COMMERCIAL

WATER CONTROL
Where NATURE & SCIENCE meet.™

OWNER'S MANUAL

HF Series Commercial Water Softeners

12/05/2017

Water Control Corporation
7150 143rd Ave NW • Ramsey, MN 55303
Phone: 763-427-9638 • Fax: 763-427-5665
www.watercontrolinc.com

WATER CONTROL

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HF SERIES
WATER SOFTENERS

Water Control "HF" Series softeners feature 3" service connections, large heavy duty electronic control valves, non-corrosive high-strength fiberglass mineral tanks, and long-lasting synthetic cation resin. This series is perfectly designed for apartments, hotels, commercial laundry, schools, hospitals, restaurants, industrial facilities, cooling towers, and other high flow/high capacity applications. Available options include single, twin, triplex, and quad systems. Steel resin tanks, progressive service, brine reclamation, and Accu-Pipe skid systems are also available.

SPECIFICATIONS

Model Series Number	Exchange Capacity* (grains)				Flow Rate (gpm)			Pipe Size (inches)		Back Wash (gpm)	Resin (cu ft)	Brine Tank Capacity (lbs)	Regen. Time (min)	Tank Size (in)		Approx. Ship Weight (lbs)
	Min [1]	Mid [2]	Max [3]	Cv	7 psid	Cont. 15 psid	Peak 25 psid	Service	Drain					Resin	Salt	
HF-300	210000	300000	320000	36	96	128	182	3	1	15	10	760	68	24 X 72	30 X 50	1200
HF-450	315000	450000	480000	42.4	112	158	212	3	2	25	15	760	72	30 X 72	30 X 50	1325
HF-480	336000	480000	512000	40	106	150	200	3	2	25	16	730	76	30 X 72	30 X 50	1375
HF-600	420000	600000	640000	47	125	178	238	3	2	25	20	1375	74	36 X 72	39 X 48	1850
HF-800	567000	810000	864000	55	146	205	275	3	2	50	27	1375	68	42 X 72	39 X 48	2300
HF-900	630000	900000	960000	53.6	142	200	268	3	2	50	30	1275	74	42 X 72	39 X 48	2500
HF-1200	840000	1200000	1280000	56	148	213	280	3	2	70	40	3200	86	48 X 72	50 X 60	3450

- FOR TWIN TANK, TRIPLEX AND QUAD SYSTEMS, CV RATNGS, EXCHANGE CAPACITIES, FLOW RATES AND RESIN QUANTITIES SHOULD BE DOUBLED, TRIPLED, OR QUADRUPLED RESPECTIVELY.
- LARGER SYSTEMS ARE AVAILABLE. CONTACT WATER CONTROL CORP FOR DETAILS.

[1] Based on 6 lbs salt per cubic foot.

[2] Based on 10 lbs salt per cubic foot.

[3] Based on 15 lbs salt per cubic foot.

All "HF" Series softeners utilize series 3900 controllers, pre-wired with 3-prong connectors, 120 VAC, 60 Hz, 5 Amps or less (One G.F.I. wall outlet is required for each resin tank in system).

**** Exchange capacity based on treating water with 10 gpg total hardness as CaCo3 and 400 ppm total dissolved solids. Capacities may vary with different influent water characteristics and other factors. Due to varying water conditions, tank sizes and water pressures, the above should only be used as a guideline.***

WITH OVER 45 YEARS OF EXPERIENCE IN THE WATER CONDITIONING AND PLUMBING INDUSTRIES, WATER CONTROL CAN DESIGN AND MANUFACTURE EQUIPMENT FOR VIRTUALLY ANY APPLICATION. WE OFFER A COMPLETE MENU OF SERVICES, INCLUDING WATER TESTING, SYSTEM SIZING, BIM MODELING (REVIT™), DELIVERY, SETUP, STARTUP, AND AFTER-MARKET SERVICE PLANS. WE MAINTAIN A UNIQUE FOCUS ON MECHANICAL ENGINEERS, CONTRACTORS, AND THE PLUMBING INDUSTRY. DEPEND ON US TO PROVIDE QUALITY, INNOVATIVE SOLUTIONS FOR ALL YOUR COMMERCIAL WATER CONDITIONING NEEDS.

HOW TO SPECIFY "HF" SERIES SOFTENERS:

ORDER CODE:

HF - [ ] - [ ]

MODEL (from other side)

SYSTEM SIZE

Single tank:	SIMPLEX (MR)
Two Tank:	TWIN
Two Tank (Alternating):	TWIN - ALT
Three Tank:	TRIPLEX
Four Tank:	QUAD

Additional Options: (check options below)

- ☐ Progressive Service: Adds and removes tanks from service, based on flow demand
- ☐ Brine Reclamation: Re-uses brine solution for significant salt savings (approx 30%)
- ☐ Steel Tank(s) (optional ASME Rating)
- ☐ Accu-Pipe Skid-Mounted System (pre-plumbed, pre-wired system, mounted on heavy-duty skid)
- ☐ Accu-Pipe LS: Same as Accu-Pipe System, less skid base (piping/wiring only)
- ☐ Brine Silo (large volume salt storage / brine generation & delivery system)
- ☐ Salt Sock and Access Door (lockable) for blow-in salt delivery

Specialty Filter Options: (check options below)

- ☐ Carbon
- ☐ Tannin
- ☐ Acid Neutralizer (Calcite)
- ☐ Dealkalizer
- ☐ Additional media options available, call for details

**For a detailed, model-specific specification, please contact Water Control Corporation. Detailed drawings also available upon request (CAD™ or Revit™).*

Water softening system requires a minimum inlet water pressure of 30 psig and maximum of 120 psig. If storage tank is subject to vacuum, an adequate vacuum relief valve must be properly installed. Tank warranty is void if subjected to vacuum. Feed water temperature shall be between 40ºF and 100ºF. Each control valve requires a 120 volt GFCI wall outlet.

We have team members throughout the US and Canada who are ready to serve you.
To get started, please talk with your local sales representative, or contact our Technical Support Department: 1-866-405-1268 or techsupport@watercontrolinc.com

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WATER CONTROL

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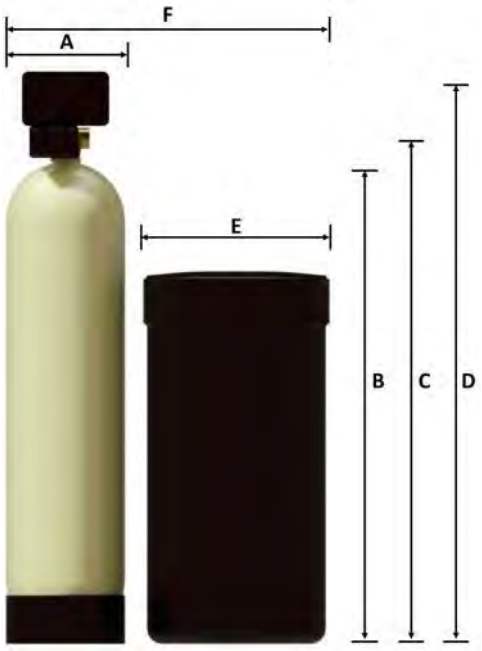
Single Tank Models

WATER SOFTENER DIMENSIONS



Model Series Number (con't)	(A) Resin Tank Diameter (in.)	(B) Resin Tank Height (in.)	(C) Inlet/ Outlet Height (in.)	(D) Overall Height (in.)	(E) Brine Tank Diameter (in.)	(F) Overall Length (in.)
LF-90-MR	14.5	66.1	68.3	78.1	24	42.5
LF-120-MR	16	66.2	68.4	78.2	24	44
LF-150-MR	16	66.2	68.4	78.2	24	44
LF-150X-MR	18.7	73.2	75.4	85.2	24	46.7
LF-180-MR	22	67.1	69.3	79.1	24	50
LF-210-MR	22	67.1	69.3	79.1	24	50
LF-240-MR	24.3	74.2	76.4	86.2	24	52.3
LF-300-MR	24.3	74.2	76.4	86.2	24	52.3
LF-360-MR	30.1	77.2	79.4	89.2	30	64.1
LF-450-MR	30.1	77.2	79.4	89.2	30	64.1
LF-600-MR	36	80.5	82.7	92.5	39	79
HF-300-MR	24.2	77	82.2	92	30	58.2
HF-450-MR	30.2	79.7	84.9	94.7	30	64.2
HF-480-MR	30.2	79.7	84.9	94.7	30	64.2
HF-600-MR	36.1	82.3	87.5	97.3	39	79.1
HF-800-MR	42.3	72.5	77.7	87.5	39	85.3
HF-900-MR	42.3	72.5	77.7	87.5	39	85.3
HF-1200-MR	48.3	81.5	86.7	96.5	50	102.3

All dimensions are approximate and subject to change without notice. Please consult our technical department for additional system information.

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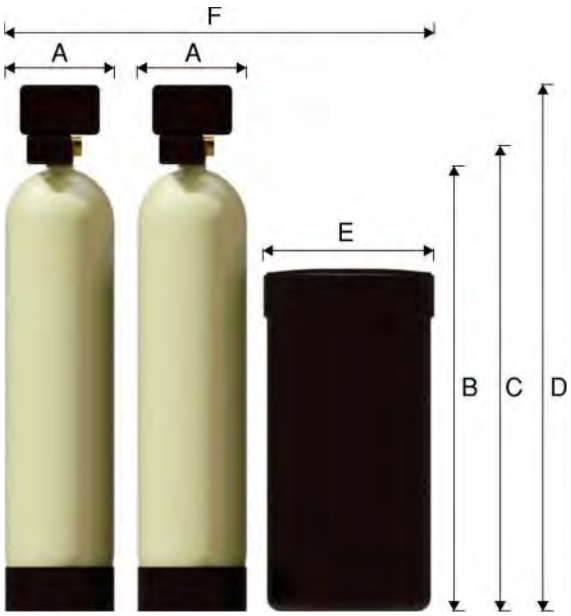
Twin Tank Models

WATER SOFTENER DIMENSIONS



Model Series Number	(A) Resin Tank Diameter (in.)	(B) Resin Tank Height (in.)	(C) Inlet/ Outlet Height (in.)	(D) Overall Height (in.)	(E) Brine Tank Diameter (in.)	(F) Overall Length (in.)
HF-300-Twin	24.2	77	82.2	92	30	90.4
HF-450-Twin	30.2	79.7	84.9	94.7	30	102.4
HF-480-Twin	30.2	79.7	84.9	94.7	30	102.4
HF-600-Twin	36.1	82.3	87.5	97.3	39	123.2
HF-800-Twin	42.3	72.5	77.7	87.5	39	135.5
HF-900-Twin	42.3	72.5	77.7	87.5	39	135.5
HF-1200-Twin	48.3	81.5	86.7	96.5	50	158.5

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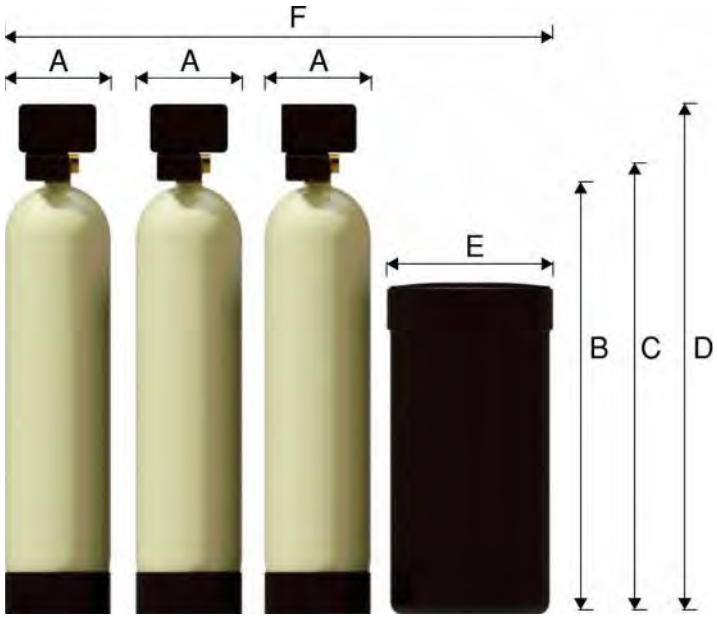
Three Tank Models

WATER SOFTENER DIMENSIONS



Model Series Number	(A) Resin Tank Diameter (in.)	(B) Resin Tank Height (in.)	(C) Inlet/ Outlet Height (in.)	(D) Overall Height (in.)	(E) Brine Tank Diameter (in.)	(F) Overall Length (in.)
HF-300-Triplex	24.2	77	82.2	92	30	122.6
HF-450-Triplex	30.2	79.7	84.9	94.7	30	140.6
HF-480-Triplex	30.2	79.7	84.9	94.7	30	140.6
HF-600-Triplex	36.1	82.3	87.5	97.3	39	167.4
HF-800-Triplex	42.3	72.5	77.7	87.5	39	185.8
HF-900-Triplex	42.3	72.5	77.7	87.5	39	185.8
HF-1200-Triplex	48.3	81.5	86.7	96.5	50	214.8

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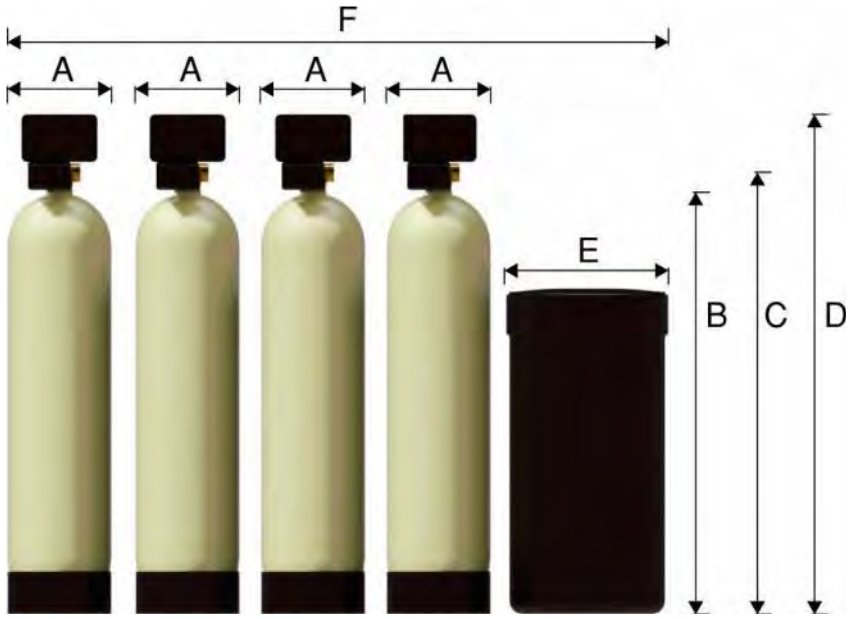
Four Tank Models

WATER SOFTENER DIMENSIONS



Model Series Number	(A) Resin Tank Diameter (in.)	(B) Resin Tank Height (in.)	(C) Inlet/ Outlet Height (in.)	(D) Overall Height (in.)	(E) Brine Tank Diameter (in.)	(F) Overall Length (in.)
HF-300-Quad	24.2	77	82.2	92	30	154.8
HF-450-Quad	30.2	79.7	84.9	94.7	39	187.8
HF-480-Quad	30.2	79.7	84.9	94.7	39	187.8
HF-600-Quad	36.1	82.3	87.5	97.3	50	222.5
HF-800-Quad	42.3	72.5	77.7	87.5	50	247
HF-900-Quad	42.3	72.5	77.7	87.5	50	247
HF-1200-Quad	48.3	81.5	86.7	96.5	50	271

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WATER CONTROL

FLECK® NXT
ADVANCED SYSTEM NETWORK CONTROLLER

ON-BOARD COMMUNICATION CAPABILITIES TO LINK MULTIPLE VALVES

MADE IN THE USA OF FOREIGN & DOMESTIC PARTS

FEATURES/BENEFITS

On-screen multilingual support: English, French, German, Portuguese, Spanish

Time of day super capacitor backup for power loss

2 line/ 16 character full text LCD backlit display

Left arrow button allows digit selecting in programming mode

Networks two to four valves via off-the-shelf CAT3, CAT5, or better cables

Field-configurable for all system types

LED Status indicator

- Blue: In service
- Flashing Blue: Regeneration Queued
- Green: Regeneration
- Flashing Green: Standby
- Red: Error with codes

Auxillary inputs and outputs

- Programmable relay output
- Programmable chemical pump output
- Remote lockout and regen input

Easy installation with plug-in wiring harnesses

Easy electronic programming

Diagnostics

- Current Flow Rate
- Peak Flow Rate (can be reset)
- Totalizer (can be reset)
- Hours between last two regenerations
- Hours Since Last Regeneration
- Volume Remaining (adjustable)
- Valve Address
- Software Version

SYSTEM TYPE

System Type 4, 5, 6, 7, 9, 14

VALVE TYPE

2750	3150
2850s	3900
2850	7000 (excludes system 14)
2900s	

SPECIFICATIONS

SYSTEM	SYSTEM DESCRIPTION	NUMBER OF TANKS/CONTROLS	TYPE
4	Single Unit	1	Time Clock: No Meter Immediate: One Meter Delayed: One Meter Remote: No Meter
5	Interlocked	2, 3, or 4	Immediate: All Meters Remote: No Meter
6	Series Regeneration	2, 3, or 4	Immediate: One Meter Delayed: One Meter Remote: No Meter
7	Twin Alternaiting	2	Immediate: One Meter Remote: No Meter
9	Multiple Tank Alternating	2, 3, or 4	Immediate: All Meters Remote: No Meter
14	Demand Recall	2, 3, or 4	Immediate: All Meters

REGENERATION TYPE

Meter Delayed Fixed Reserve
Meter Immediate
Remote Signal Start Immediate
Time Clock Delayed

REGENERATION FLOW

Downflow
Upflow Fill First
Upflow Brine First

ELECTRICAL RATING

24V Transformers:

- 115V AC +/- 20% input, 24V AC output
- 230V AC +/- 20% input, 24V AC output

GENERIC METER GUIDELINES

Open collector output

Pulse rate generated must not exceed 100 pulses per second (100Hz) or 6,000 pulses per minute

Support for meter outputs in the range of 1-255 gallons (25.5m3) for every 1-255 pulses.

Meter must operate at 5 VDC

PENTAIR

FILTRATION & PROCESS
5730 NORTH GLEN PARK ROAD, MILWAUKEE, WI 53209
P: 262.238.4400 | F: 262.518.4404 | WWW.PENTAIRAQUA.COM | CUSTOMER CARE: 800.279.9404

FLECK® 3900
3-INCH CONTROL VALVE

5-CYCLE CONTROL FOR SINGLE OR MULTI-TANK SYSTEMS

MADE IN THE USA
OF FOREIGN & DOMESTIC PARTS

FEATURES/BENEFITS

Lead free brass valve body for superior strength and durability

Continuous service flow rate of 250 GPM with a backwash of 100 GPM

Backwash capability accommodates softener tanks up to 63" and filter up to 42" in diameter

Fully adjustable 3 or 5 cycle control for efficient and reliable water treatment system

Designed for single or multiple tank systems

Environmental protective cover for water resistance, corrosion resistance, and UV stability

Time-tested, hydraulically-balanced piston for service and regeneration

Rugged-built electromechanical timer designed with heavy duty 3/8" wide plastic gears

OPTIONS

Filter or softener control valves

Downflow co-current or upflow counter-current regeneration

No hard water bypass piston

Brine cam auxiliary switch

Electro-mechanical timer auxiliary switch

Treated water regeneration

Versatile top or side mount

Electromechanical 7- or 12-day time clock, meter delayed, or meter immediate regeneration

3200NXT- Network controller uses on-board communication capabilities to link multiple valves (via off-the-shelf CAT3, CAT5, or better cables) for system types 4,5,6,7,9,and 14.

XT- Offers a two-line, 16 character LCD backlit display for easy entering of master and user programing as well as view of diagnostics.

Electro-mechanical Timer- Simple to adjust and easy to service with quick access to all internal components.

TESTED and CERTIFIED by the WQA to NFS/ANSI Standard 61 Section 8 Material Safety Only.

TESTED and CERTIFIED by the WQA to NFS/ANSI Standard 372 for Lead Free Compliance.

RoHS Restriction of Hazardous Substance Compliant

VALVE SPECIFICATIONS

Valve Material	Lead-free brass*
Inlet/Outlet	3" NPT
Cycles	3 or 5

FLOW RATES (50 PSI INLET) – VALVE ALONE

Continuous (15 psi drop)	250 GPM (56.8 m^3/h)
Peak (25 psi drop)	325 GPM (73.8 m^3/h)
Cv (flow at 1 psi drop)	65
Max. Backwash (25 psi drop)	100 GPM (22.7 m^3/h)

REGENERATION

Downflow/Upflow	Both
Adjustable Cycles	Yes
Time Available	Electromechanical: 0-164 minutes 3200NXT: 0-240 minutes per cycle XT: 0-240 minutes per cycle

METER INFORMATION

Meter Accuracy Range	7 - 300 GPM +/- 5%
Meter Capacity Range (gal.)	Standard: 3,750 - 63,750 Extended: 18,750 - 387,500 NXT: 1-9,900,000 XT: 1,000-9,900,000

DIMENSIONS

Distributor Pilot	3" O.D.
Drain Line	2" NPTF
Brine System	1800
Brine Line	1"
Mounting Base	Top: 6" – 8 threaded, 6" flanged or welded flange
Height from Top of Tank	15"

TYPICAL APPLICATIONS

Water Softener

Filter

ADDITIONAL INFORMATION

Electrical Rating	24V, 110V, 220V; 50 Hz, 60 Hz
Estimated Shipping Weight	Time clock: 93 lbs Metered: 115 lbs
Pressure	Hydrostatic: 300 psi (20 bar) Working: 20 - 125 psi (1,4 - 8,5 bar)
Temperature	34-110°F (1-43°C)

*As defined in the U.S. EPA Safe Drinking Water Act; the product also meets California Proposition 65 Standards for lead-free brass.

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WATER PURIFICATION
STAINLESS STEEL METERS

HIGH EFFICIENCY AND TIMELY REGENERATIONS

1”

1-1/2”

2”

3”

Reduce your SKUs with Pentair’s Stainless Steel Meters. Manufactured with truly lead-free stainless steel materials, SS meters are designed to meet today’s water treatment needs.

LEAD-FREE

Truly lead-free 316 grade stainless steel material eliminates the risk of lead leaching into the water

DURABLE MATERIALS

Rust-resistant

Corrosion-resistant

1”, 1-1/2” and 2” models are hot-water rated to 150°F

MULTIPLE APPLICATIONS

Widely used in commercial and industrial applications

Single and multi-tank system compatibility

BENEFITS

Simplified service and reduced inventory

No tools needed to install sensor

All-in-one electronic and mechanical flow sensing

RELIABILITY

Mechanical meters record water usage even during power outages

CONVENIENCE

Optional stainless steel union for ease of installation and maintenance (purchased separately)

TESTED and CERTIFIED by the WQA to NSF/ANSI Standard 61 Section 8 Material Safety Only.

TESTED and CERTIFIED by the WQA to NSF/ANSI Standard 372 for Lead Free Compliance.

RoHS Restriction of Hazardous Substance Compliant

SPECIFICATIONS

METER TYPE	MAX FLOW RATE (GPM)	PRESSURE DROP @ MAX FLOW RATE (PSI)	K-FACTOR (PULSES/GALLON)	*ACCURACY RANGE +/- 5% (GPM)	STANDARD RANGE (GAL)	EXTENDED RANGE (GAL)	CV
1" PADDLE	40	4.9	8	.7-40	310-5,270	1,550-26,350	18
1-1/2" PADDLE	75	4.3	4	1.5-75	625-10,625	3,125-53,125	36
2" PADDLE	150	4.6	2	3.0-150	1,250-21,250	6,250-106,250	70
3" PADDLE	300	9.0	0.67	7.0-300	3,750-63,750	18,750-318,750	100

**Allow inlet straight pipe runs of at least ten pipe diameters and outlet pipe runs of at least five pipe diameters of the same size of the flow meter for best results.*

WIRING

(black) = Ground
(green) = Signal
(red) = +VDC

PENTAIR

WATER QUALITY SYSTEMS
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P: 262.238.4400 | F: 262.238.4404
WATERPURIFICATION.PENTAIR.COM
CUSTOMER CARE: 800.279.9404 | tech-support@pentair.com

4004887 REV B OC16

3200NXT

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. 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.

Please Circle and/or Fill in the Appropriate Data for Future Reference:

Programming Mode:

Feed Water Hardness:	_____ Grains per Gallon or Degrees
Regeneration Time:	Delayed _____ AM/PM or _____ Immediate
Regeneration Day Override:	Off or Every _____ Days
Time of Day:	_____

Master Programming Mode:

Valve Type:	**2750 / 2850 / 2900s / 3150 / 3900 / Stager**
Regenerant Flow:	Downflow / Upflow Brine Draw First / Upflow Brine Fill First
Valve Address:	#1 / #2 / #3 / #4
Display Format:	US Gallons or m^3
Unit Capacity:	_____ Grains or Degrees
Capacity Safety Factor:	Zero or _____ %
Feed Water Hardness:	_____ Grains or Degrees
System Size:	1 Valve / 2 Valves / 3 Valves / 4 Valves
Regeneration Cycle Step #1:	_ _ : _ _ : _ _
Regeneration Cycle Step #2:	_ _ : _ _ : _ _
Regeneration Cycle Step #3:	_ _ : _ _ : _ _
Regeneration Cycle Step #4:	_ _ : _ _ : _ _
Regeneration Cycle Step #5:	_ _ : _ _ : _ _
Timed Auxiliary Relay Output Window:	
	Off or Start Time _ _ : _ _ : _ _
	End Time _ _ : _ _ : _ _
Chemical Pump Output Auxiliary Relay:	Off or Volume (Gallons or M^3)
	Time: _ _ : _ _ : _ _
Fleck Flow Meter Size:	Paddle: 1” 1.5” 2” 3”
	Turbine: 1” 1.5”
Generic Flow Meter:	Maximum Flow Rate:
	Add _ _ _ Gallons every _ _ _ Pulses

Timer Operation

Setting the Time of Day

NOTE: Set Time of Day on the Lead Unit (#1) and the rest of the units in the system will populare with the Time of Day within 10 seconds.

1. Press and hold the Up or Down button for 2 seconds.
2. Press the Shift button to select the digit you want to modify.
3. Press the Up or Down buttons to adjust the value.
4. Press the Extra Cycle button to return to the normal display screen, or after a 5 second timeout.

NOTE: The "D" button (Diagnostic) can be pressed to exit without saving.

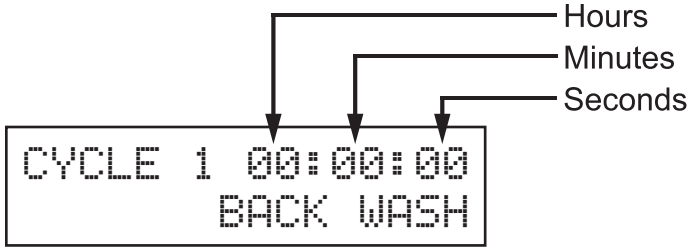
Manually Initiating a Regeneration

1. When timer is in service or stand by, press the Extra Cycle button for 5 seconds on the main screen.
2. The timer advances to Regeneration Cycle Step #1, and begins programmed time count down.
3. Press the Extra Cycle button once to advance valve to Regeneration Cycle Step #2 (if active).
4. Press the Extra Cycle button once to advance valve to Regeneration Cycle Step #3 (if active).
5. Press the Extra Cycle button once to advance valve to Regeneration Cycle Step #4 (if active).
6. Press the Extra Cycle button once to advance valve to Regeneration Cycle Step #5 (if active).
7. Press the Extra Cycle button once more to advance the valve back to in service.

NOTE: A manually initiated or queued regeneration can be cleared by pressing the Extra Cycle button for less than 5 seconds. A system queued regeneration can only be cleared by stepping through a manual regeneration. If regeneration occurs for any reason prior to the delayed regeneration time, the manual regeneration request shall be cleared. Pressing the Extra Cycle button while in regeneration will cause the upper drive to advance to the next step immediately.

Timer Operation During Regeneration

In the Regeneration Cycle Step display, the timer shows the current regeneration cycle number the valve is on, or has reached, and the time remaining in that step. Once all regeneration steps are complete the timer returns to in Service and resumes normal operation.



Example: 12 Minutes Remaining in Cycle 1 (Back Wash)

Press the Extra Cycle button during a Regeneration Cycle to immediately advance the valve to the next cycle step position and resume normal step timing.

Flow Meter Equipped Timer

- During normal operation, the Time of Day screen alternates with the error screen (if errors are present).
- As treated water is used, the Volume Remaining display counts down from the calculated system capacity to zero. When this occurs a Regeneration Cycle begins if no other units are in regeneration.

Timer Operation During Programming

The timer enters the Program Mode in standby or service mode as long as it is not in regeneration. While in the Program Mode the timer continues to operate normally monitoring water usage. Timer programming is stored in memory permanently.

Timer Operation During A Power Failure

All program settings are stored in permanent memory. Current valve position, cycle step time elapsed, and time of day are stored during a power failure, and will be restored upon power re-application. Time is kept during a power failure, and time of day is adjusted upon power up (as long as power is restored within 12 hours).

NOTE: The time of day on the main display screen will flash for 5 minutes when there has been a power outage. The flashing of the time of day can be stopped by pressing any button on the display.

Remote Lockout

The timer does not allow the unit/system to go into Regeneration until the Regeneration Lockout Input signal to the unit is cleared. This requires a contact closure to activate the unit. The recommended gauge wire is 20 with a maximum length of 500 feet. See P4 remote inputs in the wiring diagrams in the service manual.

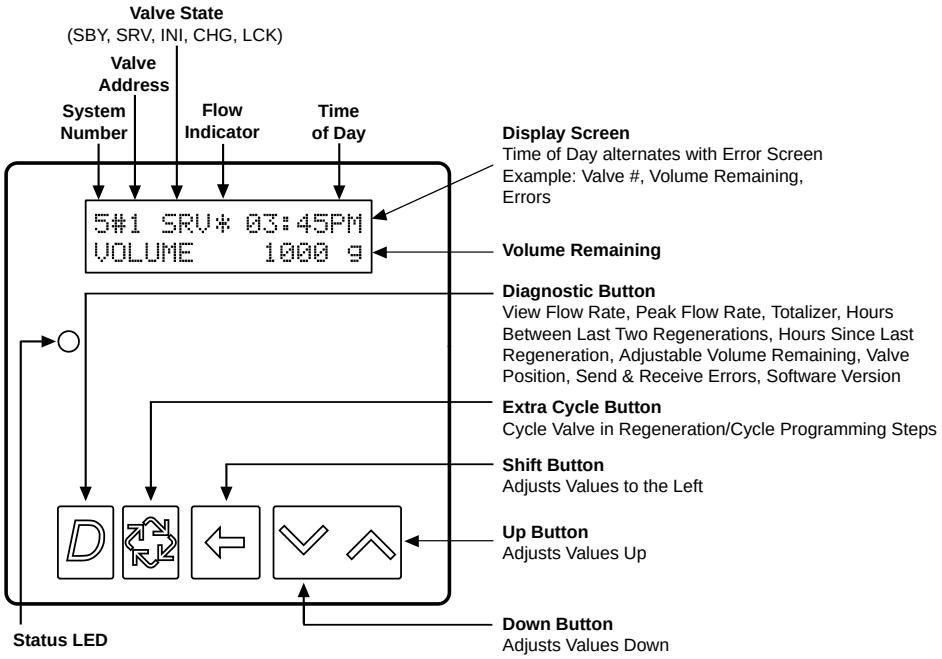
Regeneration Day Override Feature

If the Day Override option is turned on and the valve reaches the set Regeneration Day Override value, the Regeneration Cycle starts if no other unit is in Regeneration. If other units are in regeneration, it is added to a regeneration queue. This occurs regardless of the remaining volume available.

WARNING

Transformer must be grounded and ground wire must be terminated to the back plate where grounding label is located before installation.

Timer Display Features



Valve State:

CHG (Change of State)

CHG will be displayed when the lower drive changes from one state to another in dual piston valves.

INI (Initializing)

INI will display on the screen for 30 to 45 seconds when initializing after a power failure reset or programming.

RGQ (Regeneration Queued)

RGQ indicates that the reserve has been entered in a delayed system and regeneration has been queued. When in the main screen, press the Extra Cycle button to toggle service (SRV) with RGQ.

Service (SRV)

SRV will display when the unit is in service.

LCK (Lock)

Lock will be displayed when the terminal/remote input block P4 on the circuit board is switched to “lock”. See the “Network/Communication Cables & Connections” section of this manual.

LED Status Lights:

Blue LED:

Illuminates while the unit is in service and no errors exist. The unit will always be in service unless a regeneration trigger has occurred (green LED light will be displayed).
A **blinking blue light** indicates the timer is in service, and queued for regeneration.

Green LED:

Illuminates when the unit is in Regeneration mode, unless an error condition exists.

A **blinking green light** indicates the timer is in standby, and not in regeneration.

Red LED:

Illuminates when there is an error.

Flow Indicator:

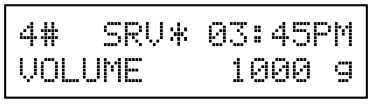
A rotating line (appearing as a rotating star shape) will display on the screen when flow is going through the the meter.

Timer Display - Screen Examples

Example:

In Service:

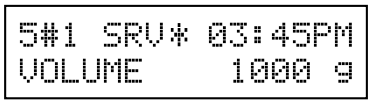
System 4 Time Clock



Example:

In Service:

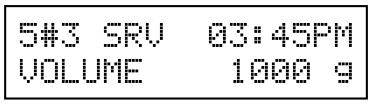
1. System 4 Flow Meter Initiated
   or
2. System 4 Flow Meter Delayed



Example:

In Service:

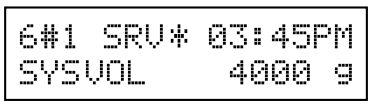
1. System 5 Flow Meter Initiated (Lead Unit)



Example:

In Service:

1. System 5 Flow Meter Initiated (Lag Unit #3)



Example:

In Service:

1. System 6 Flow Meter Initiated (Lead Unit)

Network/Communication Cables & Connections

Use either a CAT3 or CAT5 Network/Communication cable.

1. Connect the network/communication cable first before programming.
2. The maximum cable lenth between timers is 100 feet.
3. Connect each unit together from one communication port to the next communication port. It does not matter which one goes to the next one.

3200NXT Circuit Board

The number of network/communication cables needed for setup is one less than the total number of valves.

Two-Unit System: One network/communication cable
Three-Unit System: Two network/communication cables
Four-Unit Systems: Three network/communication cables

Master Programming Mode Flow Chart

NOTE: Depending on current option settings, some displays cannot be viewed or set.

Entering Master Programming Mode:

1. Press and hold the Shift and Up buttons for 5 seconds.
   Press the Extra Cycle button once per display until all displays are viewed and Normal Display is resumed.Option setting displays may be changed as required by pressing either the Up or Down button. Use the Shift button to move one space to the left.
2. Depending on current valve programming, certain displays may not be viewed or set.

NOTE: If the "D" button is pressed while in master programming, no changes will be saved.

SYSTEM TYPE: 4
SINGLE UNIT

Example:
System Type 4, Single Unit

Options: System 4 (single unit)
System 5 (2-4 units)
System 6 (2-4 units)
System 7 (2 units)
System 9 (2-4 units)

NOTE: This screen will not display for System Type 4.

VALVE ADDRESS: #2

Example:
Valve Address #2 (Second Control Valve) **(Default)**

Options: Valve Address #1 (First Control Valve)
Valve Address #2 (Second Control Valve) **(Default)**
Valve Address #3 (Third Control Valve)
Valve Address #4 (Fourth Control Valve)

NOTE: This screen will not display for System Type 4.

SYSTEM SIZE: 2 VALVES

Example:
2 Valves in the System **(Default)**

Options: 2 Valves in the System **(Default)**
3 Valves in the System
4 Valves in the System

Range: 2 to 4 Valves in the System

REGEN TRIGGER:
TIME CLK DELAYED

Example:
Time Clock Delayed **(Default)**

Options: Time Clock Delayed (System 4 Only) **(Default)**
Meter Immediate (All System Types)
Meter Delayed Fixed Reserve (Systems 4 & 6 Only)
Remote Signal Start Immediate (All System Types)

VALVE TYPE: 2750

Example:
2750 **(Default)**

Options: 2750 **(Default)**
2850
2900
3150
3900
Stager - Butterfly
Stager - Notch Cam

CAUTION: Before entering Master Programming, please contact your local professional water dealer.

Master Programming Mode Flow Chart

NOTE: Depending on current option settings, some displays cannot be viewed or set.

```
REGENERANT FLOW:
        DOWNFLOW
```

Example:
Downflow **(Default)**

Options: Downflow **(Default)**
UF Brine Draw
UF Fill First

```
REMOTE SIGNAL
START:  00:06:00
```

Example:
06:00:00 **(Default)**
(Hours:Minutes:Seconds)

Options: 00:06:00 **(Default)**
Range: 1 second to 99 minutes (1 hour, 39 minutes)

```
DISPLAY FORMAT:
US-GALLONS
```

Example:
U.S. Gallons **(Default)**

Options: U.S. - Gallons **(Default)**
European Units - Cubic Meters (Metric)

NOTE: In U.S. - Gallons mode, the display will be in 12-hour time.

NOTE: In European Units - Cubic Meters (Metric) mode, the display will be in 24-hour time.

```
UNIT CAPACITY:
 00000000 GRAINS
```

Example:
Grains **(Default)**

Options: Grains (in U.S. Format) **(Default)**
Degrees (in Metric Format)

Range: 9,000 to 9,900,000 Grain Capacity in U.S. Format
90.0 to 190,000 Degree Capacity in Metric Format

NOTE: The word "GRAINS" will change to "DEGREES" in the metric Display Format. Use the Shift button to move to the left.

```
CAPACITY SAFETY
FACTOR:      00%
```

Example:
00% **(Default)**

Range: 0 to 50%

NOTE: Use the Shift button to move to the left.

NOTE: This screen will only display on the lead unit for System Types 6 & 7. For all other System Types, it will display for all units.

```
FEED WATER
HARDNESS: 15 GPG
```

Example:
15 GPG (U.S. Format) **(Default)**

Range: 1 to 199 Grains/Gallon (U.S. Format)
2 to 199 Degrees (Metric Format)

NOTE: Use the Shift button to move to the left.

CAUTION: Before entering Master Programming, please contact your local professional water dealer.

Master Programming Mode Flow Chart

REGENERATION DAY OVERRIDE:OFF

Example: Off **(Default)**

REGENERATION DAY OVERRIDE:01 DAYS

Example: 1 Day

Options: Off **(Default)** or On

Range: 1 to 99 Days

REGENERATION TIME: 02:00AM

Example: 2:00 A.M. **(Default)**

Options: A.M. (U.S. Format)
HR (Metric Format)

NOTE: Regeneration time will not appear unless Regeneration Day Override is on.

NOTE: If Stager is chosen for Valve Type, the Regeneration Cycle Step description will not display.

CYCLE 1 00:00:00 BACK WASH

Example: Cycle 1 in Back Wash Mode

Options: Regeneration Cycle Step #1
Regeneration Cycle Step #2
Regeneration Cycle Step #3
Regeneration Cycle Step #4
Regeneration Cycle Step #5

NOTE: Please refer to the "Regenerant Flow Default Cycle Steps & Times" in the Master Programming Mode section of the manual.

AUXILIARY RELAY: DISABLED

Example: Auxiliary Relay is Disabled

Options: Enabled
Disabled **(Default)**

NOTE: Only displayed if Auxiliary Relay is enabled in previous screen. Auxiliary Relay will only display if Chemical Pump is OFF for System Types 6 & 7.

AUX RELAY OUTPUT START 1 00:00:00

Example: Auxiliary Relay Output in Start 1 at 0 hours, 0 minutes, & 0 seconds

Range: 00:00:00 to 18:00:00

AUX RELAY OUTPUT END 1 00:00:00

Example: Auxiliary Relay Output in End 1 at 0 hours, 0 minutes, & 0 seconds

Range: 00:00:00 to 18:00:00

NOTE: This screen will only display on the lead unit for System Types 6 & 7. For all other System Types, it will display for all units.

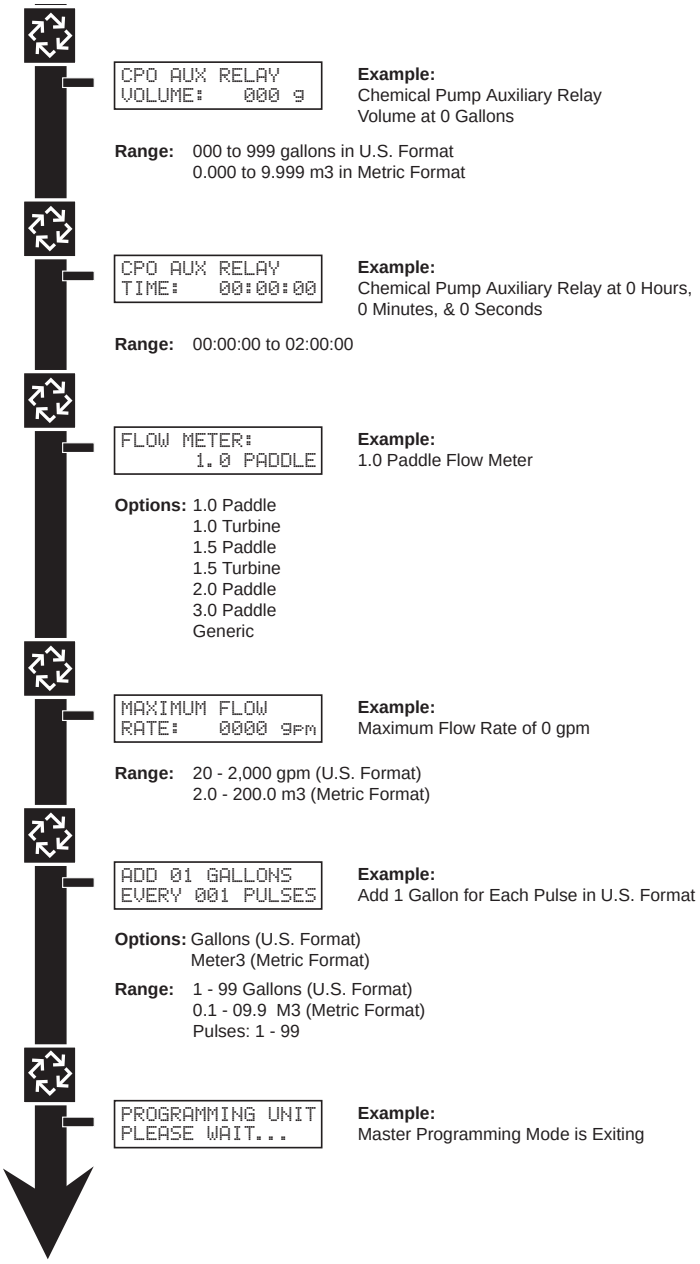
CHEMICAL PUMP: DISABLED

Example: Chemical Pump is Disabled

Options: Enabled
Disabled **(Default)**

CAUTION: Before entering Master Programming, please contact your local professional water dealer.

Master Programming Mode Flow Chart



NOTE: Only displayed on units that physically have a meter (Lead always has a meter). Only shown if Auxiliary Relay is disabled on System Types 6 & 7.

NOTES: Default flow meter type is based on the valve type. This screen will only display on the lead unit for System Types 6 & 7. All other system types it will display for all units.

NOTE: Only displayed if "Generic" is chosen for the flow meter.

NOTE: Only displayed if "Generic" is chosen for the flow meter.

CAUTION: Before entering Master Programming, please contact your local professional water dealer.

When the Master Programming Mode is entered, parameters can be set to make the timer(s) function as needed.

NOTE: Depending on current option settings, some displays cannot be viewed or set.

Entering Master Programming Mode:

1. Press and hold the Shift and Up buttons for 5 seconds.
   OR
2. Set the time of day display to **12:01 PM or 12:01HR** (See the "Setting the Time of Day" section on the "Timer Operation" page). Then go to the main display screen, press the Up and Down buttons at the same time for 5 seconds.

Exiting Master Programming Mode:

1. Press the Extra Cycle button once per display until all are viewed. Master Programming Mode is exited and the normal display screen appears.
2. To exit the Master Programming Mode without saving, press the Diagnostic button.

NOTE: If no keypad activity is made for 5 minutes while in the Master Programming Mode, or if there is a power failure, no changes will be made, and the unit will go back to the main display screen.

Resets:

Soft Reset: Press and hold the Up and Down buttons for 25 seconds until 12:00PM (or 12:00HR) appears. This resets all parameters except for the flow meter totalizer volume.
Master Reset: Hold the Extra Cycle button while powering up the unit. This resets all of the parameters in the unit. Check and verify the choices selected in Master Programming Mode.

1. System Type

This program type selects the system type (4, 5, 6, 7, or 9).

1. Use Up or Down buttons to adjust this value.
2. Press the Extra Cycle button.

2. Valve Address

This program step selects the valve address (1, 2, 3, or 4) within the network needed for each timer for communication. The #1 is the "master" or "lead" which contains programmed parameters, that will be used by all of the timer(s) in the network to control Regeneration, in Service, or Standby of all the valve(s) in the system.

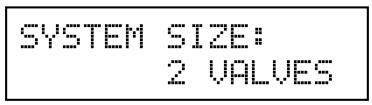
1. Use Up or Down buttons to adjust this value.
2. Press the Extra Cycle button.

CAUTION: Before entering Master Programming, please contact your local professional water dealer.

3. System Size

This program step is used to set up the number of valves (1, 2, 3, or 4) in the system.

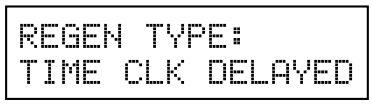
1. Use Up or Down buttons to adjust this value.
2. Press the Extra Cycle button.



4. Regeneration Type

This program step is used to set up the trigger type.

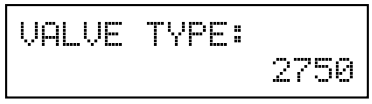
1. Use Up or Down buttons to adjust this value.
2. Press the Extra Cycle button.



5. Valve Type

This program step selects the valve type (2750, 2850, 2900s, 3150, 3900, Stager-Butterfly, or Stager-Notch Cam)

1. Use Up or Down buttons to adjust this value.
2. Press the Extra Cycle button.



6. Regenerant Flow

This program step selects the regenerant flow type (Downflow, Upflow, or Upflow Fill First)

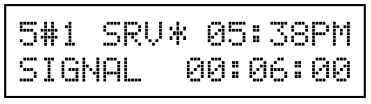
1. Use Up or Down buttons to adjust this value.
2. Press the Extra Cycle button.

CAUTION: Before entering Master Programming, please contact your local professional water dealer.

7. Remote Signal Start

This program step selects the remote signal start. Hours, minutes, and seconds can be changed. When Remote Signal Start is active, the main screen will display. The options are either Off or set to the desired time.

1. Use Up or Down buttons to adjust this value.
2. Press the Extra Cycle button.



Example of setting Remote Signal Start to 6 minutes. The display counts down to 0. If Remote Signal Start is detected for 6 minutes, it will remotely signal start.

8. Display Format

This program step is used to set the desired volume display format. This option must be the same on all system units. U.S. will display volumes in gallons and is in 12 hour timekeeping. Metric will display volumes in cubic meters and is in 24 hour timekeeping.

1. Use Up or Down buttons to adjust this value.
2. Press the Extra Cycle button.

9. Unit Capacity

This program selects the individual timer's total capacity of hardness that can be removed. The unit capacity is measured in grains if in U.S. mode and degrees in Metric mode.

U.S. Range: 9,000 to 9,900,000 Grains (Default = 300,000 Grains)

Metric Range: 90.0 to 199,000.0 Degrees (Default = 300.0 Degrees)

1. Use the Shift button to select the digit you want to modify.
2. Use Up or Down buttons to adjust this value.
3. Press the Extra Cycle button.

CAUTION: Before entering Master Programming, please contact your local professional water dealer.

10. Capacity Safety Factor

This program step is used to adjust the capacity of the system. This is a percentage by which the unit's capacity is reduced.

Range: 0 – 50% (Default = 0%)

1. Use the Shift button to select the digit you want to modify.
2. Use Up or Down buttons to adjust this value.
3. Press the Extra Cycle button.

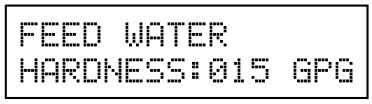
11. Feed Water (Hardness)

This program step is used to set the feed water hardness. The system will automatically calculate volume remaining based on the Unit Capacity, Capacity Safety Factor and Feed Water Hardness entered.

U.S. Range: 1 – 199 gpg (Grains per Gallon)(Default = 15)

Metric Range: 2 – 199 Degrees (Default = 30)

1. Use the Shift button to select the digit you want to modify.
2. Use Up or Down buttons to adjust this value.
3. Press the Extra Cycle button.



12. Regeneration Day Override

This program step sets the maximum amount of time (in days) the unit can be In Service without a Regeneration.

Default: OFF

Range: 1 - 99 Days

NOTE: If "On," the screen for regeneration time will display.

1. Use the Shift button to select the digit you want to modify.
2. Use Up or Down buttons to adjust this value.
3. Press the Extra Cycle button.

CAUTION: Before entering Master Programming, please contact your local professional water dealer.

13. Regeneration Time

This program step sets time of day for a delayed regeneration to occur, or regeneration day override.

Default U.S.: 02:00 AM

Default Metric: 02:00 HR

1. Use the Shift button to select the digit you want to modify.
2. Use Up or Down buttons to adjust this value.
3. Press the Extra Cycle button.

14. Regeneration Cycle Steps

This program step programs the Regeneration Cycle step times 1 through 5. Please refer to the chart below for regenerant flow default cycle steps and times.

Regenerant Flow	Cycle 1	Time	Cycle 2	Time	Cycle 3	Time	Cycle 4	Time	Cycle 5	Time
Down Flow	Back Wash	10 Minutes	Brine & Slow Rinse	1 Hour	Rapid Rinse	10 Minutes	Brine Tank Fill	12 Minutes	Pause	N/A
UF Brine Draw	Brine & Slow Rinse	1 Hour	Backwash	10 Minutes	Rapid Rinse	10 Minutes	Brine Tank Fill	12 Minutes	Pause	N/A
UF Fill First	Brine Tank Fill	12 Minutes	Brine Making	1 Hour	Brine & Slow Rinse	1 Hour	Back Wash	10 Minutes	Rapid Rinse	10 Minutes

15. Auxiliary Relay Output

The next two displays are part of a series of settings used to program the optional relay output. The first setting turns the output on/off during Regeneration only. The second turns the output on during Service only, every time a set volume of water used has accumulated.

CAUTION: Before entering Master Programming, please contact your local professional water dealer.

16. Timed Auxiliary Relay Output Window (Start & End Time Setting, If Auxiliary Relay is Enabled)

This option setting consists of two displays. The first display sets the turn-on time of the output, referenced to the start of the first Regeneration Cycle. The second display sets the output turn-off time, referenced again to the start of first Regeneration Cycle.

Start Time:

Anytime During Regeneration (Except Last Minute of the Regeneration Time)

End Time:

At start time, and anytime during the regeneration cycle.

17. Chemical Pump Auxiliary Relay Output Window

This option setting consists of two displays. The first display sets the volume of water flow at which the output turns on. The second display sets the time of the output.

U.S. Range: 0 – 999 Gallons (1 – 999 Seconds)

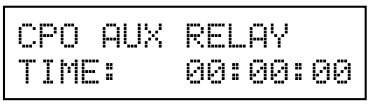
Metric Range: 0.00 – 9.99 m3 (1 – 999 Seconds)

Activate Output After Volume Set is Reached.

Use the Shift button to move one space to the left for each number entered.

Use Up or Down buttons to adjust this value.

Press the Extra Cycle button.



CAUTION: Before entering Master Programming, please contact your local professional water dealer.

18. Fleck Flow Meter Size (Default to Valve Type)

This program step sets the size of the Fleck flow meter.

- 1.0” Paddle (2750 Default)
- 1.5” Paddle (2850/2900 Default)
- 2.0” Paddle (3150 Default)
- 3.0” Paddle (3900 Default)
- 1.0” Turbine
- 1.5” Turbine
- Generic Flow Meter

1. Use Up or Down buttons to adjust this value.
2. Press the Extra Cycle button.

```
FLOW METER:
      .75 PADDLE
```

19. Maximum Flow Rate

This program step sets maximum flow rate of the generic flow meter.

1. Press the Shift button to select the digit you want to modify.
2. Press the Up or Down buttons to adjust this value.
3. Press the Extra Cycle button.

```
MAXIMUM FLOW
RATE:  0000  gpm
```

20. Pulses per Gallon/Liter

This program step sets the pulses per gallon/liter for generic flow meters.

1. Press the Shift button to select the digit you want to modify.
2. Press the Up or Down buttons to adjust this value.
3. Press the Extra Cycle button.

```
ADD  01 GALLONS
EVERY 001 PULSES
```

21. End of Master Programming Mode

```
PROGRAMMING UNIT
PLEASE WAIT...
```

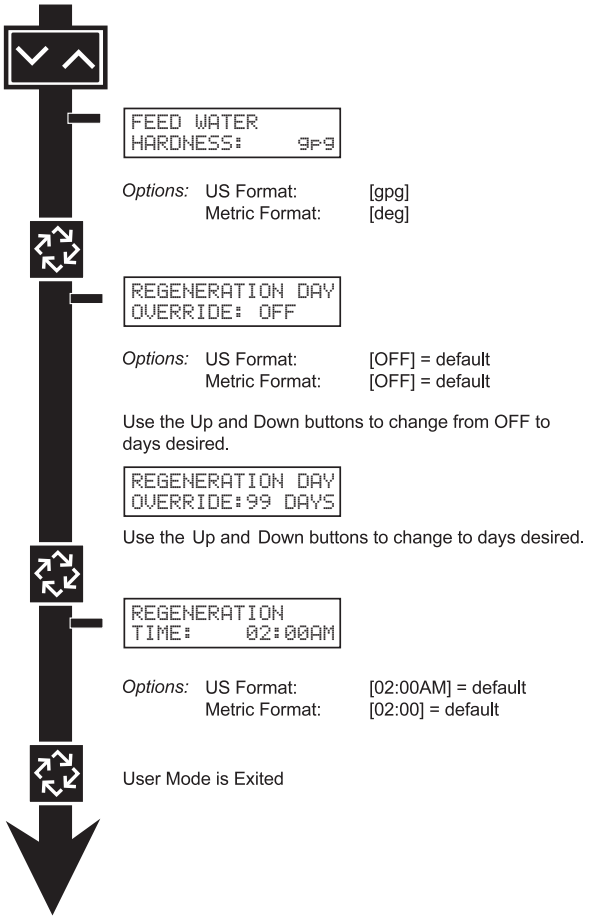
CAUTION: Before entering Master Programming, please contact your local professional water dealer.

User Mode Programming Flow Chart

NOTES: User Mode is only displayed when a metered option is chosen under System Type. Depending on current option settings, some displays cannot be viewed or set.

Entering User Mode:

Hold the Up and Down buttons for 5 seconds.



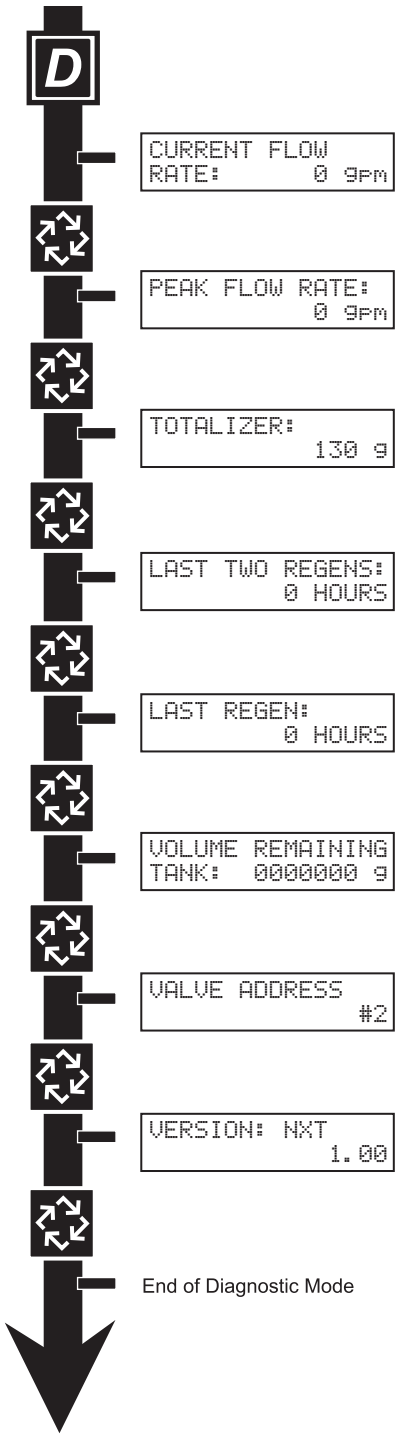
NOTE: User Mode cannot be entered on the Lag unit for System 6.

1. **Enter User Mode**
   - Press and hold the Up and Down buttons for 5 seconds.
2. **Set Feed Water Hardness**
   - Press the Shift, Up, and Down buttons to move the cursor and change the value of the numbers.
   - Press the Extra Cycle button to proceed to the next step.
     NOTE: Only displayed when a metered option is chosen under System Type.
3. **Set Regeneration Day Override**
   - To turn on and set the days, press the Down button.
   - Press the Shift, Up, and Down buttons to move the cursor and change the value of the numbers.
   - Press the Extra Cycle button to proceed to the next step.
4. **Regeneration Time**
   - Press the Shift, Up, and Down buttons to move the cursor and change the value of the numbers.
   - Press the Extra Cycle button
5. **End of User Programming Mode**

Entering Diagnostic Mode:

1. Push and release the “D” button.
2. Press the Extra Cycle button once per display until all displays are viewed and Normal Display is resumed.
3. Push and release the “D” button at anytime during diagnostic mode and the timer will exit the mode.
4. Depending on current valve programming, certain displays may not be able to be viewed or set.

NOTE: If a System 6, Unit#1 of “Tank Remaining” will display “System Remaining).



Diagnostic Programming Guide

When the Diagnostics Mode is entered, all available displays are viewed as needed. Depending on current option settings, some displays cannot be viewed.

Overview Diagnostic Mode

The current diagnostic will be displayed until Extra Cycle key is pressed. There is no time limit on each display. The timer will display individual valve information, not system information. In the event of regeneration occurring while displaying diagnostics, the regeneration step and time remaining will be displayed. When regeneration has been completed, the display will return to the normal Time of Day display.

Entering and Exiting Diagnostic Mode

Push and Release the “D” button to enter. Pressing the Extra Cycle button will move to the next diagnostic to be displayed. Push the Extra Cycle button once per display until all are viewed. Pressing the Diagnostic button, while in the Diagnostic Mode, will cause the unit to leave the Diagnostic Mode and return to the normal time of day display.

Current Flow Rate

Flow Rate for this particular Timer will be calculated and displayed. Flow rates will be calculated every second. The display updates once per second. Flow rates are dependent upon the meter used.

- **1” Paddle Meter Maximum Flow Rate:** 75 gpm (.28 m3/m)
- **1.5” Paddle Meter Maximum Flow Rate:** 90 gpm (.34 m3/m)
- **2” Paddle Meter Maximum Flow Rate:** 175 gpm (.66 m3/m)
- **3” Paddle Meter Maximum Flow Rate:** 350 gpm (1.32 m3/m)
- **1” and 1.5” Turbine Meter:** 75 gpm

1. Press the Extra Cycle button.

```
CURRENT FLOW
RATE:       0 gpm
```

Peak Flow Rate

The Peak Flow Rate since the last regeneration will be captured.

- **Range:** 0 to Maximum Number

1. Press the Extra Cycle button.

```
PEAK FLOW RATE:
            0 gpm
```

Totalizer

The total volume of treated water that passes through a meter will be counted.
NOTE: The user cannot edit below the current volume remaining.

1. Reset to zero by holding the Up and Down arrow keys for 5 seconds during the Totalizer display.
2. Press the Extra Cycle button.

```
TOTALIZER:
        0000000 g
```

Hours Between Last Two Regenerations

The hours between the last two regenerations will be saved and displayed.

1. Depress the Extra Cycle button.

```
LAST TWO REGENS:
      0000 HOURS
```

Hours Since Last Regeneration

The hours since the last regeneration will be saved and displayed.

1. Depress the Extra Cycle button.

```
LAST REGEN:
      0000 HOURS
```

Volume Remaining (This Tank Only)

Volume remaining in the current tank will be adjustable when displayed in this mode. Regeneration will occur if set to zero.

NOTE: Volume Remaining will not display for System Type 6.

The maximum ranges are the same as the maximum volume calculated on the main screen.

1. Press the Shift button to select the digit you want to modify.
2. Use Up or Down buttons is used to adjust this value.
3. Depress the Extra Cycle button

```
VOLUME REMAINING
TANK:  0000000 g
```

Volume Remaining (System)

Volume remaining in the system cannot be edited when displayed in this mode, except for the Lead unit. It can only be viewed on the Lag unit.

1. Depress the Extra Cycle button

```
VOLUME REMAINING
SYS: 0000000000 g
```

Valve Address

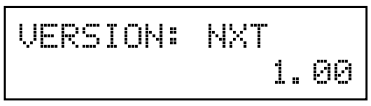
This diagnostic display is for 2 control valves or more in a system (a single valve will not display).

1. Depress the Extra Cycle button.

Software Version

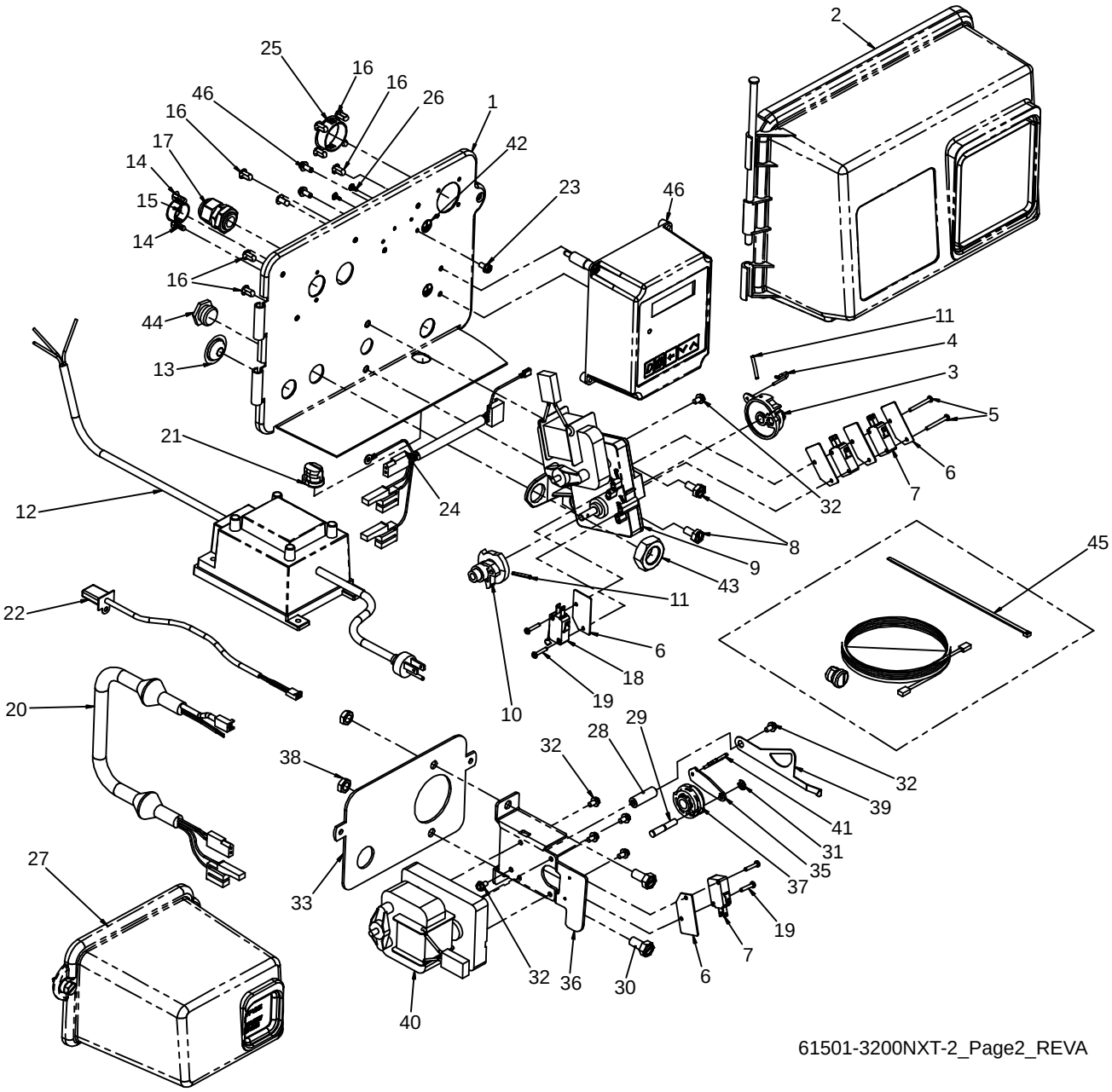
The electronic timer's software program version number will be displayed.

1. Depress the Extra Cycle button to exit.



NOTE: Diagnostic Mode programming will stop if the system goes into regeneration.

2750/2850/2900 Upper & 2900 Lower Powerhead Assy

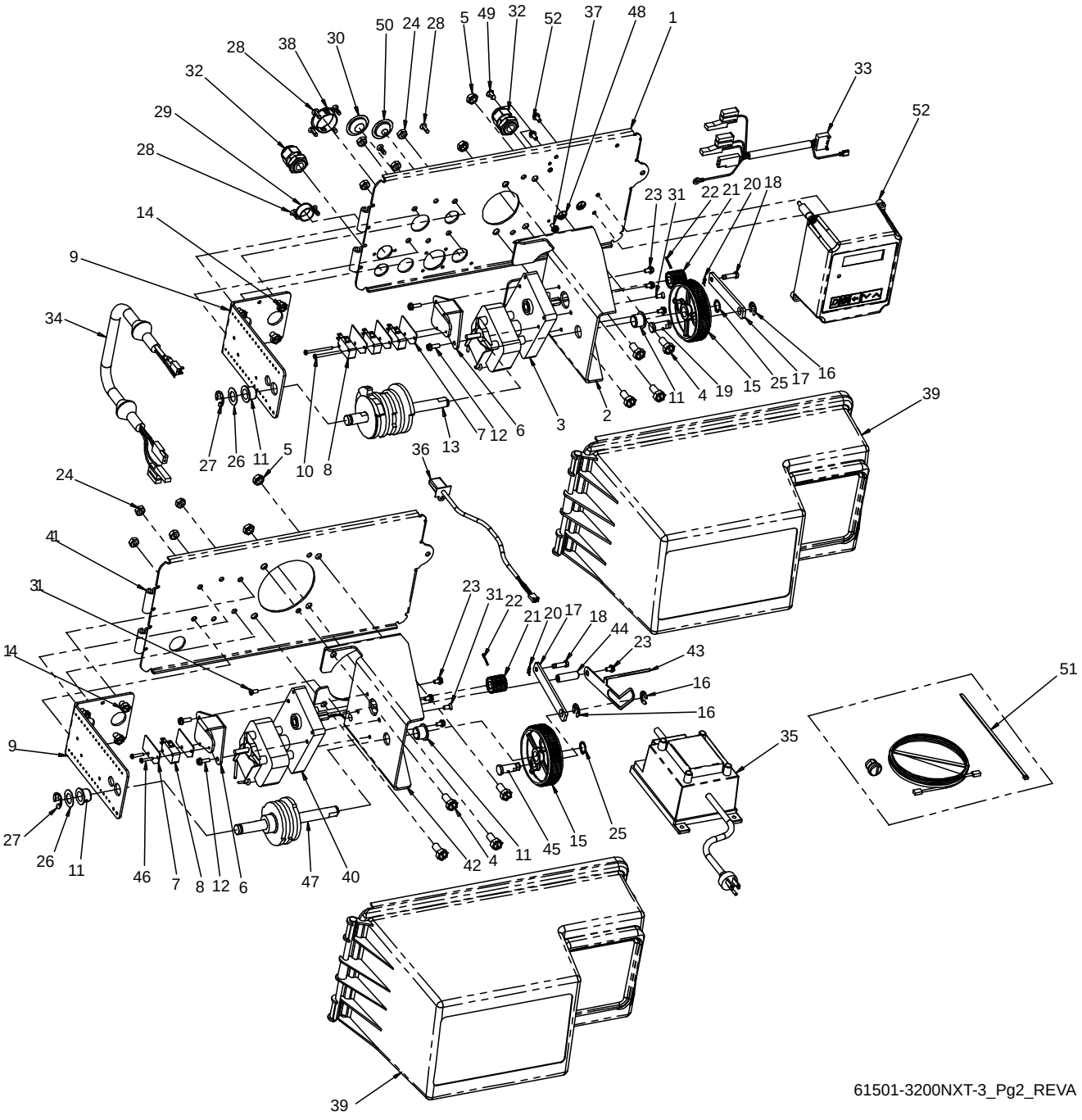


2750/2850/2900 Upper & 2900 Lower Powerhead Assy

Item No.	Quantity	Part No.	Description
1	1	18697-15	backplate, hinged
2	1	60219-02	cover assy, environmental, black
3	1	60160-15	drive cam assy, stf, blue
4	1	10909	pin, link
5	2	14923	screw, pan hd mach, 4-40 x 1
6	5	10302	insulator, limit switch
7	3	10218	switch, micro
8	2	10231	screw, slot hex, 1/4 - 20 x 1/2
9	1	41544	motor, drive, 24V, 50/60 Hz
10	1	12777	cam, shut-off valve
11	2	10338	pin, roll, 3/32 x 7/8
12	1	41034	transformer, US, 120V, 24V, 108VA
		41049	transformer, euro, 230V/24V 108VA
		41050	transformer, aust, 230V/24V, 108VA
13	1	19691	plug, .750 dia, recessed, black
14	2	19800	plug, .140 dia, white
15	1	15806	plug, hole, heyco #2693
16	9	19801	plug, .190 dia, white, heyco #0307
17	1	17967	fitting assy, liquid tight, blk
18	1	10896	switch, micro
19	4	11805	screw, rd hd, 4-40 x 5/8 type 1
20	1	40943	wire harness, lower drive, w/molded strain relief
21	1	13547	strain relief, flat cord, heyco #30-1
22	1	19121	meter cable assy, 3200NT
		19121-08	meter cable assy, NT, 35” w/connector
		19121-09	meter cable assy, NT, 99.5” w/connector
		19121-10	meter cable assy, NT, 303.5” w/connector
23	1	14202-01	screw, hex wsh mach, 8-32 x 5/16
24	1	40941	wire harness, upper drive
25	1	17421	plug, 1.20 hole, heyco #2733
26	2	41581	plug, hole, .125 dia, white
27	1	60217-02	cover assy, 2900, lower, black, environmental
28	1	18626	spacer, indicator
29	1	18746	bearing, connecting rod
30	2	11224	screw, hex hd 5/16 - 18 x 5/8, SS
31	1	10250	ring, retaining
32	7	10872	screw, hex wsh, 8-32 x 17/64
33	1	18709	backplate, lower
34	1	11381	pin, roll, 2900/3900
35	1	14759	link, piston rod
36	1	14769	bracket, motor, 2900
37	1	14775	cam, drive, 2900
38	2	16346	nut, hex, jam, 5/16-18, 18-8-SS
39	1	18725	indicator, service/standby
40	1	40388	motor, drive, 24V, 50/60Hz, SP
41	1	14813	pin, spring, connecting rod
42	1	41102	label, 3200NT, ground
43	1	10269	nut, jam, 3/4 - 16
44	1	10712	fitting, brine valve
45	1	41692	kit, can communication cable
46	1	42466-11	timer assy, NXT, right hand

NOTE: For all other service part numbers, see the Service Manual that accompanies the control valve.

3150/3900 Upper & 3900 Lower Drive Powerhead Assy

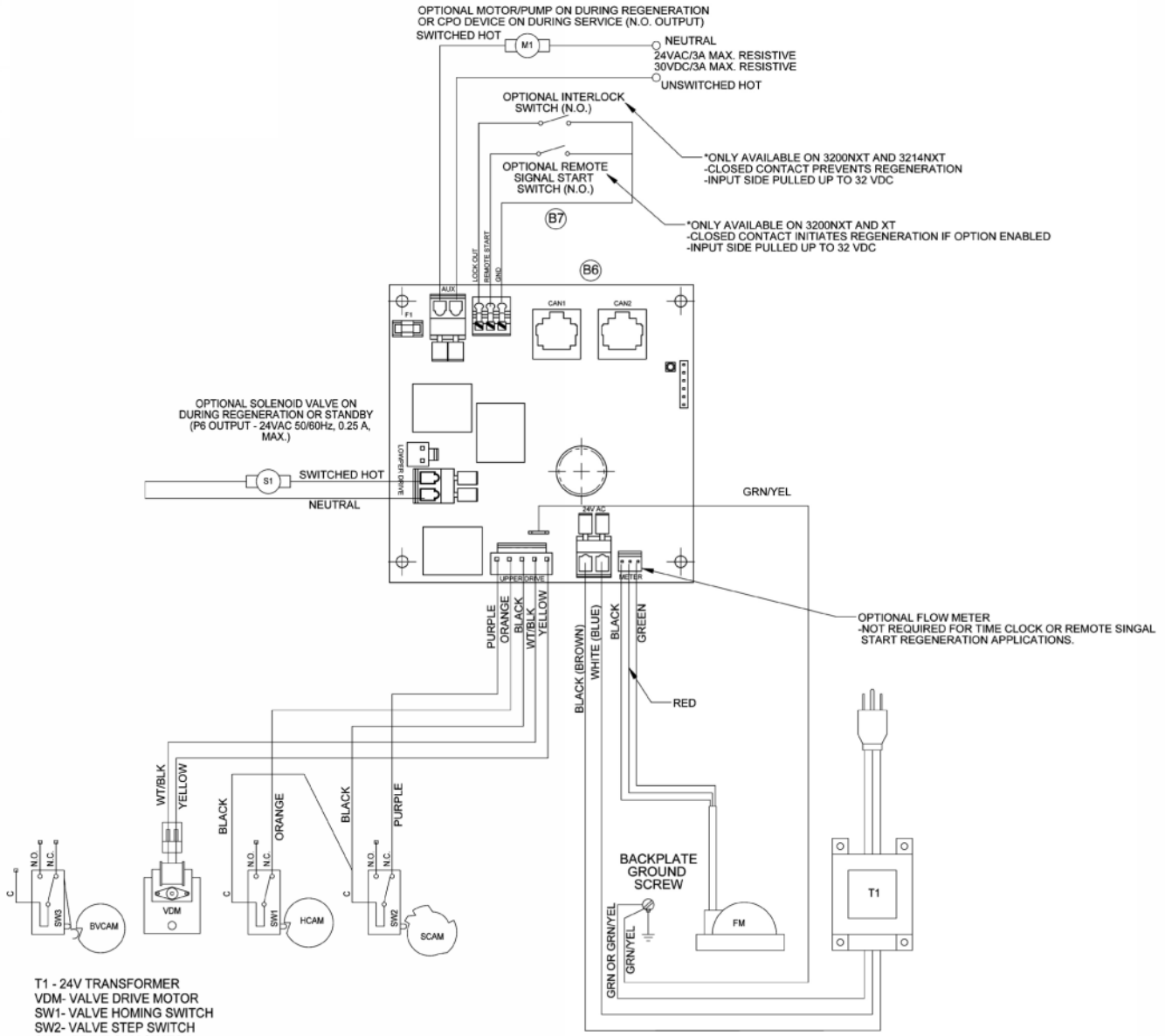


3150/3900 Upper & 3900 Lower Drive Powerhead Assy

Item No.	Quantity	Part No.	Description
1	1	19304-04	backplate, 3150/3900
2	1	15120	bracket, motor mtg, 3150/3900
3	1	40391	motor, drive, 24V, 50/60 hz, sp
4	8	11224	screw, hex hd, 5/16 - 18 x 5/8, ss
5	4	16346	nut, hex, jam, 5/16 - 18, 18-8-ss
6	2	17797	bracket, switch, mounting, 3150/3900
7	5	10302	insulator, limit switch
8	4	10218	switch, micro
9	2	16053	bracket, brine side
10	2	12624	screw, phil pan, 40 x 1 1/2
11	4	16052	bushin, 3150/3900
12	4	17567	screw, hex, wsh hd, 8 x 1/2
13	1	16494	cam assy, 3150/3900
14	8	10231	screw, slot hex, 1/4 - 20 x 1/2 18-8 ss
15	2	16046	gear, drive
16	3	11774	ring, retaining
17	2	16047	link, drive
18	2	11709	pin, drive link
19	1	16048	bearing, drive link
20	2	11898	clip, 3150/3900
21	2	16045	pinion, drive
22	2	11381	pin, roll, 2900/3900
23	7	10872	screw, hex wsh, 8-32 x 17/64
24	8	11235	nut, hex, 1/4 - 20
25	2	16050	ring, retaining
26	2	16059	washer, ss, .88, 3150/3900
27	2	16051	ring, retaining, bowed
28	8	19800	plug, .140, white
29	1	15806	plug, hole, heyco, #2693
30	1	19591	plug, .8750 hole, recessed, black
31	3	11080	screw, flt hd mach, 8-32 x 3/8
32	2	17967	fitting assy, liquid tight, blk
33	1	40941	wire harness, upper drive
34	1	40943	wire harness, lower drive w/molded strain relief
35	1	41034	transformer, US, 120V, 24V, 108VA
		41049	transformer, euro, 230V/24V 108VA
		41050	transformer, aust, 230V/24V, 108VA
36	1	19121	meter cable assy, 3200NT
		19121-08	meter cable assy, NT, 35” w/connector
		19121-09	meter cable assy, NT, 99.5” w/connector
		19121-10	meter cable assy, NT, 303.5” w/connector
37	1	14202-01	screw, hex wsh, 8-32 x 5/16
38	1	17421	plug, 1.20 hole
39	2	60240-02	cover assy, 3150/3900, env, black
40	1	40392	motor, drive, 115V, 50/60Hz, sp
41	1	19305	backplate, 3900, lower, env
42	1	16086	bracket, motor mounting
43	1	19315	indicator, service/standby, 3900
44	1	18726	spacer, indicator
45	1	16048	bearing, drive link
46	2	11805	screw, rd hd, 4-40 x 5/8, type 1
47	1	16495	cam assy, 3900, lower
48	1	41102	label, 3200NT, ground
49	1	19801	plug, .190 dia, white
50	1	19691	plug, .750 dia, recessed, black
51	1	41692	kit, can communication cable
52	1	42466-11	timer assy, NXT, right hand

NOTE: For all other service part numbers, see the Service Manual that accompanies the control valve.

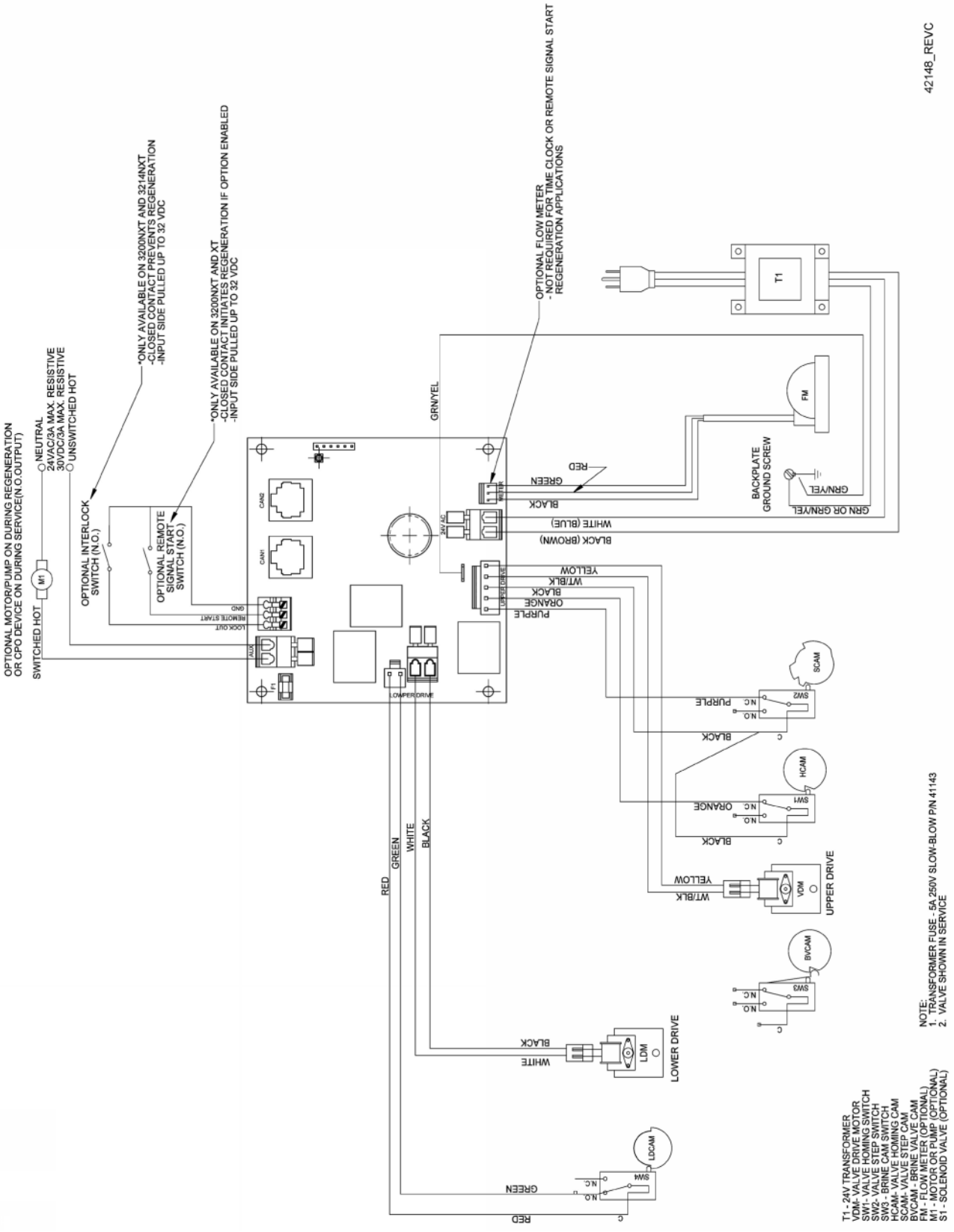
2750/2850/3150 Input & Output Wiring



T1 - 24V TRANSFORMER
VDM- VALVE DRIVE MOTOR
SW1- VALVE HOMING SWITCH
SW2- VALVE STEP SWITCH
SW3 - BRINE CAM SWITCH
HCAM- VALVE HOMING CAM
SCAM- VALVE STEP CAM
BVCAM - BRINE VALVE CAM
FM - FLOW METER (OPTIONAL)
M1 - MOTOR OR PUMP (OPTIONAL)
S1 - SOLENOID VALVE (OPTIONAL)

NOTE:
1. TRANSFORMER FUSE - 5A 250V SLOW-BLOW P/N 41143
2. VALVE SHOWN IN SERVICE

42140_REVD


42148_REVC
OPTIONAL MOTOR/PUMP ON DURING REGENERATION
OR CPO DEVICE ON DURING SERVICE(N.O.OUTPUT)
NEUTRAL
24VAC/3A MAX. RESISTIVE
30VDC/3A MAX. RESISTIVE
UNSWITCHED HOT
SWITCHED HOT
M1
OPTIONAL INTERLOCK SWITCH (N.O.)
OPTIONAL REMOTE SIGNAL START SWITCH (N.O.)
*ONLY AVAILABLE ON 3200NXT AND 3214NXT
-CLOSED CONTACT PREVENTS REGENERATION
-INPUT SIDE PULLED UP TO 32 VDC
*ONLY AVAILABLE ON 3200NXT AND XT
-CLOSED CONTACT INITIATES REGENERATION IF OPTION ENABLED
-INPUT SIDE PULLED UP TO 32 VDC
OPTIONAL FLOW METER
- NOT REQUIRED FOR TIME CLOCK OR REMOTE SIGNAL START
REGENERATION APPLICATIONS
T1
FM
GRN/YEL
BACKPLATE
GROUND SCREW
GRN OR GRN/YEL
GRN/YEL
RED
GREEN
BLACK
WHITE (BLUE)
BLACK (BROWN)
YELLOW
WT/BLK
BLACK
ORANGE
PURPLE
CAN2
CAN1
24V AC
MOTOR
UPPER DRIVE
LOWER DRIVE
LOCK OUT
REMOTE START
GND
AUX
F1
SCAM
HCAM
BVCAM
LDCAM
SW2
SW1
SW3
SW4
N.C.
N.O.
C
PURPLE
BLACK
ORANGE
BLACK
YELLOW
WT/BLK
VDM
UPPER DRIVE
RED
GREEN
WHITE
BLACK
LDM
LOWER DRIVE
GREEN
RED
T1 - 24V TRANSFORMER
VDM- VALVE DRIVE MOTOR
SW1- VALVE HOMING SWITCH
SW2- VALVE STEP SWITCH
SW3 - BRINE CAM SWITCH
HCAM- VALVE HOMING CAM
SCAM- VALVE STEP CAM
BVCAM - BRINE VALVE CAM
FM - FLOW METER (OPTIONAL)
M1 - MOTOR OR PUMP (OPTIONAL)
S1 - SOLENOID VALVE (OPTIONAL)
NOTE:
1. TRANSFORMER FUSE - 5A 250V SLOW-BLOW P/N 41143
2. VALVE SHOWN IN SERVICE

Detected Errors

NOTE: It can take up to 30 seconds for an error to be detected and displayed. All errors on each timer in the system must be displayed before the errors can be corrected.

If a communication error is detected, an Error Screen will alternate with the main (time of day) screen every few seconds.

- All units In Service remain in the In Service position.
- All units in Standby go to In Service.
- Any unit in Regeneration when the error occurs completes Regeneration and goes to In Service.
- No units are allowed to start a Regeneration Cycle while the error condition exists, unless they are manually forced into Regeneration.
- When an error is corrected and the error no longer displays (it may take several seconds for all of the units in a system to stop displaying the error message), the system returns to normal operation.

NOTE: During the error condition the control continues to monitor the flow meter and update the volume remaining. Once the error condition is corrected all units return to the operating status they were in prior to the error. Regeneration queue is rebuilt according to the normal system operation. Or, if more than one unit has been queued for regeneration, then the queue is rebuilt according to which one communicates first.

Cause	Correction
A. One or more units have a missing or bad communication cable.	A. Connect the communication cables and/or replace.
B. One or more units has a communication cable plugged into the wrong receptacle.	B. Connect the communication cable as shown in the wiring diagrams.
C. One or more units is not powered.	C. Power all units.

Programming Errors

During the error condition the control continues to monitor the flow meter and update the remaining capacity. Once the error condition is corrected all units return to the operating status they were in prior to the error and regeneration is queued according to the normal system operation. If reprogramming the unit in the Master Programming Mode clears the error, the volume remaining may be reset to the full unit capacity (i.e. as though it were just regenerated).

1. All units in standby go In Service.
2. Any unit in regeneration when the error occurs completes regeneration and goes to In Service.
3. No units are allowed to start a regeneration cycle while the error condition exists.

When the problem is corrected and the error no longer displays (it may take several seconds for all of the units in a system to stop displaying the error message), the system returns to normal operation.

Programming Errors Detected:

- Duplicate unit addresses or numbers
- Size of system (ex: if sized for a 4 units, and only have 2 units)
- Display format mismatches

Solution:

- Program the units correctly in the Master Programming Mode.

NOTE: If these errors are detected, numbers 1 through 3 become true, and the main screen (time of day) will alternate with an error screen.

Cause	Correction
A. Any or all of two or more units programmed with the same unit number (Matching Address Error)	A. Program the units correctly in the Master Programming Mode
B. Flashing/blinking display	B. Power outage has occurred
C. Format Mismatch (Units have both U.S. and Metric Formats)	C. Verify all units have same Format selected (all U.S. or all Metric)
D. No messages displayed/small black squares appear in display	D. Turn the contrast button on the back of unit until text appears (see “Problems Viewing Display/Changing Contrast of Display” below)
E. Size Error (Units not correctly numbered/more than one unit has the same number assigned)	E. Check each unit and verify each as the correct number, and that only one unit has that number
F. Com Error (Communication Error)	F. Check the wiring of the system and verify it is correct and that all are connected

Example Error Screens

Detected Error
1. Go through Master Programming to program the unit.

No Message #1
1. Make sure all communication cables are connected.
2. If “No Message #1” ensure it is the lead unit.
3. Ensure #1 is configured for the correct system type.

No Message #3
1. Make sure all communication cables are connected.
2. If “No Message #3” ensure it is unit #3.
3. Ensure #3 is configured for the correct system type.

Program Mismatch
1. Ensure the units on the network are not configured the same as #1/the Lead unit.

Exceed Unit Size
1. There are more units on the system than the Lead is programmed for.

Matching Address
1. The unit is programmed the same # as another unit.
   NOTE: The rest of the system will still function without this unit.

Notes

PENTAIR

FLECK 3900

SERVICE MANUAL

TABLE OF CONTENTS

CALIFORNIA PROPOSITION 65 WARNING

⚠ WARNING: This product contains chemicals known to the State of California to cause cancer or birth defects or other reproductive harm.

JOB SPECIFICATION SHEET

Job Number: _____

Model Number: _____

Water Hardness: _____ ppm or gpg

Capacity Per Unit: _____

Mineral Tank Size: _____ Diameter: _____ Height: _____

Salt Setting per Regeneration: _____

1. **Type of Timer:**
   - A. 7 Day or 12 Day
   - B. Meter Initiated
2. **Downflow:** **Upflow** **Upflow Variable**
3. **Meter Size:**
   - A. 3/4-inch Std Range (125 - 2,100 gallon setting)
   - B. 3/4-inch Ext Range (625 - 10,625 gallon setting)
   - C. 1-inch Std Range (310 - 5,270 gallon setting)
   - D. 1-inch Ext Range (1,150 - 26,350 gallon setting)
   - E. 1-1/2 inch Std Range (625 - 10,625 gallon setting)
   - F. 1-1/2 inch Ext Range (3,125 - 53,125 gallon setting)
   - G. 2-inch Std Range (1,250 - 21,250 gallon setting)
   - H. 2-inch Ext Range (6,250 - 106,250 gallon setting)
   - I. 3-inch Std Range (3,750 - 63,750 gallon setting)
   - J. 3-inch Ext Range (18,750 - 318,750 gallon setting)
   - K. Electronic ____ Pulse Count ___ Meter Size _____
4. **System Type:**
   - A. System #4: 1 Tank, 1 Meter, Immediate, or Delayed Regeneration
   - B. System #4: Time Clock
   - C. System #4: Twin Tank
   - D. System #5: 2-5 Tanks, Interlock Mechanical
2-4 Tanks, Interlock Electronic
Meter per unit for Mechanical and Electronic
   - E. System #6: 2-5 Tanks, 1 Meter, Series Regeneration, Mechanical
2-4 Tanks, 1 Meter, Series Regeneration, Electronic
   - F. System #7: 2-5 Tanks, 1 Meter, Alternating Regeneration, Mechanical
2 Tanks only, 1 Meter, Alternating Regeneration, Electronic
   - G. System #9: Electronic Only, 2-4 Tanks, Meter per Valve, Alternating
   - H. System #14: Electronic Only, 2-4 Tanks, Meter per Valve. Brings units on and offline based on flow.
5. **Timer Program Settings:**
   - A. Backwash: _____ Minutes
   - B. Brine and Slow Rinse: _____ Minutes
   - C. Rapid Rinse: _____ Minutes
   - D. Brine Tank Refill: _____ Minutes
   - E. Pause Time: _____ Minutes
   - F. Second Backwash: _____ Minutes
6. **Drain Line Flow Control:** **gpm**
7. **Brine Line Flow Controller:** **gpm**
8. **Injector Size#:**
9. **Piston Type:**
   - A. Hard Water Bypass
   - B. No Hard Water Bypass

INSTALLATION

Water Pressure

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

Electrical Facilities

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.

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 to prevent air breaks and back flow.

By-Pass Valves

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

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

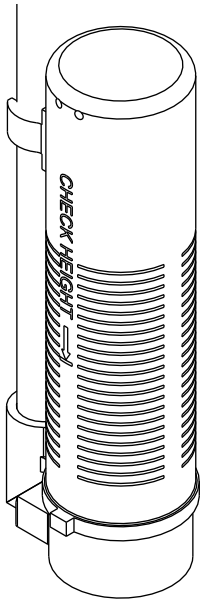
Installation Instructions

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

NOTE: Only use silicone lubricant.

6. Solder joints near the drain must be done prior to connecting the Drain Line Flow Control fitting (DLFC). Leave at least 6 inches (15 cm) between the DLFC and solder joints when soldering pipes that are connected on the DLFC. Failure to do this could cause interior damage to the DLFC.
7. Plumber tape is the only sealant to be used on the drain fitting. The drain from twin tank units may be run through a common line.
8. Make sure that the floor is clean beneath the salt storage tank and that it is level.
9. Place approximately 1 inch (25 mm) of water above the grid plate. If a grid is not utilized, fill to the top of the air check (Figure 1) in the salt tank. Do not add salt to the brine tank at this time.
10. On units with a by-pass, place in by-pass position. Turn on the main water supply. Open a cold soft water tap nearby and let run a few minutes or until the system is free from foreign material (usually solder) that may have resulted from the installation. Once clean, close the water tap.
11. Slowly place the by-pass in service position and let water flow into the mineral tank. When water flow stops, slowly open a cold water tap nearby and let run until the air is purged from the unit.
12. Plug unit into an electrical outlet.

NOTE: All electrical connections must be connected according to local codes. Be certain the outlet is uninterrupted.



60002 Rev E

Figure 1 Residential Air Check Valve

START-UP INSTRUCTIONS

The water softener should be installed with the inlet, outlet, and drain connections made in accordance with the manufacturer's recommendations, and to meet applicable plumbing codes.

1. Turn the manual regeneraton knob slowly in a clockwise direction until the program micro switch lifts on top of the first set of pins. Allow the drive motor to move the piston to the first regeneration step and stop. Each time the program switch position changes, the valve will advance to the next regeneration step. Always allow the motor to stop before moving to the next set of pins or spaces.

NOTE: For electronic valves, please refer to the manual regeneration part of the timer operation section. If the valve came with a separate electronic timer service manual, refer to the timer operation section of the electronic timer service manual.

2. Position the valve to backwash. Ensure the drain line flow remains steady for 10 minutes or until the water runs clear (see above).
3. Position the valve to the brine / slow rinse position. Ensure the unit is drawing water from the brine tank (this step may need to be repeated).
4. Position the valve to the rapid rinse position. Check the drain line flow, and run for 5 minutes or until the water runs clear.

STARTUP INSTRUCTIONS *CONTINUED*

5. Position the valve to the start of the brine tank fill cycle. Ensure water goes into the brine tank at the desired rate. The brine valve drive cam will hold the valve in this position to fill the brine tank for the first regeneration.
6. Replace control box cover.
7. Put salt in the brine tank.

NOTE: Do not use granulated or rock salt.

3200 TIMER SETTING PROCEDURE

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

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

How To Set The Time Of Day

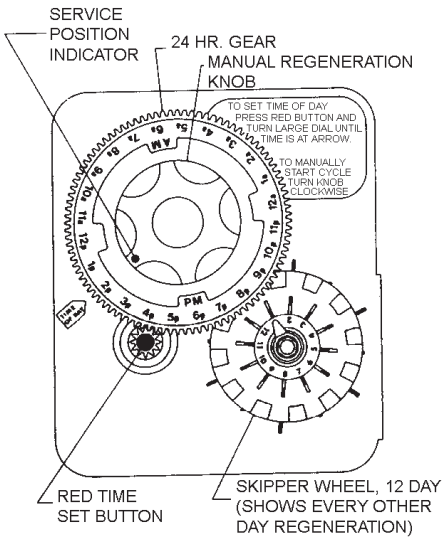
1. Press and hold the red button in to disengage the drive gear.
2. Turn the large gear until the actual time of day is at the time of day pointer.
3. Release the red button to again engage the drive gear.

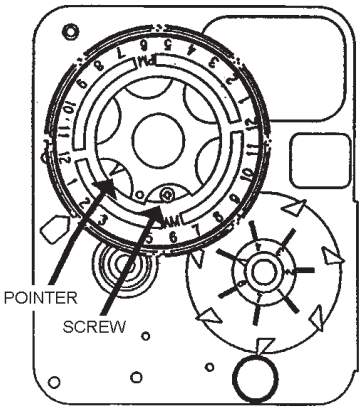
How To Manually Regenerate Your Water Conditioner At Any Time

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

How to Adjust Regeneration Time

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





3200 ADJUSTABLE REGENERATION TIMER

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

61502-3200 Rev A

Figure 2

3210 & 3220 TIMER SETTING PROCEDURE

Typical Programming Procedure

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

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

How To Set The Time Of Day

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

How To Manually Regenerate Your Water Conditioner At Any Time

1. Turn the manual regeneration knob clockwise.

3210 & 3220 TIMER SETTING PROCEDURE *CONTINUED*

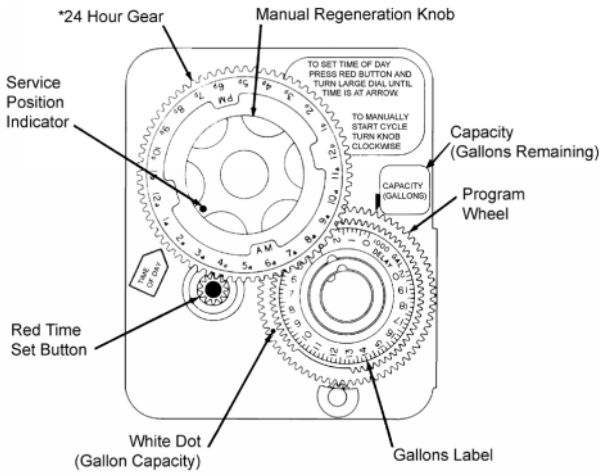
2. This slight movement of the manual regeneration knob engages the program wheel and starts the regeneration program.
3. The black center knob will make one revolution in the following approximately three hours and stop in the position shown in the drawing.
4. Even though it takes three hours for this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

Immediate Regeneration Timers

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

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

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



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

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Figure 3

3200, 3210, 3220, 3230 REGENERATION CYCLE SETTING PROCEDURE

How To Set The Regeneration Cycle Program

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

3200 Series Timers (Figure 4)

1. To expose cycle program wheel, grasp timer in upper left-hand corner and pull, releasing snap retainer and swinging timer to the right.
2. To change the regeneration cycle program, the program wheel must be removed. Grasp program wheel and squeeze protruding lugs toward center, lift program wheel off timer. Switch arms may require movement to facilitate removal.
3. Return timer to closed position engaging snap retainer in back plate. Make certain all electrical wires locate above snap retainer post.

Timer Setting Procedure

How To Change The Length Of The Backwash Time

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

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

How To Change The Length Of Brine And Rinse Time

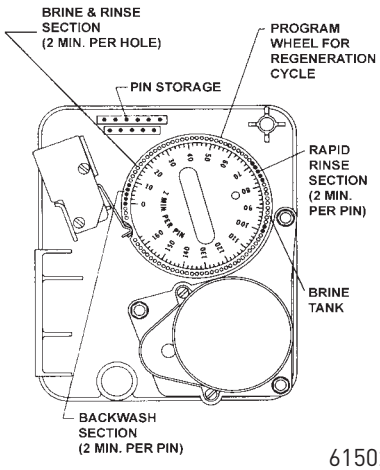
1. The group of holes between the last pin in the backwash section and the second group of pins determines the length of time that your unit will brine and rinse (2 min. per hole).
2. To change the length of brine and rinse time, move the rapid rinse group of pins to give more or fewer holes in the brine and rinse section. Number of holes times two equals brine and rinse time in minutes.

How To Change The Length Of Rapid Rinse

1. The second group of pins on the program wheel determines the length of time that your water conditioner will rapid rinse (2 min. per pin).
2. To change the length of rapid rinse time, add or remove pins at the higher numbered end of this section as required. The number of pins times two equals the rapid rinse time in minutes.

How To Change The Length Of Brine Tank Refill Time

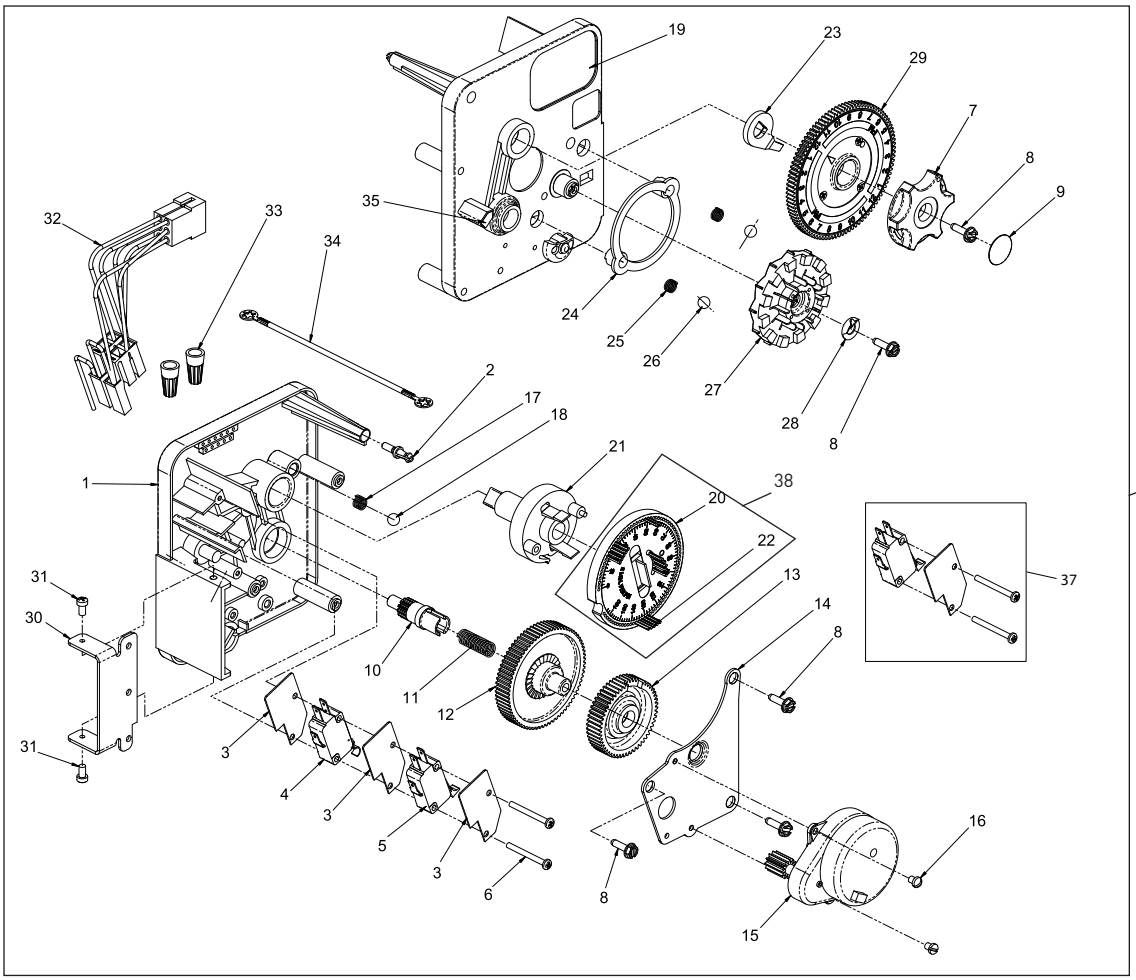
1. The second group of holes in the program wheel determines the length of time that your water conditioner will refill the brine tank (2 min. per hole).
2. To change the length of refill time, move the two pins at the end of the second group of holes as required.
3. The regeneration cycle is complete when the outer microswitch is tripped by the two pin set at end of the brine tank refill section.
4. The program wheel, however, will continue to rotate until the inner micro switch drops into the notch on the program wheel.



61502-3210 Rev A

Figure 4

3200 TIME CLOCK TIMER ASSEMBLY



615023200 Rev A

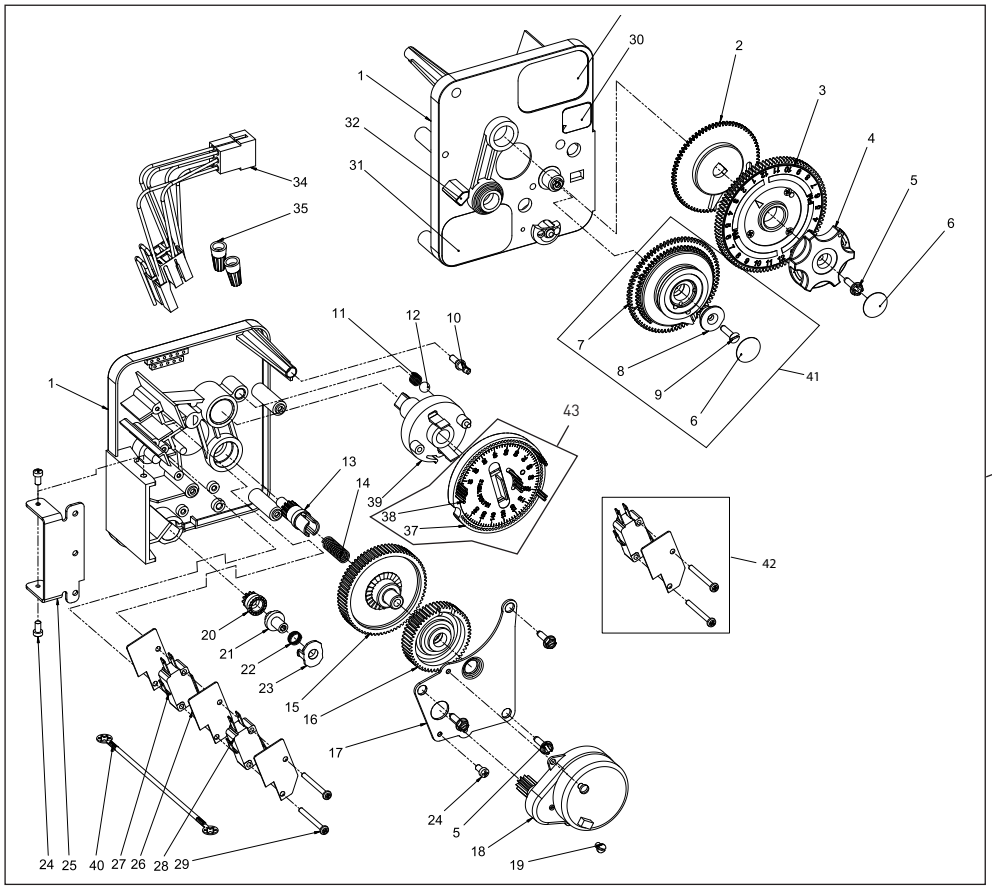
3200 TIME CLOCK TIMER ASSEMBLY

CONTINUED

Item No.	QTY	Part No.	Description
1	1	13870	Housing, Timer, 3200
2	1	14265	Clip, Sping
3	3	14087	Insulator
4	1	10896	Switch, Micro
5	1	15320	Switch, Micro, Timer
6	2	11413	Screw, Pan Hd Mach, 4-40 x 1-1/8
7	1	13886	Knob, 3200
8	5	13296	Screw, Hex Wsh, 6-20 x 1/2
9	1	11999	Label, Button
10	1	13018	Pinion, Idler
11	1	13312	Spring, Idler Shaft
12	1	13017	Gear, Idler
13	1	13164	Gear, Drive
14	1	13887	Plate, Motor Mounting
15	1	18743-1	Motor, 120V, 60Hz, 1/30 RPM
		18752-1	Motor, 100V, 50Hz, 1/30 RPM
		18824-1	Motor, 230V, 50Hz, 1/30 RPM
		18826-1	Motor, 24V, 50Hz, 1/30 RPM
		19659-1	Motor, 24V, 60Hz, 1/30 RPM
		19660-1	Motor, 230V, 60Hz, 1/30 RPM
16	2	13278	Screw, Sltd Fillister Hd 6-32 x .156
17	1	15424	Spring, Detent, Timer
18	1	15066	Ball, 1/4-inch, Delrin
19	1	15465	Label, Caution
20	1	19210	Program Wheel Assy
21	1	13911	Gear, Main Drive, Timer
22	17	41754	Pin, Spring, 1/16 x 5/8 SS, Timer
23	1	13011	Arm, Cycle Actuator
24	1	13864	Ring, Skipper Wheel
25	2	13311	Spring, Detent, Timer
26	2	13300	Ball, 1/4-inch, SS
27	1	14381	Skipper Wheel Assy, 12 Day
		14860	Skipper Wheel Assy, 7 Day
28	1	13014	Pointer, Regeneration
29	1	40096-24	Dial, 12 AM Regen Assy, Black
		40096-02	Dial, 2 AM Regen Assy, Black
30	1	13881	Bracket, Hinger Timer
31	2	11384	Screw, Phil, 6-32 x 1/4 Zinc
32	1	13902	Harness, 3200
33	2	40422	Nut, Wire, Tan
34	1	15354-01	Wire, Ground, 4 inches
35	1	14007	Label, Time of Day
36	1	*	Complete 3200 Time Clock Timer Assembly
37		60320-02	Switch Kit, 3200/9000 Timer Auxiliary, Optional
38		61420-03	Program Wheel, Gear Assy, Filter 2 Min Per Pin
		61420-04	Program Wheel, Gear Assy, Softener, 2 Min Per Pin

*Call your distributor for Part Number

3210 METER DELAYED TIMER ASSEMBLY



61502-3210 Rev A

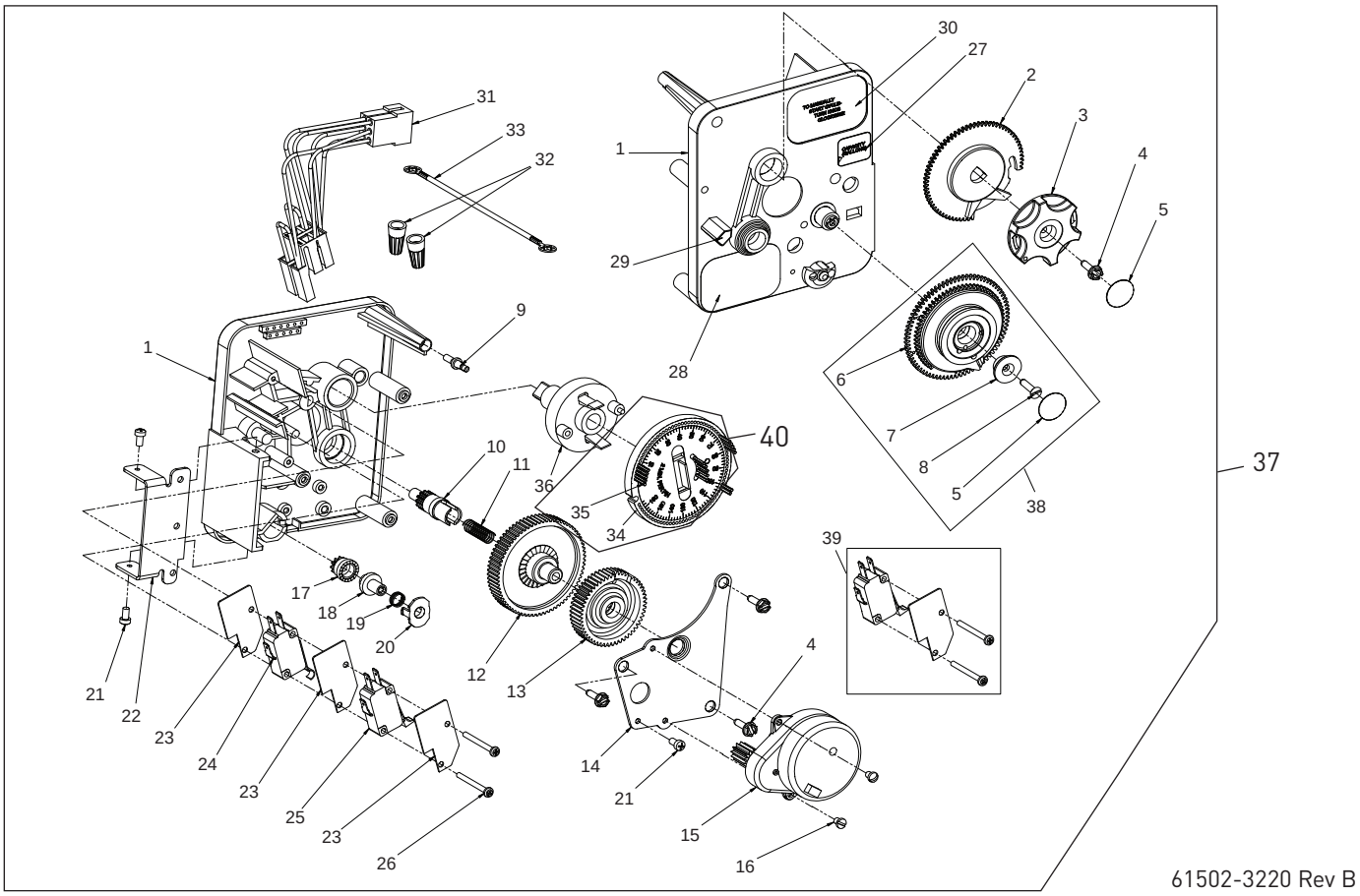
3210 METER DELAYED TIMER ASSEMBLY

CONTINUED

Item No.	QTY	Part No.	Description
1	1	13870	Housing, Timer, 3200
2	1	13802	Gear, Cycle Actuator
3	1	40096-02	Dial 2 AM Regen Assy, Black
4	1	13886	Knob, 3200
5	4	13296	Screw, Hex Wsh, 6-20 x 1/2
6	2	11999	Label, Button
7	1	13803	Gear, Program Drive Wheel
8	1	13806	Retainer, Program Wheel
9	1	13748	Screw, Flat Head St, 6-20 x 1/2
10	1	14265	Clip, Spring
11	1	15424	Spring, Detent, Timer
12	1	15066	Ball, 1/4-inch Delrin
13	1	13018	Pinion, Idler
14	1	13312	Spring, Idler Shaft
15	1	13017	Gear, Idler
16	1	13164	Gear, Drive
17	1	13887	Plate, Motor Mounting
18	1	18743-1	Motor, 120V, 60Hz 1/30 RPM
		18752-1	Motor, 100V, 50Hz, 1/30 RPM
		18824-1	Motor, 230V, 50Hz, 1/30 RPM
		18826-1	Motor, 24V, 50Hz, 1/30 RPM
		19659-1	Motor, 24V, 60Hz, 1/30 RPM
		19660-1	Motor, 230V, 60Hz, 1/30 RPM
19	1	13278	Screw, Fillister Hd, 6-32 x .156
20	1	13830	Pinion, Program Wheel Drive
21	1	13831	Clutch, Drive Pinion
22	1	14276	Spring, Meter, Clutch
23	1	14253	Retainer, Clutch Spring
24	3	11384	Screw, Phil, 6-32 x 1/4
25	1	13881	Bracket, Hinge Timer
26	3	14087	Insulator
27	1	10896	Switch, Micro
28	1	15320	Switch, Micro, Timer
29	2	11413	Screw, Pan Hd Mach, 4-40 x 1 1/8
30	1	14198	Label, Indicator
31	1	15465	Label, Caution
32	1	14007	Label, Time of Day
33	1	14045	Label, Instruction
34	1	13902	Harness, 3200
35	2	40422	Nut, Wire, Tan
36	1	15354-01	Wire, Ground, 4 inches
37	1	19210	Program Wheel Assy
38	17	41754	Pin, Spring, 1/16 x 5/8 SS, Timer
39	1	13911	Gear, Main Drive, Timer
40	1	*	Complete 3210 Meter Delayed Timer Assembly
41		60405-80	Program Wheel, w/3-inch STD Label 63,750 gal
		60405-90	Program Wheel, w/3-inch EXT Label 320,000 gal
42		60320-02	Switch Kit, 3200/9000 Timer Auxiliary, Optional
43		61420-03	Program Wheel, Gear Assy, Filter 2 Min Per Pin
		61420-04	Program Wheel, Gear Assy, Softener, 2 Min Per Pin
Not Shown:			
		25141	Label, STD M^3, Gallon 240, 3-inch
		25142	Label, EXT M^3, Gallon 1200, 3-inch

*Call your distributor for Part Number

3220 METER IMMEDIATE TIMER ASSEMBLY



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3220 METER IMMEDIATE TIMER

ASSEMBLY *CONTINUED*

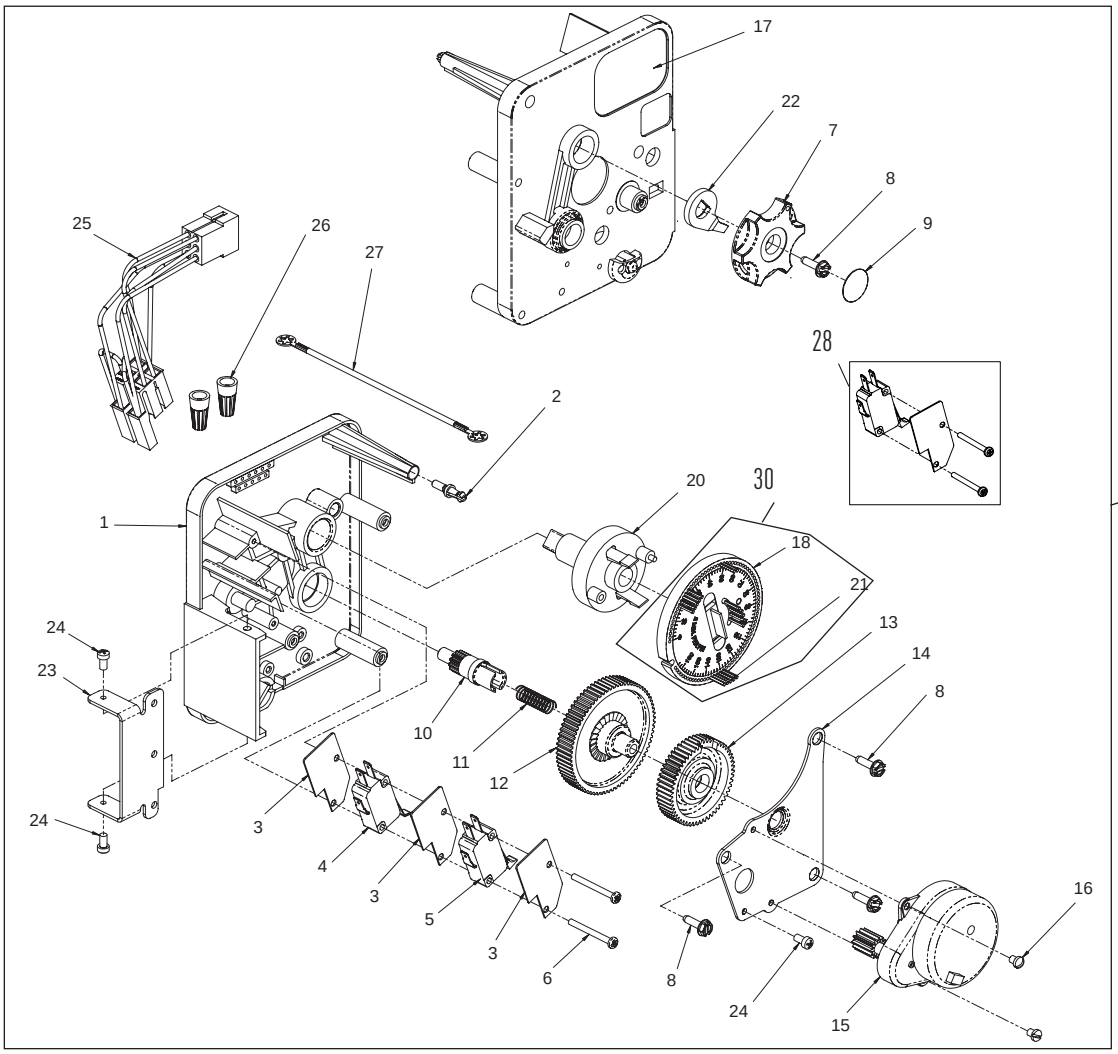
Item No.	QTY	Part No.	Description
1	1	13870	Housing, Timer
2	1	15431	Gear, Cycle Actuator, System #5
3	1	13886	Knob, 3200
4	4	13296	Screw, Hex Wsh, 6-20 x 1/2
5	2	11999	Label, Button
6	1	13807	Gear, Program Drive Wheel
7	1	13806	Retainer, Program Wheel
8	1	13748	Screw, Flt Hd St, 6-20 x 1/2
9	1	14265	Spring Clip
10	1	13018	Pinion, Idler
11	1	18563	Idler Shaft Spring
12	1	13017	Gear, Idler
13	1	13164	Drive Gear
14	1	13887	Plate, Motor Mounting
15	1	18743-1	Motor, 120V, 60 Hz, 1/30 RPM
		18752-1	Motor, 100V, 50Hz, 1/30 RPM
		18824-1	Motor, 230V, 50Hz, 1/30 RPM
		18826-1	Motor, 24V, 50Hz, 1/30 RPM
		19659-1	Motor, 24V, 60Hz, 1/30 RPM
		19660-1	Motor, 230V, 60Hz, 1/30 RPM
16	2	13278	Screw, Sltd Fillister Hd
17	1	14502	Pinion, Program Wheel
18	1	14501	Clutch, Drive Pinion
19	1	14276	Meter Clutch Spring
20	1	14253	Retainer, Clutch Spring
21	3	11384	Screw, Phil, 6-32 x 1/4 Zinc
22	1	13881	Bracket, Hinge Timer
23	3	14087	Insulator
24	1	15414-00	Micro Switch
25	1	15320	Switch, Micro, Timer
26	2	11413	Screw, Pan Hd Mach, 4-40 x 1-1/8
27	1	14198	Label, Indicator
28	1	15465	Label, Caution
29	1	14007	Label, Time of Day
30	1	15148	Label, Instruction
31	1	40617	Harness, 3220
32	2	40422	Nut, Wire, Tan
33	1	15354-01	Wire, Ground, 4 inches
34	1	19210-05	Program Wheel Assembly, 9000/3230
35	17	41754	Pin, Spring, 1/16 x 5/8 Stainless Steel, Timer
36	1	15055	Gear, Main Drive
37	1	*	Complete 3220 Meter Immediate Timer Assembly
38		60405-80	Program Wheel, w/3-inch STD Label 63,750 gal
		60405-90	Program Wheel, w/3-inch EXT Label 320,000 gal
39		60320-02	Switch Kit, 3200/9000 Timer Auxiliary, Optional
40		61420-06	Program Wheel, Gear Assy, Softener Immediate 2 Min Per Pin
		61420-42	Program Wheel, Gear Assy, Filter Immediate 2 Min Per Pin

Not Shown:

		25141	Label, STD M^3, Gallon 240, 3-inch
		25142	Label, EXT M^3, Gallon 1200, 3-inch

*Call your distributor for Part Number

3230 REMOTE START TIMER ASSEMBLY



61502-3230R REV A

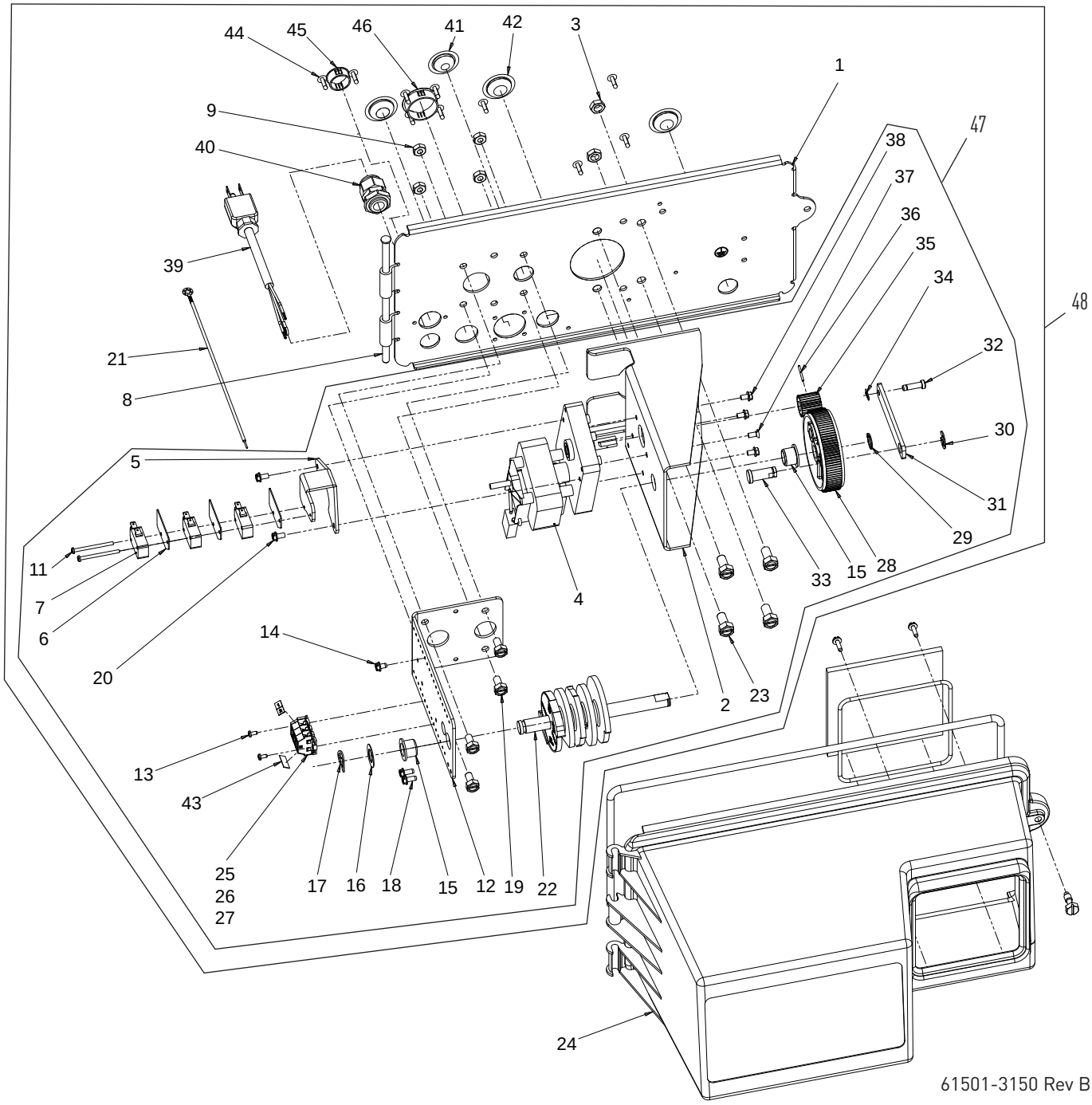
3230 REMOTE START TIMER ASSEMBLY

CONTINUED

Item No.	QTY	Part No.	Description
1	1	13870	Housing, Timer
2	1	14265	Spring Clip
3	3	14087	Insulator
4	1	15314	Micro Switch
5	1	15320	Switch, Micro, Timer
6	2	11413	Screw, Pan Hd Mach, 4-40 x 1-1/8
7	1	13886	Knob, 3200
8	4	13296	Screw, Hex Wsh, 6-20 x 1/2
9	1	11999	Label, Button
10	1	13018	Pinion, Idler
11	1	18563	Idler Shaft Spring
12	1	13017	Gear, Idler
13	1	15055	Drive Gear
14	1	13887	Plate, Motor Mounting
15	1	18743-1	Motor, 120V, 60 Hz, 1/30 RPM
		18752-1	Motor, 100V, 50Hz, 1/30 RPM
		18824-1	Motor, 23V, 50Hz, 1/30 RPM
		18826-1	Motor, 24V, 50Hz, 1/30 RPM
		19659-1	Motor, 24V, 60Hz, 1/30 RPM
		19660-1	Motor, 230V, 60Hz, 1/30 RPM
16	2	13278	Screw, Sltd Fillister Hd
17	1	15313	Label, Caution
18	1	19210-05	Program Wheel Assembly, 3200
20	1	15055	Main Drive Gear
21	17	41754	Pin, Spring, 1/16 x 5/8 Stainless Steel, Timer
22	1	13011	Cycle Actuator Arm
23	1	13881	Bracket, Hinge Timer
24	3	11384	Screw, Phil, 6-32 x 1/4 Zinc
25	1	16336	Harness, 3230R
26	2	40422	Nut, Wire, Tan
27	1	15354-01	Wire, Ground, 4 inches
28		60320-02	Switch Kit, 3200/9000 Timer Auxiliary, Optional
29		*	3230 Timer Assy
30		61420-06	Program Wheel, Gear Assy, Softener Immediate 2 Min Per Pin
		61420-42	Program Wheel, Gear Assy, Filter Immediate 2 Min Per Pin

*Call your distributor for Part Number

CONTROL DRIVE ASSEMBLY

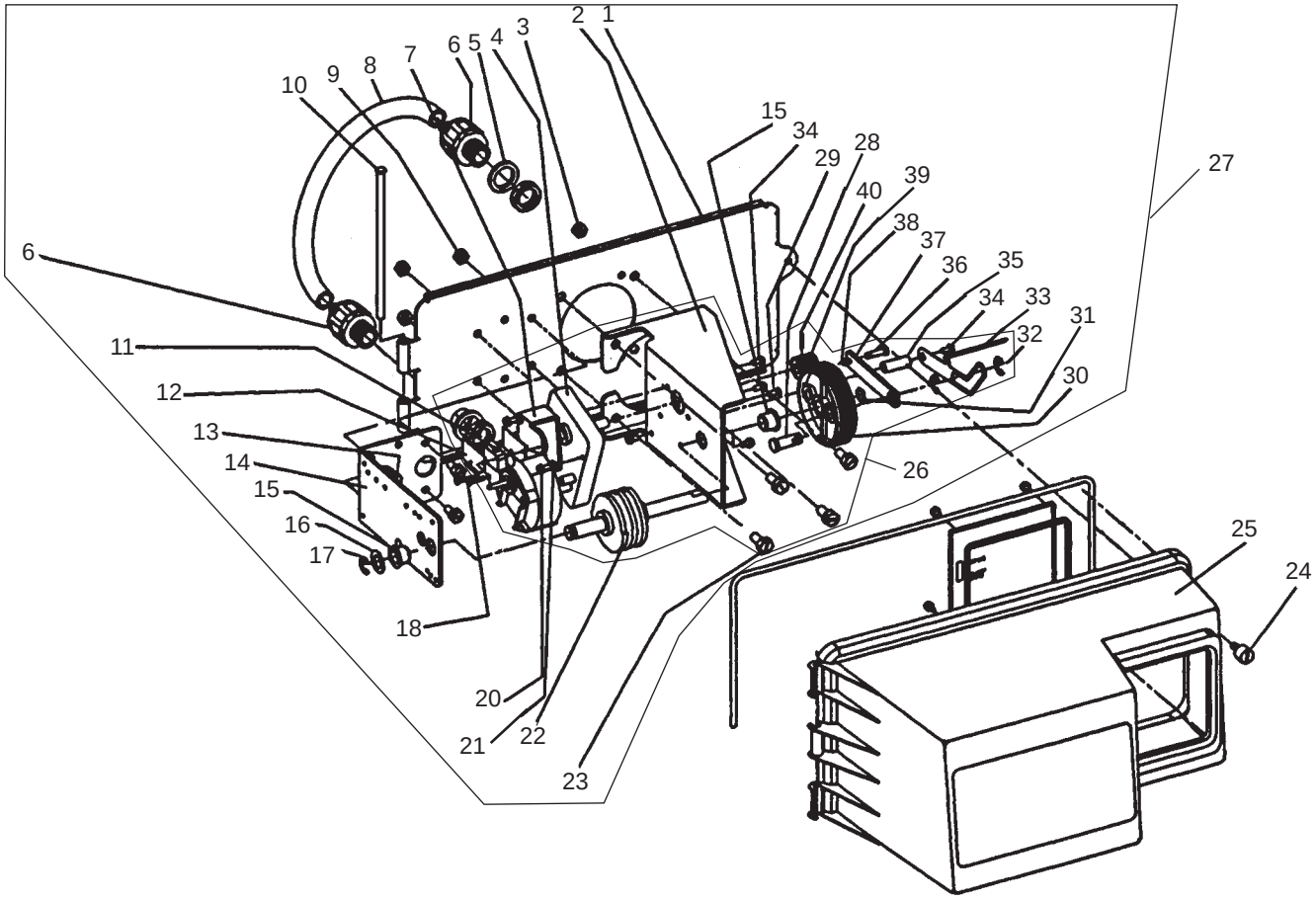


CONTROL DRIVE ASSEMBLY *CONTINUED*

Item No.	QTY	Part No.	Description
1	1	19304-04	Backplate, 3150/3900, Upper, NEMA 3R
2	1	15120-01	Bracket, Motor Mtg, 3150/3900 Environmental
3	2	16346	Nut, Hex, Jam, 5/16 - 18
4	1	40392	Motor, Drive, 115V, 50/60 Hz, Sp
		40390	Motor, Drive, 220V, 50 Hz, Sp, Fam 3
		42581	Motor, Drive, 24VAC/DC, 50-60 Hz, Fam 3
5	1	17797	Bracket, Switch Mounting, 3150/3900
6	4	10302	Insulator, Limit Switch
7	3	10218	Switch, Micro
8	1	17845-03	Pin, Hinge, 3150/3900, Env
9	4	11235	Nut, Hex, 1/4 -20, Mach Screw, Zinc
10	2	13365	Washer, Lock, #4, External
11	2	40080	Screw, Rd Hd, 4-40 x 1-1/2 inch
12	1	16053	Bracket, Brine Side
13	2	40133	Screw, Pan Hd, 4-40 x 1/4-inch
14	2	40133	Screw Pan HD, 4-40 x 1/4-inch
15	2	16052	Bushing, 3150/3900
16	1	16059	Washer, SS, .88, 3150/3900
17	1	16051	Ring, Retaining, Bowed
18	2	10300	Screw, Slot Hex Wsh, 18-8 x 3/8
19	4	10231	Screw, Slot Hex, 1/4 - 20 x 1/2
20	2	14202-01	Screw, Hex Wsh Hd, 8 x 5/16
21	1	10475-01	Wire, Ground
22	1	16494-03	Cam Assy, 3150/3900 Signal After Brine Fill
		16494-05	Cam Assy, 3150/3900 Upper Signal After Rapid Rinse
		16494-06	Cam Assy, 3150/3900, Upper, Upflow, 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 Bloack, 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 feet US, Round, 120V
		40085-12	Power Cord, 12 feet US, Round, 240V
		11545	Power Cord, 4 feet European, Black
		19303	Power Cord, 8 feet, Australian
		19885	Power Cord, Japanese, 110V/120V
40	1	17967	Fitting Assy, Liquid Tight, Blk
41	1	19691	Plug, .750 Dia, Recessed, Black
42	3	19591	Plug, .8750 Hole, Recessed, Black
43	2	15250	Label, Terminal Strip
44	10	19800	Plug, .140 Dia, White
45	1	15806	Plug, Hole, Heyco #2693
46	1	17421	Plug, 1.20 Hole
47		60057-01	Drive Assy, 3150, 120V, SYS 5 & 7, Signal After Brine Tank Fill
		60057-03	Drive Assy, 3150, 24V, 3900 Upper, SYS #5 or SYS #7
		60057-11	Drive Assy, 3150, 120V, 3900 Upper, SYS #4 or SYS #6
		60057-21	Drive Assy, 3150, 120V, Upflow, 3900 Upper, SYS 5 or SYS 7, Brine Draw First
48		*	3150 Powerhead Assembly
Not Shown			
	1	17470	Cable Guide Assy, 2850/3150
	1	19856	Ring, Retaining (Used on Cover)
	1		Timer (See Timer Section)
	1	16427-04	Wire, Lead, 12 inches, White
	1	40396	Harness, Drive, Environmental
	1	14924	Strain Relief Heyco #1247
	1	15513	Meter Cable, 17.5 inches, 2 inches
	1	15216	Meter Cable, 15.25 inches, 1.5 inches
	1	18585	Harness, 3900, Aux Switch

*Call your distributor for Part Number

ADAPTER CONTROL DRIVE LOWER POWERHEAD

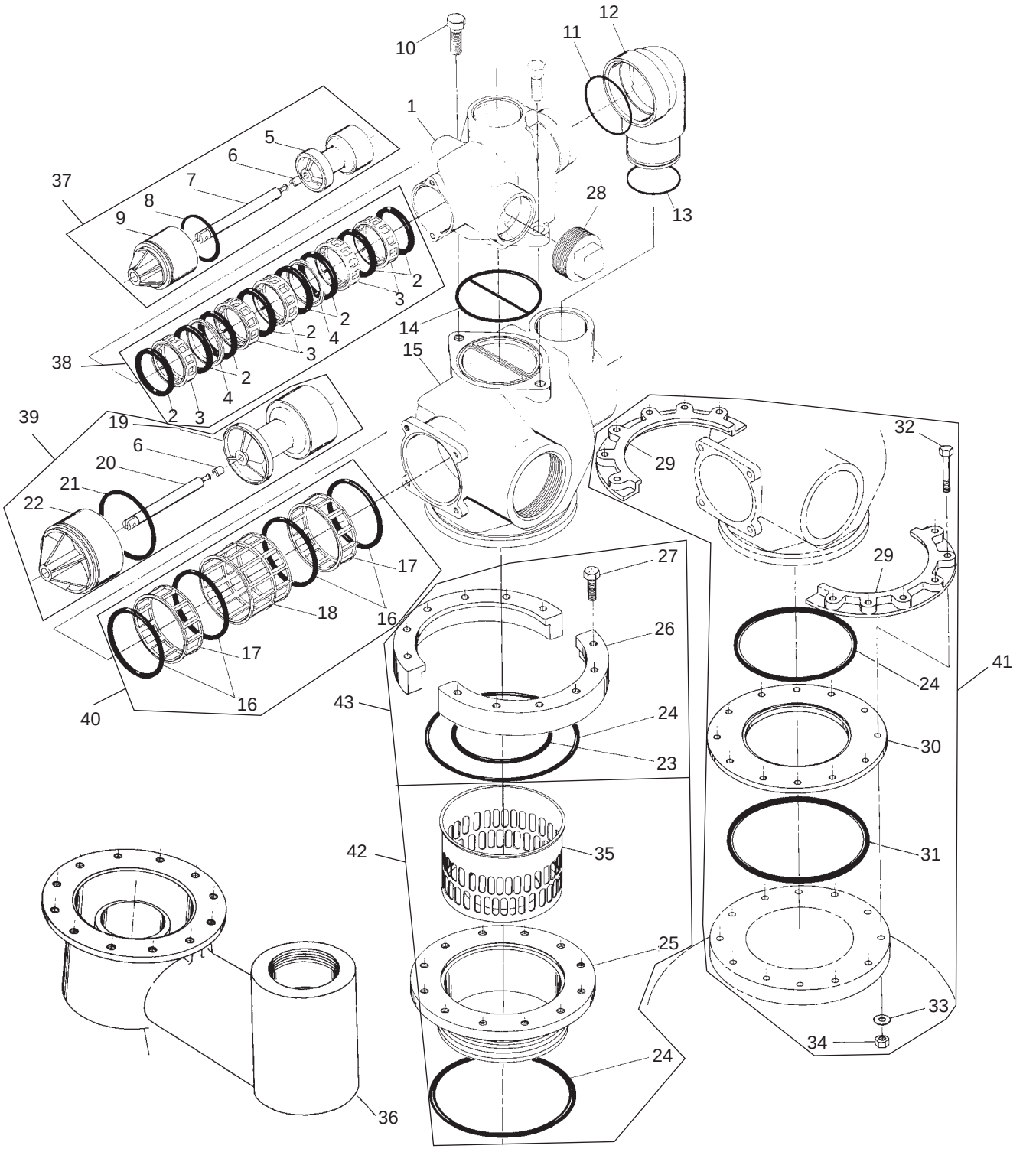


ADAPTER CONTROL DRIVE LOWER POWERHEAD *CONTINUED*

Item No.	QTY	Part No.	Description
1	1	19305	Back Plate, 3900 Lower, Enviromental
2	1	16086	Bracket - Motor Mounting
3	2	16346	Nut
4	1	40392	Drive Motor - 115 V. 50/60 Hz.
		40390	Drive Motor - 220 V. 50/60 Hz.
		42581	Drive Motor - 24 VAC/DC 50/60 Hz.
5	2	18692	Washer, Sealing
6	2	18691	Connector, Conduit
7	1	17797	Bracket - Switch Mounting
8	1	18693	Conduit, lnterdrive
9	4	11235	Nut, 1/4-20
10	1	17845-03	Pin, Hinge
11	1	10218	Switch
12	2	10302	Insulator - Switch
13	4	10231	Screw - Hex Head, 1/4-20 x 1/2, 18-8 S.S.
14	1	16053	Bracket - Brine Side
15	2	16052	Bushing
16	1	16059	Washer
17	1	16051	Retaining Ring - Bowed "E"
18	2	11805	Screw, RD HD, 4-40 x 5/8-inch, Type 1, Steel/Zinc
20	2	17567	Screw - Hex Head, WSH, 8 x 1/2, Type B, 18-8, S.S.
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.
24	1	19813/41536	Screw O-ring, Cover
25	1	60240-22	Cover, Black, Lower, Environmental
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
		60058-01	Lower Drive Assy, 3900, 120V
		60058-03	Lower Drive Mtr Assy, 3900, 24V
27		*	3900 Lower Powerhead Assy
28	1	16048-01	Bearing - Drive Link
29	2	11080	Screw - Flt HD Mach, 8-32 x 3/8, Steel Zinc
30	1	16046	Drive Gear
31	1	16050	Retaining Ring
32	2	11774	Retaining Ring - "E"
33	1	19315	Indicator
34	4	10872	Screw - Hex Head, 8-32 x 17/64, Steel/Trivalent Zinc
35	1	18726	Space, Indicator
36	1	11709	Pin - Drive Link
37	1	16047	Drive Link
38	1	11898	Clip
39	1	16045	Drive Pinion
40	1	11381	Roll Pin
Not Shown			
	1	40405	Wire Harness, Environmental, System 4, Lower

*Call your distributor for Part Number

CONTROL VALVE

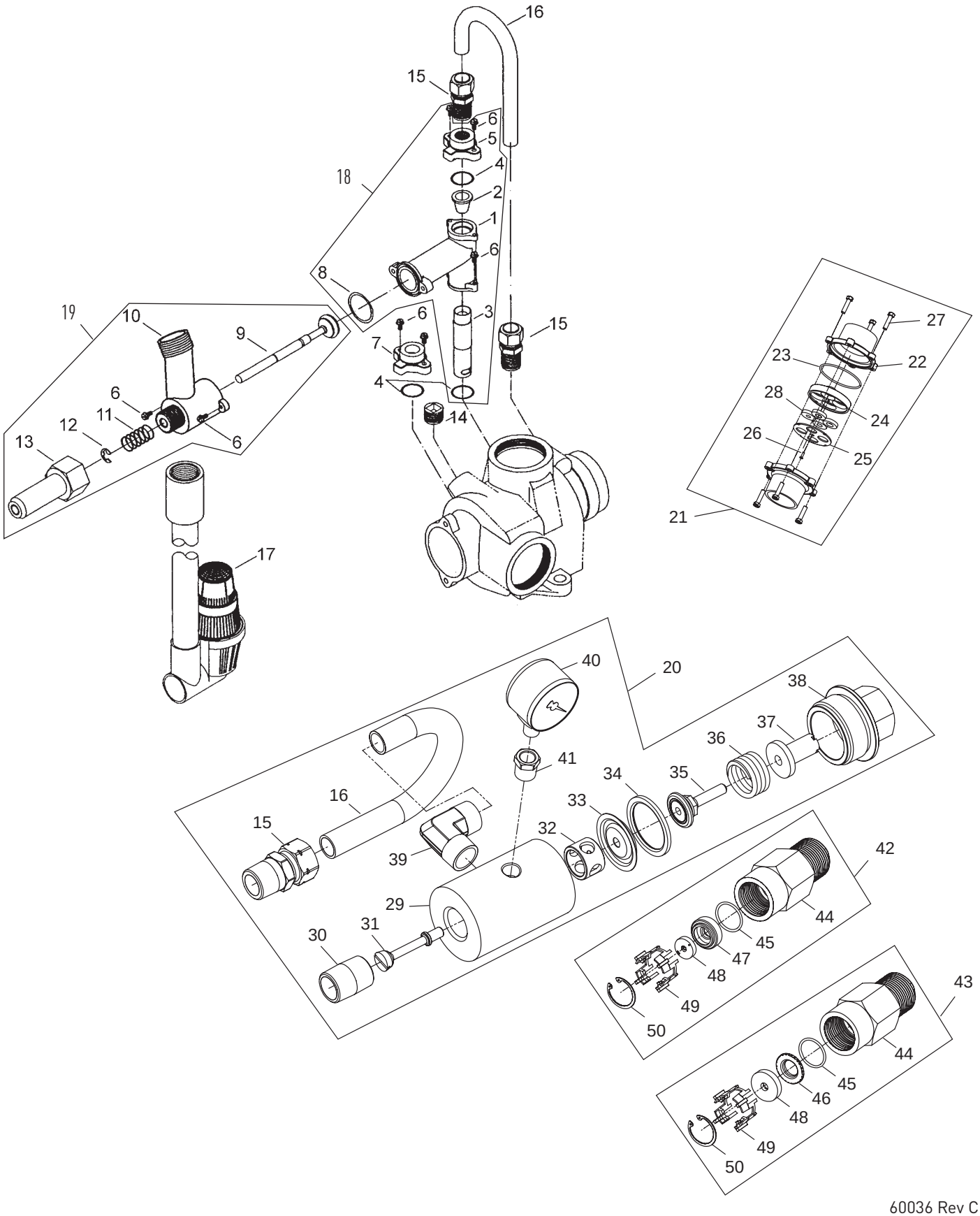


61500-3900

CONTROL VALVE *CONTINUED*

Item No.	QTY	Part No.	Description
1	1	15114	Valve Body
2	8	11720	Seal
		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-inch Adapter Body
16	4	16068	Seal
		41534	Seal, 3900, 558 BP
17	2	16069	Spacer - Narrow
18	1	16070	Spacer - Wide
19	1	16071	Piston
		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
		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-inch -8
26	2	16257	Flange Segment
27	12	11238	Screw - Hex Head
28	1	16088	Pipe Plug - 2-inch NPT
35	1	16258	Flow Disperser
37		60106-00	Piston Assy, 3900/3150 STD
		60106-10	Piston Assy, 3150, Upflow
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-inch 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
		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



60036 Rev C

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

Item No.	QTY	Part No.	Description
1	1	16340	Body, Injector, 1800 D/F
		16340-20	Body, Injector, 1800, Downflow, Metric
		16340-01	Body, Injector, 1800 Upflow
		16340-21	Body, Injector, 1800, Upflow, Metric
2	1	15128-xx	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
3	1	15127-xx	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
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-inch 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, Upflow
17	1	60009-00	Air Check, #900, Commercial Less Fittings
		60009-01	Air Check, #900, Commercial, HW Less Fittings
18		60277-04	Injector Assy, 1800, #4, Downflow
		60272-04	Injectory Assy, 1800, #4, Upflow
		60277-05	Injectory Assy, 1800 #5, Downflow
		60272-05	Injector Assy, 1800, #5, Upflow
		60277-06	Injector Assy, 1800, #6, Downflow
		60277-07	Injector Assy, 1800, #7, Downflow

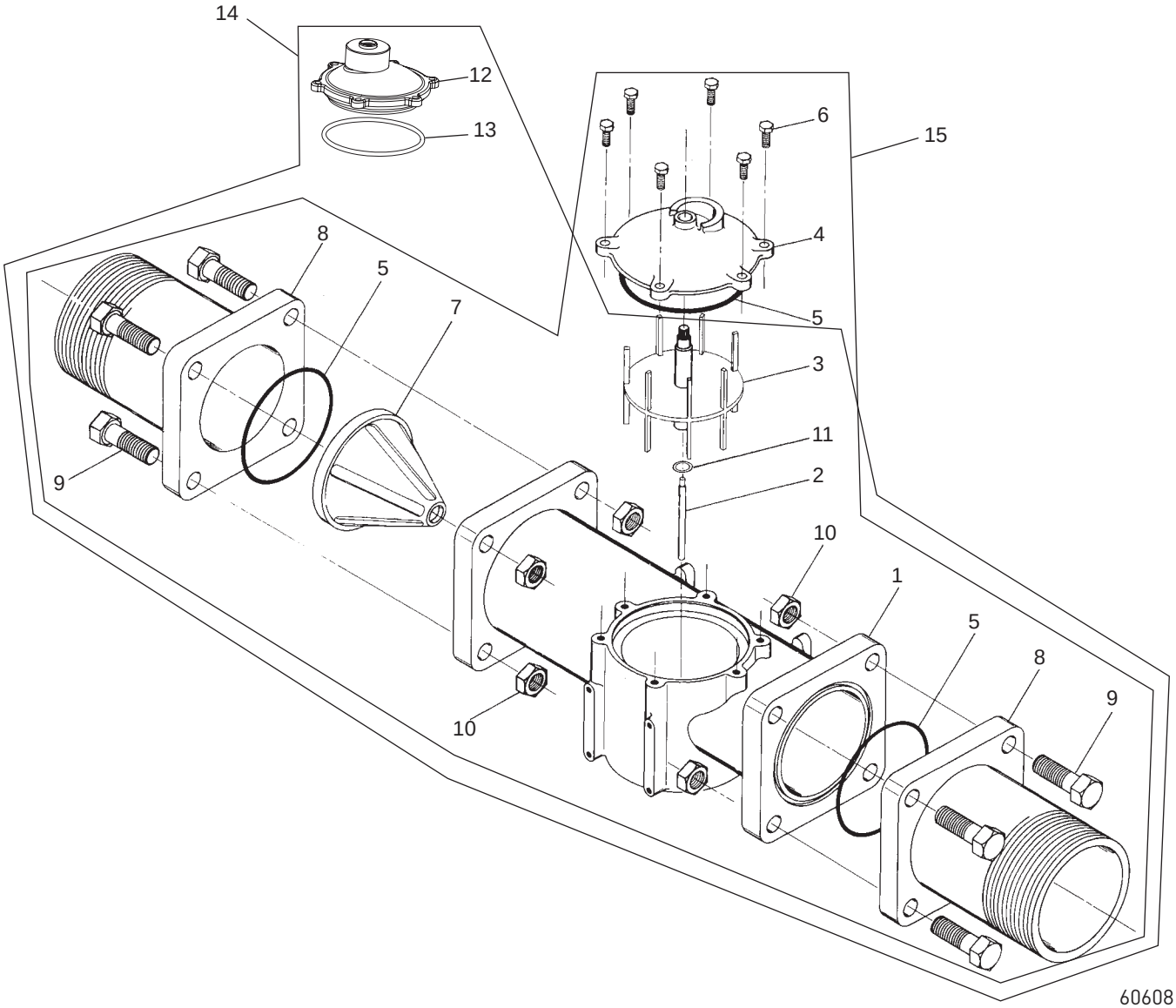
1800 SERIES BRINE SYSTEM AND DRAIN LINE FLOW CONTROL ASSEMBLY *CONTINUED*

Item No.	QTY	Part No.	Description
		60272-07	Injector Assy, 1800, #7, Upflow
		60277-08	Injector Assy, 1800, #8, Downflow
		60277-09	Injectory Assy, 1800 #9, Downflow
		60277-10	Injectory Assy, 1800 #10, Downflow
19		60036-02	Brine Valve, 1800, Design 3
		60276-01	Brine Valve, 1800, Retrofit Kit, Downflow 1800 Injector and Brine Valve, Update to Design 3
20		60734	Regulator, 3150/3900, Pressure, Upflow
21		60711-000	DLFC, 2-inch NPT, Less BTTNS, w/4 HLS
		60711-00	DLFC, 2-inch NPT, Less BTTNS, W/2 HLS
		60711-01	DLFC, 2-inch NPT, Less BTTNS, W/1 HLS
		60711-20	DLFC, 2-inch NPT, 20 gpm
		60711-25	DLFC, 2-inch NPT, 25 gpm
		60711-30	DLFC, 2-inch NPT, 30 gpm
		60711-35	DLFC, 2-inch NPT, 35 gpm
		60711-40	DLFC, 2-inch NPT, 40 gpm
		60711-45	DLFC, 2-inch NPT, 45 gpm
		60711-50	DLFC, 2-inch NPT, 50 gpm
		60711-55	DLFC, 2-inch NPT, 55 gpm
		60711-60	DLFC, 2-inch NPT, 60 gpm
		60711-65	DLFC, 2-inch NPT, 65 gpm
		60711-70	DLFC, 2-inch NPT, 70 gpm
		60711-75	DLFC, 2-inch NPT, 75 gpm
		60711-80	DLFC, 2-inch NPT, 80 gpm
		60711-85	DLFC, 2-inch NPT, 85 gpm
		60711-90	DLFC, 2-inch NPT, 90 gpm
		60711-95	DLFC, 2-inch NPT, 95 gpm
		60711-100	DLFC, 2-inch NPT, 100 gpm
		60812-30	DLFC, 2-inch BSP/Metric, 30 gpm
		60812-35	DLFC, 2-inch BSP/Metric, 35 gpm
		60812-45	DLFC, 2-inch BSP/Metric, 45 gpm
		60812-50	DLFC, 2-inch BSP/Metric, 50 gpm
		60812-55	DLFC, 2-inch BSP/Metric, 55 gpm
		60812-70	DLFC, 2-inch BSP/Metric, 70 gpm
		60812-75	DLFC, 2-inch BSP/Metric, 75 gpm
		60812-80	DLFC, 2-inch BSP/Metric, 80 gpm
		60812-90	DLFC, 2-inch BSP/Metric, 90 gpm
		60812-95	DLFC, 2-inch BSP/Metric, 95 gpm
		60812-100	DLFC, 2-inch BSP/Metric, 100 gpm
22	2	27913-21	Housing, Flow Control, 2-inch 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.
		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-inch, Close
31	1	19091	Pin, Regulator 3150
32	1	19093	Stand-Off Regulator 3150
33	1	19095	Diaphragm, Regulator 3150
34	1	19094	Washer, Regulator 3150
35	1	19092	Retainer, Regulator 3150
36	1	19101	Spring, Regulator 3150
37	1	19399	Washer, Calibration 3150
38	1	19090	Cap, Regulator 3150
39	1	19278	Fitting, Tube, 90 Deg
40	1	19693	Pressure Gauge
41	1	41232	Bushing Reducer 1/4 x 1/8
42		60710-1.2	BLFC, 1-inch F x 1-inch M, NPT, 1.2 gpm
		60710-2.0	BLFC, 1-inch F x 1-inch M, NPT, 2.0 gpm
		60710-2.4	BLFC, 1-inch F x 1-inch M, NPT, 2.4 gpm
		60710-3.0	BLFC, 1-inch F x 1-inch M, NPT, 3.0 gpm
		60710-3.5	BLFC, 1-inch F x 1-inch M,

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

Item No.	QTY	Part No.	Description
			NPT, 3.5 gpm
	.....	60710-4.0.....	BLFC, 1-inch F x 1-inch M, NPT, 4.0 gpm
	.....	60710-5.0.....	BLFC, 1-inch F x 1-inch M, NPT, 5.0 gpm
	.....	60710-7.0.....	BLFC, 1-inch F x 1-inch M, NPT, 7.0 gpm
43	.....	60710-9.0.....	BLFC, 1-inch F x 1-inch M, NPT, 9.0 gpm
	.....	60710-10.....	BLFC, 1-inch F x 1-inch M, NPT, 10 gpm
	.....	60710-12.....	BLFC, 1-inch F x 1-inch M, NPT, 12 gpm
	.....	60710-15.....	BLFC, 1-inch F x 1-inch M, NPT, 15 gpm
	.....	60710-20.....	BLFC, 1-inch F x 1-inch M, NPT, 20 gpm
	.....	60710-25.....	BLFC, 1-inch F x 1-inch M, NPT, 25 gpm
44	.....	16530	Housing, BLFC, 1"M x 1"F
45	.....	19292	O-ring, -020
46	.....	19279	Retainer, Flow Control, Flow 9.0 - 25 gpm
47	.....	19053	Retainer, Flow Control, Flow 2.0 - 7.0 gpm
48	.....	12085	Washer, Flow, 1.2 gpm
	.....	12087	Washer, Flow, 2.0 gpm
	.....	12088	Washer, Flow, 2.4 gpm
	.....	12089	Washer, Flow, 3.0 gpm
	.....	12090	Washer, Flow, 3.5 gpm
	.....	12091	Washer, Flow, 4.0 gpm
	.....	12092	Washer, Flow, 5.0 gpm
	.....	12408	Washer, Fow, 7.0 gpm
	.....	17944	Washer, Flow, 9.0 gpm
	.....	16529	Washer, Flow, 10.0 gpm
	.....	16735	Washer, Flow, 12.0 gpm
	.....	16736	Washer, Flow, 15.0 gpm
	.....	16528	Washer, Flow, 20.0 gpm
	.....	16737	Washer, Flow, 25.0 gpm
49	.....	16738	Retainer,Flow Control
50	.....	16805	Ring, Retaining
Not Shown - Option Without Brine Valve			
	1	16605	Retainer Plate
	1	19860	Fitting, Brine Valve, 1800

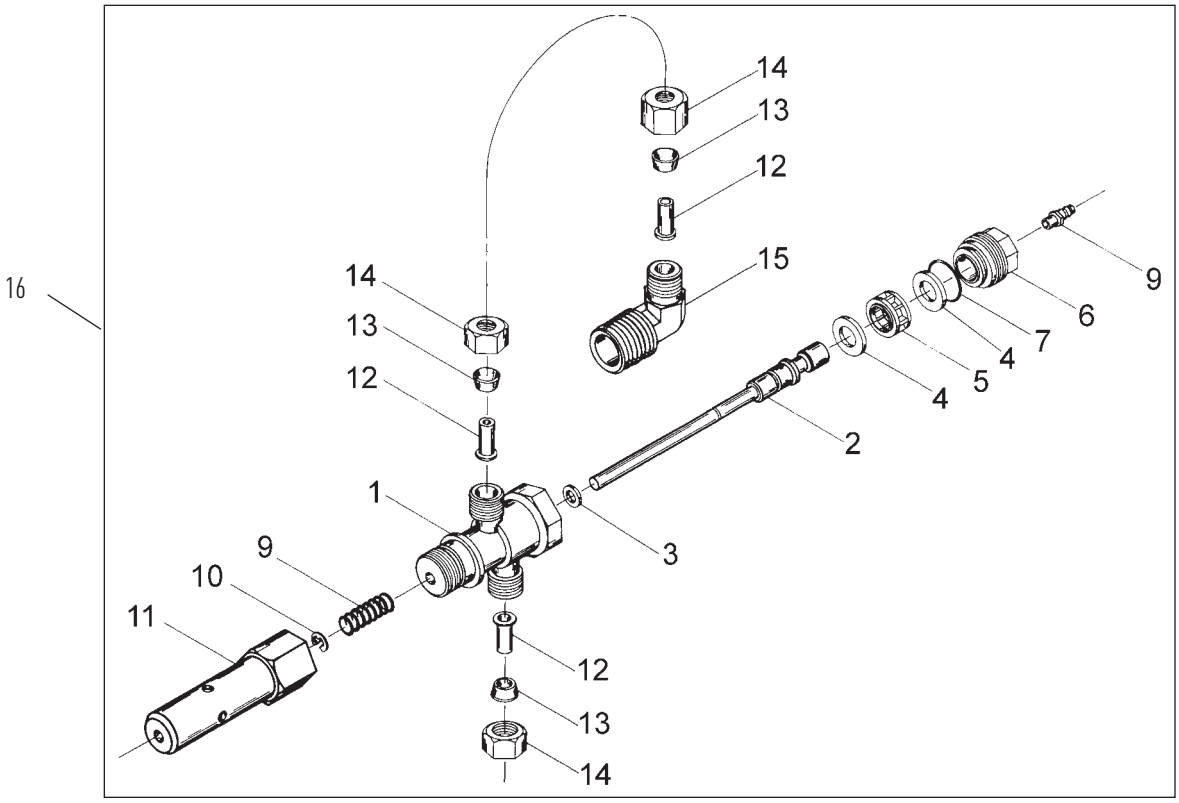
3-INCH METER ASSEMBLY



Item No.	QTY	Part No.	Description
1	1	16254	Meter Body
2	1	16279	Impeller Shaft
3	1	16575	Impeller Assembly
4	1	16400	Meter Cover Assembly - Standard
		16401	Meter Cover Assembly - Extended Range
5	3	15707	O-Ring - 236
6	6	12112	Screw - Hex Head
		15886	Screw - Hex Head (Metric)
7	1	16280	Flow Straightener
8	2	16328	Connecting Flange
9	8	40118	Screw - Hex Head
		17122	Screw - Hex Head (Metric)
10	8	16386	Nut - 1/2-13

Item No.	QTY	Part No.	Description
11	1	16574	Stainless Steel Washer
12	1	16401	Meter Cap, 3-inch, EXT, BRS, PDL
13	1	15707	O-ring - 236
14		60608-02	Meter Assy, 3-inch Inline, NPT, EXT, Brass, Paddlewheel
		60608-22	Meter Assy, 3-inch Inline, BSP/Metric, EXT, Paddlewheel
15		60608-01	Meter Assy, 3-inch Inline, NPT, STD, Brass, Paddlewheel
		60608-21	Meter Assy, 3-inch Inline, BSP/Metric, STD, Paddlewheel

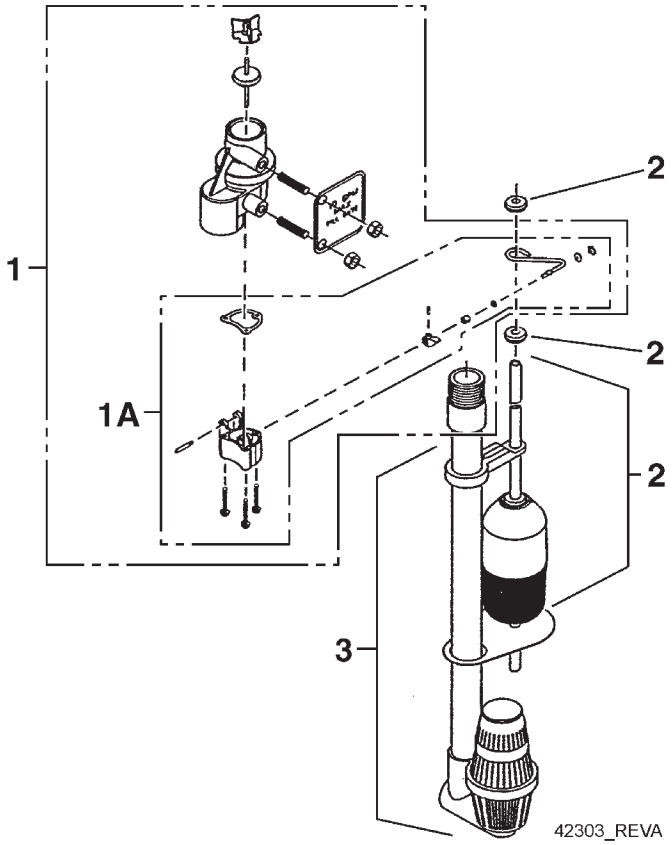
SERVICE VALVE OPERATOR ASSEMBLY



BR60150-3150REVA

Item No.	QTY	Part No.	Description
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)
Not Shown			
	1	16511	Tube, 3150, PVC, SVO

2350 SAFETY BRINE VALVE



Item No.	QTY	Part No.	Description
1	1	60038	Safety Brine Valve, 2350
1A	1	61024	Actuator Assy, 2350 Brine
2	1	60028-30	Float Assy, 2350, 30-inch Wht
		60026-30SAN	Float Assy, 2350, 30-inch Hot Water
3	1	60009-00	Air Check, #900, Commercial Less Fittings
		60009-01	Air Check, #900, Commercial, Hot Water Less Fittings
Not Shown			
	1	18603	Fitting Assy, 900 Air Check 2350
	1	18602	Fitting Assy, 900 Air Check

TROUBLESHOOTING

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

GENERAL SERVICE HINTS FOR METER CONTROL

Problem: Softener delivers hard water

Reason: Reserve capacity has been exceeded.

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

Reason: Program wheel is not rotating with meter output.

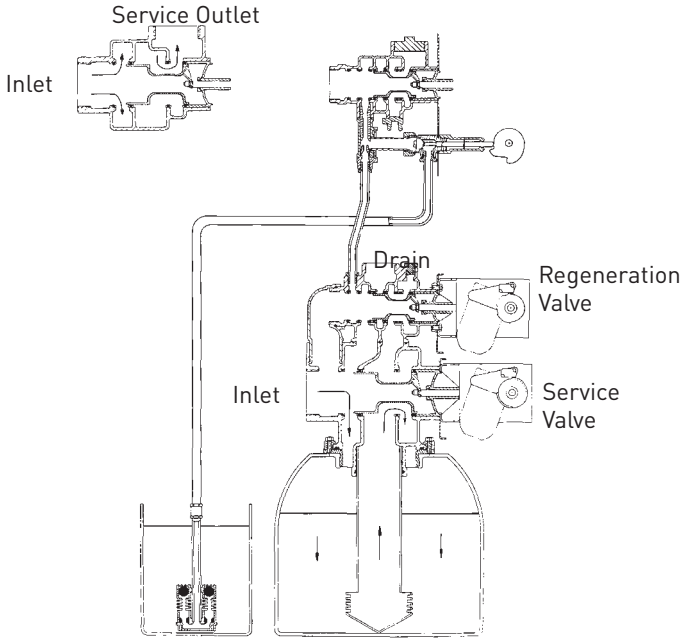
Correction: Pull cable out of meter cover and rotate manually. Program wheel must move without binding and clutch must give positive clicks when program wheel strikes regeneration stop. If it does not, replace timer.

Reason: Meter is not measuring flow.

Correction: Check meter with meter checker.

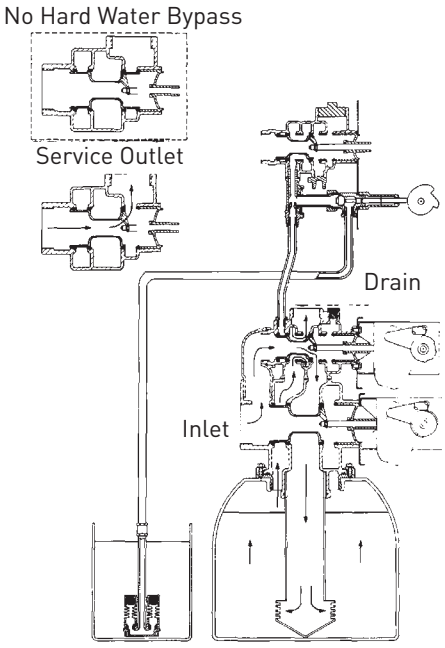
WATER CONDITIONER FLOW DIAGRAMS

1 Service Position



Hard water enters 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.

2 Backwash Position

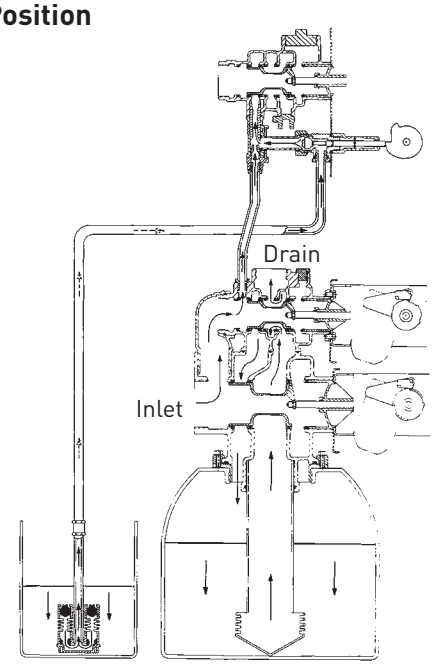


Hard water enters at valve inlet – flows thru service adapter piston for by-pass, and up thru coupling to regeneration valve inlet. Flow continues thru the regeneration valve piston – down the distributor tube – thru the bottom distributor and up thru the mineral – around the piston and out the drain. 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

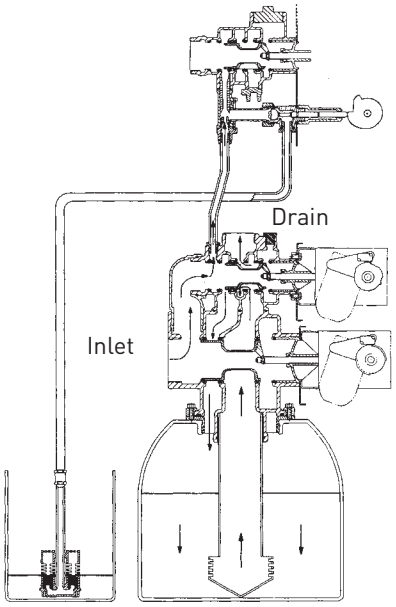
CONTINUED

3 Brine Position



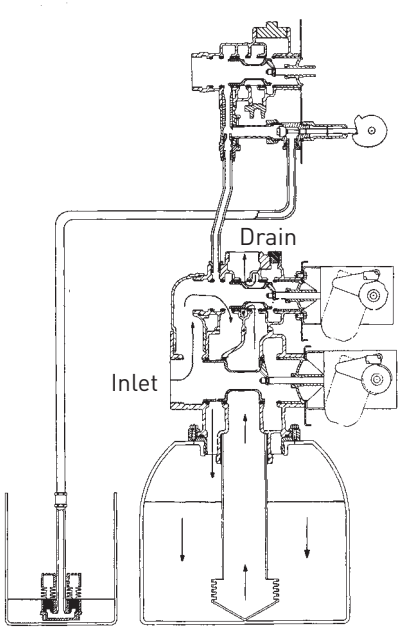
Hard water enters at valve inlet – flows thru injector nozzle and throat to draw brine from the brine tank. Brine flows down thru the mineral – into the bottom distributor – up the distributor tube – around the piston and out the drain.

4 Slow Rinse Position



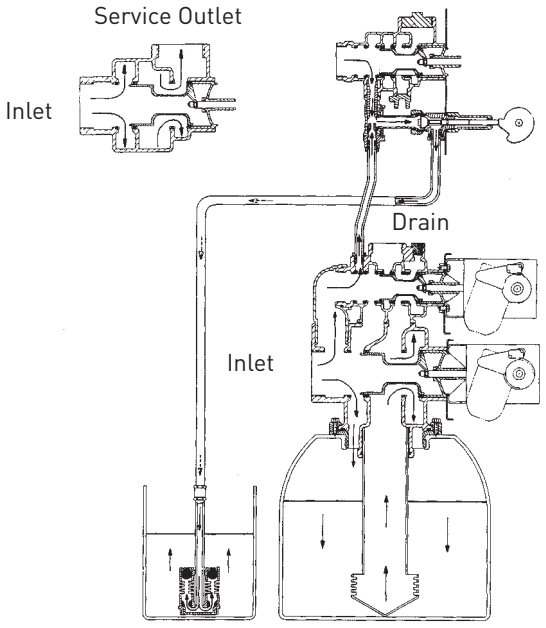
Hard water enters at valve inlet – flows thru injector nozzle and throat – down thru the mineral – into the bottom distributor – up the distributor tube – around the piston and out the drain.

5 Rapid Rinse Position



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.

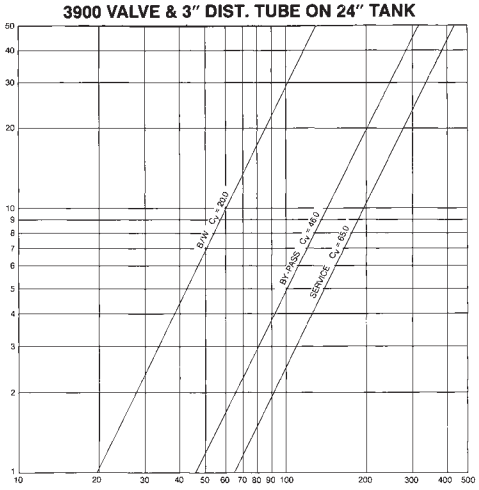
6 Brine Tank Refill Position



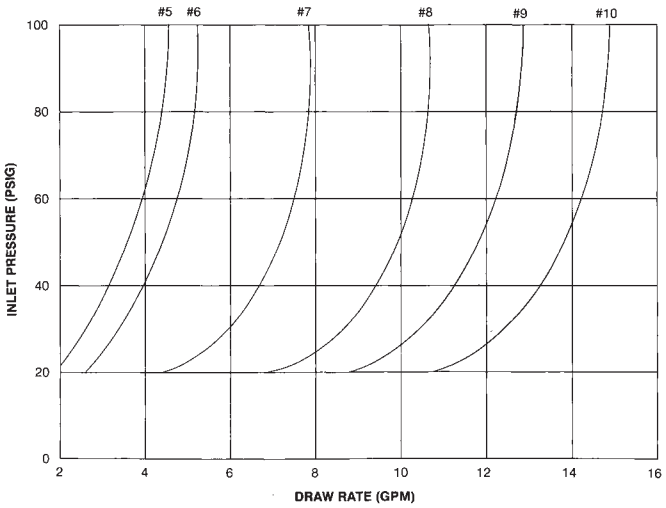
Hard water enters at valve inlet – flows thru nozzle and thru throat to brine valve to refill the brine tank. Inlet flow also continues down thru mineral to the bottom distributor. Conditioned water flows up thru the distributor tube, around the piston and out the outlet. Note: An option is available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

FLOW DATA & INJECTOR DRAW RATES

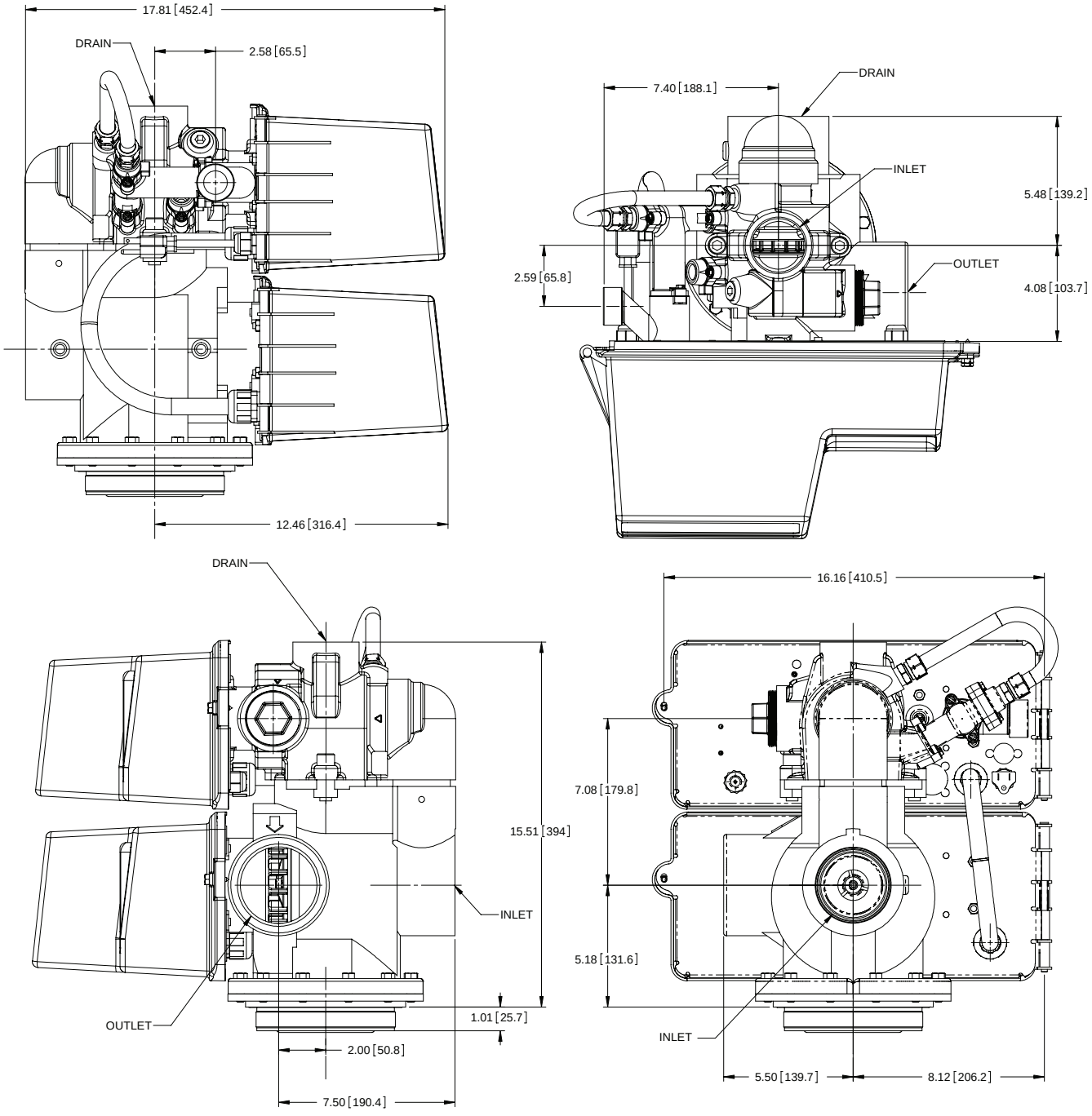
3900 VALVE & 3" DIST. TUBE ON 24" TANK



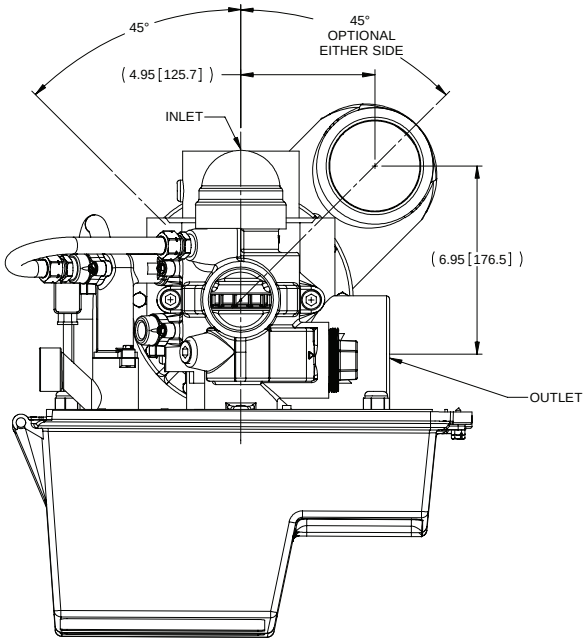
3900 ON EMPTY TANK

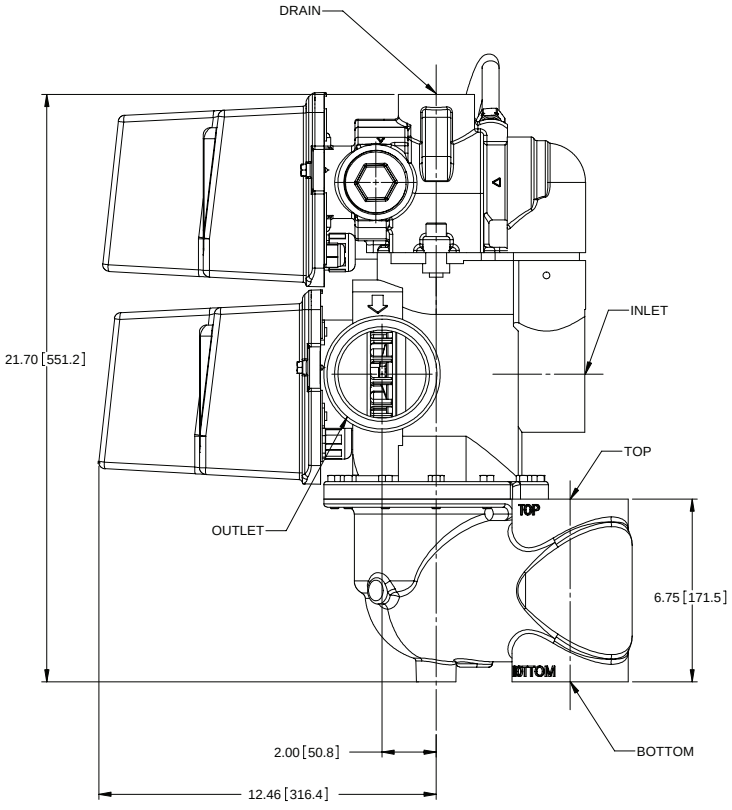


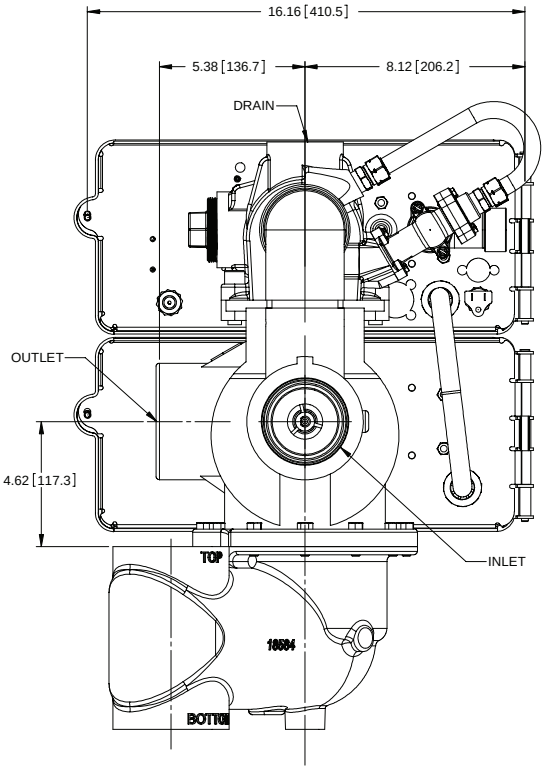
DIMENSIONAL DRAWING 3900 TOP MOUNT



DIMENSIONAL DRAWING 3900 SIDE MOUNT

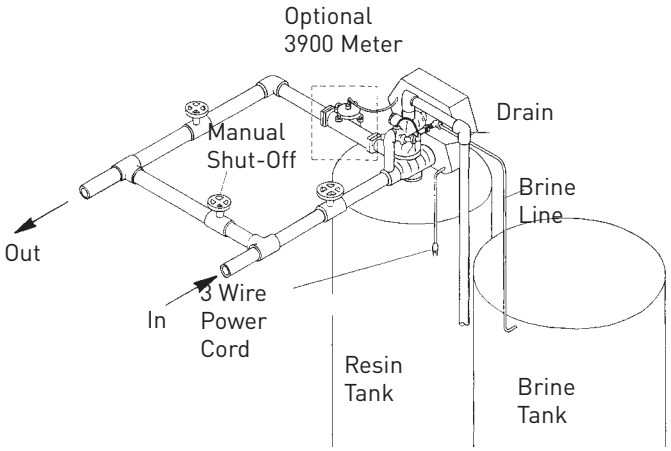




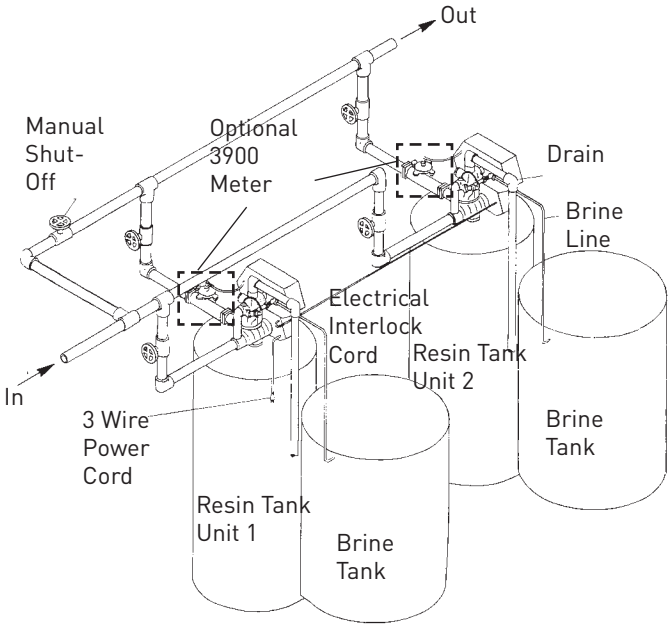


TYPICAL INSTALLATIONS

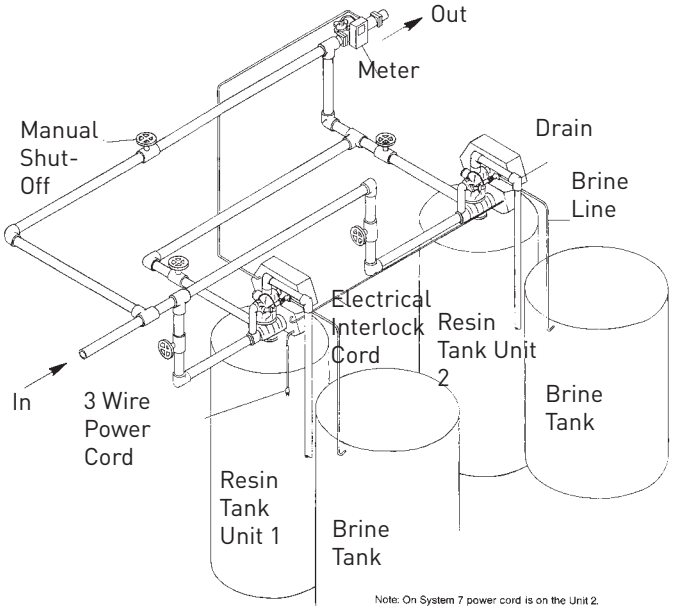
System #4 - Typical Single Tank Installation with Optional Meter



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

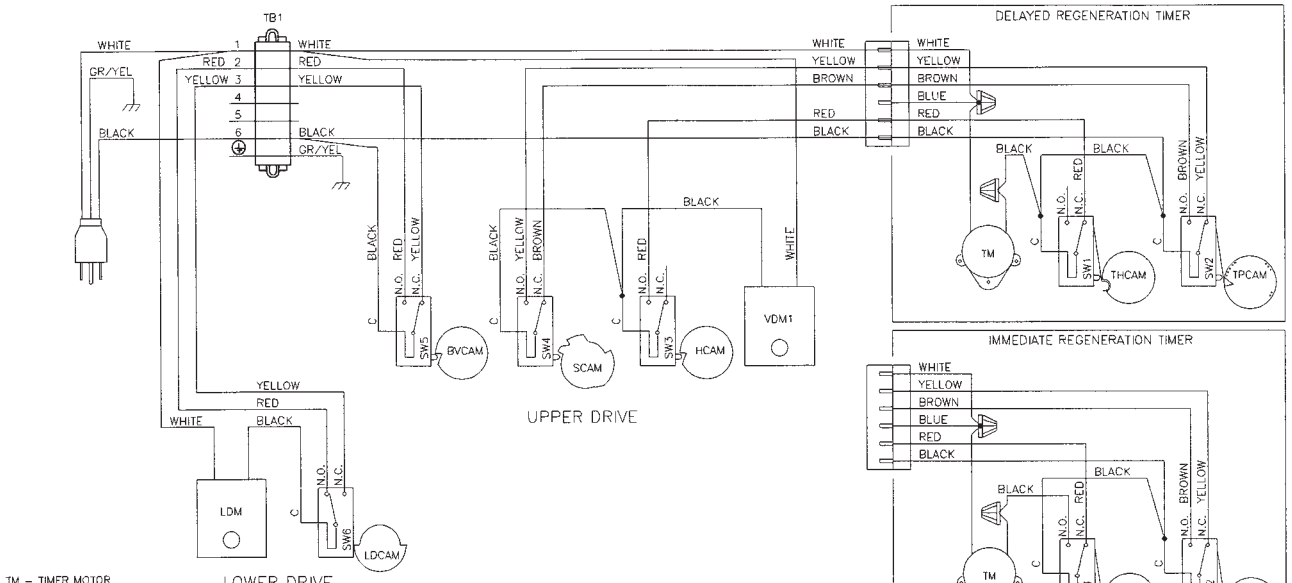


System #6 Interlock - Typical Twin Tank Installation with Optional Meter Interlock and No Hard Water Bypass



VALVE WIRING

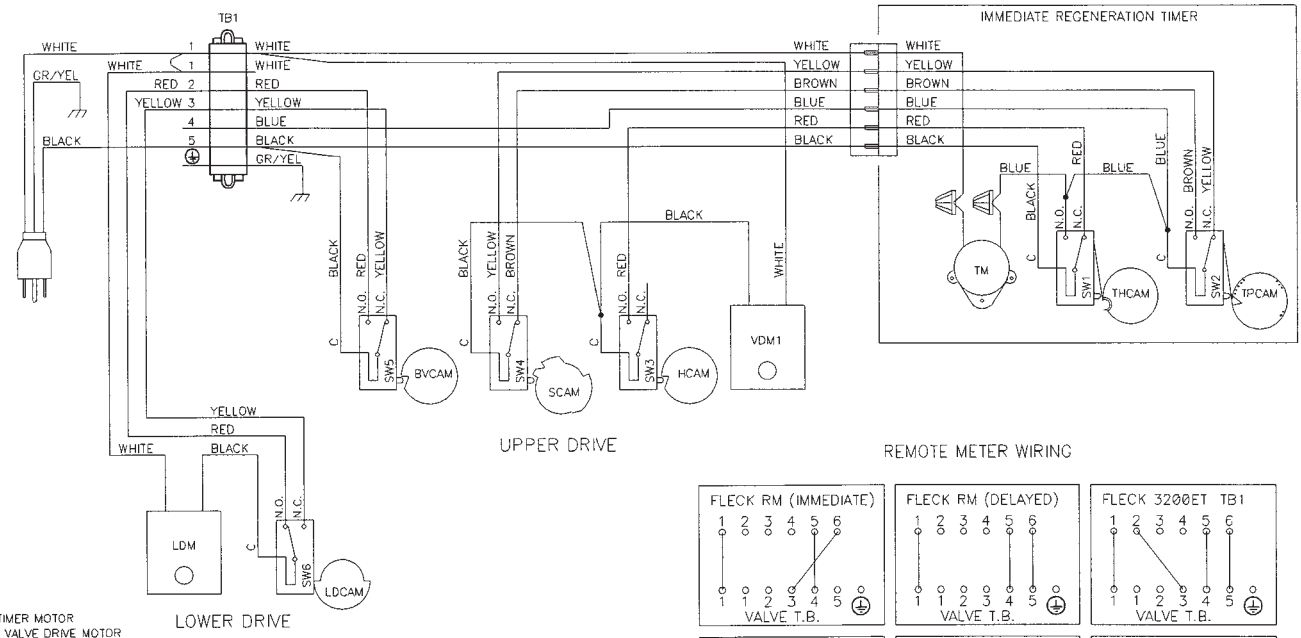
System #4



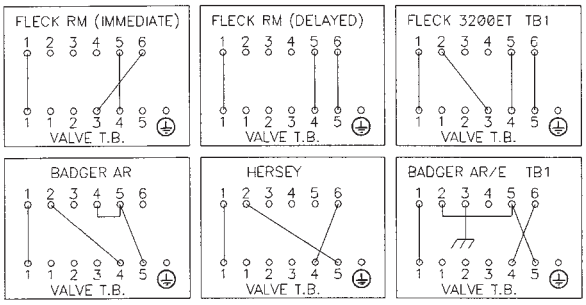
TM – TIMER MOTOR
VDM – VALVE DRIVE MOTOR
LDM – LOWER DRIVE MOTOR
SW1 – TIMER HOMING SWITCH
SW2 – TIMER PROGRAM SWITCH
SW3 – VALVE HOMING SWITCH
SW4 – VALVE STEP SWITCH
SW5 – BRINE CAM SWITCH
SW6 – LOWER DRIVE SWITCH
THCAM – TIMER HOMING CAM
TPCAM – TIMER PROGRAM CAM
HCAM – VALVE HOMING CAM
SCAM – VALVE STEP CAM
BVCAM – BRINE VALVE CAM
LDCAM – LOWER DRIVE CAM

NOTE:
SINGLE TANK TIMECLOCK, METER DELAYED, OR METER IMMEDIATE REGENERATION

System #4 with Remote Meter



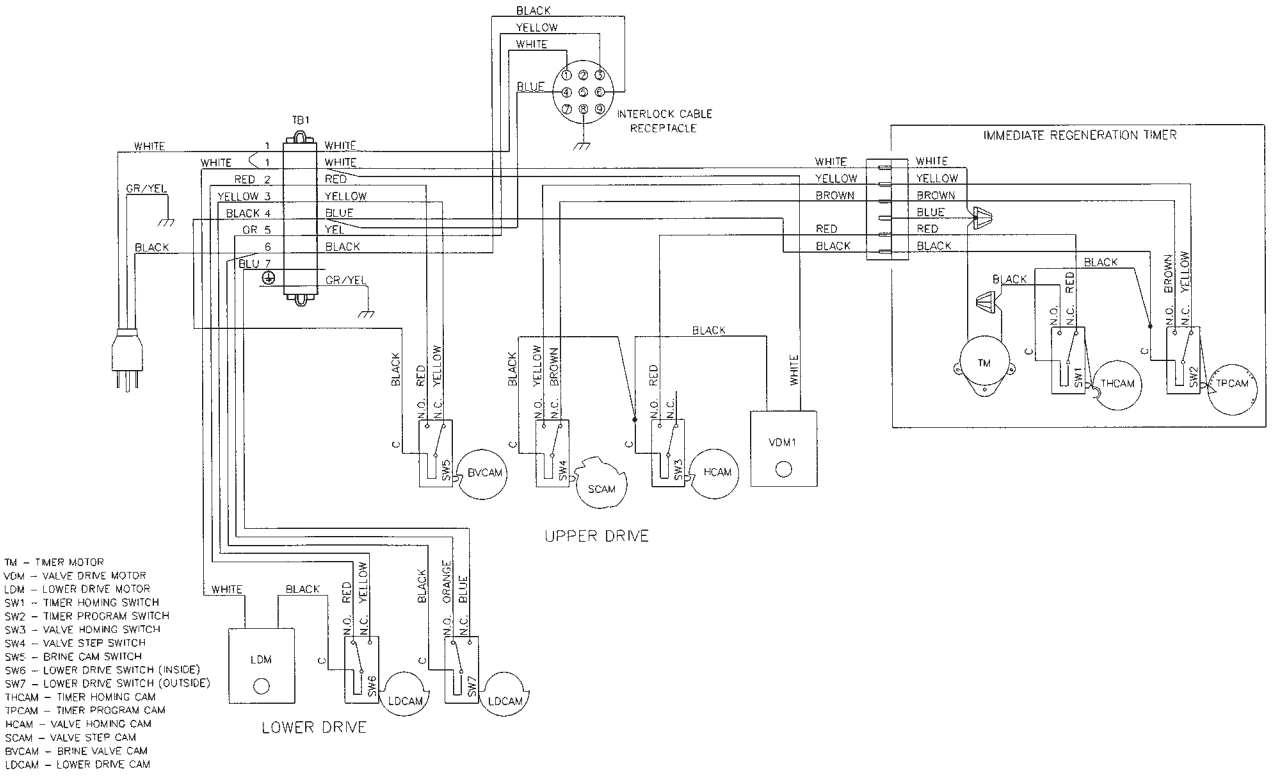
REMOTE METER WIRING



TM – TIMER MOTOR
VDM – VALVE DRIVE MOTOR
LDM – LOWER DRIVE MOTOR
SW1 – TIMER HOMING SWITCH
SW2 – TIMER PROGRAM SWITCH
SW3 – VALVE HOMING SWITCH
SW4 – VALVE STEP SWITCH
SW5 – BRINE CAM SWITCH
SW6 – LOWER DRIVE SWITCH
THCAM – TIMER HOMING CAM
TPCAM – TIMER PROGRAM CAM
HCAM – VALVE HOMING CAM
SCAM – VALVE STEP CAM
BVCAM – BRINE VALVE CAM
LDCAM – LOWER DRIVE CAM

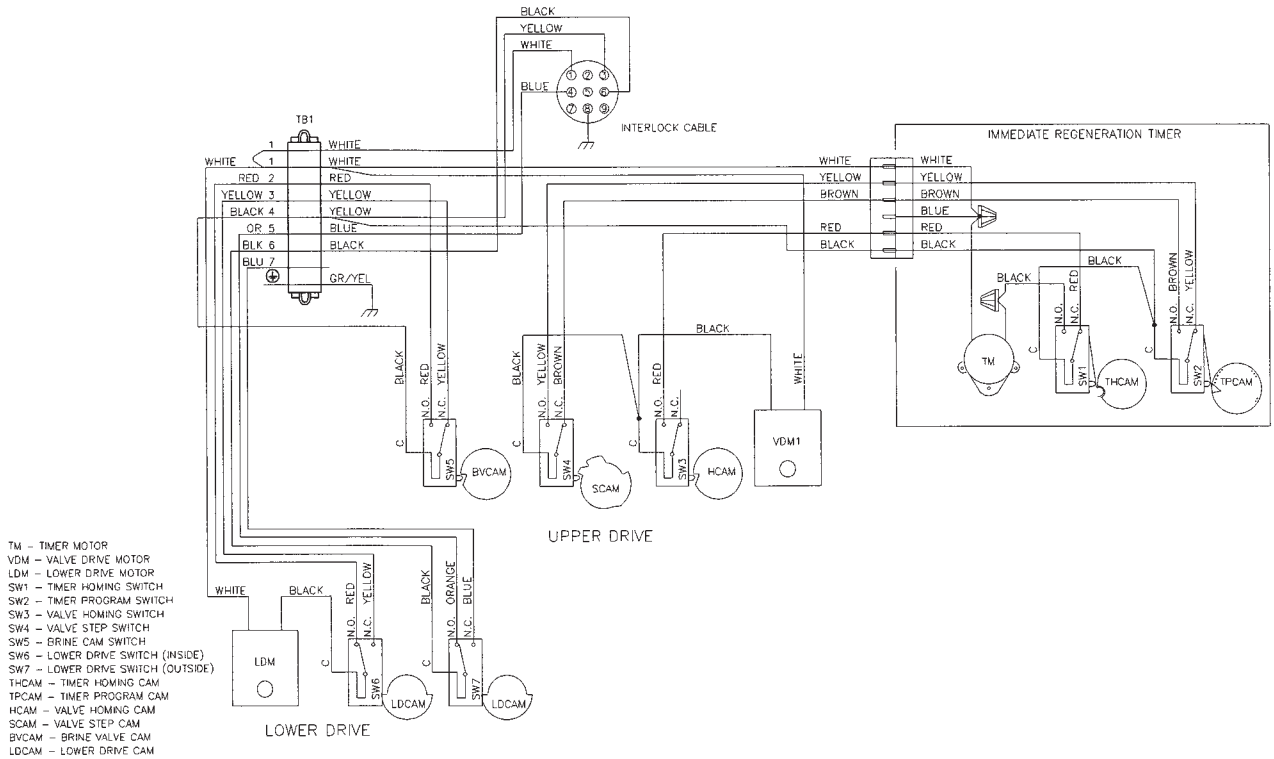
NOTE:
SINGLE TANK REMOTE METER DELAYED, OR IMMEDIATE REGENERATION

System #5



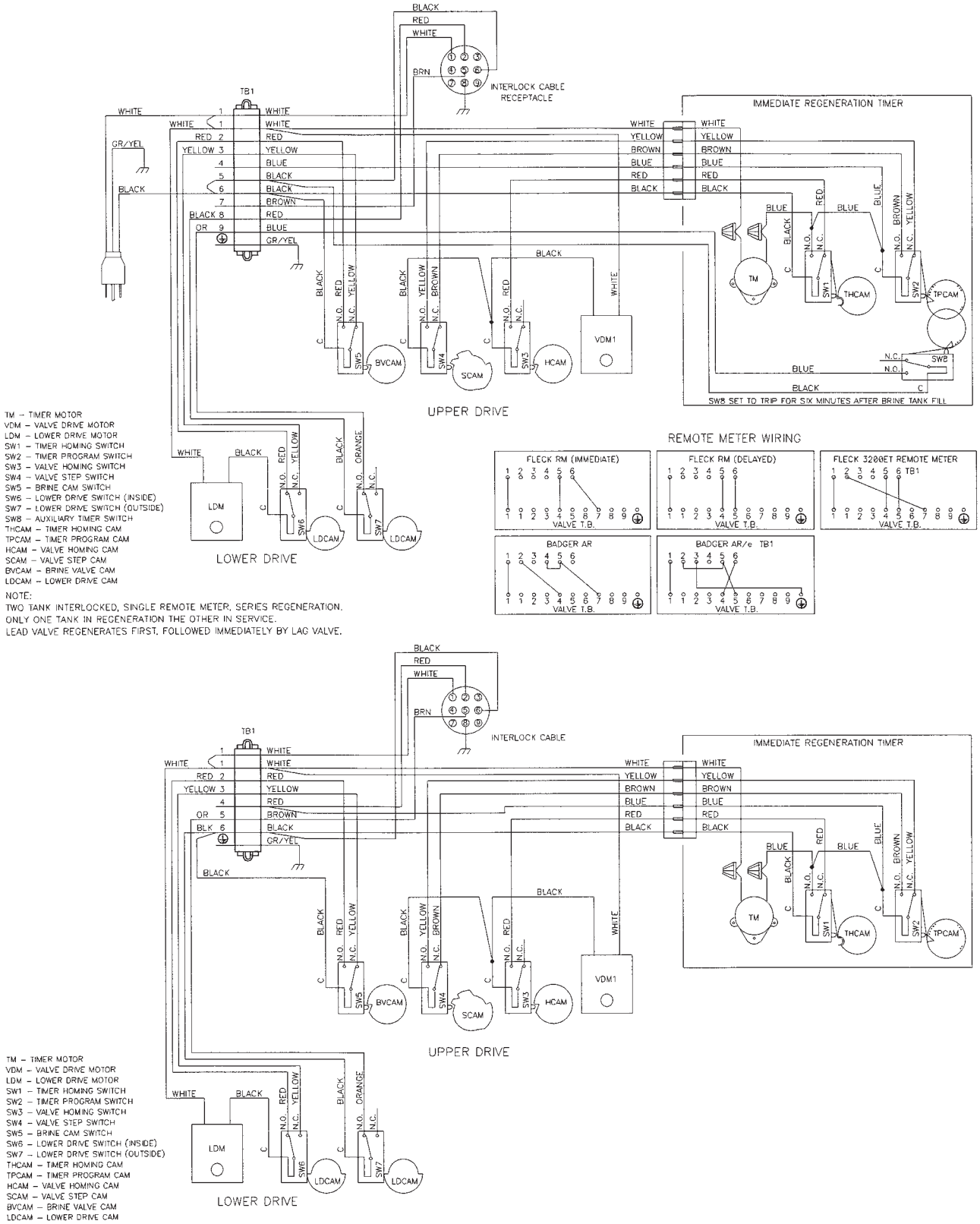
TM – TIMER MOTOR
VDM – VALVE DRIVE MOTOR
LDM – LOWER DRIVE MOTOR
SW1 – TIMER HOMING SWITCH
SW2 – TIMER PROGRAM SWITCH
SW3 – VALVE HOMING SWITCH
SW4 – VALVE STEP SWITCH
SW5 – BRINE CAM SWITCH
SW6 – LOWER DRIVE SWITCH (INSIDE)
SW7 – LOWER DRIVE SWITCH (OUTSIDE)
THCAM – TIMER HOMING CAM
TPCAM – TIMER PROGRAM CAM
HCAM – VALVE HOMING CAM
SCAM – VALVE STEP CAM
BVCAM – BRINE VALVE CAM
LDCAM – LOWER DRIVE CAM

NOTE:
TWO TANK INTERLOCKED, INDIVIDUAL METER, IMMEDIATE REGENERATION.
ONLY ONE TANK IN REGENERATION THE OTHER IN SERVICE.

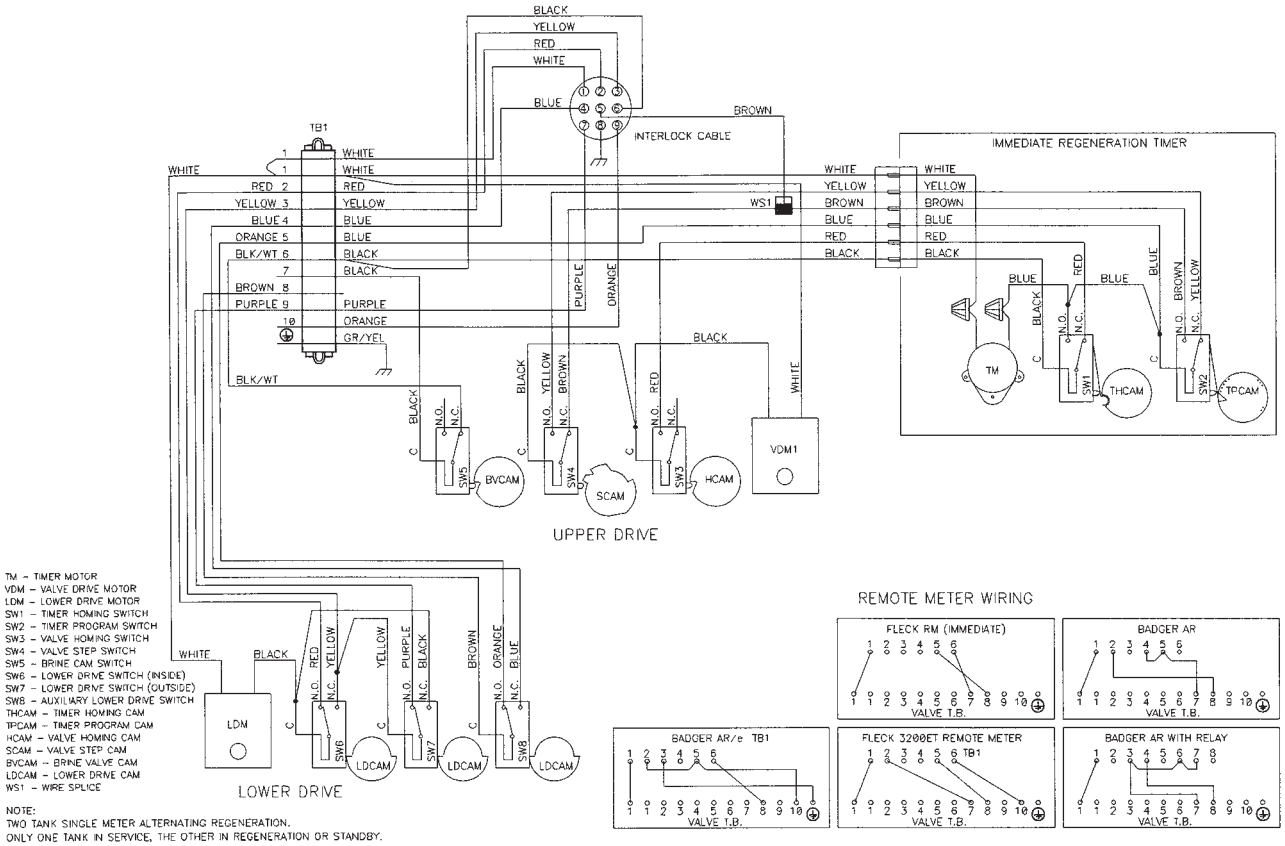


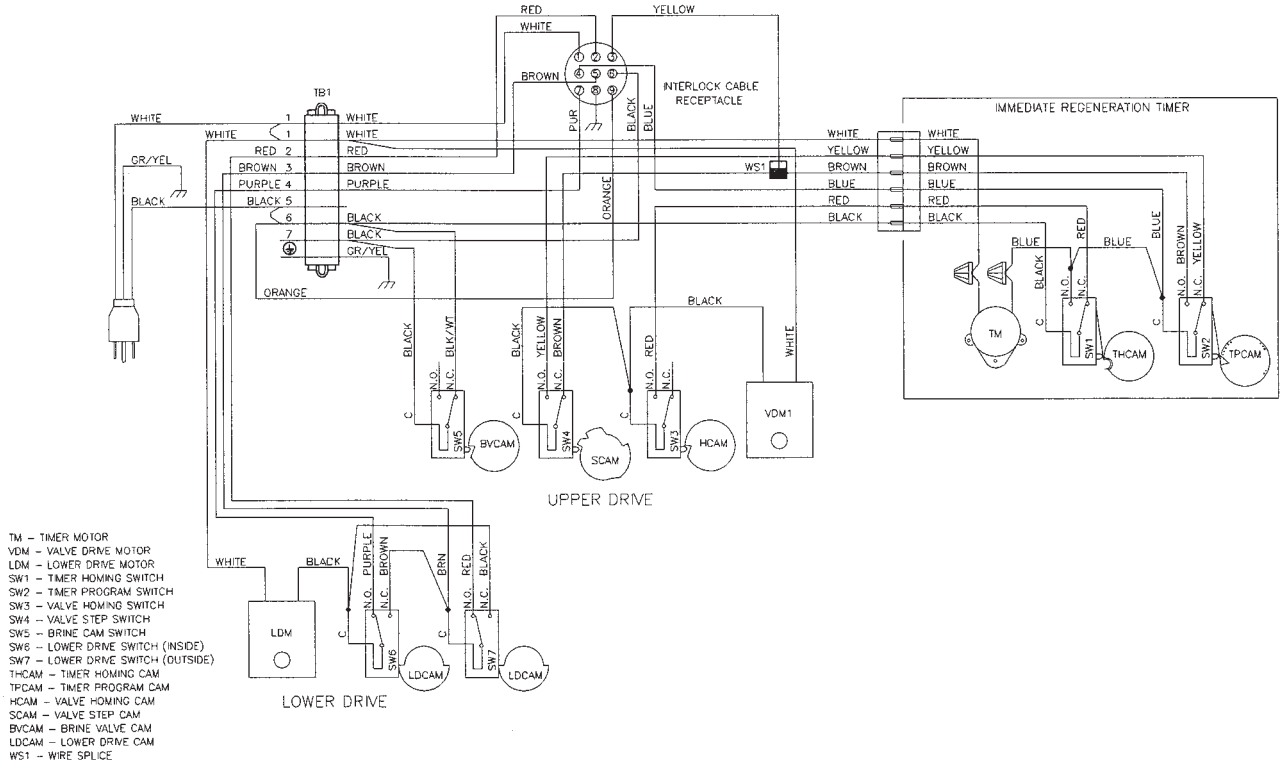
TM – TIMER MOTOR
VDM – VALVE DRIVE MOTOR
LDM – LOWER DRIVE MOTOR
SW1 – TIMER HOMING SWITCH
SW2 – TIMER PROGRAM SWITCH
SW3 – VALVE HOMING SWITCH
SW4 – VALVE STEP SWITCH
SW5 – BRINE CAM SWITCH
SW6 – LOWER DRIVE SWITCH (INSIDE)
SW7 – LOWER DRIVE SWITCH (OUTSIDE)
THCAM – TIMER HOMING CAM
TPCAM – TIMER PROGRAM CAM
HCAM – VALVE HOMING CAM
SCAM – VALVE STEP CAM
BVCAM – BRINE VALVE CAM
LDCAM – LOWER DRIVE CAM

System #6

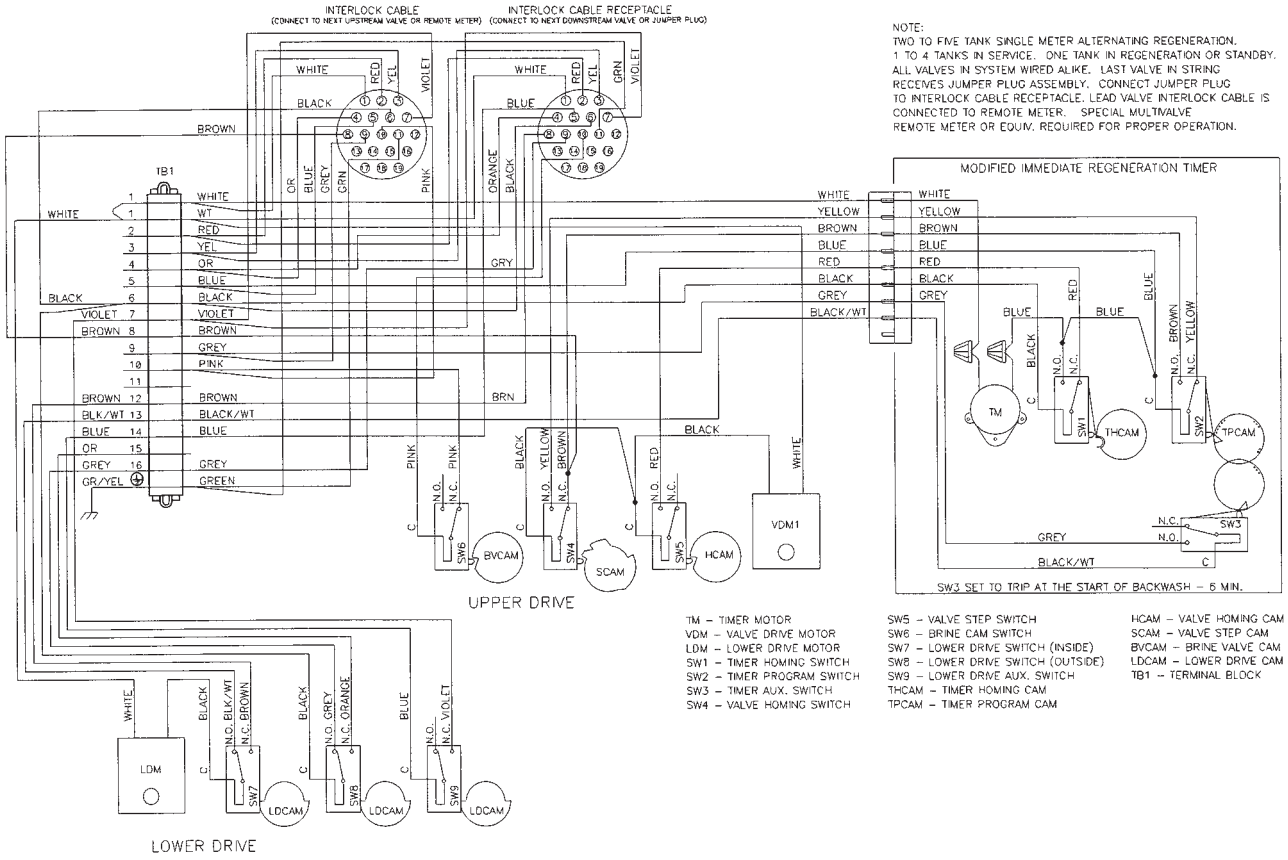

INTERLOCK CABLE RECEPTACLE
INTERLOCK CABLE
IMMEDIATE REGENERATION TIMER
SW8 SET TO TRIP FOR SIX MINUTES AFTER BRINE TANK FILL
UPPER DRIVE
LOWER DRIVE
REMOTE METER WIRING
FLECK RM (IMMEDIATE)
FLECK RM (DELAYED)
FLECK 3200ET REMOTE METER
BADGER AR
BADGER AR/e TB1
VALVE T.B.
TM – TIMER MOTOR
VDM – VALVE DRIVE MOTOR
LDM – LOWER DRIVE MOTOR
SW1 – TIMER HOMING SWITCH
SW2 – TIMER PROGRAM SWITCH
SW3 – VALVE HOMING SWITCH
SW4 – VALVE STEP SWITCH
SW5 – BRINE CAM SWITCH
SW6 – LOWER DRIVE SWITCH (INSIDE)
SW7 – LOWER DRIVE SWITCH (OUTSIDE)
SW8 – AUXILIARY TIMER SWITCH
THCAM – TIMER HOMING CAM
TPCAM – TIMER PROGRAM CAM
HCAM – VALVE HOMING CAM
SCAM – VALVE STEP CAM
BVCAM – BRINE VALVE CAM
LDCAM – LOWER DRIVE CAM
NOTE:
TWO TANK INTERLOCKED, SINGLE REMOTE METER, SERIES REGENERATION.
ONLY ONE TANK IN REGENERATION THE OTHER IN SERVICE.
LEAD VALVE REGENERATES FIRST, FOLLOWED IMMEDIATELY BY LAG VALVE.

System #7


BLACK
YELLOW
RED
WHITE
BLUE
BROWN
INTERLOCK CABLE
TB1
IMMEDIATE REGENERATION TIMER
WS1
TM
THCAM
TPCAM
VDM1
HCAM
SCAM
BVCAM
UPPER DRIVE
LOWER DRIVE
LDM
LDCAM
REMOTE METER WIRING
FLECK RM (IMMEDIATE)
BADGER AR
BADGER AR/e TB1
FLECK 3200ET REMOTE METER TB1
BADGER AR WITH RELAY
VALVE T.B.
TM – TIMER MOTOR
VDM – VALVE DRIVE MOTOR
LDM – LOWER DRIVE MOTOR
SW1 – TIMER HOMING SWITCH
SW2 – TIMER PROGRAM SWITCH
SW3 – VALVE HOMING SWITCH
SW4 – VALVE STEP SWITCH
SW5 – BRINE CAM SWITCH
SW6 – LOWER DRIVE SWITCH (INSIDE)
SW7 – LOWER DRIVE SWITCH (OUTSIDE)
SW8 – AUXILIARY LOWER DRIVE SWITCH
THCAM – TIMER HOMING CAM
TPCAM – TIMER PROGRAM CAM
HCAM – VALVE HOMING CAM
SCAM – VALVE STEP CAM
BVCAM – BRINE VALVE CAM
LDCAM – LOWER DRIVE CAM
WS1 – WIRE SPLICE
NOTE:
TWO TANK SINGLE METER ALTERNATING REGENERATION.
ONLY ONE TANK IN SERVICE, THE OTHER IN REGENERATION OR STANDBY.


RED
YELLOW
WHITE
BROWN
INTERLOCK CABLE RECEPTACLE
TB1
IMMEDIATE REGENERATION TIMER
WS1
TM
THCAM
TPCAM
VDM1
HCAM
SCAM
BVCAM
UPPER DRIVE
LOWER DRIVE
LDM
LDCAM
TM – TIMER MOTOR
VDM – VALVE DRIVE MOTOR
LDM – LOWER DRIVE MOTOR
SW1 – TIMER HOMING SWITCH
SW2 – TIMER PROGRAM SWITCH
SW3 – VALVE HOMING SWITCH
SW4 – VALVE STEP SWITCH
SW5 – BRINE CAM SWITCH
SW6 – LOWER DRIVE SWITCH (INSIDE)
SW7 – LOWER DRIVE SWITCH (OUTSIDE)
THCAM – TIMER HOMING CAM
TPCAM – TIMER PROGRAM CAM
HCAM – VALVE HOMING CAM
SCAM – VALVE STEP CAM
BVCAM – BRINE VALVE CAM
LDCAM – LOWER DRIVE CAM
WS1 – WIRE SPLICE

System #7 Multivalve



TM – TIMER MOTOR
VDM – VALVE DRIVE MOTOR
LDM – LOWER DRIVE MOTOR
SW1 – TIMER HOMING SWITCH
SW2 – TIMER PROGRAM SWITCH
SW3 – TIMER AUX. SWITCH
SW4 – VALVE HOMING SWITCH

SW5 – VALVE STEP SWITCH
SW6 – BRINE CAM SWITCH
SW7 – LOWER DRIVE SWITCH (INSIDE)
SW8 – LOWER DRIVE SWITCH (OUTSIDE)
SW9 – LOWER DRIVE AUX. SWITCH
THCAM – TIMER HOMING CAM
TPCAM – TIMER PROGRAM CAM

HCAM – VALVE HOMING CAM
SCAM – VALVE STEP CAM
BVCAM – BRINE VALVE CAM
LDCAM – LOWER DRIVE CAM
TB1 – TERMINAL BLOCK

SERVICE ASSEMBLIES

60036-02 1800 Brine Valve:
11772..... Spring
11774..... Retaining Ring
18713..... Brine Valve Body
16497-01 ..... Brine Stem Assembly
16498-01 ..... Stem Guide Assembly

60277-xx 1800 Injector Assembly:
12473..... Screw - Hex Head
15127-xx..... Injector Throat
15128-xx..... Injector Nozzle
15246..... O-ring -116
16340..... Injector Body
16341-01 ..... Injector Cover
-xx Specify Size

60160-00 3900 Upper Piston Assembly:
14818..... Clip Piston Rod
14922..... O-ring -035
15125..... Piston Rod
16130..... Piston
16389-0 ..... End Plug Assembly

60107-00 3900 Lower Piston - Hard Water Bypass:
14818..... Clip Piston Rod
16071..... Piston
16072..... Piston Rod
16076..... O-ring -042
16399-01 ..... End Plug Assembly - White

60107-10 3900 Lower Piston - No Hard Water Bypass:
14818..... Clip Piston Rod
16082..... Piston - No Hard Water Bypass
16072..... Piston Rod
16076..... O-ring -042
16399-11 ..... End Plug Assembly - Black

60131 3900 Upper Seal Kit:
10368..... Spacer
10369..... Spacer - Port
11720..... Seal

60132 3900 Lower Seal Kit:
16068..... Seal
16069..... Spacer - Narrow
16070..... Spacer - Wide

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

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

60131-10 3900 Upper Seal Kit:
10368..... Spacer
10369..... Spacer
11720-02 ..... Seal, 1-1/2-inch, Silicone

60132-10 3900 Lower Seal Kit:
41534..... Seal, 3900, 558 Bypass
16069..... Spacer, 3900
16070..... Spacer, 3900

60038 Safety Brine Valve, 2350:
60028-30 ..... Float Assembly, White
60009-00 ..... #900 Air Check, Less Fittings
18602..... Kit, Fitting, 1700 Brine, 900 Air Check
18603..... Kit, Fitting, 1700 Brine, 2350 Safety

61417 Adapter Assy, Side Mount, 3900:
18584-02 ..... Adapter, 3900 Side Mount
16257..... Segment, Flange
11238..... Screw, Hex, 5/16-18 x 1, 18-8 Stainless Steel
16345..... O-ring, 362
16800..... O-ring, 238
11533..... Plug, Pipe 1/4-inch

60150-3150 SVO, Assembly, 3150/3900
Drain Line Flow Controls (DLFC):
60711-00 ..... 2-inch NPT, Less BTTNS, w/2 Holes
60711-000 ..... 2-inch NPT, Less BTTNS, w/3 Holes
60711-01 ..... 2-inch NPT, Less BTTNS, w/1 Hole
60711-20 ..... 2-inch NPT, 20 gpm
60711-25 ..... 2-inch NPT, 25 gpm, Brass
60711-30 ..... 2-inch NPT, 30 gpm
60711-35 ..... 2-inch NPT, 35 gpm
60711-40 ..... 2-inch NPT, 40 gpm
60711-45 ..... 2-inch NPT, 45 gpm
60711-50 ..... 2-inch NPT, 50 gpm
60711-55 ..... 2-inch NPT, 55 gpm
60711-60 ..... 2-inch NPT, 60 gpm
60711-65 ..... 2-inch NPT, 65 gpm
60711-70 ..... 2-inch NPT, 70 gpm
60711-75 ..... 2-inch NPT, 75 gpm
60711-80 ..... 2-inch NPT, 80 gpm
60711-85 ..... 2-inch NPT, 85 gpm
60711-90 ..... 2-inch NPT, 90 gpm
60711-95 ..... 2-inch NPT, 95 gpm
60711-100 ..... 2-inch NPT, 100 gpm
60812-30 ..... 2-inch BSP/ Metric, 30 gpm
60812-35 ..... 2-inch BSP/ Metric, 35 gpm
60812-45 ..... 2-inch BSP/ Metric, 45 gpm
60812-50 ..... 2-inch BSP/ Metric, 50 gpm
60812-55 ..... 2-inch BSP/ Metric, 55 gpm
60812-70 ..... 2-inch BSP/ Metric, 70 gpm
60812-75 ..... 2-inch BSP/ Metric, 75 gpm
60812-80 ..... 2-inch BSP/ Metric, 80 gpm
60812-90 ..... 2-inch BSP/ Metric, 90 gpm
60812-95 ..... 2-inch BSP/ Metric, 95 gpm
60812-100 ..... 2-inch BSP/ Metric, 100 gpm

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