



Fleck 3900

Service Manual

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JOB SPECIFICATION SHEET

Job Number: _____
Model Number: _____
Water Hardness: _____ ppm or gpg
Capacity Per Unit: _____
Mineral Tank Size: _____ Diameter: _____ Height: _____
Salt Setting per Regeneration: _____

1. Type of Timer:

- A. 7 Day or 12 Day
- B. Meter Initiated

2.

3. Meter Size:

- A. 3/4" Std Range (125 - 2,100 gallon setting)
- B. 3/4" Ext Range (625 - 10,625 gallon setting)
- C. 1" Std Range (310 - 5,270 gallon setting)
- D. 1" Ext Range (1,150 - 26,350 gallon setting)
- E. 1-1/2" Std Range (625 - 10,625 gallon setting)
- F. 1-1/2" Ext Range (3,125 - 53,125 gallon setting)
- G. 2" Std Range (1,250 - 21,250 gallon setting)
- H. 2" Ext Range (6,250 - 106,250 gallon setting)
- I. 3" Std Range (3,750 - 63,750 gallon setting)
- J. 3" Ext Range (18,750 - 318,750 gallon setting)
- K. Electronic _____ Pulse Count _____ Meter Size _____

4. System Type:

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

5.

- A. Backwash: _____ Minutes
- B. Brine and Slow Rinse: _____ Minutes
- C. Rapid Rinse: _____ Minutes
- D. Brine Tank Refill: _____ Minutes
- E. Pause Time: _____ Minutes
- F. Second Backwash: _____ Minutes

6. _____ gpm

7. Brine Line Flow Controller: _____ gpm

8. Injector Size#: _____

9. Piston Type:

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

INSTALLATION

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

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

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

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.

The softener should be located close to a drain to prevent air breaks and back flow.

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

CAUTION

1. Place the softener tank where you want to install the unit making sure the unit is level and on a firm base.
2. During cold weather, the installer should warm the valve to room temperature before operating.
3. All plumbing should be done in accordance with local plumbing codes. The pipe size for residential drain line should be a minimum of 1/2" (13 mm). Backwash flow rates in excess of 7 gpm (26.5 Lpm) or length in excess of 20' (6 m) require 3/4" (19 mm) drain line. Commercial drain lines should be the same size as the drain line flow control.

Rotate the skipper wheel until the number “1” is at the red

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.

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.

The program wheel as shown in the drawing is in the service position. As you look at the numbered side of the program wheel, the group of pins starting at zero determines the length of time your unit will backwash.

For example, if there are six pins in this section, the time of backwash will be 12 min. (2 min. per pin). To change the length of backwash time, add or remove pins as required. The number of pins times two equals the backwash time in minutes.

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.

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.

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

32

33

34

2

17

18

1

31

1

30

8

31

3

4

3

5

3

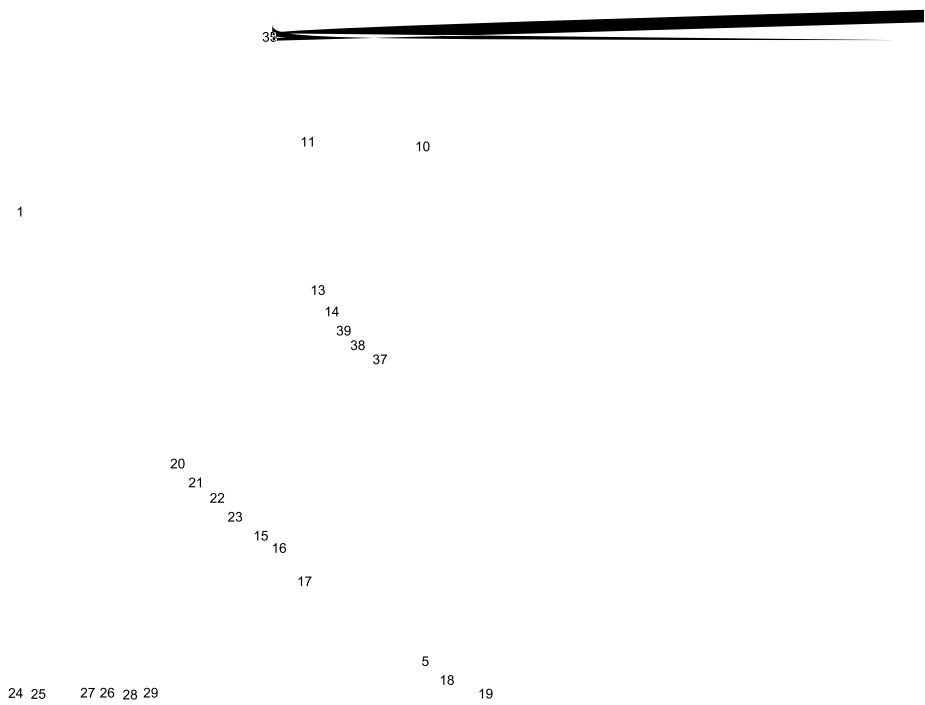
6

8

15

16

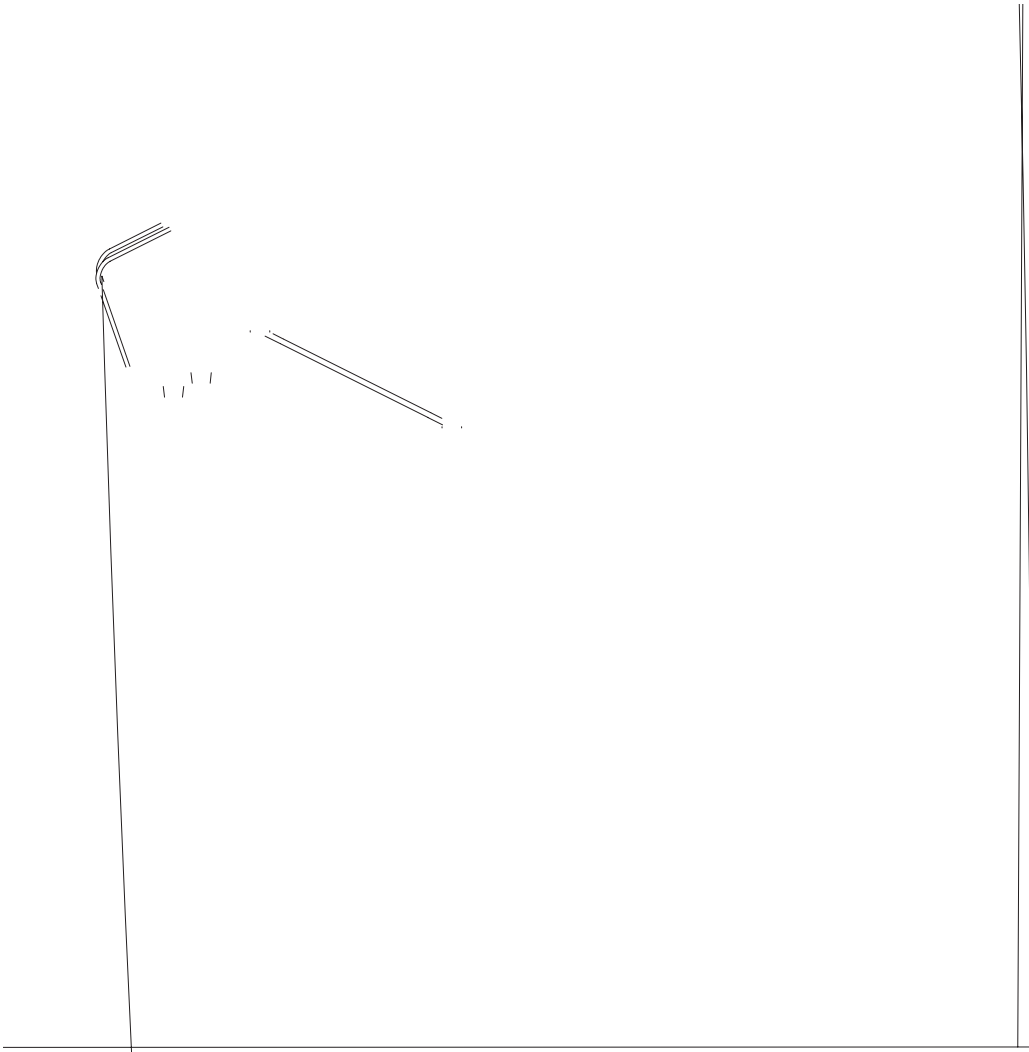
3210 METER DELAYED TIMER
ASSEMBLY

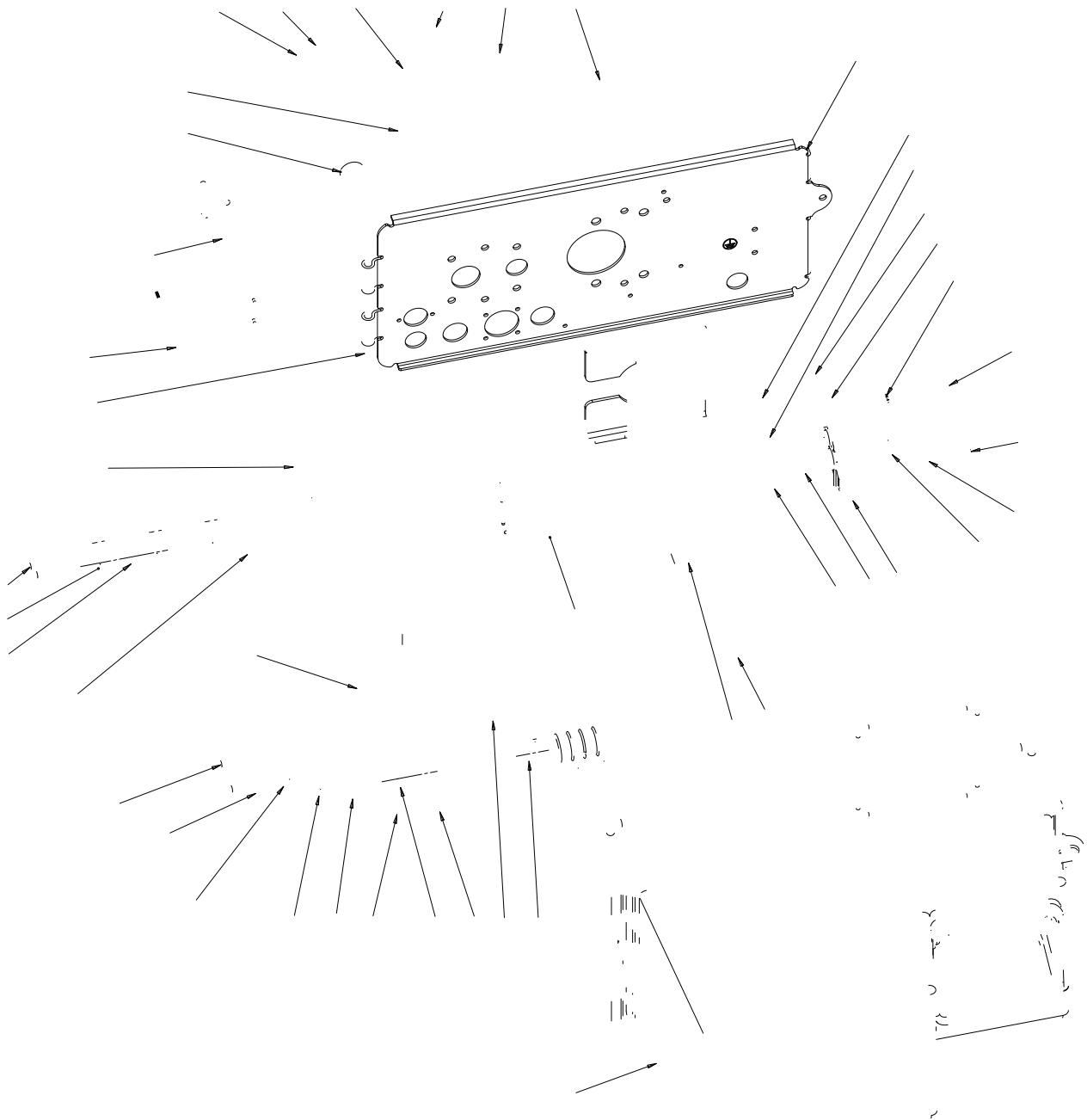


3220 METER IMMEDIATE TIMER ASSEMBLY

1.....1.....	13870.....	Housing, Timer	25.....1.....	15320.....	Switch, Micro, Timer
2.....1.....	15431.....	Gear, Cycle Actuator, System #5	26.....2.....	11413.....	Screw, Pan Hd Mach, 4-40 x 1-1/8
3.....1.....	13886.....	Knob, 3200	27.....1.....	14198.....	Label, Indicator
4.....4.....	13296.....	Screw, Hex Wsh, 6-20 x 1/2	28.....1.....	15465.....	Label, Caution
5.....2.....	11999.....	Label, Button	29.....1.....	14007.....	Label, Time of Day
6.....1.....	13807.....	Gear, Program Drive Wheel	30.....1.....	15148.....	Label, Instruction
7.....1.....	13806.....	Retainer, Program Wheel	31.....1.....	40617.....	Harness, 3220
8.....1.....	13748.....	Screw, Flt Hd St, 6-20 x 1/2	32.....2.....	40422.....	Nut, Wire, Tan
9.....1.....	14265.....	Spring Clip	33.....1.....	15354-01.....	Wire, Ground, 4"
10.....1.....	13018.....	Pinion, Idler	34.....1.....	19210-05.....	Program Wheel Assembly, 9000/3230
11.....1.....	18563.....	Idler Shaft Spring	35.....17.....	41754.....	Pin, Spring, 1/16 x 5/8 Stainless Steel, Timer
12.....1.....	13017.....	Gear, Idler	36.....1.....	15055.....	Gear, Main Drive
13.....1.....	13164.....	Drive Gear	37.....1.....	*	Complete 3220 Meter Immediate Timer Assembly
14.....1.....	13887.....	Plate, Motor Mounting	38.....	60405-80.....	Program Wheel, w/3" STD Label 63,750 gal
15.....1.....	18743-1.....	Motor, 120V, 60 Hz, 1/30 RPM		60405-90.....	Program Wheel, w/3" EXT Label 320,000 gal
	1.....	18752-1.....			
	1.....	18824-1.....			
	1.....	18826-1.....			
	1.....	19659-1.....			
	1.....	19660-1.....			
16.....2.....	13278.....	Screw, Slt'd Fillister Hd	39.....	60320-02.....	Switch Kit, 3200/9000 Timer Auxiliary, Optional
17.....1.....	14502.....	Pinion, Program Wheel	40.....	61420-06.....	Program Wheel, Gear Assy, Softener Immediate 2 Min Per Pin
18.....1.....	14501.....	Clutch, Drive Pinion		61420-42.....	w ..22 8
19.....1.....	14276.....	Meter Clutch Spring			
20.....1.....	14253.....	Retainer, Clutch Spring			
21.....3.....	11384.....	Screw, Phil, 6-32 x 1/4 Zinc			
22.....1.....	13881.....	Bracket, Hinge Timer			
23.....3.....	14087.....	Insulator			
24.....1.....	15414-00.....	Micro Switch			

**3230 REMOTE START TIMER
ASSEMBLY**



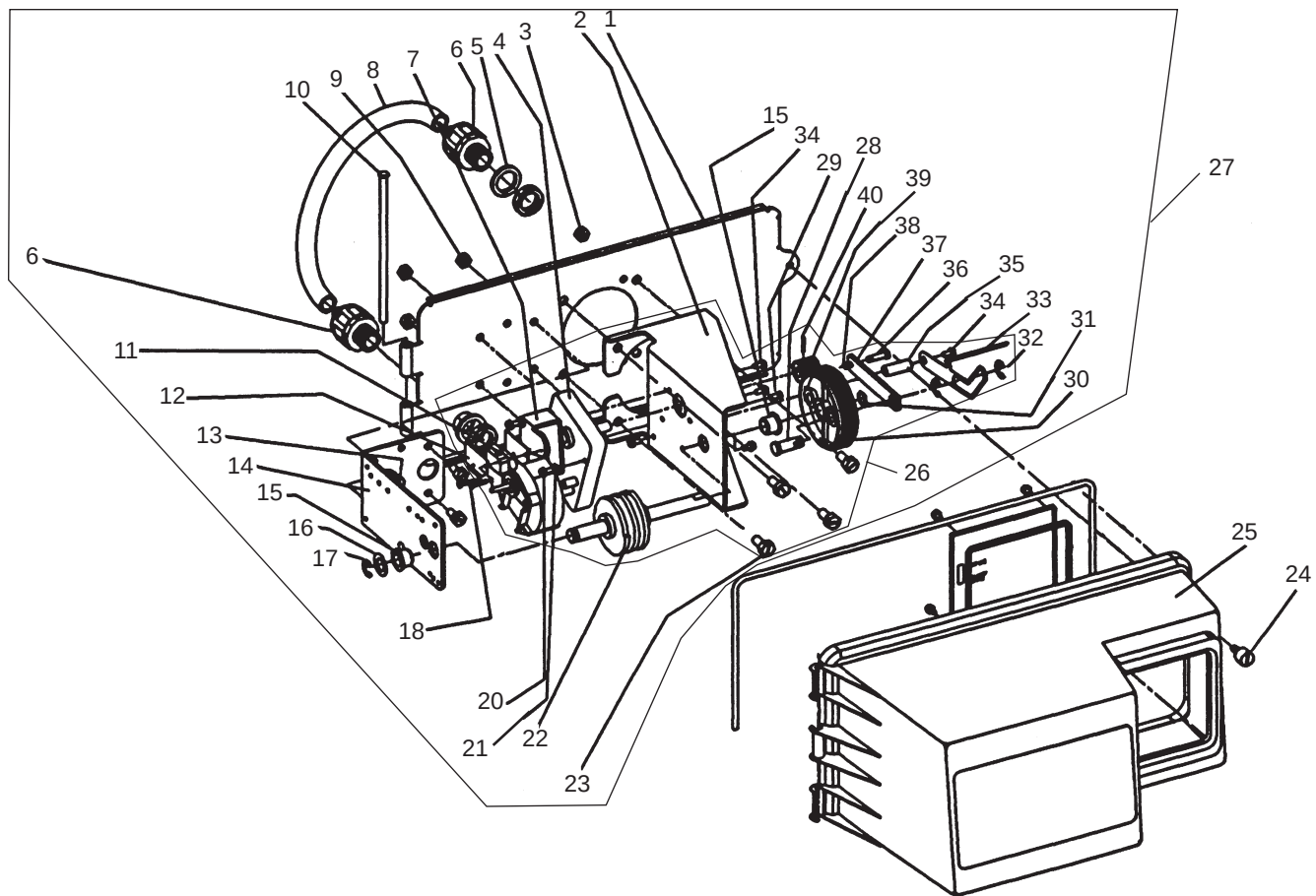


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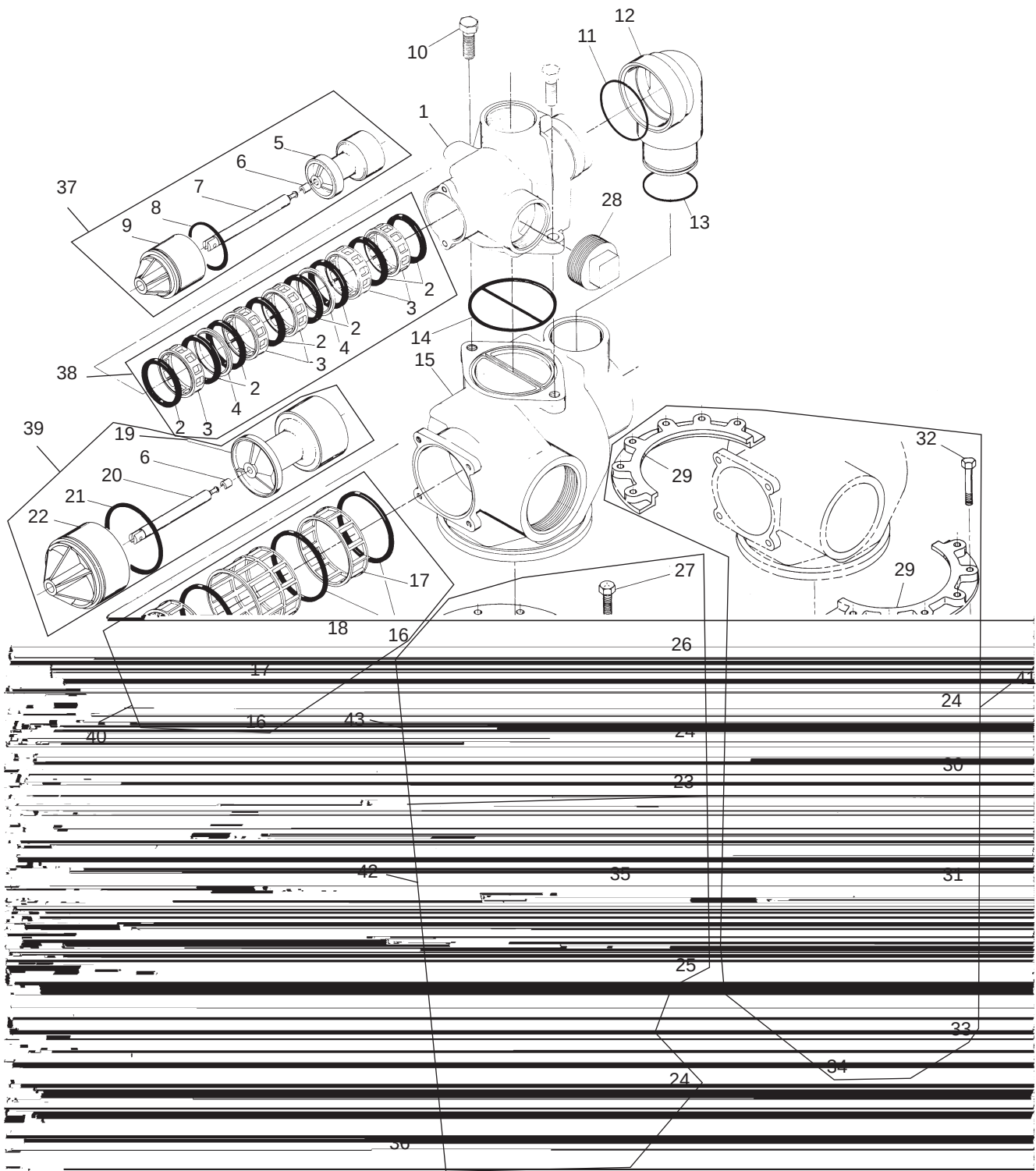
1.....1.....19304-04.....	Backplate, 3150/3900, Upper, NEMA 3R	11545.....	Power Cord, 4' European, Black
2.....1.....15120-01.....	Bracket, Motor Mtg, 3150/3900 Environmental	19303.....	Power Cord, 8', Australian
3.....2.....16346.....	Nut, Hex, Jam, 5/16 - 18	19885.....	Power Cord, Japanese, 110V/120V
4.....1.....40392.....	Motor, Drive, 115V, 50/60 Hz, Sp	40.....1.....17967.....	Fitting Assy, Liquid Tight, Blk
.....40390.....	Motor, Drive, 220V, 50 Hz, Sp, Fam 3	41.....1.....19691.....	Plug, .750 Dia, Recessed, Black
.....42581.....	Motor, Drive, 24VAC/DC, 50-60 Hz, Fam 3	42.....3.....19591.....	Plug, .8750 Hole, Recessed, Black
5.....1.....17797.....	Bracket, Switch Mounting, 3150/3900	43.....2.....15250.....	Label, Terminal Strip
6.....4.....10302.....	Insulator, Limit Switch	44.....10.....19800.....	Plug, .140 Dia, White
7.....3.....10218.....	Switch, Micro	45.....1.....15806.....	Plug, Hole, Heyco #2693
8.....1.....17845-03.....	Pin, Hinge, 3150/3900, Env	46.....1.....17421.....	Plug, 1.20 Hole
9.....4.....11235.....	Nut, Hex, 1/4 -20, Mach Screw, Zinc	47.....60057-01.....	Drive Assy, 3150, 120V, SYS 5 & 7, Signal After Brine Tank Fill
10.....2.....13365.....	Washer, Lock, #4, External	60057-03.....	Drive Assy, 3150, 24V, 3900 Upper, SYS #5 or SYS #7
11.....2.....40080.....	Screw, Rd Hd, 4-40 x 1 1/2"	60057-11.....	Drive Assy, 3150, 120V, 3900 Upper, SYS #4 or SYS #6
12.....1.....16053.....	Bracket, Brine Side	60057-21.....	Drive Assy, 3150, 120V, Upfow, 3900 Upper, SYS 5 or SYS 7, Brine Draw First
13.....2.....40133.....	Screw, Pan Hd, 4-40 x 1/4	48.....*	3150 Powerhead Assembly
14.....2.....40133.....	Screw Pan HD, 4-40 x 1/4"	1.....17470.....	Cable Guide Assy, 2850/3150
15.....2.....16052.....	Bushing, 3150/3900	1.....19856.....	Ring, Retaining (Used on Cover)
16.....1.....16059.....	Washer, SS, .88, 3150/3900	1.....	Timer (See Timer Section)
17.....1.....16051.....	Ring, Retaining, Bowed	1.....16427-04.....	Wire, Lead, 12", White
18.....2.....10300.....	Screw, Slot Hex Wsh, 18-8 x 3/8	1.....40396.....	Harness, Drive, Environmental
19.....4.....10231.....	Screw, Slot Hex, 1/4 - 20 x 1/2	1.....14924.....	Strain Relief Heyco #1247
20.....2.....14202-01.....	Screw, Hex Wsh Hd, 8 x 5/16	1.....15513.....	Meter Cable, 17.5", 2"
21.....1.....10475-01.....	Wire, Ground	1.....15216.....	MeterCable, 15.25", 1.5"
22.....1.....16494-03.....	Cam Assy, 3150/3900 Signal After Brine Fill	1.....18585.....	Harness, 3900, Aux Switch
.....16494-05.....	Cam Assy, 3150/3900 Upper Signal After Rapid Rinse		
.....16494-06.....	Cam Assy, 3150/3900, Upper, Upfow, Signal After Rapid Rinse		
23.....4.....11224.....	Screw, Hex Hd, 5/16 - 18 x 5/8		
24.....1.....60240-02.....	Cover Assy, 3150/3900 Env, Black, NEMA 3R		
25.....5.....41084.....	Terminal Block, Segment, Gray		
26.....1.....41085.....	Endplate, Terminal Block, Gray		
27.....1.....40174.....	Terminal Block, Green/Yellow		
28.....1.....16046.....	Gear, Drive		
29.....1.....16050.....	Ring, Retaining		
30.....1.....11774.....	Ring, Retaining		
31.....1.....16047.....	Link, Drive		
32.....1.....11709.....	Pin, Drive Link		
33.....1.....16048.....	Bearing, Drive Link		
34.....1.....11898.....	Clip, 3150/3900		
35.....1.....16045.....	Pinion, Drive		
36.....1.....11381.....	Pin, Roll, 2900/3900		
37.....1.....11080.....	Screw, Flt Hd Mach, 8-32 x 3/8		
38.....3.....10872.....	Screw, Hex Wsh, 8-32 x 17/64		
39.....1.....40084-12.....	Power Cord, 12' US, Round, 120V		
.....40085-12.....	Power Cord, 12' US, Round, 240V		

*Call your distributor for Part Number

POWERHEAD



1.....1.....19305.....	Back Plate, 3900 Lower, Enviromental	24.....1.....19813/41536.....	Screw O-ring, Cover
2.....1.....16086.....	Bracket - Motor Mounting	25.....1.....60240-22.....	Cover, Black, Lower, Enviromental
3.....2.....16346.....	Nut	26.....	Includes Item No: 2, 4, 7, 11, 12, 15, 18, 20, 21, 22, 23, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40
4.....1.....40392.....	Drive Motor - 115 V. 50/60 Hz.	60058-01.....	Lower Drive Assy, 3900, 120V
.....40390.....	Drive Motor - 220 V. 50/60 Hz.	60058-03.....	Lower Drive Mtr Assy, 3900, 24V
.....42581.....	Drive Motor - 24 VAC/DC 50/60 Hz.	27.....*	3900 Lower Powerhead Assy
5.....2.....18692.....	Washer, Sealing	28.....1.....16048-01.....	Bearing - Drive Link
6.....2.....18691.....	Connector, Conduit	29.....2.....11080.....	Screw - Flt HD Mach, 8-32 x 3/8, Steel Zinc
7.....1.....17797.....	Bracket - Switch Mounting	30.....1.....16046.....	Drive Gear
8.....1.....18693.....	Conduit, Interdrive	31.....1.....16050.....	Retaining Ring
9.....4.....11235.....	Nut, 1/4-20	32.....2.....11774.....	Retaining Ring - "E"
10.....1.....17845-03.....	Pin, Hinge	33.....1.....19315.....	Indicator
11.....1.....10218.....	Switch	34.....4.....10872.....	Screw - Hex Head, 8-32 x 17/64, Steel/Trivalent Zinc
12.....2.....10302.....	Insulator - Switch	35.....1.....18726.....	Space, Indicator
13.....4.....10231.....	Screw - Hex Head, 1/4-20 x 1/2, 18-8 S.S.	36.....1.....11709.....	Pin - Drive Link
14.....1.....16053.....	Bracket - Brine Side	37.....1.....16047.....	Drive Link
15.....2.....16052.....	Bushing	38.....1.....11898.....	Clip
16.....1.....16059.....	Washer	39.....1.....16045.....	Drive Pinion
17.....1.....16051.....	Retaining Ring - Bowed "E"	40.....1.....11381.....	Roll Pin
18.....2.....11805.....	Screw, RD HD, 4-40 x 5/8", Type 1, Steel/Zinc	1.....40405.....	Wire Harness, Enviromental, System 4, Lower
20.....2.....17567.....	Screw - Hex Head, WSH, 8 x 1/2, Type B, 18-8, S.S.	*Call your distributor for Part Number	
21.....2.....12288.....	Washer, Lock, Internal #8		
22.....1.....16495.....	Cam Assembly		
23.....4.....11224.....	Screw - Hex Head, 5/16-18 x 5/8, S.S.		



61500-3900

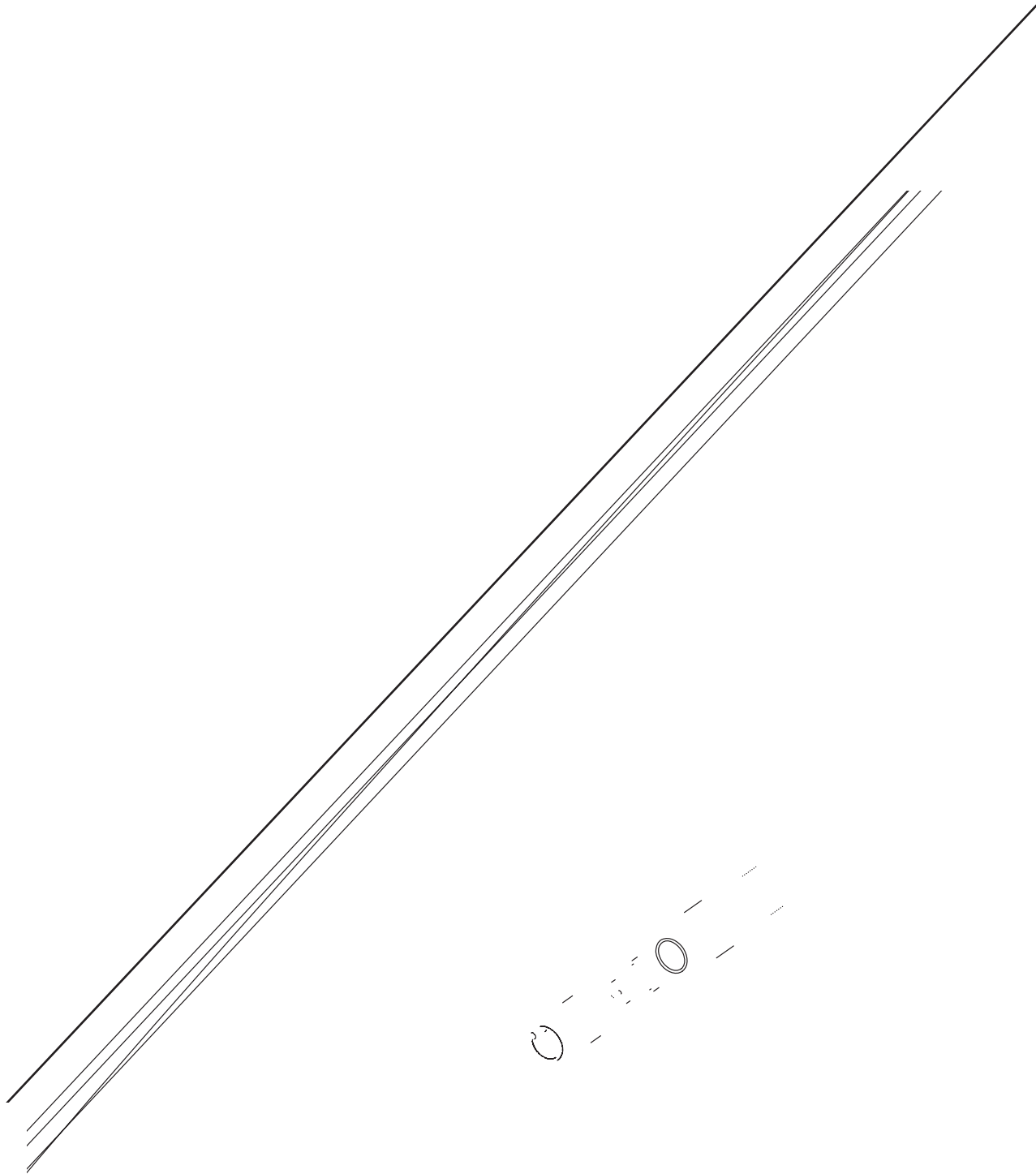
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1.....1	15114	Valve Body
2.....8	11720	Seal
8.....	11720-02	Seal, Silicone
3.....5	10369	Spacer - Port
4.....2	10368	Spacer
5.....1	16130	Piston
6.....2	14818	Clip - Piston Rod
7.....1	15125	Piston Rod
8.....1	14922	O-ring -035
9.....1	16398-01	End Plug Assembly
10.....2	40118	Screw - Hex Head
11.....1	16078	O-ring - 149
12.....1	16074	Coupling
13.....1	16077	O-ring - 140
14.....1	15112	Seal
15.....1	16067-02	3" Adapter Body
16.....4	16068	Seal
4.....	41534	Seal, 3900, 558 BP
17.....2	16069	Spacer - Narrow
18.....1	16070	Spacer - Wide
19.....1	16071	Piston
1.....	16082	Piston - No Hard Water Bypass
20.....1	16072	Piston Rod
21.....1	16076	O-ring - 042
22.....1	16399-01	End Plug Assy - White
1.....	16399-11	End Plug Assy - Black, NHWB-P
23.....1	16800	O-ring - 238
24.....2	16345	O-ring - 362
25.....1	16255	Tank Adapter - 6" -8
26.....2	16257	Flange Segment
27.....12	11238	Screw - Hex Head
28.....1	16088	Pipe Plug - 2" NPT
35.....1	16258	Flow Disperser
37.....	60106-00	Piston Assy, 3900/3150 STD
.....	60106-10	Piston Assy, 3150, Upfow
38.....	60131	Seal & Spacer Kit, 3900 Upper, 3150
.....	60131-10	Seal & Spacer Kit, Silicone, Chemical Resistent, 3900 Upper, 3150
39.....	60107-00	Piston Assy, 3900, HWBP, Lower
.....	60107-10	Piston Assy, 3900, NHWBP, Lower
40.....	60132	Seal & Spacer Kit, 3900, Lower
.....	60132-10	Seal & Spacer Kit, 3900, 558BP Chemical Resistent, Lower
41.....	60190	Flange Kit, Park & Structural, 09/05 and After
.....	60191	Flange Kit, Park, 08/05 and Prior
42.....	60193	Flange Kit, 6" Thread
43.....	60192	Flange Kit, Welded

Options

29.....2	16482	Flange Segment
30.....1	16483	Flange Ring
31.....1	16484	O-Ring -442
32.....12	16517	Screw, Park Tank
12.....	19592	Screw, Structural Tank
33.....12	18619	Washer
34.....12	16346	Nut
36.....1	18584	Adapter, Side Mount

**1800 SERIES BRINE SYSTEM AND
DRAIN LINE FLOW CONTROL
ASSEMBLY**



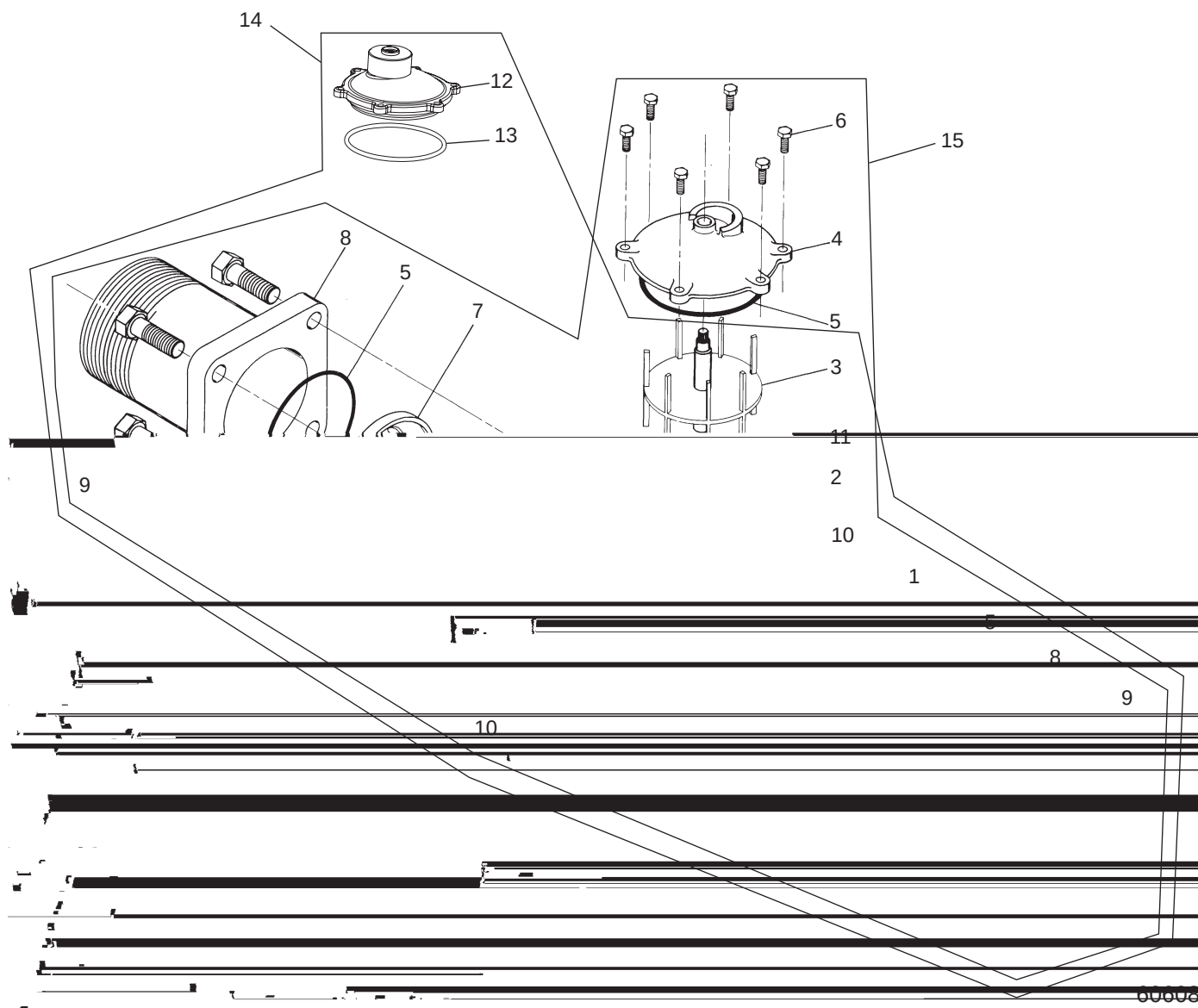
1800 SERIES BRINE SYSTEM AND DRAIN LINE FLOW CONTROL *ASSEMBLY continued*

1.....1	16340.....	Body, Injector, 1800 D/F	18.....	60277-04.....	Injector Assy, 1800, #4, Downfow
	 16340-20.....	Body, Injector, 1800, Downfow, Metric		 60272-04.....	Injectory Assy, 1800, #4, Upfow
	 16340-01.....	Body, Injector, 1800 Upfow		 60277-05.....	Injectory Assy, 1800 #5, Downfow
	 16340-21.....	Body, Injector, 1800, Upfow, Metric		 60272-05.....	Injector Assy, 1800, #5, Upfow
2.....1	15128-xx	Injector Nozzle		 60277-06.....	Injector Assy, 1800, #6, Downfow
	 15128-04.....	#4 Green		 60277-07.....	Injector Assy, 1800, #7, Downfow
	 15128-05.....	#5 Red		 60272-07.....	Injector Assy, 1800, #7, Upfow
	 15128-06.....	#6 White		 60277-08.....	Injector Assy, 1800, #8, Downfow
	 15128-07.....	#7 Blue		 60277-09.....	Injectory Assy, 1800 #9, Downfow
	 15128-08.....	#8 Yellow		 60277-10.....	Injectory Assy, 1800 #10, Downfow
	 15128-09.....	#9 Violet			
	 15128-10.....	#10 Black	19.....	60036-02.....	Brine Valve, 1800, Design 3
3.....1	15127-xx	Injector Throat		 60276-01.....	Brine Valve, 1800, Retroft Kit, Downfow 1800 Injector and Brine Valve, Update to Design 3
	 15127-04.....	#4 Green			
	 15127-05.....	#5 Red	20.....	60734.....	Regulator, 3150/3900, Pressure, Upfow
	 15127-06.....	#6 White			
	 15127-07.....	#7 Blue			
	 15127-08.....	#8 Yellow			
	 15127-09.....	#9 Violet			
	 15127-10.....	#10 Black			
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	19054.....	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			
	 18703-01.....	Tube, Brine, 5/8 OD, Short, Upfow			
17.....1	60009-00.....	Air Check, #900, Commercial Less Fittings			
	 60009-01.....	Air Check, #900, Commercial, HW Less Fittings			

1800 SERIES BRINE SYSTEM AND DRAIN LINE FLOW CONTROL *ASSEMBLY continued*

21.....	60711-000.....	DLFC, 2" NPT, Less BTTNS, w/4 HLS	33.....1	19095.....	Diaphragm, Regulator 3150
.....	60711-00.....	DLFC, 2" NPT, Less BTTNS, W/2 HLS	34.....1	19094.....	Washer, Regulator 3150
.....	60711-01.....	DLFC, 2" NPT, Less BTTNS, W/1 HLS	35.....1	19092.....	Retainer, Regulator 3150
.....	60711-20.....	DLFC, 2" NPT, 20 gpm	36.....1	19101.....	Spring, Regulator 3150
.....	60711-25.....	DLFC, 2" NPT, 25 gpm	37.....1	19399.....	Washer, Calibration 3150
.....	60711-30.....	DLFC, 2" NPT, 30 gpm	38.....1	19090.....	Cap, Regulator 3150
.....	60711-35.....	DLFC, 2" NPT, 35 gpm	39.....1	19278.....	Fitting, Tube, 90 Deg
.....	60711-40.....	DLFC, 2" NPT, 40 gpm	40.....1	19693.....	Pressure Gauge
.....	60711-45.....	DLFC, 2" NPT, 45 gpm	41.....1	41232.....	Bushing Reducer 1/4 x 1/8
.....	60711-50.....	DLFC, 2" NPT, 50 gpm	42.....	60710-1.2.....	BLFC, 1"F x 1"M, NPT, 1.2 gpm
.....	60711-55.....	DLFC, 2" NPT, 55 gpm		60710-2.0.....	BLFC, 1"F x 1"M, NPT, 2.0 gpm
.....	60711-60.....	DLFC, 2" NPT, 60 gpm		60710-2.4.....	BLFC, 1"F x 1"M, NPT, 2.4 gpm
.....	60711-65.....	DLFC, 2" NPT, 65 gpm		60710-3.0.....	BLFC, 1"F x 1"M, NPT, 3.0 gpm
.....	60711-70.....	DLFC, 2" NPT, 70 gpm		60710-3.5.....	BLFC, 1"F x 1"M, NPT, 3.5 gpm
.....	60711-75.....	DLFC, 2" NPT, 75 gpm		60710-4.0.....	BLFC, 1"F x 1"M, NPT, 4.0 gpm
.....	60711-80.....	DLFC, 2" NPT, 80 gpm		60710-5.0.....	BLFC, 1"F x 1"M, NPT, 5
.....	60711-85.....	DLFC, 2" NPT, 85 gpm			
.....	60711-90.....	DLFC, 2" NPT, 90 gpm			
.....	60711-95.....	DLFC, 2" NPT, 95 gpm			
.....	60711-100.....	DLFC, 2" NPT, 100 gpm			
.....	60812-30.....	DLFC, 2" BSP/Metric, 30 gpm			
.....	60812-35.....	DLFC, 2" BSP/Metric, 35 gpm			
.....	60812-45.....	DLFC, 2" BSP/Metric, 45 gpm			
.....	60812-50.....	DLFC, 2" BSP/Metric, 50 gpm			
.....	60812-55.....	DLFC, 2" BSP/Metric, 55 gpm			
.....	60812-70.....	DLFC, 2" BSP/Metric, 70 gpm			
.....	60812-75.....	DLFC, 2" BSP/Metric, 75 gpm			
.....	60812-80.....	DLFC, 2" BSP/Metric, 80 gpm			
.....	60812-90.....	DLFC, 2" BSP/Metric, 90 gpm			
.....	60812-95.....	DLFC, 2" BSP/Metric, 95 gpm			
.....	60812-100.....	DLFC, 2" BSP/Metric, 100 gpm			
22.....	2.....	27913-21.....	Housing, Flow Control, 2" BSP		
23.....	16804.....	O-ring, -150			
24.....	1.....	16649.....	Holder, DLFC Button		
25.....	1.....	16650.....	Cover Plate DLFC		
26.....	1.....	13898.....	Screw, Flat HD, Phil, Steel		
27.....	6.....	13386.....	Screw, Hex HD MACH, 1/4-20 x 1 OR Slot Hex Cap Screw 18-8 S.S.		
	6.....	17976.....	Screw, Hex HD, M6 x 25 mm		
28.....	16529.....	Washer, Flow, 10.0 gpm			
	16736.....	Washer, Flow, 15.0 gpm			
	16528.....	Washer, Flow, 20.0 gpm			
	16737.....	Washer, Flow, 25.0 gpm			
29.....	1.....	19089.....	Body Regulator 3150		
30.....	1.....	10242.....	Fitting, Nipple, 1/2", Close		
31.....	1.....	19091.....	Pin, Regulator 3150		
32.....	1.....	19093.....	Stand-Off Regulator 3150		

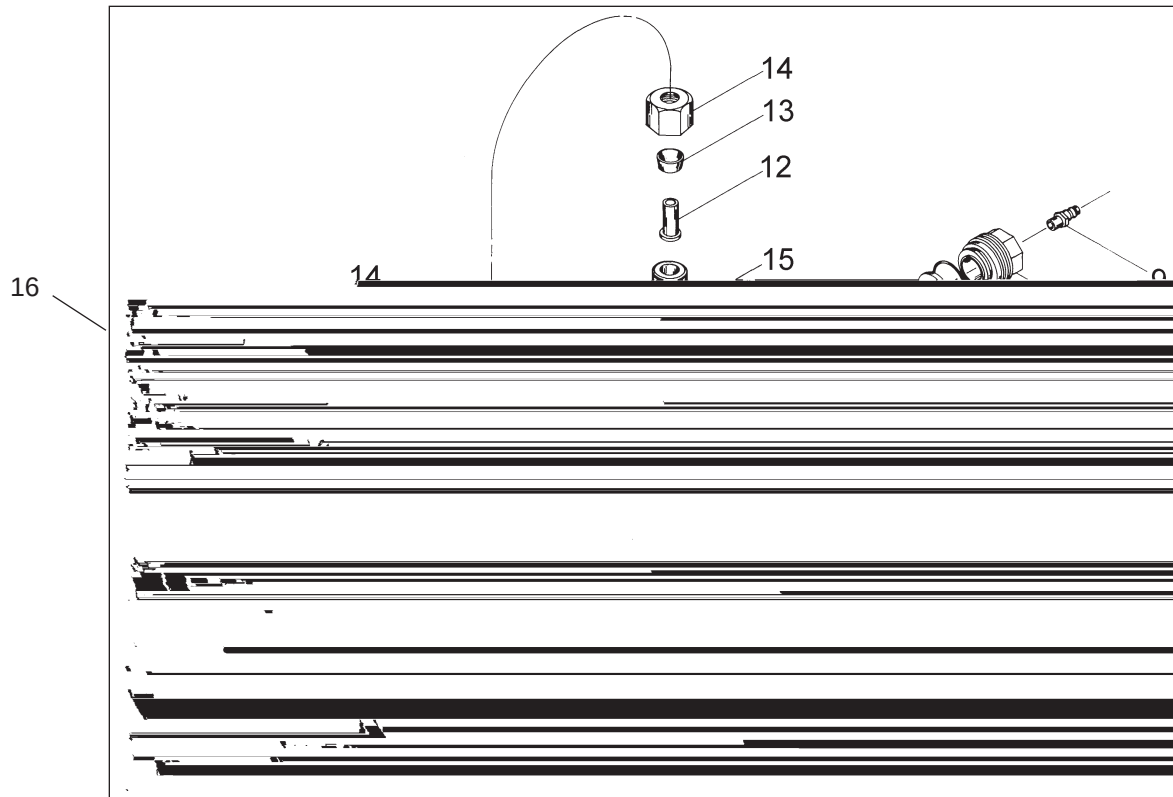
3" METER ASSEMBLY



1.....1	16254.....	Meter Body
2.....1	16279.....	Impeller Shaft
3.....1	16575.....	Impeller Assembly
4.....1	16400.....	Meter Cover Assembly - Standard
1	16401.....	Meter Cover Assembly - Extended Range
5.....3	15707.....	O-Ring - 236
6.....6	12112.....	Screw - Hex Head
6	15886.....	Screw - Hex Head (Metric)
7.....1	16280.....	Flow Straightener
8.....2	16328.....	Connecting Flange
9.....8	40118.....	Screw - Hex Head
8	17122.....	Screw - Hex Head (Metric)
10.....8	16386.....	Nut - 1/2-13
11.....1	16574.....	Stainless Steel Washer
12.....1	16401.....	Meter Cap, 3", EXT, BRS, PDL
13.....1	15707.....	O-ring - 236

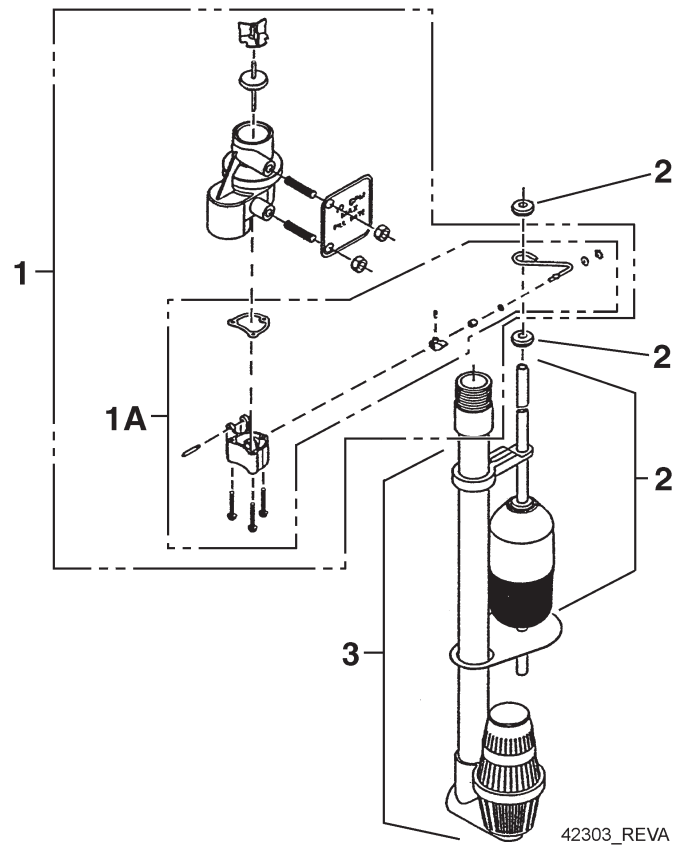
14.....	60608-02.....	Meter Assy, 3" Inline, NPT, EXT, Brass, Paddlewheel
.....	60608-22.....	Meter Assy, 3" Inline, BSP/Metric, EXT, Paddlewheel
15.....	60608-01.....	Meter Assy, 3" Inline, NPT, STD, Brass, Paddlewheel
.....	60608-21.....	Meter Assy, 3" Inline, BSP/Metric, STD, Paddlewheel

ASSEMBLY



BR60150-3150REVA

1.....1	15074.....	Body, SVO
2.....1	16065.....	Piston & Stem, SVO
3.....1	10141.....	O-ring, -010
4.....2	14835.....	Seal, 3150
5.....1	14834.....	Spacer, Softwater Fill
6.....1	16509.....	Plug, End, SVO
7.....1	12977.....	O-ring, -015
8.....1	15965.....	Fitting, Bias
9.....1	10249.....	Spring, Brine Valve
10.....1	10250.....	Ring, Retaining
11.....1	16498-02.....	Stem Guide Assy, SVO
12.....3	10332.....	Fitting, Insert, 3/8
13.....3	10330.....	Fitting, Sleeve, 3/8 Celcon
14.....3	10329.....	Fitting, Tube, 3/8 Nut, Brass
15.....1	16503.....	Fitting, Elbow, 90 Deg.
16.....1	60150-3150.....	SVO Assy, 3150/3900 (Includes Items 1-15)
.....1	16511.....	Tube, 3150, PVC, SVO



- 1.....1 60038.....Safety Brine Valve, 2350
- 1A1 61024.....Actuator Assy, 2350 Brine
- 2.....1 60028-30.....Float Assy, 2350, 30" Wht
-1 60026-30SAN ...Float Assy, 2350, 30" Hot Water
- 3.....1 60009-00.....Air Check, #900, Commercial
Less Fittings
-1 60009-01.....Air Check, #900, Commercial,
Hot Water Less Fittings
-1 18603.....Fitting Assy, 900 Air Check 2350
-1 18602.....Fitting Assy, 900 Air Check

		Correction
Water conditioner fails to regenerate.	Electrical service to unit has been interrupted	Assure permanent electrical service (check fuse, plug, pull chain, or switch)
	Timer is defective.	Replace timer.
	Power failure.	Reset time of day.
Hard water.	By-pass valve is open.	Close by-pass valve.
	No salt is in brine tank.	Add salt to brine tank and maintain salt level above water level.
	Injector screen plugged.	Clean injector screen.
	Insufficient water flowing into brine tank.	Check brine tank fill time and clean brine line flow control if plugged.
	Hot water tank hardness.	Repeated flushings of the hot water tank is required.
	Leak at distributor tube.	Make sure distributor tube is not cracked. Check O-ring and tube pilot.
	Internal valve leak.	Replace seals and spacers and/or piston.
Unit used too much salt.	Improper salt setting.	Check salt usage and salt setting.
	Excessive water in brine tank.	See "Excessive water in brine tank".
Loss of water pressure.	Iron buildup in line to water conditioner.	Clean line to water conditioner.
	Iron buildup in water conditioner.	Clean control and add mineral cleaner to mineral bed. Increase frequency of regeneration.
	Inlet of control plugged due to foreign material broken loose from pipes by recent work done on plumbing system.	Remove piston and clean control.
Loss of mineral through drain line.	Air in water system.	Assure that well system has proper air eliminator control. Check for dry well condition.
	Improperly sized drain line flow control.	Check for proper drain rate.
Iron in conditioned water.	Fouled mineral bed.	Check backwash, brine draw, and brine tank fill. Increase frequency of regeneration. Increase backwash time.
Excessive water in brine tank.	Plugged drain line flow control.	Clean flow control.
	Plugged injector system.	Clean injector and screen.
	Timer not cycling.	Replace timer.
	Foreign material in brine valve.	Replace brine valve seat and clean valve.
	Foreign material in brine line flow control.	Clean brine line flow control.
Softener fails to draw brine.	Drain line flow control is plugged.	Clean drain line flow control.
	Injector is plugged.	Clean injector
	Injector screen plugged.	Clean screen.
	Line pressure is too low.	Increase line pressure to 20 psi
	Internal control leak	Change seals, spacers, and piston assembly.
	Service adapter did not cycle.	Check drive motor and switches.
Control cycles continuously.	Misadjusted, broken, or shorted switch.	Determine if switch or timer is faulty and replace it, or replace complete power head.
Drain flows continuously.	Valve is not programming correctly.	Check timer program and positioning of control. Replace power head assembly if not positioning properly.
	Foreign material in control.	Remove power head assembly and inspect bore. Remove foreign material and check control in various regeneration positions.
	Internal control leak.	Replace seals and piston assembly.

CONTROL

Reserve capacity has been exceeded.

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

Program wheel is not rotating with meter output.

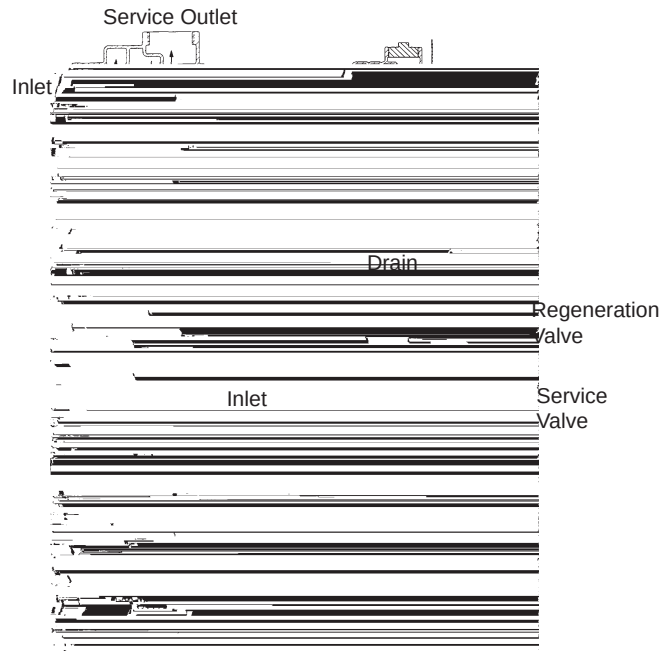
Correction: Pull cable out of meter cover and rotate manually. Program wheel must move without binding and clutch must give positive clicks when program wheel strikes regeneration stop. If it does not, replace timer.

Meter is not measuring flow.

Correction: Check meter with meter checker.

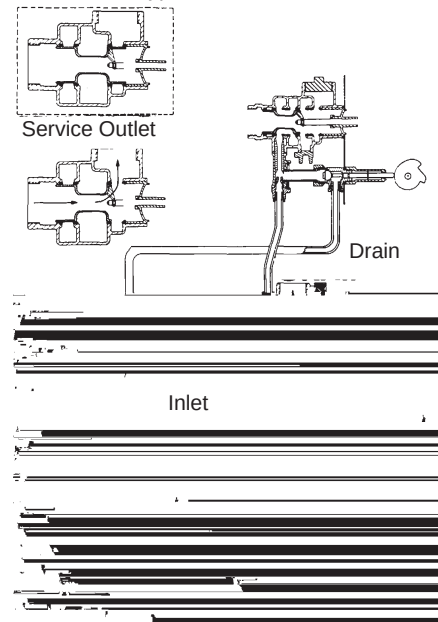
WATER CONDITIONER FLOW DIAGRAMS

1 Service Position



Hard water enters at valve inlet and flows down thru mineral to the bottom distributor. Conditioned water flows up thru the distributor tube, around the piston and out the outlet.

No Hard Water Bypass

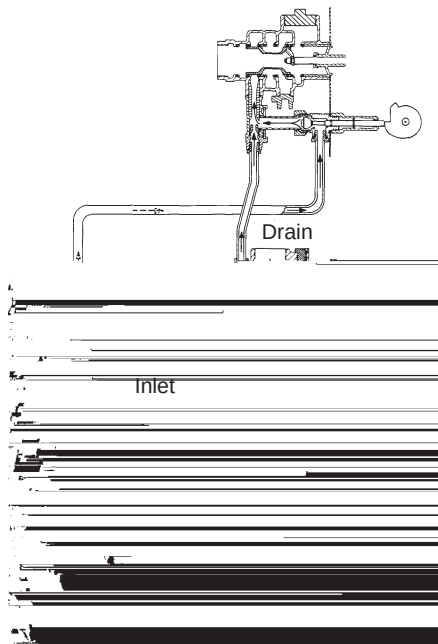


Hard water enters at valve inlet – flows thru service adapter piston for by-pass, and up thru coupling to regeneration valve inlet. Flow continues thru the regeneration valve piston – down the distributor tube – thru the bottom distributor and up thru the mineral – around the piston and out the drain. If optional no hard water by-pass piston is used, water flow to service outlet is prevented by an extension on the service outlet until the end of the rapid rinse cycle or brine tank refill cycle, depending on options chosen.

WATER CONDITIONER FLOW

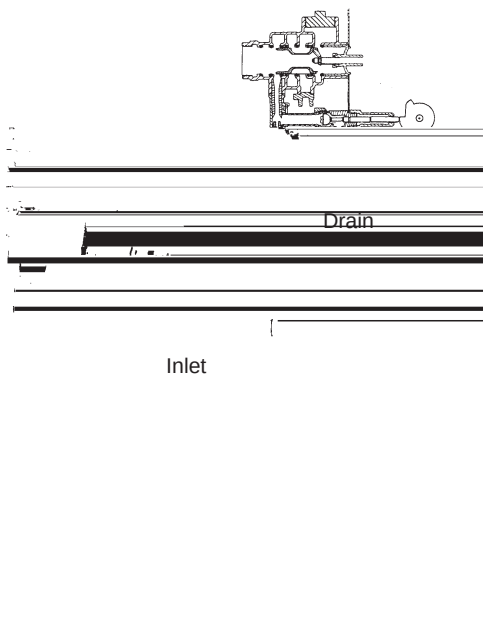
DIAGRAMS *continued*

3 Brine Position

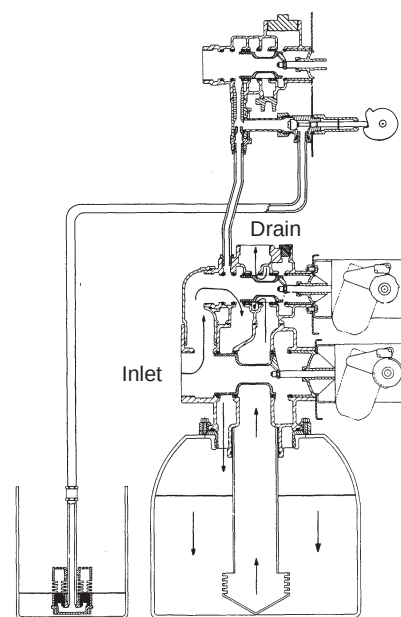


Hard water enters at valve inlet – flows thru injector nozzle and throat to draw brine from the brine tank. Brine flows down thru the mineral – into the bottom distributor – up the distributor tube – around the piston and out the drain.

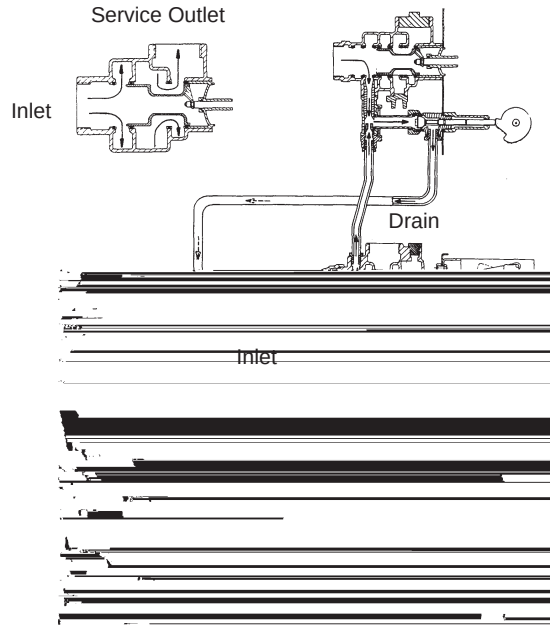
4 Slow Rinse Position



Hard water enters at valve inlet – flows thru injector nozzle and throat – down thru the mineral – into the bottom distributor – up the distributor tube – around the piston and out the drain.



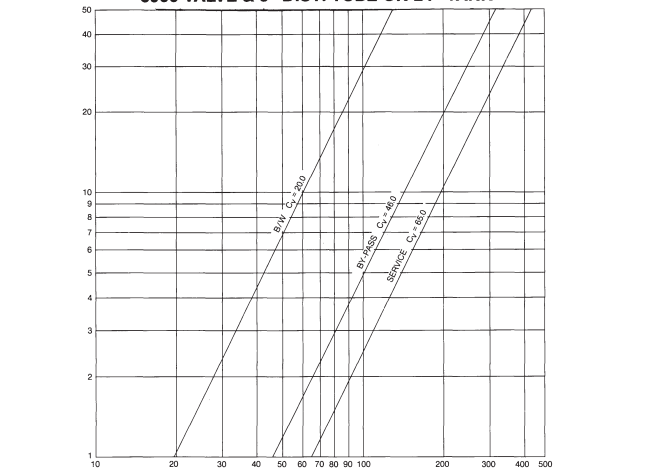
Hard water enters at valve inlet – flows thru the regeneration valve directly down thru the mineral – into the bottom distributor – up the distributor tube – around the piston and out the drain.



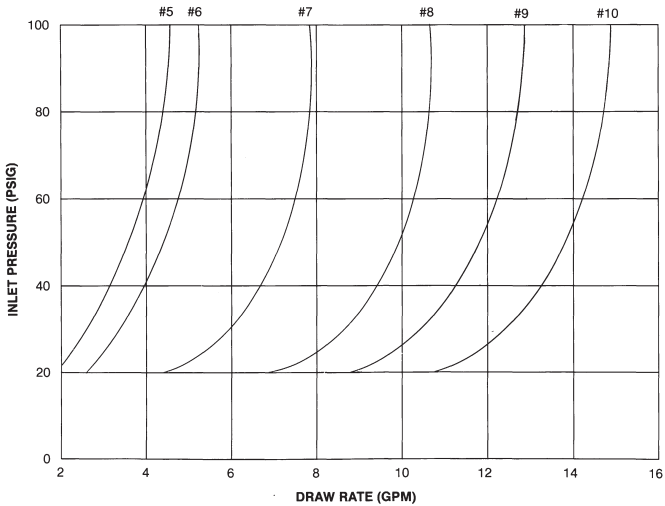
Hard water enters at valve inlet – flows thru nozzle and thru throat to brine valve to refill the brine tank. Inlet flow also continues down thru mineral to the bottom distributor. Conditioned water flows up thru the distributor tube, around the piston and out the outlet. Note: An option is available to keep service valve in by-pass position until the end of brine tank refill cycle.

FLOW DATA & INJECTOR DRAW RATES

3900 VALVE & 3" DIST. TUBE ON 24" TANK

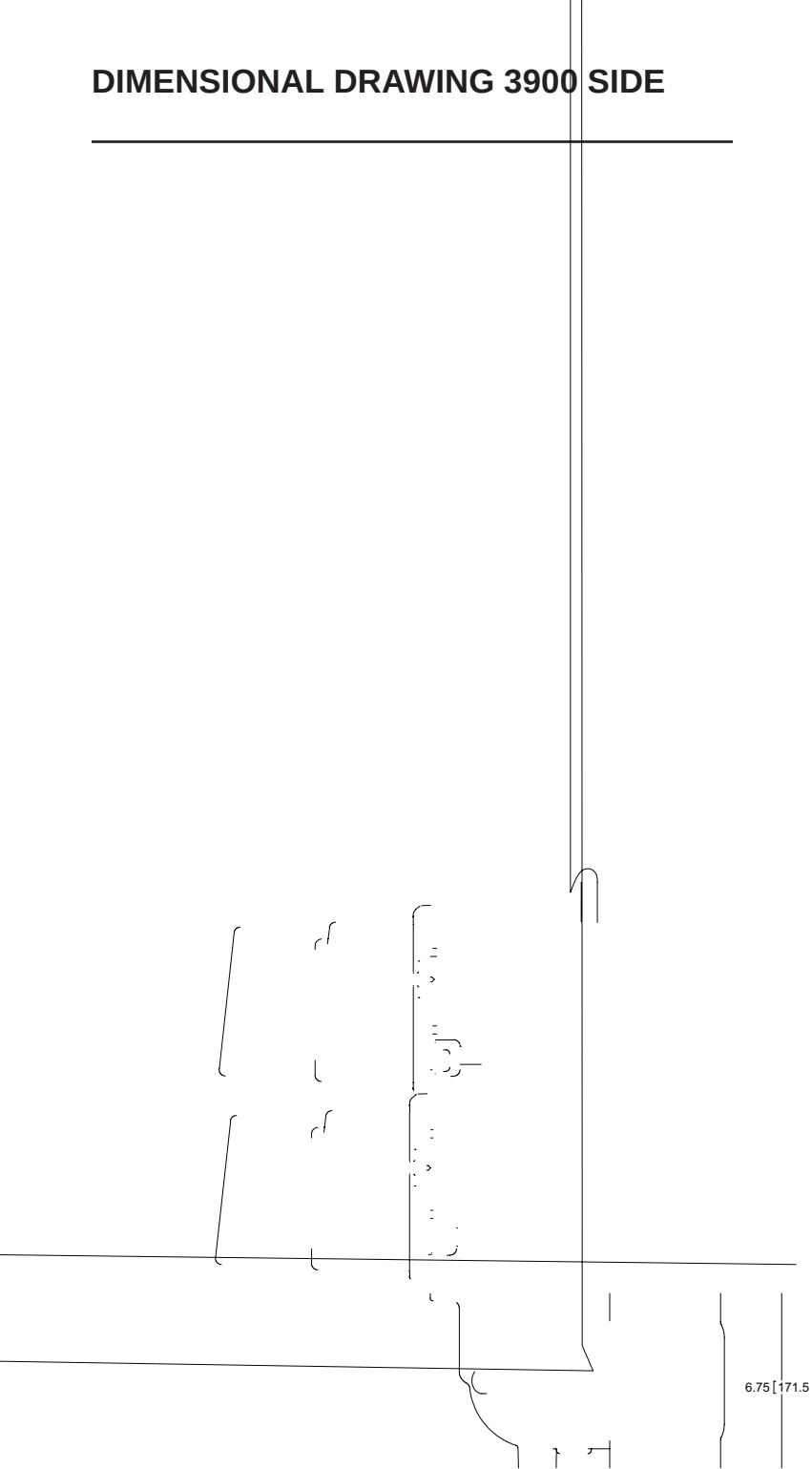


3900 ON EMPTY TANK

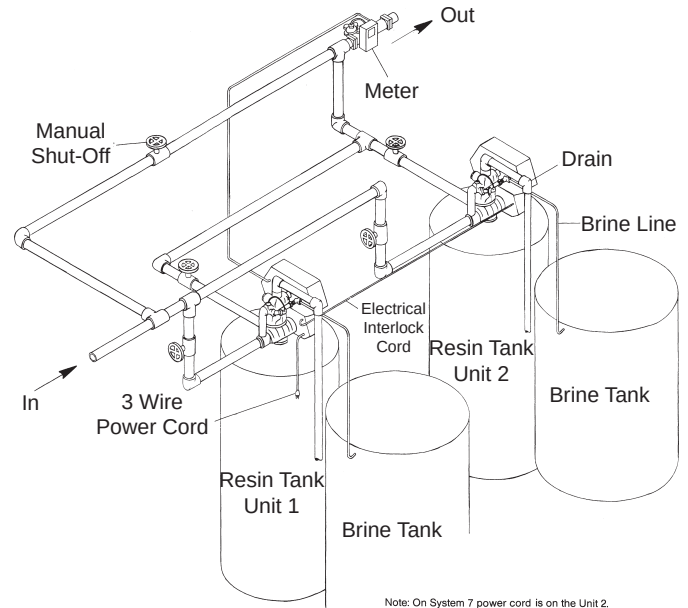
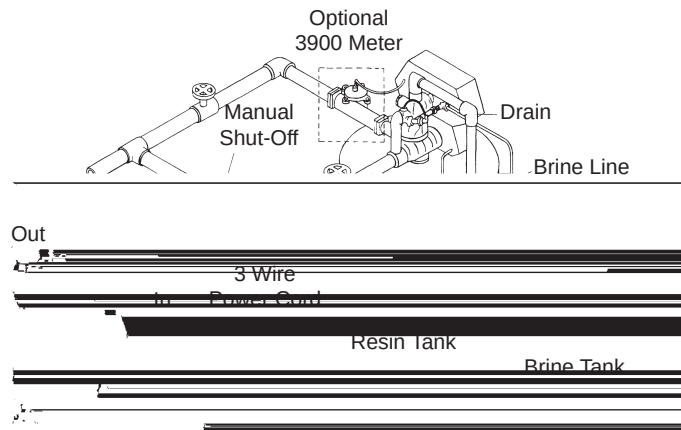


DIMENSIONAL DRAWING 3900 TOP

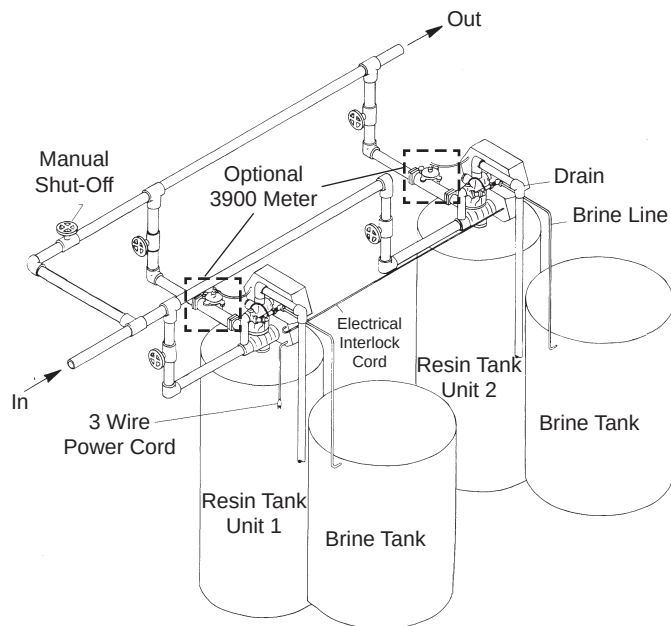
DIMENSIONAL DRAWING 3900 SIDE



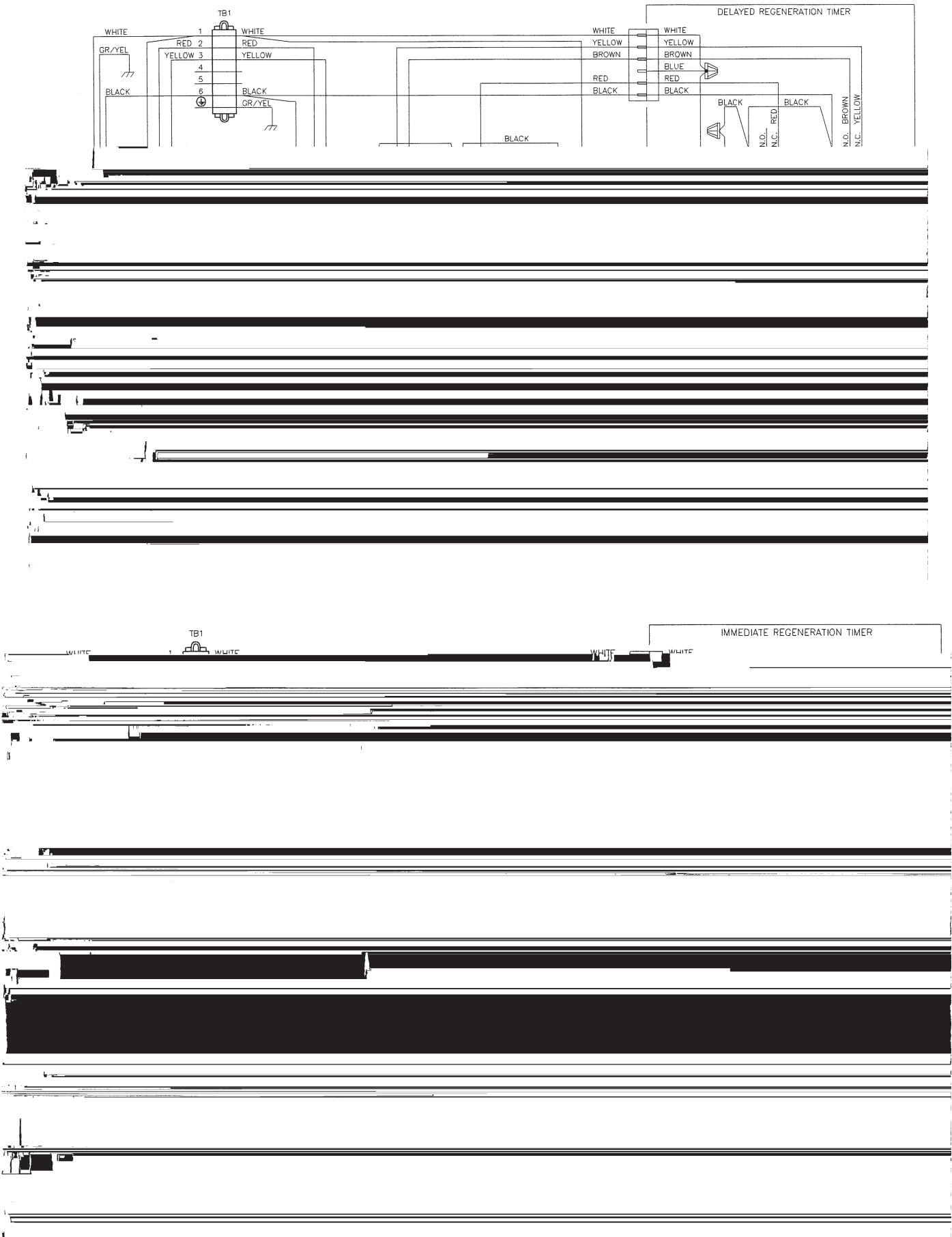
TYPICAL INSTALLATIONS



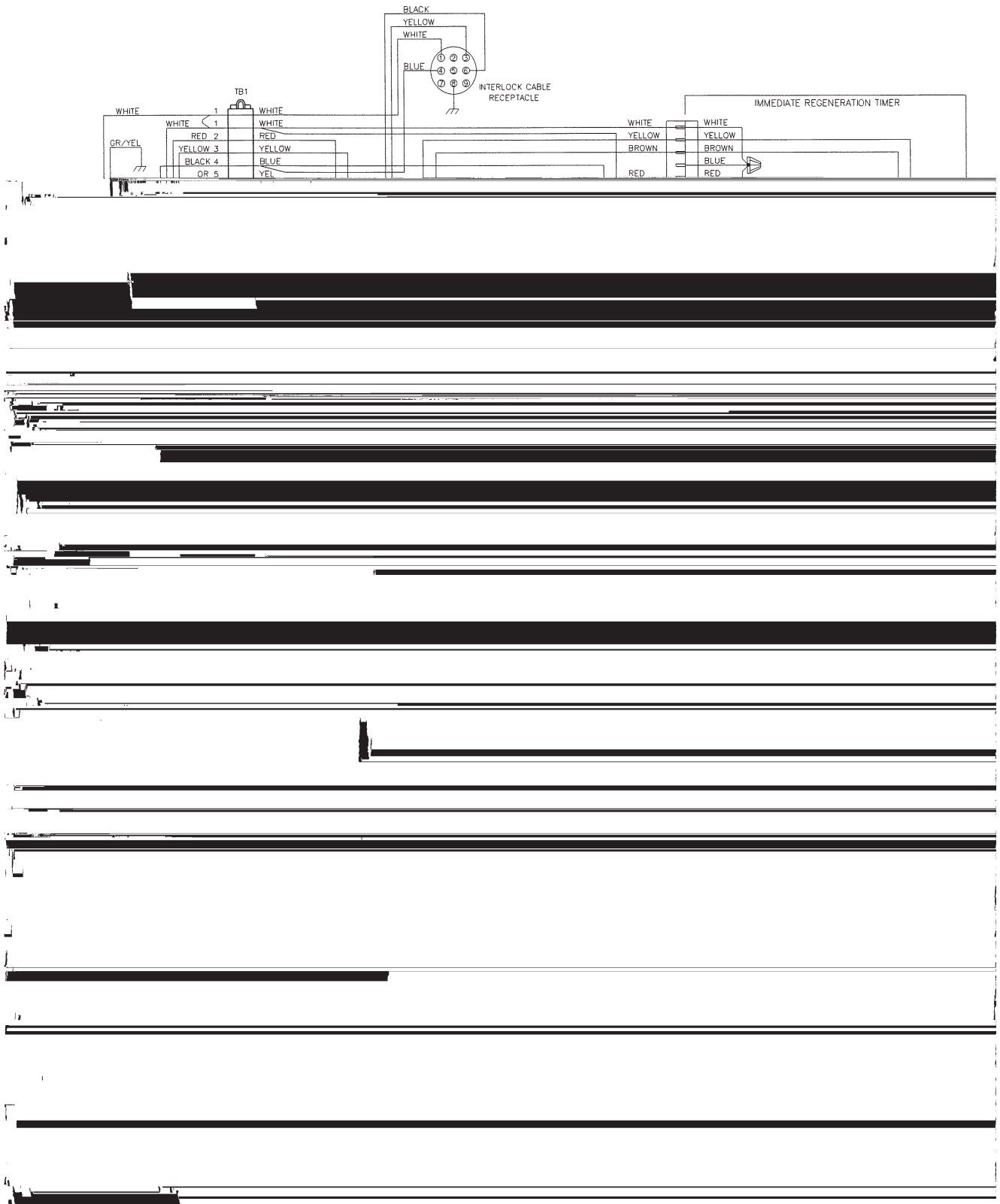
Note: On System 7 power cord is on the Unit 2.



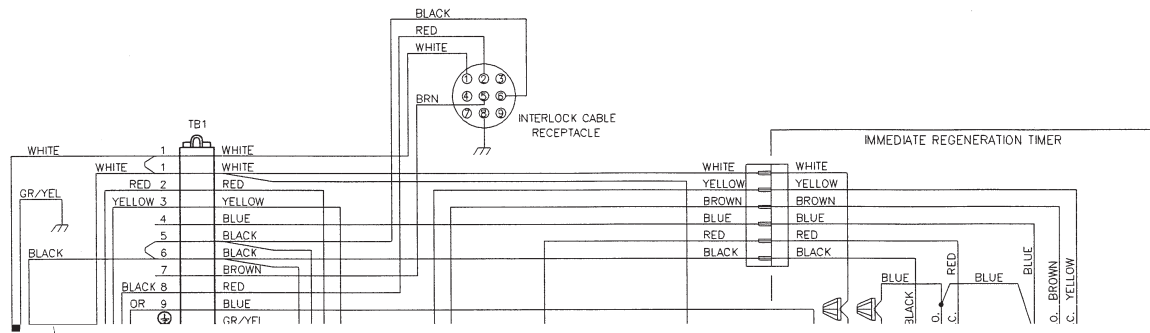
System #4



System #5

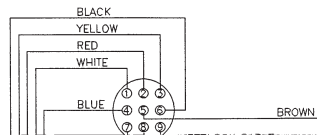


System #6



System #7

TS1



INTERLOCK CABLE
(CONNECT TO NEXT UPSTREAM VALVE OR REMOTE METER)

INTERLOCK CABLE RECEPTACLE
(CONNECT TO NEXT DOWNSTREAM VALVE OR JUMPER PLUG)

NOTE:
TWO TO FIVE TANK SINGLE METER ALTERNATING REGENERATION.
1 TO 4 TANKS IN SERVICE. ONE TANK IN REGENERATION OR STANDBY.
ALL VALVES AT FULLY CLOSED. FIRST VALVE AT STANDBY.

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

12473.....Screw - Hex Head
15127-xx.....Injector Throat
15128-xx.....Injector Nozzle
15246.....O-ring -116
16340.....Injector Body
16341-01Injector Cover
-xx Specify Size

14818.....Clip Piston Rod
14922.....O-ring -035
15125.....Piston Rod
16130.....Piston
16389-0End Plug Assembly

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

14818.....Clip Piston Rod
16082.....Piston - No Hard Water Bypass
16072.....Piston Rod
16076.....O-ring -042
16399-11.....End Plug Assembly - Black

10368.....Spacer
10369.....Spacer - Port
11720.....Seal

16068.....Seal
16069.....Spacer - Narrow
16070.....Spacer - Wide

10302.....Insulator - Switch
10872.....Screw - Hex Head
11080.....Screw - Flat Head
10218.....Switch
10300.....Screw - Hex Head
15120.....Bracket - Motor Mounting
40392.....Drive Motor - 115 V. 50/60 Hz
16052.....Blushing
17797.....Bracket - Switch Mounting
12624.....Screw - Pan Head

10302.....Insulator - Switch
10872.....Screw - Hex Head
11080.....Screw - Flat Head
10218.....Switch
10300.....Screw - Hex Head
11805.....Screw - Pan Head
40392.....Drive Motor - 115V. 50/60 Hz
17797.....Bracket - Switch Mounting
16086.....Bracket - Motor Mounting

10368.....Spacer
10369.....Spacer
11720-02.....Seal, 1-1/2", Silicone

41534

continued

60711-00.....	2" NPT, Less BTTNS, w/2 Holes
60711-000.....	2" NPT, Less BTTNS, w/3 Holes
60711-01.....	2" NPT, Less BTTNS, w/1 Hole
60711-20.....	2" NPT, 20 gpm
60711-25.....	2" NPT, 25 gpm, Brass
60711-30.....	2" NPT, 30 gpm
60711-35.....	2" NPT, 35 gpm
60711-40.....	2" NPT, 40 gpm
60711-45.....	2" NPT, 45 gpm
60711-50.....	2" NPT, 50 gpm
60711-55.....	2" NPT, 55 gpm
60711-60.....	2" NPT, 60 gpm
60711-65.....	2" NPT, 65 gpm
60711-70.....	2" NPT, 70 gpm
60711-75.....	2" NPT, 75 gpm
60711-80.....	2" NPT, 80 gpm
60711-85.....	2" NPT, 85 gpm
60711-90.....	2" NPT, 90 gpm
60711-95.....	2" NPT, 95 gpm
60711-100.....	2" NPT, 100 gpm
60812-30	2" BSP/ Metric, 30 gpm
60812-35	2" BSP/ Metric, 35 gpm
60812-45	2" BSP/ Metric, 45 gpm
60812-50	2" BSP/ Metric, 50 gpm
60812-55	2" BSP/ Metric, 55 gpm
60812-70	2" BSP/ Metric, 70 gpm
60812-75	2" BSP/ Metric, 75 gpm
60812-80	2" BSP/ Metric, 80 gpm
60812-90	2" BSP/ Metric, 90 gpm
60812-95	2" BSP/ Metric, 95 gpm
60812-100	2" BSP/ Metric, 100 gpm

