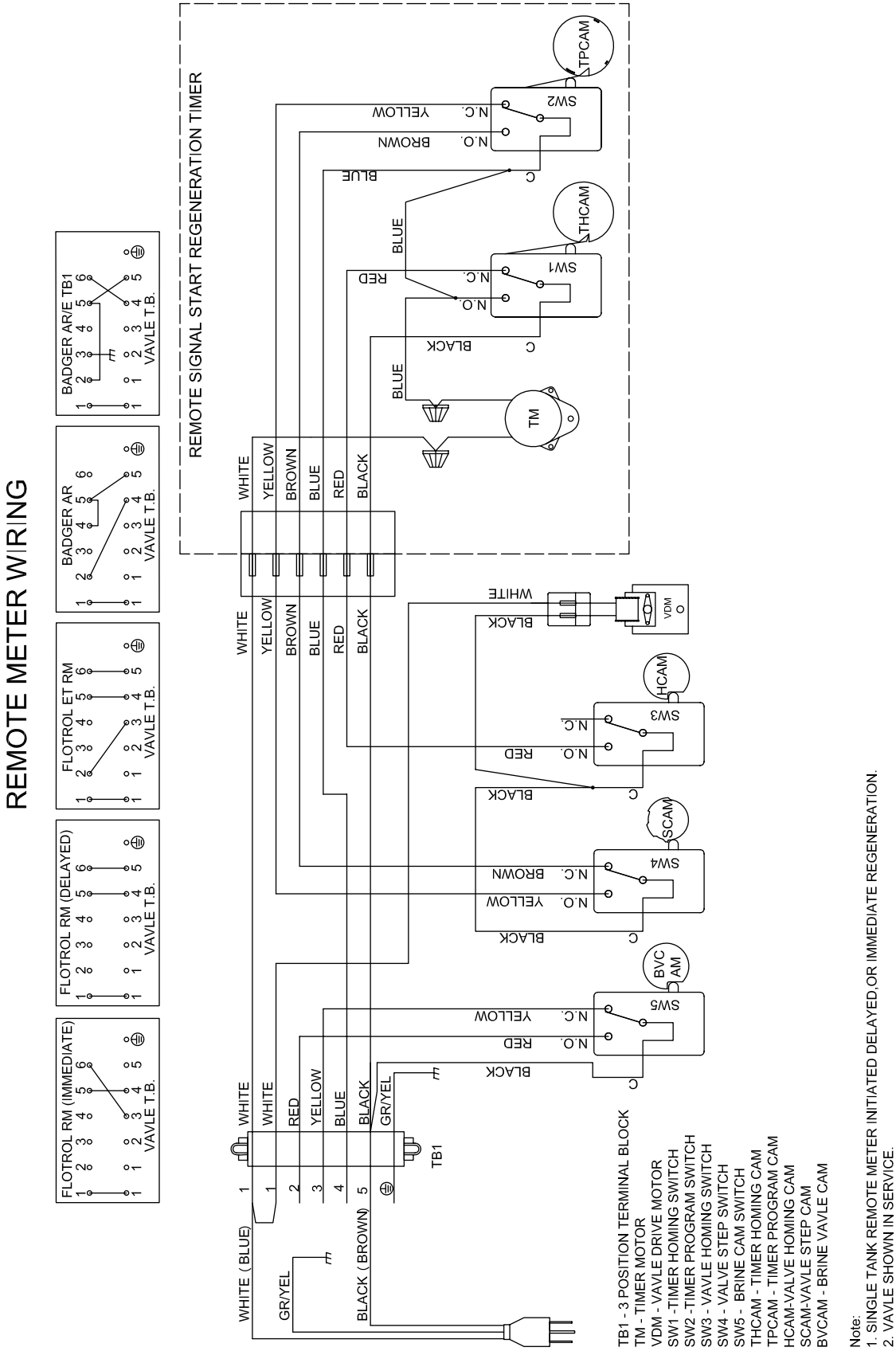
F60 System #4 Valve Wiring



TB1 - 3 POSITION TERMINAL BLOCK
TM - TIMER MOTOR
VDM - VAVLE DRIVE MOTOR
SW1 - TIMER HOMING SWITCH
SW2 -TIMER PROGRAM SWITCH
SW3 - VAVLE HOMING SWITCH
SW4 - VALVE STEP SWITCH
SW5 - BRINE CAM SWITCH
THCAM - TIMER HOMING CAM
TPCAM - TIMER PROGRAM CAM
HCAM-VALVE HOMING CAM
SCAM-VAVLE STEP CAM
BVCAM - BRINE VAVLE CAM

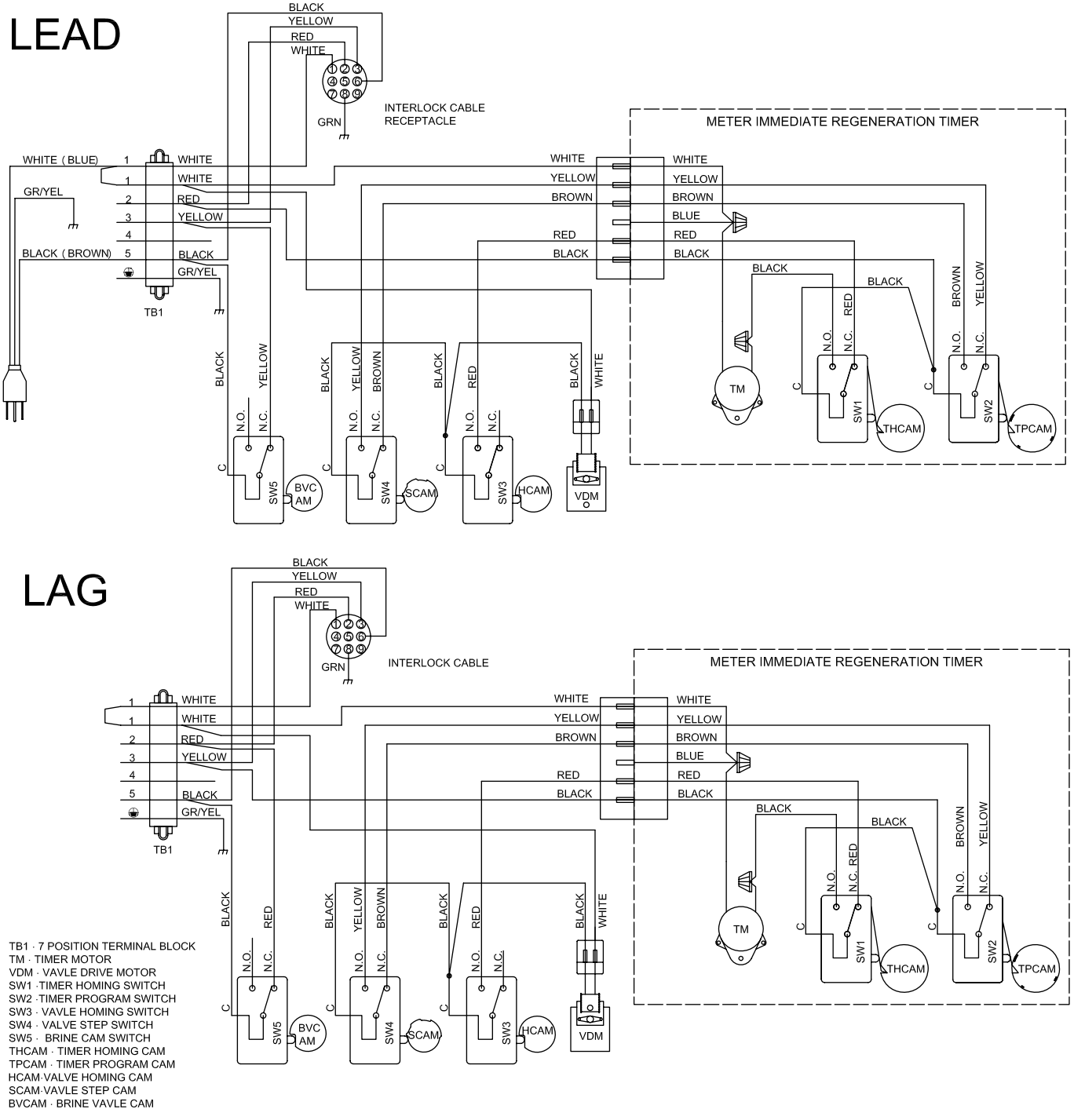
Note:
1. SINGLE TANK TIMECLOCK,METER DELAYED,OR METER IMMEDIATE REGENERATION.
2. VAVLE SHOWN IN SERVICE.

F60 System #4 With Remote Meter Valve Wiring



MODEL F60

F60 System #5 Valve Wiring

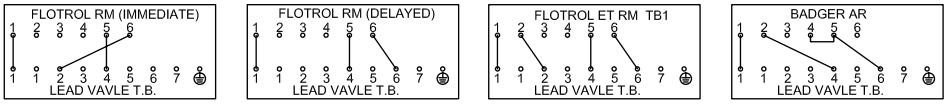


TB1 · 7 POSITION TERMINAL BLOCK
TM · TIMER MOTOR
VDM · VAVLE DRIVE MOTOR
SW1 ·TIMER HOMING SWITCH
SW2 ·TIMER PROGRAM SWITCH
SW3 · VAVLE HOMING SWITCH
SW4 · VALVE STEP SWITCH
SW5 · BRINE CAM SWITCH
THCAM · TIMER HOMING CAM
TPCAM · TIMER PROGRAM CAM
HCAM·VALVE HOMING CAM
SCAM·VAVLE STEP CAM
BVCAM · BRINE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

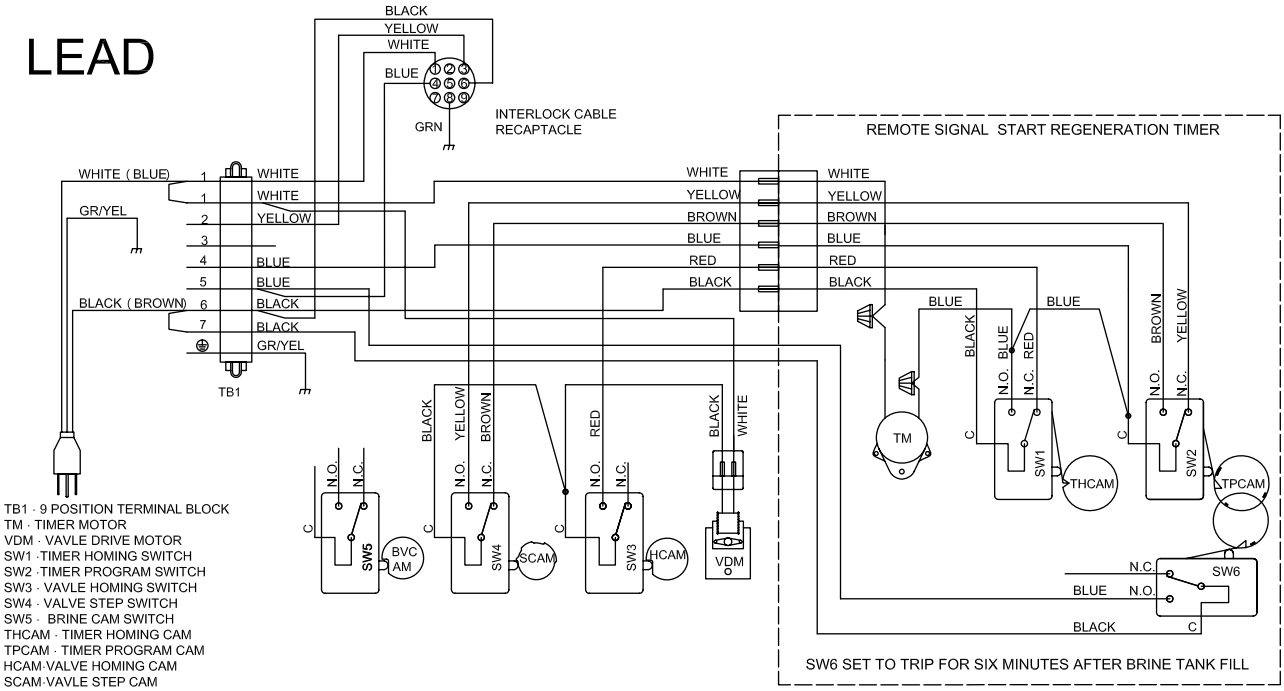
Note:
1.TWO TANKS INTERLOCKED,INDIVIDUAL METER,IMMEDIATE REGENERATION.
2. BOTH TANKS NORMALLY IN SERVICE.
3. ONLY ONE TANK IN REGENERATION,THE OTHER REMAINS IN SERVICE.
4.VAVLE SHOWN IN SERVICE POSITION.

F60 System #6 Duplex Valve Wiring

REMOTE METER WIRING



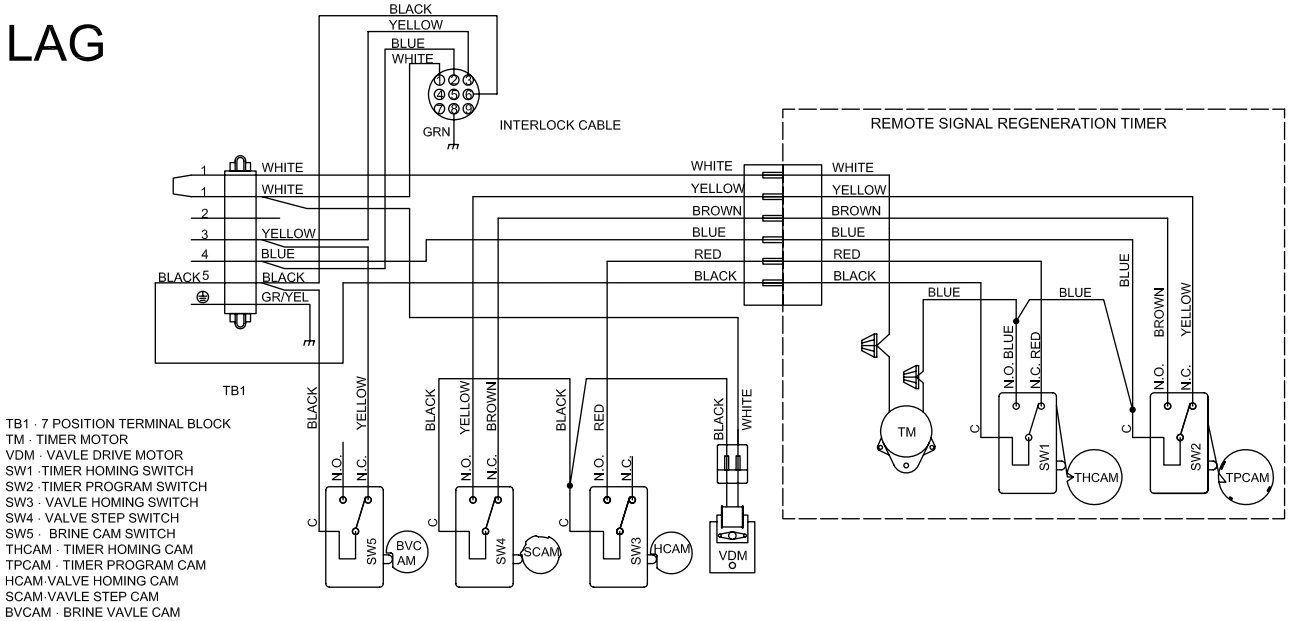
LEAD



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

Note:
1.TWO TANKS 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 REGENERATION FIRST,FOLLOWED IMMEDIATELY BY LAG VALVE
5.VAVLE SHOWN IN SERVICE.

LAG

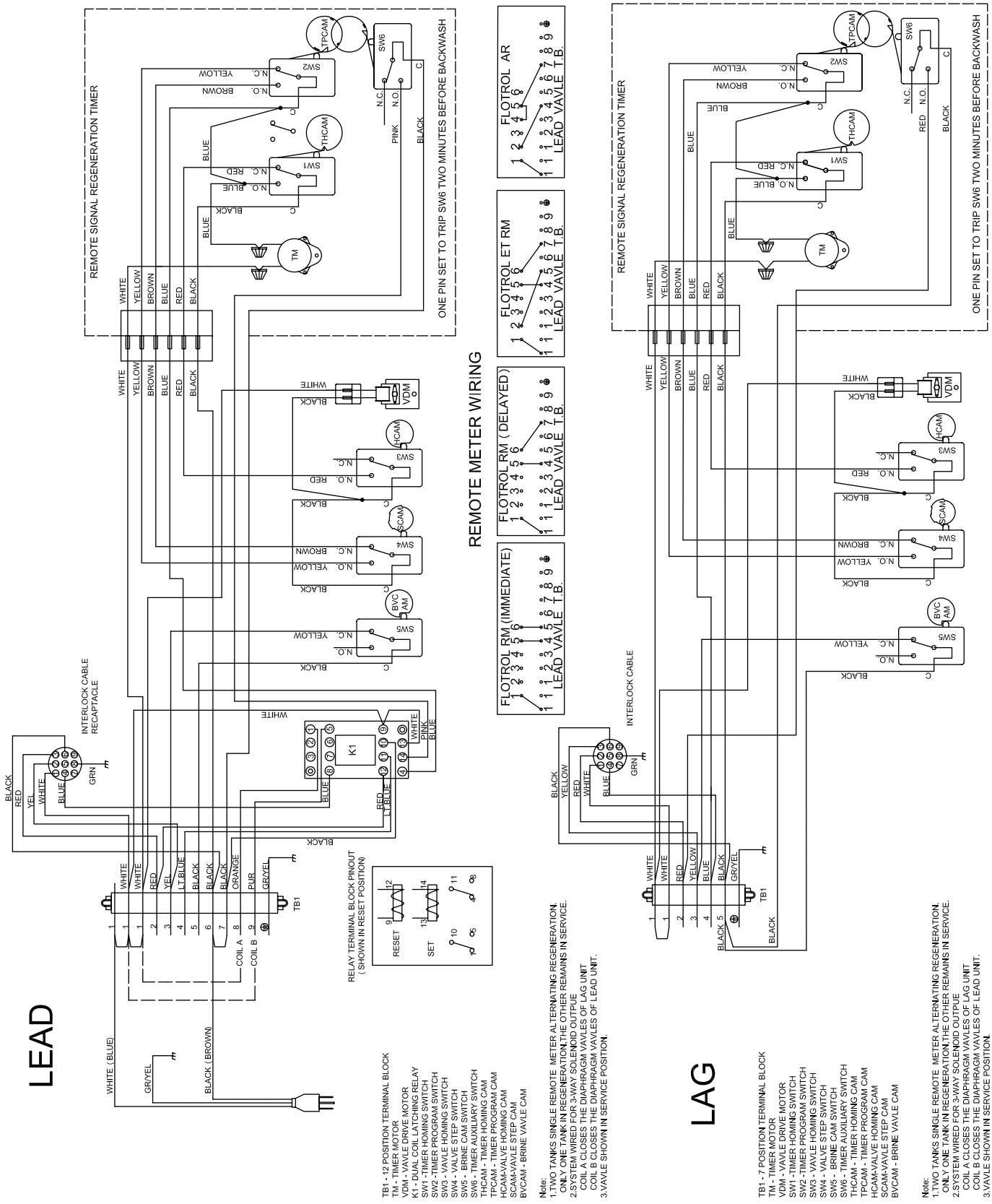


TB1 · 7 POSITION TERMINAL BLOCK
TM · TIMER MOTOR
VDM · VAVLE DRIVE MOTOR
SW1 ·TIMER HOMING SWITCH
SW2 ·TIMER PROGRAM SWITCH
SW3 · VAVLE HOMING SWITCH
SW4 · VALVE STEP SWITCH
SW5 · BRINE CAM SWITCH
THCAM · TIMER HOMING CAM
TPCAM · TIMER PROGRAM CAM
HCAM·VALVE HOMING CAM
SCAM·VAVLE STEP CAM
BVCAM · BRINE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

Note:
1.TWO TANKS 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 REGENERATION FIRST,FOLLOWED IMMEDIATELY BY LAG VALVE
5.VAVLE SHOWN IN SERVICE.

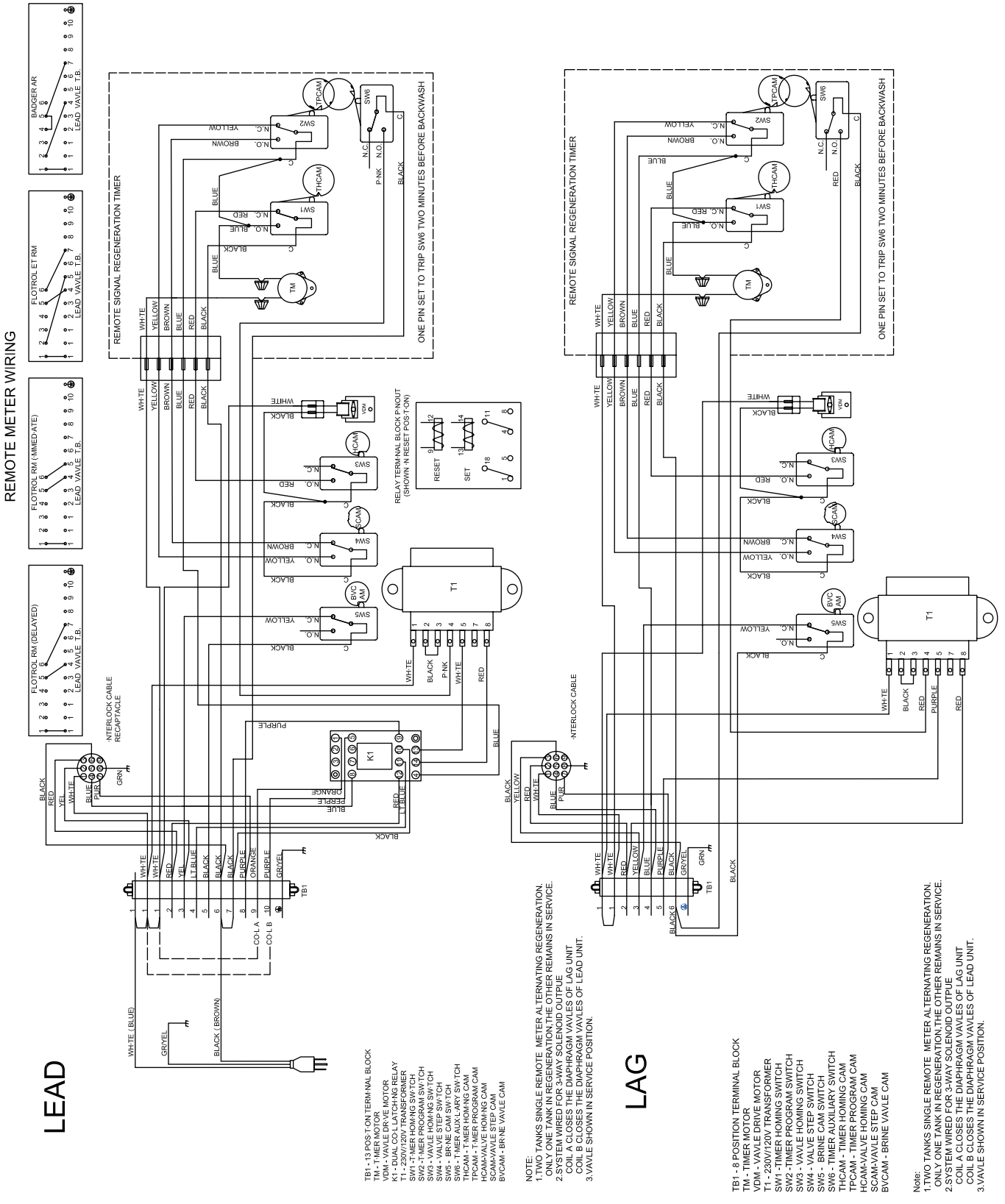
MODEL F60

System #7 Duplex F60 24V/120V Valve Wiring



MODEL F60

System #7 Duplex 230V 3-Way Valve Wiring



TB1 - 13 POSITION TERMINAL BLOCK
TM - TIMER MOTOR
VDM - VAVLE DRIVE MOTOR
K1 - 230V COIL CONTROL RELAY
T1 - 230V/120V TRANSFORMER
SW1 - TIMER HOMING SWITCH
SW2 - TIMER PROGRAM SWITCH
SW3 - VAVLE 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-VAVLE STEP CAM
BVCAM - BRINE VAVLE CAM

NOTE:
1.TWO TANKS SINGLE REMOTE METER ALTERNATING REGENERATION.
ONLY ONE TANK IN REGENERATION,THE OTHER REMAINS IN SERVICE.
2.SYSTEM WIRED FOR 3-WAY SOLENOID OUTPUT
COIL A CLOSES THE DIAPHRAGM VAVLES OF LAG UNIT.
COIL B CLOSES THE DIAPHRAGM VAVLES OF LEAD UNIT.
3.VAVLE SHOWN IN SERVICE POSITION.

TB1 - 8 POSITION TERMINAL BLOCK
TM - TIMER MOTOR
VDM - VAVLE DRIVE MOTOR
T1 - 230V/120V TRANSFORMER
SW1 - TIMER HOMING SWITCH
SW2 - TIMER PROGRAM SWITCH
SW3 - VAVLE 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-VAVLE STEP CAM
BVCAM - BRINE VAVLE CAM

Note:
1.TWO TANKS SINGLE REMOTE METER ALTERNATING REGENERATION.
ONLY ONE TANK IN REGENERATION,THE OTHER REMAINS IN SERVICE.
2.SYSTEM WIRED FOR 3-WAY SOLENOID OUTPUE
COIL A CLOSES THE DIAPHRAGM VAVLES OF LAG UNIT.
COIL B CLOSES THE DIAPHRAGM VAVLES OF LEAD UNIT.
3.VAVLE SHOWN IN SERVICE POSITION.

Notes

Notes