



FLECK NXT TIMER

SERVICE MANUAL



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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 controller 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 controller 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.
- Correct and constant voltage must be supplied to the controller to maintain proper function.

JOB SPECIFICATION SHEET

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

Programming Mode:

Feed Water Hardness: _____ Grains per Gallon or mg CaCO₃/L
Regeneration Time: Delayed _____ AM/PM or Immediate
Regeneration Day Override: Off or Every _____ Days

Master Programming:

System Type:

- 4 - Single Unit
- 5 - Parallel Unit
- 6 - Parallel Series Regen
- 7 - Twin Alternating
- 9 - Alternating
- 14 - Demand Recall

| | | | | | |
|------------------|--------------------------------------|----------|----------|----------|------|
| Valve Type: | 2750 | 2850 | 2900s | 3150 | 3900 |
| System Size: | 1 Valve | 2 Valves | 3 Valves | 4 Valves | |
| Valve Address: | #1 | #2 | #3 | #4 | |
| Regenerant Flow: | Downflow or Upflow | | | | |
| | Brine Draw First or Brine Fill First | | | | |

Display Format: US Gallons or Liters

Unit Capacity: _____ Grains or grams CaCO_3

Capacity Safety Factor: Zero or _____ %

Trip Points (Gallons or M^3): _____ Point 1 _____ Point 2 _____ Point 3

Trip Delays: _____ Delay 1 _____ Delay 2 _____ Delay 3

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

Timed Auxiliary Relay Output Windows:
Off or Start Time __ : __ : __
End Time __ : __ : __

Chemical Pump Output Auxiliary Relay:
Off or Volume (Gallons or Liters) _____
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 update 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 valve.
4. Press the Extra Cycle button to return to the normal display screen, or wait for a 5 second timeout.

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

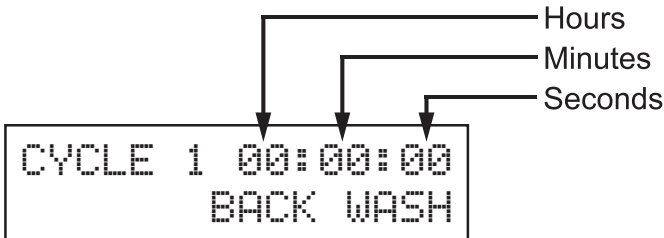
Manually Initiating a Regeneration

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 in, 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 (Backwash)



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

Flow Meter Equipped Timer

As treated water is used, the Volume Remaining display counts down from the calculated system capacity to zero. When zero is reached 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 all stored during a power failure, and will be restored when power is re-applied. 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.

SYSTEM DEFINITIONS

| System Number | System Description | # of Tanks/ Controls | Type | Operation Discussion |
|---------------|---------------------------|----------------------|---|---|
| 4 | Single Unit | 1 | Time Clock: No Meter Immediate: One Meter Delayed: One Meter Remote Signal Start: No Meter | Single tank configuration. |
| 5 | Interlocked | 2, 3, or 4 | Immediate: All Meters Remote Signal Start: No Meter | All tanks in parallel supplying treated water. Each unit in the system will have its own flow meter/sensor input. The control will delay the start of Regeneration if another unit is already in Regeneration. Once that unit has completed a Regeneration cycle, and has returned to Service,the unit with longest regeneration queue time will begin Regeneration. No more than one unit will be in Regeneration at a time. |
| 6 | Series Regeneration | 2, 3, or 4 | Immediate: One Meter Delayed: One Meter Remote Signal Start: No Meter | All tanks in parallel supplying treated water. Only #1 control will monitor flow meter/sensor input. When a regeneration is required for the system, it will regenerate valve address #1 first, immediately followed by #2, then #3, then #4 if installed. No more than one unit will be in Regeneration at a time. |
| 7 | Twin Alternating | 2 | Immediate: One Meter Remote Signal Start: No Meter | One tank online supplying treated water, one tank in Standby. Only #1 control will monitor its flow meter/sensor input. Regeneration of a unit will begin after the other control has left Standby and returned to Service. When the Regeneration cycle is complete, the regenerated unit will enter Standby. Standby on each tank is controlled by the lower drive output terminals on the NXT circuit board. |
| 9 | Multiple Tank Alternating | 2, 3, or 4 | Immediate: All Meters Remote Signal Start: No Meter | One, two, or three tanks online supplying treated water, one tank in Standby. Meter/sensor input is required on each tank. Regeneration of a unit will begin after the other control has left Standby and returned to Service. When the Regeneration cycle is complete, the regenerated unit will enter Standby. Standby on each tank is controlled by the lower drive output terminals on the NXT circuit board. |
| 14 | Demand Recall | 2, 3, or 4 | Immediate: All Meters | Meter input is required on each tank. Unit #1 will begin In Service with #2, #3, and #4 (if installed) will begin in Standby. At least one unit is In Service at all times. When flow rate to the Primary Service Unit increases to a user specified rate, the next unit in sequence will move from Standby to Service. As the flow rate falls below the user specified rate subsequent tanks will return to Standby. When the Primary Service Unit regenerates, the next unit in sequence will become the new Primary Service Unit. As each units capacity is reached the controller will initiate a Regeneration of that unit. Depending on the number of units in the system, and flow rate demand the regenerated unit will then be placed either into Standby or Service. Only one unit will be in Regeneration at a time. |

SYSTEM OPERATION IN SERVICE

(SYSTEM 14-DEMAND RECALL)

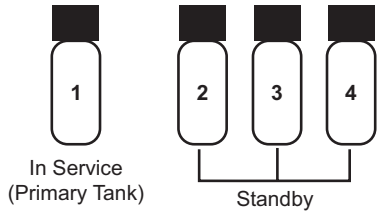
The system operates as part of a multi-valve regeneration system.

Each valve in the system will have an active flow meter input, even in Standby.

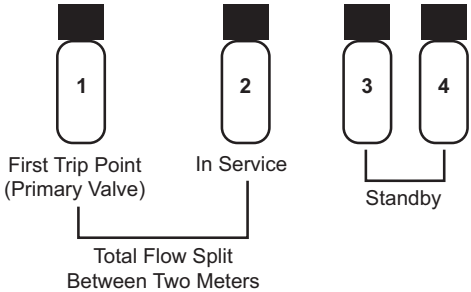
The number of valves in service depends on the flow rate.

Examples of a Four-Unit System:

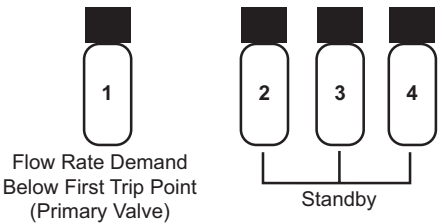
1. One Valve is in service at all times (the "primary valve").



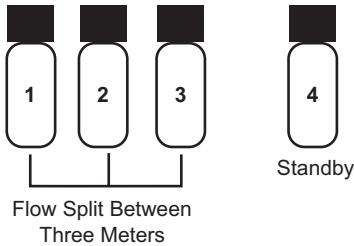
2. The total flow rate to the primary valve increased past the first trip point programmed rate. The flow stayed past the trip point delayed time. The next valve (least volume remaining) changes from Standby to In Service. This valve then splits the total flow between two meters.



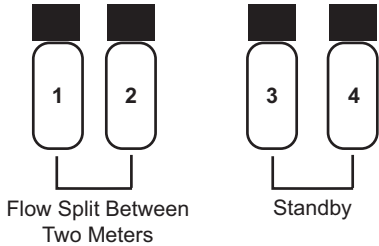
3. The flow rate demand decreased below the first trip point. The valve returns to Standby.



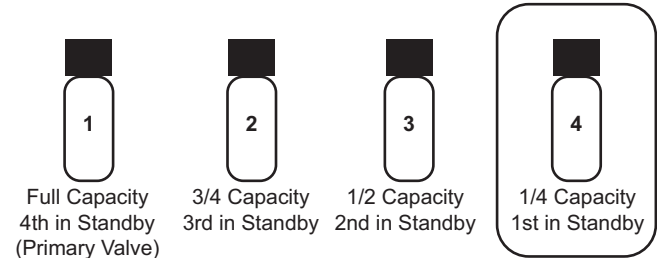
4. Total flow rate demand increased past a second trip point programmed rate. The second and third valve (least volume remaining) changes from Standby to In Service. The total flow is split between the three meters.



5. The third valves returns to stand by as demand decreases past the second trip point.

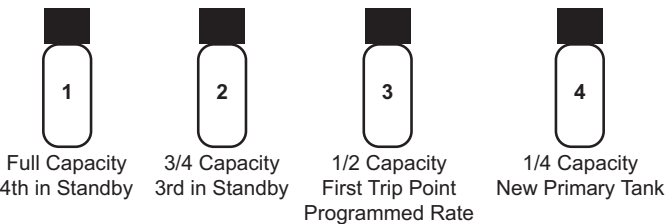


6. Valves return to stand by due to decreased total flow rate and trip points programmed. The valve with the most remaining volume will be the first to go into Standby.



7. The primary valve regenerates. The next valve with the least remaining volume becomes the new primary valve. The valve with the next least volume remaining will be the first trip point programmed rate. Valves continue operating in this order.

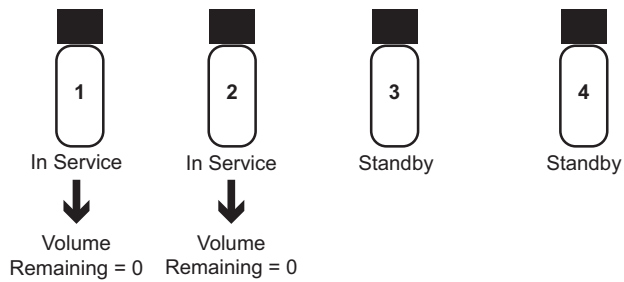
System Operation in Regeneration:



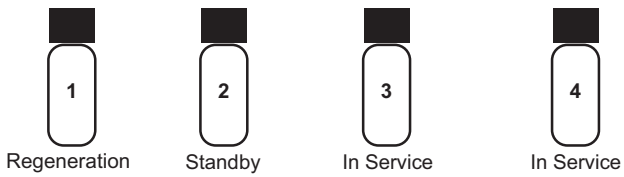
If two valves are In Service and both reach Volume Remaining = 0, the other two valves will shift from Standby to In Service. The lead valve with Volume Remaining = 0 will start regeneration. The second valve with Volume Remaining = 0 will enter Standby. If flow increases past the trip point a third valve needs to enter In Service. The valve in Standby with Volume Remaining = 0 will shift into In Service to maintain a steady flow. Operating for extended periods in this mode may degrade the water quality.

FLOW IN A FOUR-UNIT SYTEM
(SYSTEM 14-DEMAND RECALL)

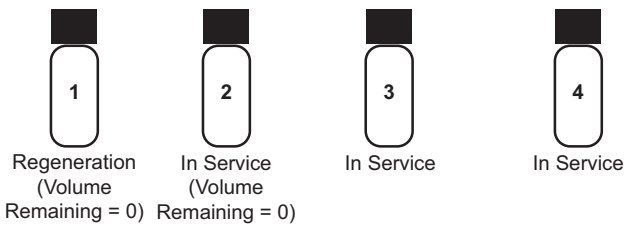
Steady Flow:



Flow Stays Steady:



Flow Increases Past the Trip Point:



TIMER DISPLAY FEATURES

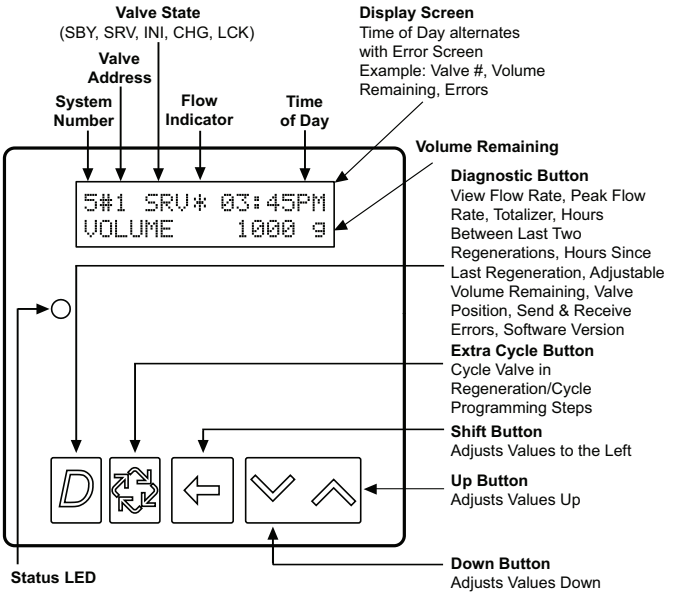


Figure 1

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 “Wiring Diagrams” section of this manual.

LED Status Lights

Blue LED - Illuminates while the unit is in service and no errors exist. 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

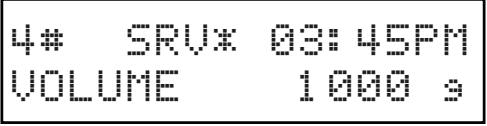
A rotating line (appearing as a rotating star shape) will display on the screen when flow is going through the meter.

TIMER DISPLAY - SCREEN EXAMPLES
(SYSTEM 4 THROUGH 6)

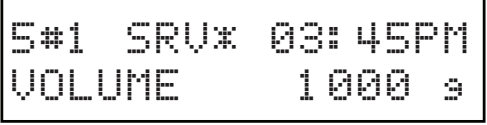
1. In Service: System 4 Time Clock



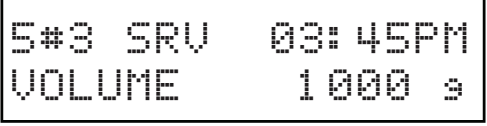
2. In Service: System 4 Flow Meter Initiated or System 4 Flow Meter Delayed



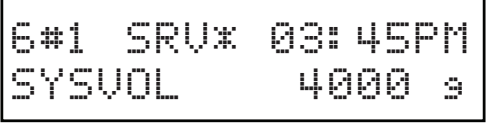
3. In Service: System 5 Flow Meter Initiated (Lead Unit)



4. In Service: System 5 Flow Meter Initiated (Lag Unit #3)

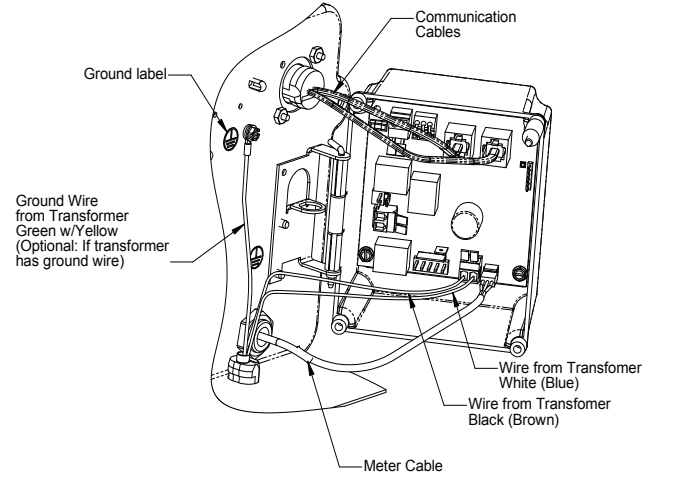


5. In Service: System 6 Flow Meter Initiated (Lead Unit)

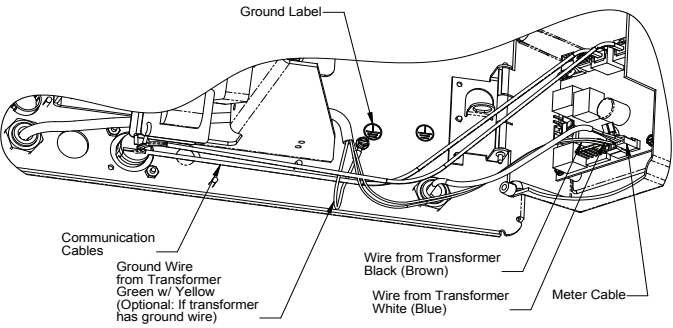


TRANSFORMER AND GROUND CONNECTIONS

2750/2850/2900 Valves:



3150/3900 Valves:



IMPORTANT: Earth ground wire must be installed.

Installing the Transformer:

1. Locate the ground label to find the screw to attach the ground wire on the transformer.
2. Remove the screw and attach the ground wire, and re-attach the screw.
3. Insert white and black transformer wires into 24VAC input of control.

NETWORK/COMMUNICATION CABLES AND CONNECTIONS

Use either a CAT3 or CAT5 Network/Communication cable. Connect the network/communication cable first before programming. The maximum cable length between timers is 100 feet. Connect each unit together from one communication port to the next communication port. It does not matter which one goes to the next one.

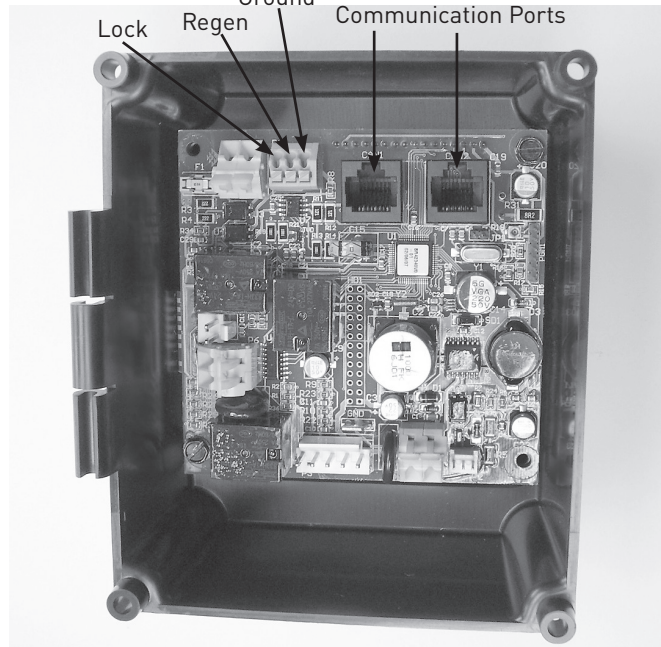


Figure 2 NXT Circuit Board

MASTER PROGRAMMING MODE FLOW CHART

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

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 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.

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 changes, press the Diagnostic button.

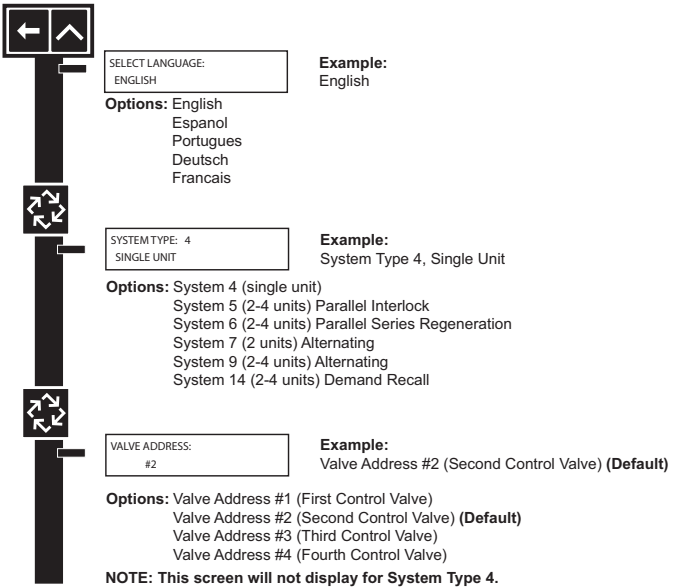
NOTE: If no keypad activity is made for 5 minutes while in the Master Programming Mode, or if there is a power failure, no changes will be saved, and the unit will go back to the main display screen.

Resets

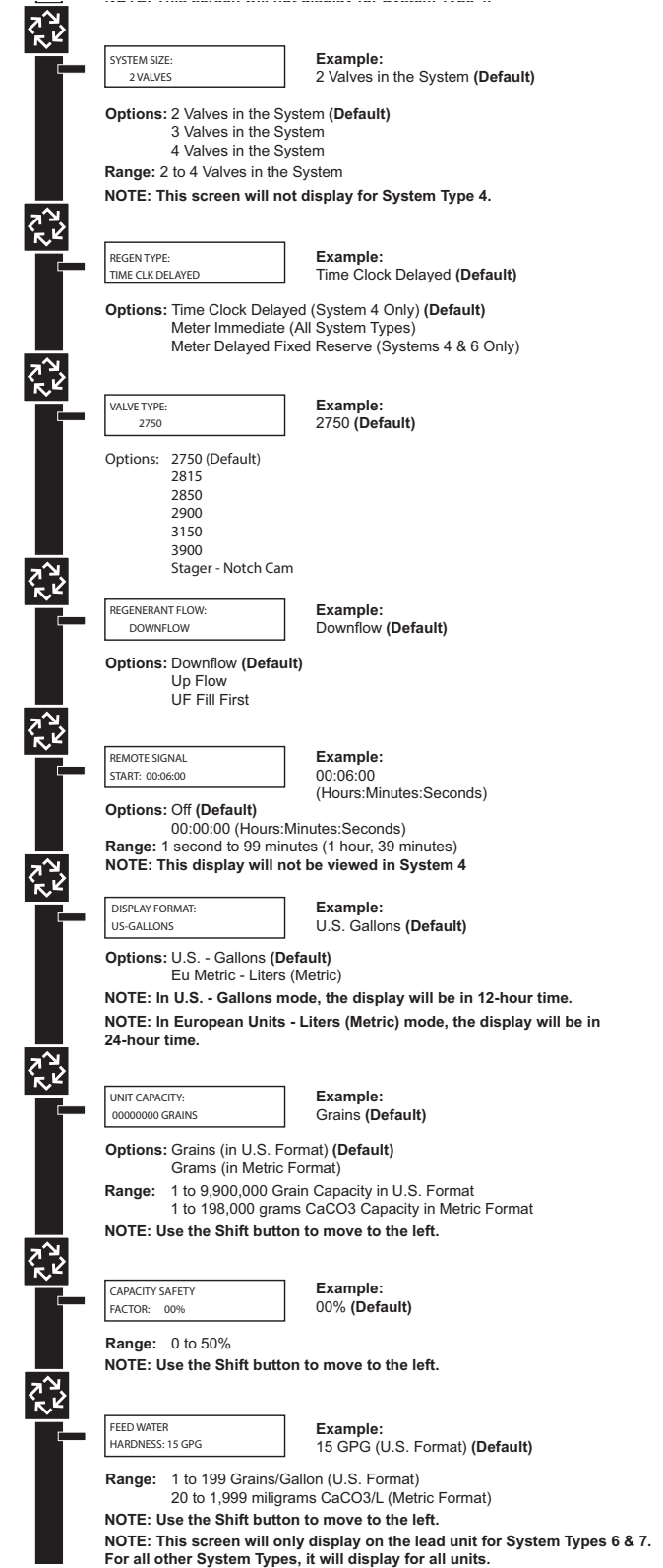
Soft Reset: Press and hold the Up and Down buttons for 25 seconds until 12:00PM (or 12:00HR) appears. This resets all parameters except for the flow meter totalizer volume.

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.

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



MASTER PROGRAMMING MODE FLOW CHART continued



Trip Points 1, 2, and 3 (System 14 only)

This program step selects up to three Trip Points programmed on the master timer only (Valve Address #1).

The actual required number of Trip Points in a system is one less than the number of valves in the system.

Trip Point 1 represents the system flow rate at which a second valve will be brought In Service or Standby.

Trip Point 2 represents the system flow rate at which a third valve will be brought In Service or Standby.

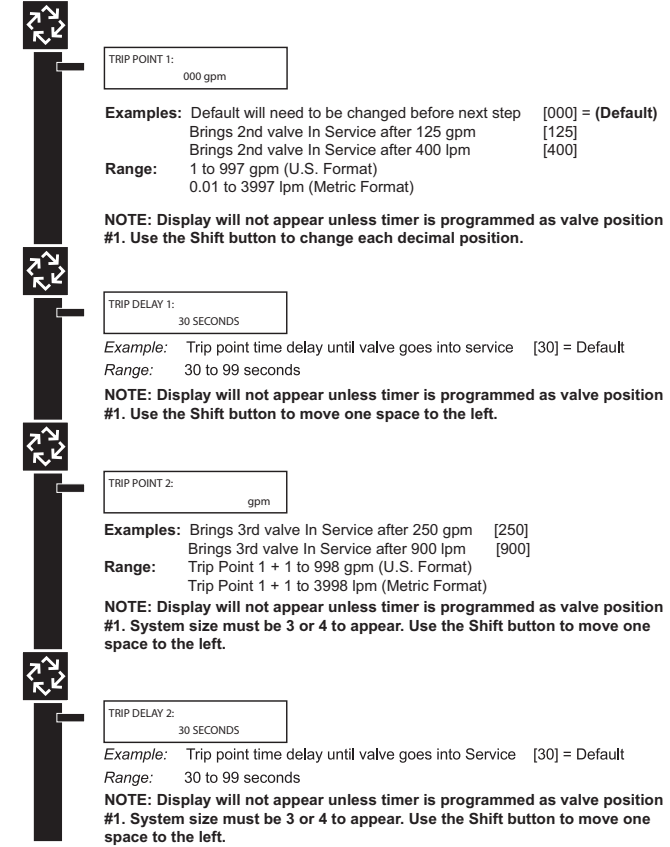
Trip Point 3 represents the system flow rate at which a fourth valve will be brought In Service or Standby.

| Trip Point 1 | Trip Point 2 | Trip Point 3 |
|------------------------|---|------------------------------------|
| Range: 1 – 997 GPM | U.S.: Value of Trip Point 1 plus 1 to 998 | U.S.: Trip Point 2 plus 1 to 999 |
| Range: 0001 – 3997 Lpm | Metric: Value of Trip Point 1 plus 1 - 3998 | Metric: Trip Point 2 plus 1 - 3999 |

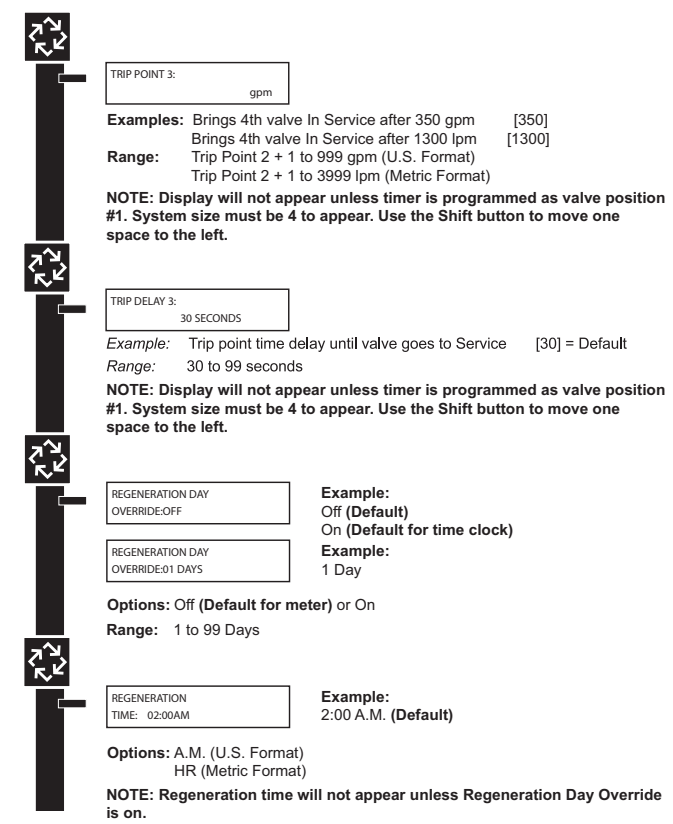
Trip Delays 1, 2, and 3 (System 14 only)

This program step selects each Trip Delay time that is addressed with each Trip Point and will be programmed on the Master timer only (Valve Address #1). The Trip Delay time represents a minimum amount of time the system flow rate is required to be equal or greater than the Trip Points to bring a unit In Service. It also is the minimum amount of time the system flow rate is required to be less than the Trip Points to remove a unit from In Service to Standby.

| Trip Delay 1 | Trip Delay 2 | Trip Delay 3 |
|------------------------|------------------------|------------------------|
| Default: 30 Seconds | | |
| Range: 30 - 99 Seconds | Range: 30 - 99 Seconds | Range: 30 - 99 Seconds |



MASTER PROGRAMMING MODE
FLOW CHART *continued*



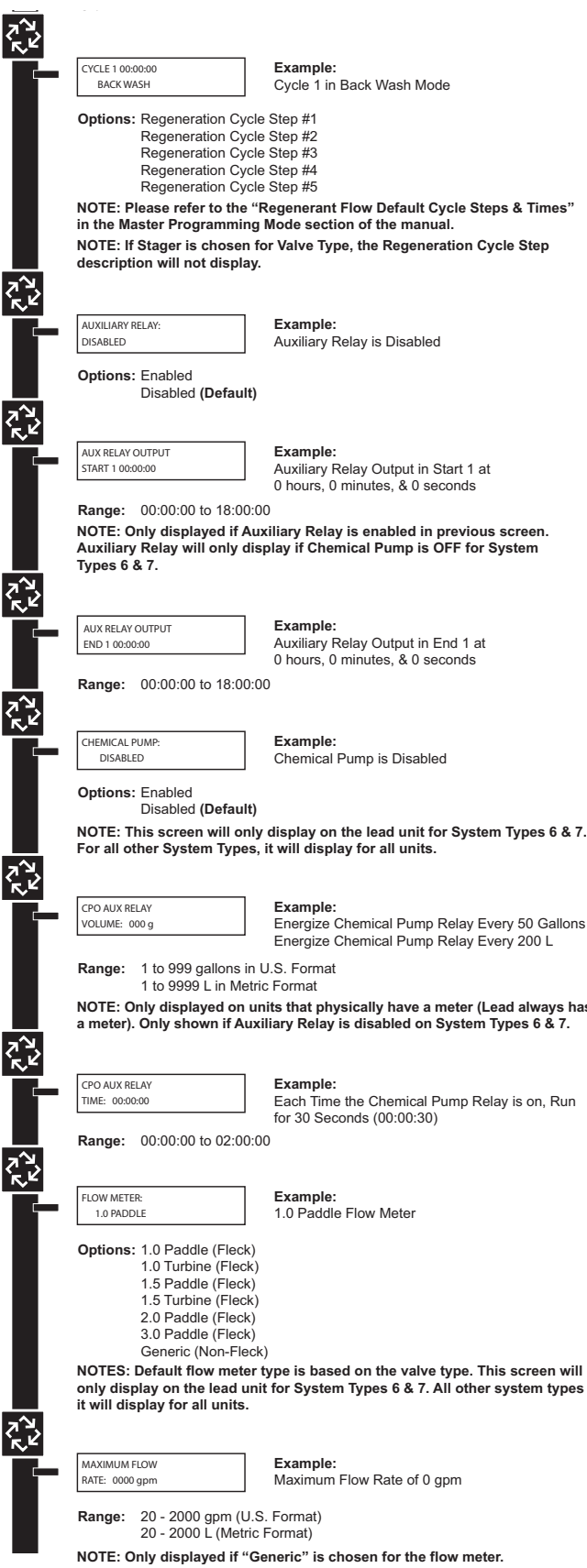
Regeneration Cycle Steps

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

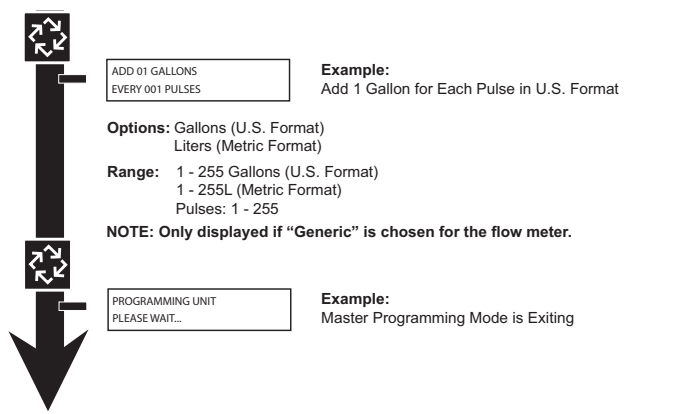
| Regenerant Flow | Cycle 1 | Time | Cycle 2 | Time |
|-----------------|--------------------|------------|--------------------|------------|
| Downflow | Backwash | 10 Minutes | Brine & Slow Rinse | 1 Hour |
| UF Brine Draw | Brine & Slow Rinse | 1 Hour | Backwash | 10 Minutes |
| UF Fill First | Brine Tank Fill | 12 Minutes | Brine Making | 1 Hour |

| Regenerant Flow | Cycle 3 | Time | Cycle 4 | Time |
|-----------------|--------------------|------------|-----------------|------------|
| Downflow | Rapid Rinse | 10 Minutes | Brine Tank Fill | 12 Minutes |
| UF Brine Draw | Rapid Rinse | 10 Minutes | Brine Tank Fill | 12 Minutes |
| UF Fill First | Brine & Slow Rinse | 1 Hour | Backwash | 10 Minutes |

| Regenerant Flow | Cycle 5 | Time |
|-----------------|-------------|------------|
| Downflow | Pause | N/A |
| UF Brine Draw | Pause | N/A |
| UF Fill First | Rapid Rinse | 10 Minutes |



MASTER PROGRAMMING MODE FLOW
CHART *continued*



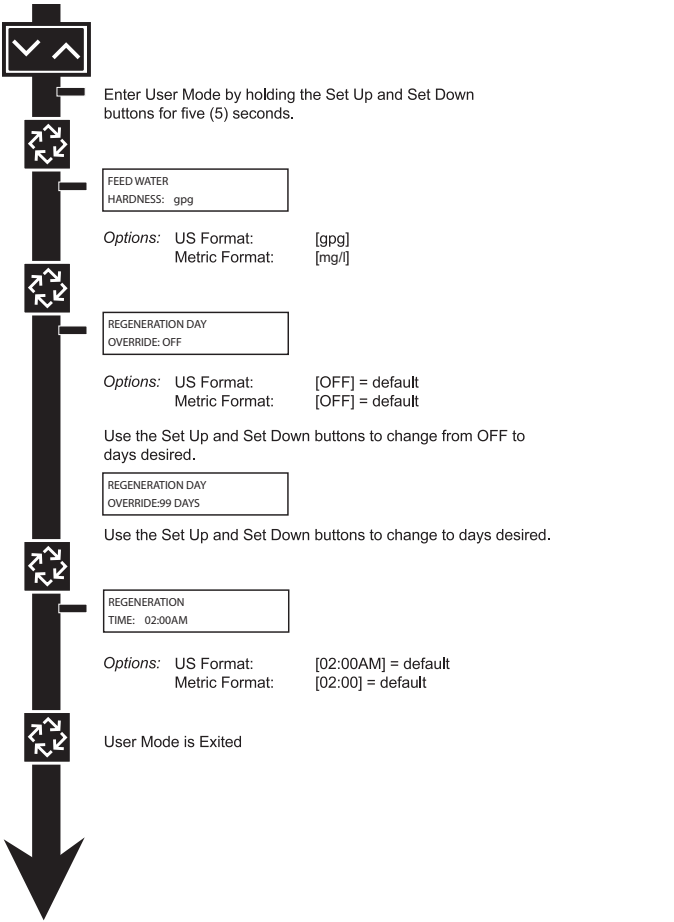
USER PROGRAMMING MODE FLOW CHART

Entering User Programming Mode

Hold the Set Up and Set Down buttons for 5 seconds.

NOTE: 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.

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



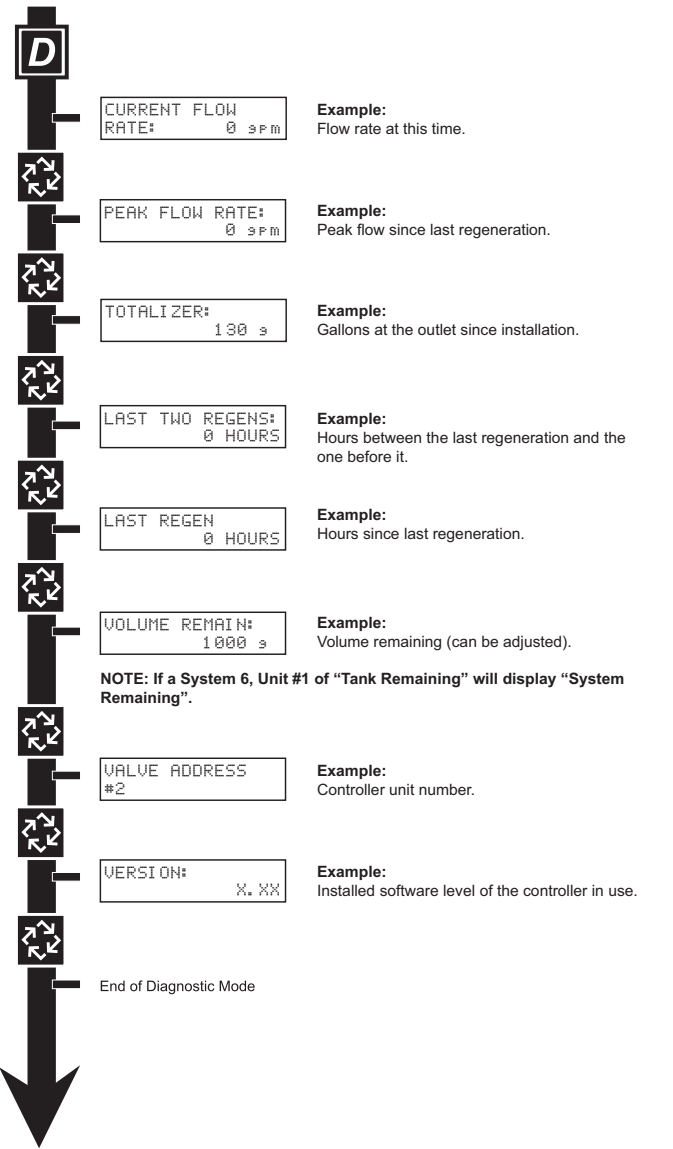
DIAGNOSTIC PROGRAMMING MODE
FLOW CHART

Entering Diagnostic Programming 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 the current controller programming, certain displays may not be able to be viewed or set.

Overview Diagnostic Mode

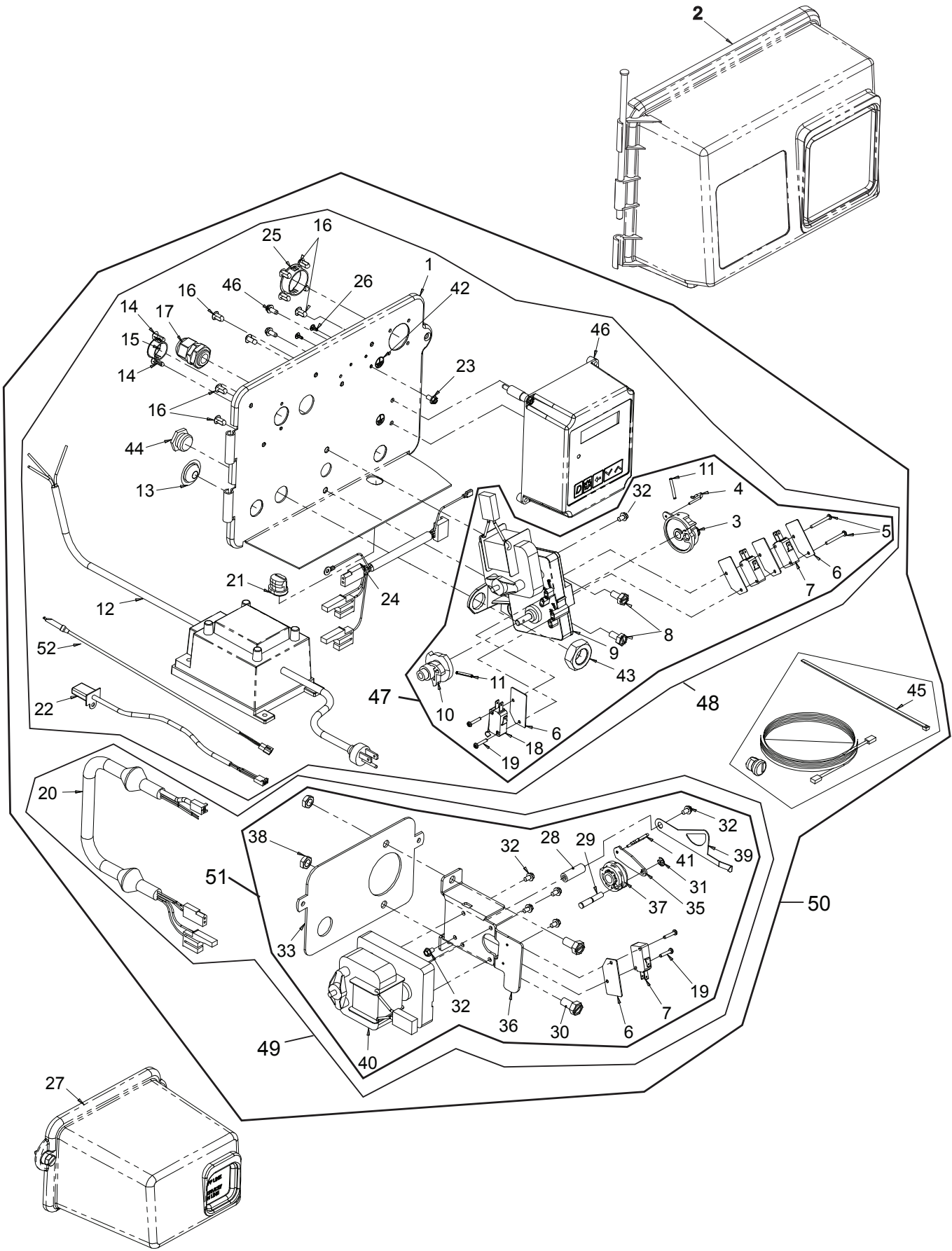
The current diagnostic will be displayed until Extra Cycle key is pressed. There is no time limit on each display. The timer will display local information, not system information. In the event of a regeneration occurring while displaying diagnostics, the regeneration step and time remaining will be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



NXT Multi Language
Programming Parameters and Ranges

| System Type | 4 Time Clock | 4 Metered Immediate | 4 Metered Delayed | 5 Interlock | | | | 6 Series | | | | 7 Alternating | 9 Alternating | | | | 14 Demand Recall | | | | Programming Parameter Ranges | | | | |
|---------------------------|---|---------------------------|-------------------------|----------------|---|---|---|-------------|---|---|---|------------------|------------------|---|---|---|------------------------|---|---|--|------------------------------|-----------------------------|----------|--|--------------------------|
| | | | | | | | | | | | | | | | | | | | | | Gallons | | Liters | | |
| | | | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 thru 4 | | 1 thru 4 | | |
| Valve Address | | | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | English, Espanol, Portugues, Deutsch, Francals | | | | | |
| Select Language | x | x | x | | | | | | | | | | | | | | | | | 1 thru 4 | | | | | |
| System Size | | | | x | | | | | | | | | | | | | | | | | | | | | |
| Regen Type | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | Time Clock, Metered Delayed, Metered Immediate | | | | | |
| Valve Type | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | 2750, 2815, 2850, 2900, 3150, 3900, Stager | | | | | |
| Regenerant Flow | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | Downflow, Upflow, Upflow Fill First | | | | | |
| Remote Signal Start | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | Off, 00:00:01 - 01:39:00 | | | | | |
| Display Format | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | US - Gallons | | EU - Metric-Liters | | | |
| Unit Capacity | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | 1 - 9900000 Grains | | 1 - 198000 gCaCO3 | | | |
| Capacity Safety Factor | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | 0- 50% | | | | | |
| Feed Water Hardness | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | 1 - 199 Grains/Gallons | | 1 - 1999 mgL | | | |
| Trip Point 1 | | | | | | | | | | | | | | | | | | | | 0 - 997gpm | | 0 - 3997 Lpm | | | |
| Trip Delay 1 | | | | | | | | | | | | | | | | | | | | 30 - 99 Seconds | | 30 - 99 Seconds | | | |
| Trip Point 2 | | | | | | | | | | | | | | | | | | | | Trip Point 1 + 1 - 998 gpm | | Trip Point 1 + 1 - 3998 Lpm | | | |
| Trip Delay 2 | | | | | | | | | | | | | | | | | | | | 30 - 99 Seconds | | 30 - 99 Seconds | | | |
| Trip Point 3 | | | | | | | | | | | | | | | | | | | | Trip Point 2 + 1 - 999 gpm | | Trip Point 2 + 1 - 3999 Lpm | | | |
| Trip Delay 3 | | | | | | | | | | | | | | | | | | | | 30 - 99 Seconds | | 30 - 99 Seconds | | | |
| Regeneration Day Override | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | Off, 1 - 99 | | | | | |
| Regeneration Time | x | | x | | | | | | | | | | | | | | | | | 12:00 a.m. - 11:59 p.m. | | 00:00 - 23:59 Hour | | | |
| Cycle 1 | | | x | | | | | | | | | | | | | | | | | 00:00:00 - 04:00:00 | | | | | |
| Cycle 2 | | | x | | | | | | | | | | | | | | | | | Off, 00:00:00 - 04:00:00 | | | | | |
| Cycle 3 | | | x | | | | | | | | | | | | | | | | | Off, 00:00:00 - 04:00:00 | | | | | |
| Cycle 4 | | | x | | | | | | | | | | | | | | | | | Off, 00:00:00 - 04:00:00 | | | | | |
| Cycle 5 | | | x | | | | | | | | | | | | | | | | | Off, 00:00:00 - 04:00:00 | | | | | |
| Auxiliary Relay | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | Enabled, Disabled | | | | | |
| Aux Relay Output Start | | | | | | | | | | | | | | | | | | | | 00:00:01 to Total Regeneration Time - 1 | | | | | |
| Aux Relay Output End | | | | | | | | | | | | | | | | | | | | Start Time + 1 to Total Regeneration Time | | | | | |
| Chemical Pump | | | | | | | | | | | | | | | | | | | | Enabled, Disabled | | | | | |
| CPO Aux Relay Volume | | | | | | | | | | | | | | | | | | | | 1 - 999 gallons | | 0001 - 9999 Liters | | | |
| CPO Aux Relay Time | | | | | | | | | | | | | | | | | | | | 00:00:01 - 02:00:00 | | 00:00:01 - 02:00:00 | | | |
| Flow Meter | | | | | | | | | | | | | | | | | | | | 1" 1.5" Paddle or Turbine, 2" Paddle, 3" Paddle, Generic | | | | | |
| Generic | | | | | | | | | | | | | | | | | | | | | | | | | |
| Maximum Flow Rate | | | | | | | | | | | | | | | | | | | | 20 - 2000 GPM | | 20 - 2000 LPM | | | |
| Add ___ Gallons or Liters | | | | | | | | | | | | | | | | | | | | 1 - 255 Gallons | | 001 - 255 Liters | | | |
| Every ___ Pulses | | | | | | | | | | | | | | | | | | | | 1 - 255 | | 1 - 255 | | | |
| Notes | <div><div>o - Regeneration Time will only be viewed if Regeneration Day Override is used.</div><div>u - If Auxiliary Relay is Enabled then Chemical Pump Relay will not be viewed or if Chemical Pump Relay is Enabled then Auxiliary R</div><div>c - All Relay Output parameters programming will be viewed if Enabled.</div><div>a - If Generic Flow Meter is chosen, then programming parameters will be viewed.</div></div> | | | | | | | | | | | | | | | | | | | | | | | | elay will not be viewed. |

2750/2850/2900S UPPER & 2900S LOWER
POWERHEAD ASSEMBLY



2750/2850/2900S UPPER & 2900S LOWER
POWERHEAD ASSEMBLY *continued*

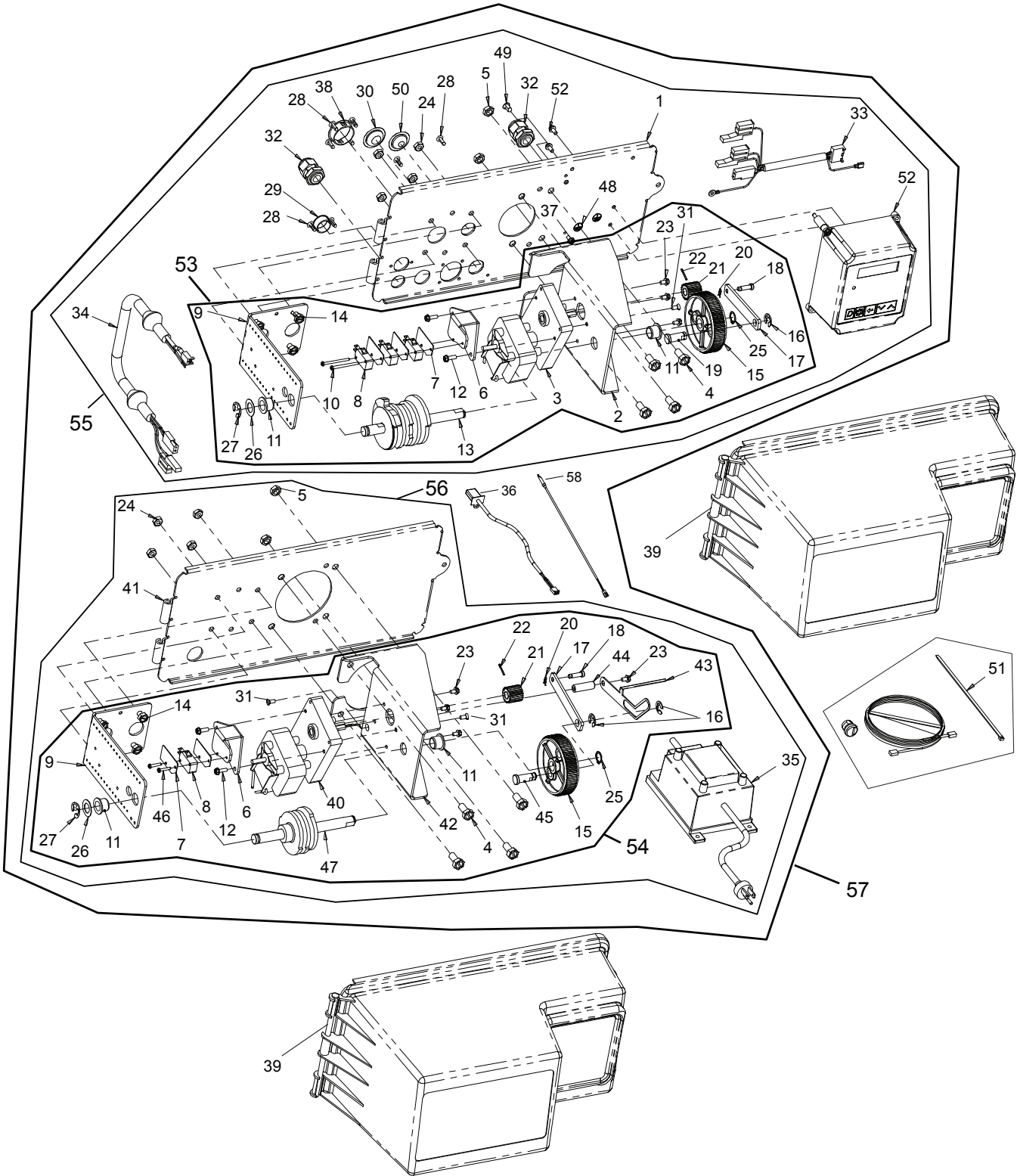
| Item No. | QTY | Part No. | Description |
|----------|--------|---------------|--|
| 1..... | 1..... | 18697-15..... | Backplate, Hinged |
| 2..... | 1..... | 60219-02..... | Cover Assy, Environmental, Black |
| 3..... | 1..... | 60160-15..... | Drive Cam Assy, Stf, Blue |
| 4..... | 1..... | 10909..... | 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..... | 42579..... | 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..... | 42469..... | Transformer, Us, 120V, 24V, 40Va |
| | | 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 Assembly, |
| | | 19121-08..... | Meter Cable Assembly, 35 inch long with connector |
| | | 19121-09..... | Meter Cable Assembly, 100 inch long with connector |
| | | 19121-10..... | Meter Cable Assembly 304 inch long with 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 |

| Item No. | QTY | Part No. | Description |
|----------|--------|---------------|--|
| 40..... | 1..... | 42580..... | Motor, Drive, 24V, 50/6 0Hz, 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..... | 61763..... | Kit, Can Communication Cable |
| 46..... | 1..... | 42466-11..... | Timer Assy, Nxt, Right Hand |
| 47..... | | 60050-23..... | Drive Assy, 2750, 2850, 2900S Upper, STF, 24V 50/60 Hz |
| | | 60050-26..... | Drive Assy, 2850S, STF, 24V 50/60 Hz |
| 48..... | * | | Powerhead Assy, 2750, 2850, 2900S Upper |
| | * | | Powerhead Assy, 2850S |
| 49..... | * | | Powerhead Assy, Lower 2900S |
| 50..... | * | | Powerhead Assy, Upper and Lower 2900S |
| 51..... | | 60055-53..... | Lower Drive Assy, 2900, 24/60 |
| 52..... | 1..... | 17971..... | Meter Cable Assembly, |
| | | 17971-02..... | Meter Cable Assembly, 28 inch long with connector |
| | | 17971-04..... | Meter Cable Assembly, 100 inch long with connector |
| | | 17971-05..... | Meter Cable Assembly 304 inch long with connector |

*Call you distributor for a Part Number

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

3150/3900 UPPER & LOWER POWERHEAD
ASSEMBLY



3150/3900 UPPER & LOWER POWERHEAD

ASSEMBLY continued

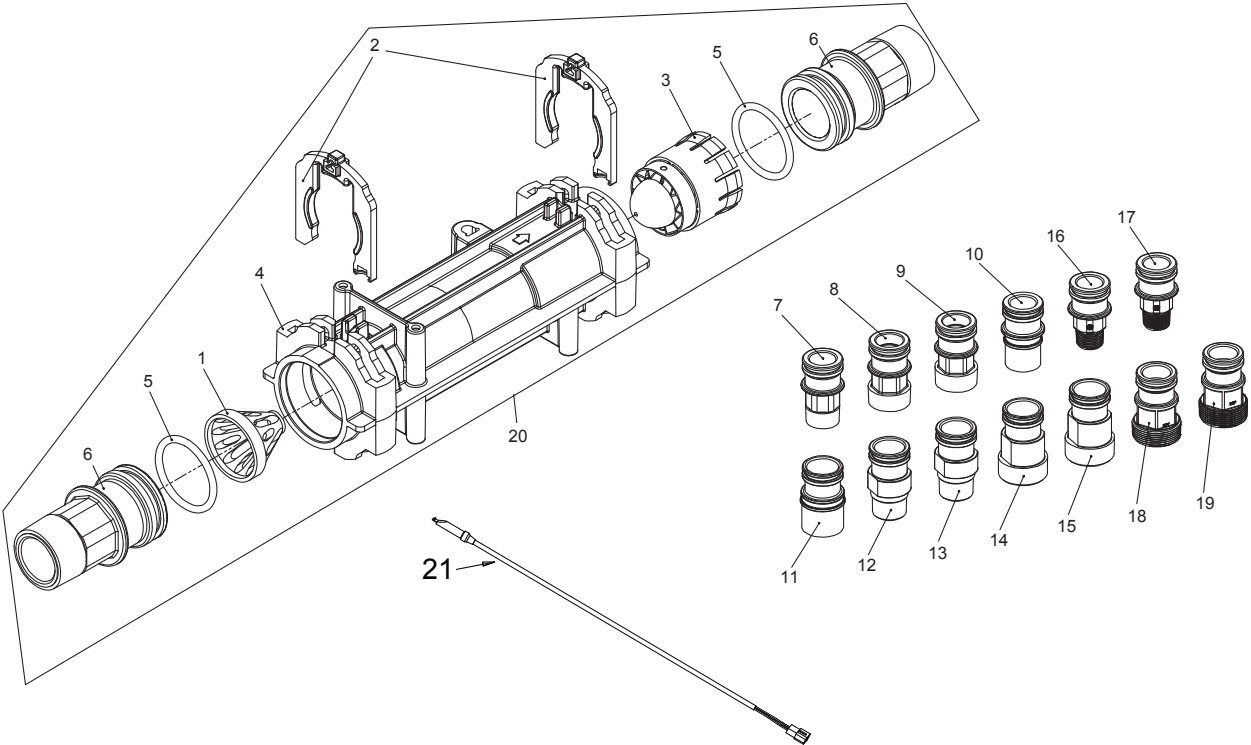
| Item No. | QTY | Part No. | Description |
|----------|--------|---------------|--|
| 1..... | 1..... | 19304-04..... | Backplate, 3150/3900 |
| 2..... | 1..... | 15120..... | Bracket, Motor MTG, 3150/3900 |
| 3..... | 1..... | 42581..... | Motor, Drive, 24V, 50/60 Hz, SP |
| 4..... | 8..... | 11224..... | 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..... | 42469..... | Transformer, US, 120V, 24V, 40VA |
| | | 41049..... | Transformer, Euro, 230V/24V 108VA |
| | | 41050..... | Transformer, Aust, 230V/24V, 108VA |
| 36..... | 1..... | 19121..... | Meter Cable Assembly |
| | | 19121-08..... | Meter Cable Assembly, 35 inch long with connector |
| | | 19121-09..... | Meter Cable Assembly, 100 inch long with connector |
| | | 19121-10..... | Meter Cable Assembly, 304 inch long with connector |

| Item No. | QTY | Part No. | Description |
|----------|--------|---------------|--|
| 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..... | 42581..... | 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..... | 61763..... | Kit, Can Communication Cable |
| 52..... | 1..... | 42466-11..... | Timer Assy, Nxt, Right Hand |
| 53..... | | 60057-03..... | Drive Assy, 3150, 3900 Upper, 24V 50/60 Hz |
| 54..... | | 60058-03..... | Lower Drive Assy, 3900, 24V 50/60 Hz |
| 55..... | * | | Powerhead Assy, 3150, 3900 Upper |
| 56..... | * | | Powerhead Assy, 3900 Lower |
| 57..... | * | | Powerhead Assy, 3900 Upper & Lower |
| 58..... | 1..... | 19791..... | Meter Cable Assembly |
| | | 19791-02..... | Meter Cable Assembly, 28 inch long with connector |
| | | 19791-04..... | Meter Cable Assembly, 100 inch long with connector |
| | | 19791-05..... | Meter Cable Assembly, 304 inch long with connector |

* Call your distributor for Part Number

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

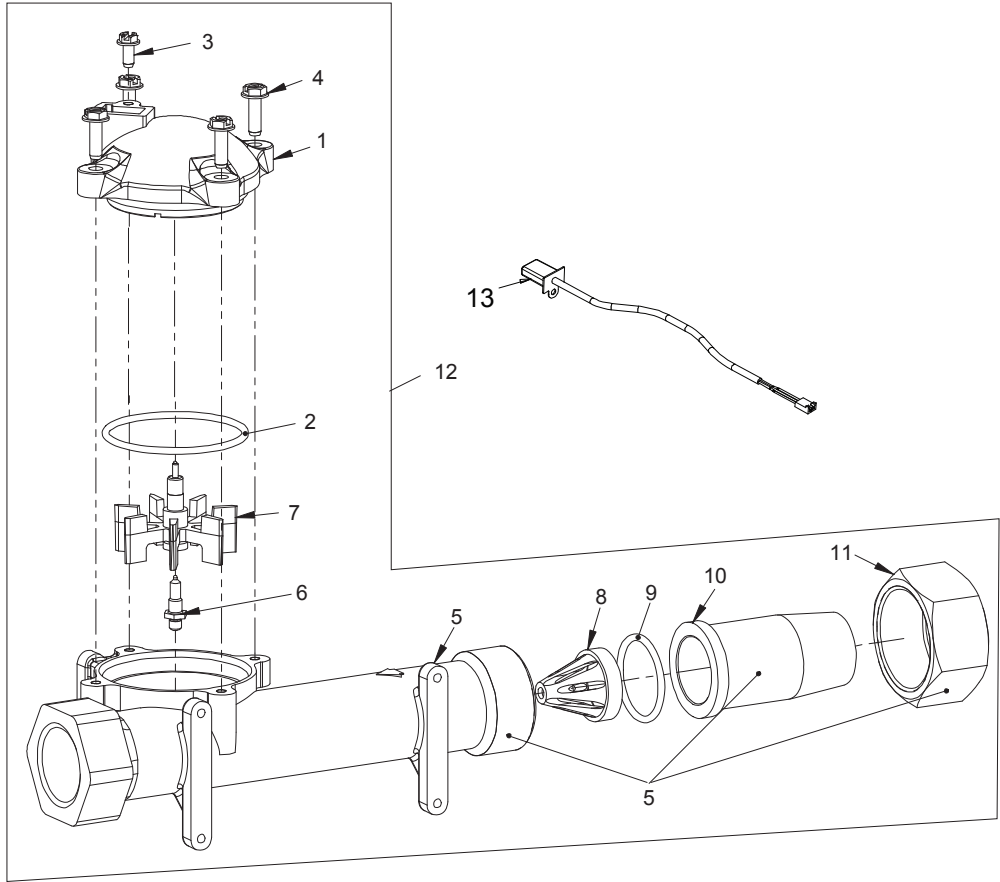
METER ASSEMBLY PLASTIC



| Item No. | QTY | Part No. | Description |
|----------|--------|---------------|--|
| 1..... | 1..... | 17542..... | Flow Straightener, 1-1/2" |
| 2..... | 2..... | 40576..... | Clip, H, Plastic, 7000 |
| 3..... | 1..... | 40577..... | Turbine Meter Assy, 7000 |
| 4..... | 1..... | 41555..... | Body, Inline Meter |
| 5..... | 2..... | 40951..... | O-ring, -220 |
| 6..... | 2..... | 40563-01..... | Connector Assy, 1" NPT, Plastic, w/O-ring |
| 7..... | 2..... | 40563-11..... | Connector Assy, 1" BSP, Plastic, w/O-ring |
| 8..... | 2..... | 40565-01..... | Connector Assy, 1-1/4" NPT, Plastic, w/O-ring |
| 9..... | 2..... | 40565-11..... | Connector Assy, 1-1/4" BSP, Plastic, w/O-ring |
| 10..... | 2..... | 41242-01..... | Connector Assy, 1" & 1-1/4", Sweat, w/O-ring |
| 11..... | 2..... | 41243..... | Connector, 1-1/4" & 1-1/2" Sweat, 7000 |
| | | 41243-01..... | Connector Assy, 1-1/4" & 1-1/2", Sweat, w/O-ring |
| 12..... | 2..... | 61561..... | Connector Assy, 1" NPT, Brass, w/O-ring |
| 13..... | 2..... | 61561-10..... | Connector Assy, 1" BSP, Brass, w/O-ring |
| 14..... | 2..... | 61562..... | Connector Assy, 1-1/2" NPT, Brass, w/O-ring |
| 15..... | 2..... | 61562-10..... | Connector Assy, 1-1/2" BSP, Brass, w/O-ring |
| 16..... | 2..... | 42414-01..... | Connector 3/4" NPT, Plastic, w/O-ring |
| 17..... | 2..... | 42414-11..... | Connector, Assy, 3/4" BSP, Plastic, w/O-ring |
| 18..... | 3..... | 42241-01..... | Connector Assy, 1-1/2" NPT, Plastic, w/O-ring |
| 19..... | 3..... | 42241-11..... | Connector Assy, 1-1/2" BSP, Plastic, w/O-Ring |

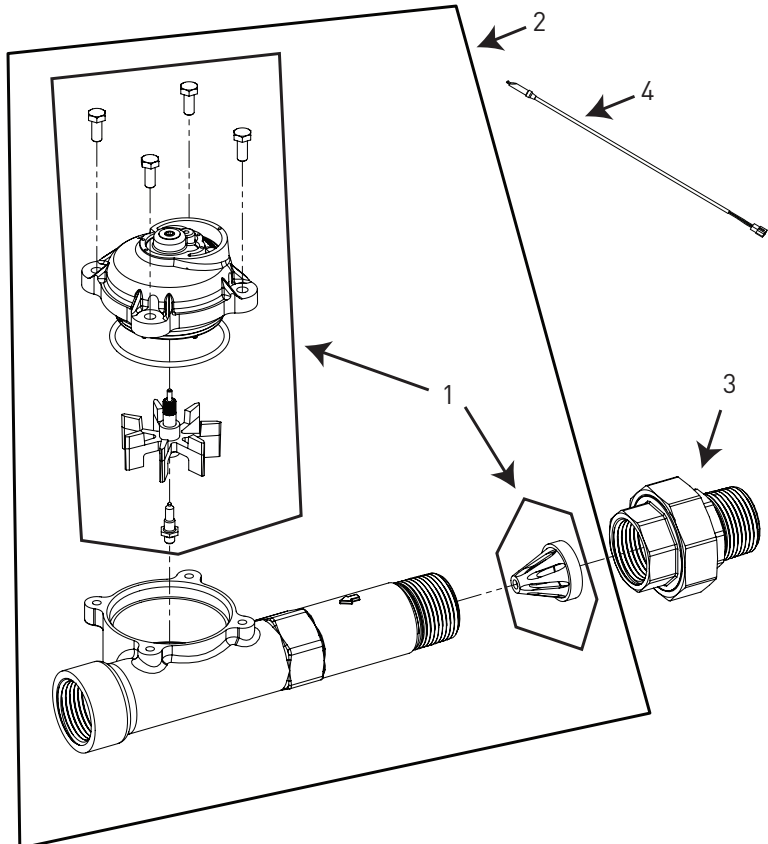
| Item No. | QTY | Part No. | Description |
|----------|--------|---------------|---|
| 20..... | | 61560..... | Meter Assy, 1-1/2" INLN, ELEC, PLAS, w/o Nipples, TURB |
| | | 61560-01..... | Meter Assy, 1", INLN, NPT, ELEC, PLAS, PLAS Nipples, TURB |
| | | 61560-02..... | Meter Assy, 1", INLN, BSP, ELEC, PLAS, PLAS Nipples, TURB |
| | | 61560-03..... | Meter Assy, 1-1/4" INLN, NPT, ELEC, PLAS, PLAS Nipples, TURB |
| | | 61560-04..... | Meter Assy, 1-1/4" INLN, BSP, ELEC, PLAS, PLAS Nipples, TURB |
| | | 61560-05..... | Meter Assy, 1" & 1-1/4", INLN, SWT, ELEC, PLAS, SWT Nipples, TURB |
| | | 61560-06..... | Meter Assy, 1-1/4" & 1-1/2", INLN, SWT, ELEC, PLAS, SWT Nipples, TURB |
| | | 61560-07..... | Meter Assy, 1" INLN, NPT, ELEC, PLAS, BRS Nipples, TURB |
| | | 61560-08..... | Meter Assy, 1" INLN, BSP, ELEC, PLAS, BRS Nipples, TURB |
| | | 61560-09..... | Meter Assy, 1-1/2" INLN, NPT, ELEC, PLAS, BRS Nipples, TURB |
| | | 61560-10..... | Meter Assy, 1-1/2" INLN, BSP, ELEC, PLAS, BRS Nipples, TURB |
| | | 61560-11..... | Meter Assy, 3/4" INLN, NPT, ELEC, PLAS, PLAS Nipples, TURB |
| | | 61560-12..... | Meter Assy, 3/4" INLN, BSP, ELEC, PLAS, PLAS Nipples, TURB |
| | | 61560-13..... | Meter Assy, 1-1/2", INLN, NPT, ELEC, PLAS, PLAS Nipples, TURB |
| | | 61560-14..... | Meter Assy, 1-1/2" INLN, BSP, ELEC, PLAS, PLAS Nipples, TURB |
| 21..... | 1..... | 19791..... | Meter Cable Assembly, |
| | | 19791-02..... | Meter Cable Assembly, 28 inch long with connector |
| | | 19791-04..... | Meter Cable Assembly, 100 inch long with connector |
| | | 19791-05..... | Meter Cable Assembly 304 inch long with connector |

1-INCH BRASS METER ASSEMBLY



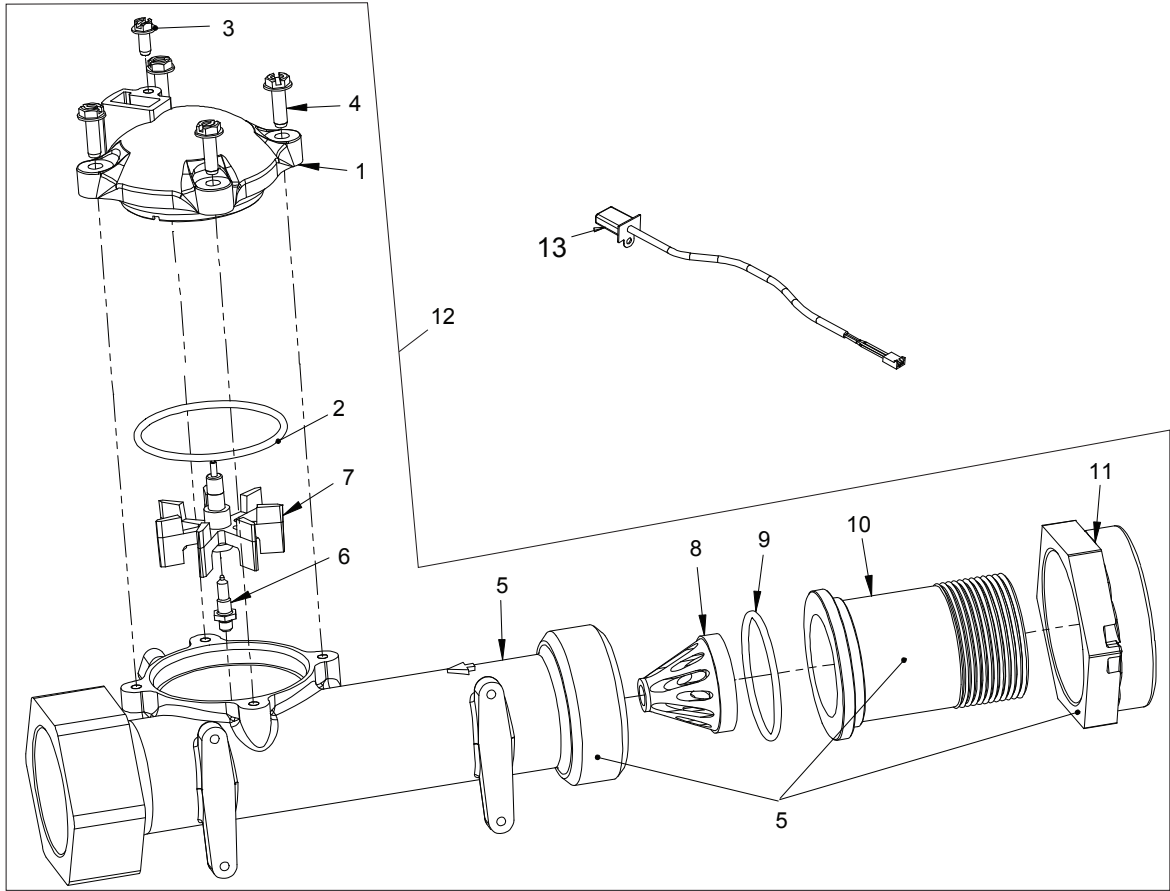
| Item No. | QTY | Part No. | Description |
|----------|--------|---------------------|---|
| 1..... | 1..... | 14716 | Meter Cap Assy, Elec, Plastic Paddlewheel |
| 2..... | 1..... | 13847 | O-ring, -137 |
| 3..... | 1..... | 17798 | Screw, Slot Hex WSH HD |
| 4..... | 4..... | 12473 | Screw, Hex WSH, 10-24 x 5/8 |
| 5..... | 1..... | 14959-20..... | Body, Meter, 1", BSP, Metric, Brass |
| 6..... | 1..... | 13882 | Post, Meter Impeller |
| 7..... | 1..... | 13509 | Impeller, Meter |
| 8..... | 1..... | 14960 | Flow Straightener, 1" |
| 9..... | 1..... | 13287 | O-ring, 123 |
| 10..... | 1..... | 14961-10..... | Fitting, 1" Quick Connector, BSP |
| 11..... | 1..... | 14962 | Nut, Quick Connect NPT |
| 12..... | 1..... | 60613 | Meter Assy, 1" Inline, NPT, Electronic, Brass, PDL |
| | | 60613NP | Meter Assy, 1" Inline, NPT, Electronic, Nickel, PDL |
| | | 60613-20..... | Meter Assy, 1" Inline, BSP, Electronic, Brass, PDL |
| 13..... | 1..... | 19121 | Meter Cable Assembly, |
| | | 19121-08..... | Meter Cable Assembly, 35 inch long with connector |
| | | 19121-09..... | Meter Cable Assembly, 100 inch long with connector |
| | | 19121-10..... | Meter Cable Assembly 304 inch long with connector |

1-INCH STAINLESS STEEL METER ASSEMBLY



| Item No. | QTY | Part No. | Description |
|----------|--------|---------------------|--|
| 1..... | 1..... | 62049-01..... | Service Kit, 1 inch & 1-1/2 inch Meter, Standard Range |
| | 1..... | 62049-02..... | Service Kit, 1 inch & 1-1/2 inch Meter, Extended Range |
| 2..... | 1..... | 61932-10..... | Meter Assy, 1 inch, Inline, Stainless Steel, NPT, Standard Range |
| | 1..... | 61932-11..... | Meter Assy, 1 inch, Inline, Stainless Steel, NPT, Extended Range |
| | 1..... | 61932-20..... | Meter Assy, 1 inch, Inline, Stainless Steel, BSP, Standard Range |
| | 1..... | 61932-21..... | Meter Assy, 1 inch, Inline, Stainless Steel, BSP, Extended Range |
| 3..... | 1..... | 44022 | Union, 1 inch, NPT (Optional on models with electronic controls) |
| | 1..... | 44023 | Union, 1 inch, BSP (Optional on models with electronic controls) |
| 4..... | 1..... | 19791 | Meter Cable Assembly, |
| | | 19791-02..... | Meter Cable Assembly, 28 inch long with connector |
| | | 19791-04..... | Meter Cable Assembly, 100 inch long with connector |
| | | 19791-05..... | Meter Cable Assembly 304 inch long with connector |

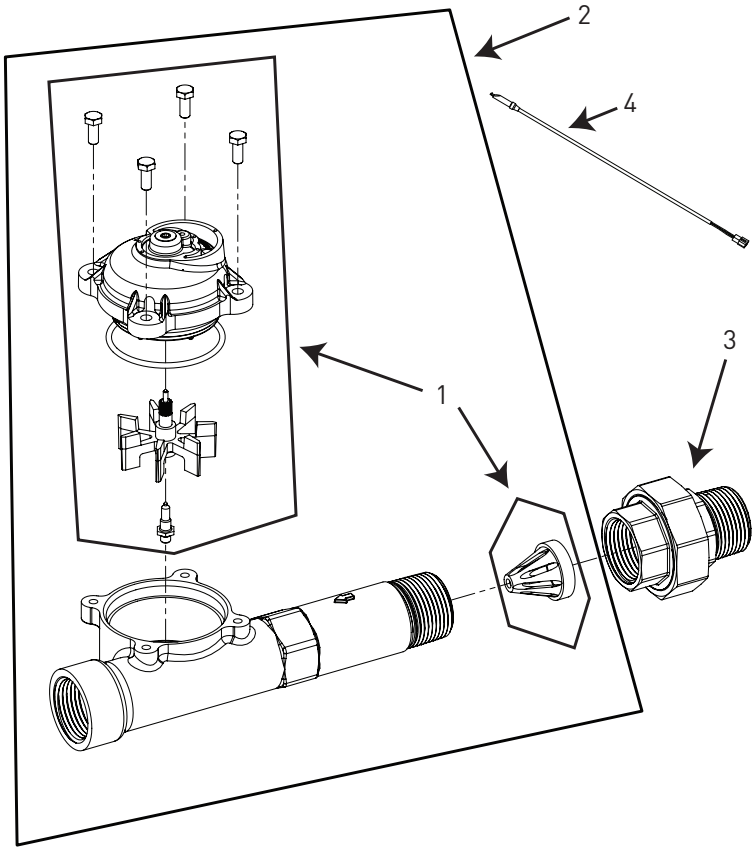
1-1/2 INCH BRASS METER ASSEMBLY



| Item No. | QTY | Part No. | Description |
|----------|--------|-----------------------|--|
| 1..... | 1..... | 14716 | Meter Cap Assy, Elec, Plastic Paddlewheel |
| 2..... | 1..... | 13847 | O-ring, -137 |
| 3..... | 1..... | 17798 | Screw, Slot Hex WSH HD |
| 4..... | 4..... | 12473 | Screw, Hex WSH, 10-24 x 5/8 |
| 5..... | 1..... | 17569-20..... | Body, Meter, BSP, 1-1/2" Quick Connector Brass |
| 6..... | 1..... | 13882 | Post, Meter Impeller |
| 7..... | 1..... | 13509 | Impeller, Meter |
| 8..... | 1..... | 17542 | Flow Straightener, 1-1/2" |
| 9..... | 1..... | 12733 | O-ring, -132 |
| 10..... | 1..... | 17544-10..... | Fitting, 1-1/2" Quick Connector, BSP |
| 11..... | 1..... | 17543 | Nut, Quick Connect 1-1/2" |
| 12..... | 1..... | 60614 | Meter Assy, 1-1/2" Inline, NPT, Electronic, Brass Body, PDL |
| | | 60614NP | Meter Assy, 1-1/2" INLN, NPT, ELEC, BRS BDY, NP, PDL |
| | | 60614-01..... | Meter Assy, 1-1/2" INLN, NPT, ELEC, BRS BDY, PDL, 1" SLV |
| | | 60614-01NP..... | Meter Assy, 1-1/2" INLN, NPT, ELEC, BRS BDY, NP, PDL, 1" SLV |
| | | 60614-20..... | Meter Assy, 1-1/2" INLN, BSP, ELEC, BRS BDY, PDL, 1" SLV |
| | | 60614-20NP..... | Meter Assy, 1-1/2" INLN, BSP, ELEC, BRS BDY, NP, PDL, 1" SLV |

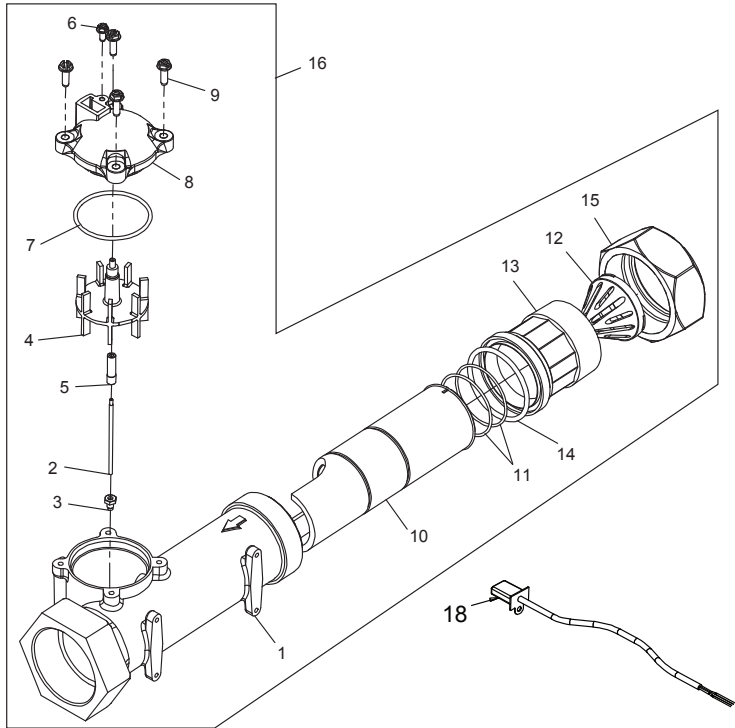
| Item No. | QTY | Part No. | Description |
|----------|--------|---------------------|--|
| 13..... | 1..... | 19121 | Meter Cable Assembly, |
| | | 19121-08..... | Meter Cable Assembly, 35 inch long with connector |
| | | 19121-09..... | Meter Cable Assembly, 100 inch long with connector |
| | | 19121-10..... | Meter Cable Assembly 304 inch long with connector |

1-1/2 INCH STAINLESS STEEL METER ASSEMBLY

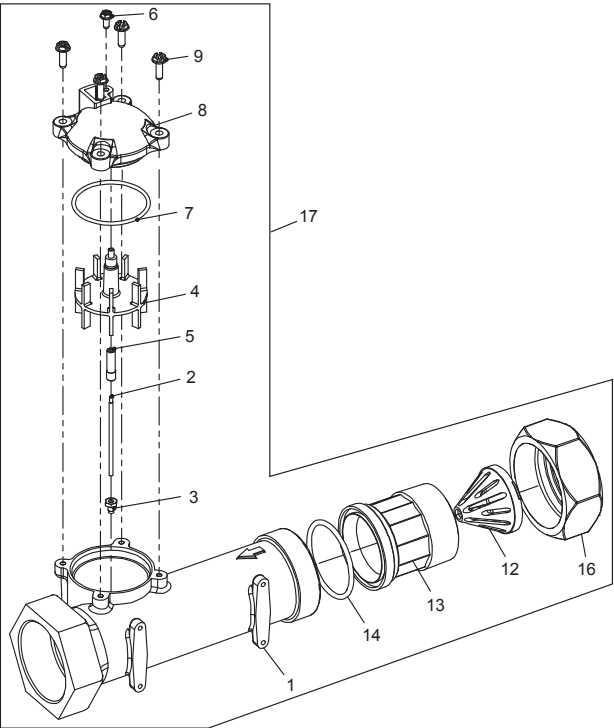


| Item No. | QTY | Part No. | Description |
|----------|--------|----------------------|--|
| 1..... | 1..... | 62049-01..... | Service Kit, 1 inch & 1-1/2 inch Meter, Standard Range |
| | | 1..... 62049-02..... | Service Kit, 1 inch & 1-1/2 inch Meter, Extended Range |
| 2..... | 1..... | 61933-10..... | Meter Assy, 1-1/2 inch, Inline, Stainless Steel, NPT, Standard Range |
| | | 1..... 61933-11..... | Meter Assy, 1-1/2 inch, Inline, Stainless Steel, NPT, Extended Range |
| | | 1..... 61933-20..... | Meter Assy, 1-1/2 inch, Inline, Stainless Steel, BSP, Standard Range |
| | | 1..... 61933-21..... | Meter Assy, 1-1/2 inch, Inline, Stainless Steel, BSP, Extended Range |
| 3..... | 1..... | 44024 | Union, 1-1/2 inch, NPT (Optional on models with electronic controls) |
| | | 1..... 44025 | Union, 1-1/2 inch, BSP (Optional on models with electronic controls) |
| 4..... | 1..... | 19791 | Meter Cable Assembly, |
| | | 19791-02..... | Meter Cable Assembly, 28 inch long with connector |
| | | 19791-04..... | Meter Cable Assembly, 100 inch long with connector |
| | | 19791-05..... | Meter Cable Assembly 304 inch long with connector |

2 INCH BRASS METER ASSEMBLY

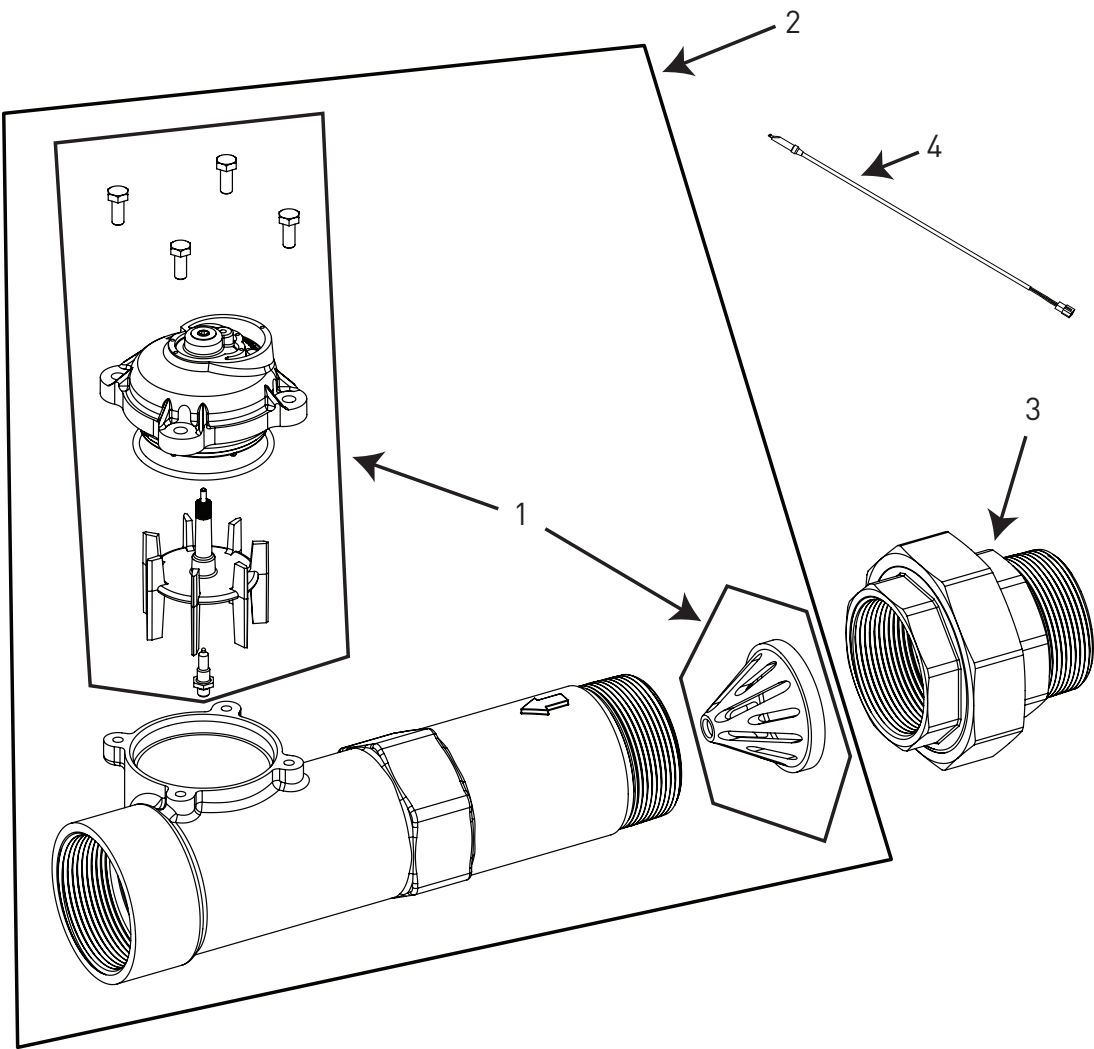


| Item No. | QTY | Part No. | Description |
|----------|--------|-----------------|--|
| 1..... | 1..... | 14456 | Body, Meter 2" |
| | 1..... | 14456-20..... | Body, Meter, 2", BSP,Metric |
| | 1..... | 14456-20NP..... | Body, Meter, 2", BSP,Metric, NP |
| 2..... | 1..... | 15432 | Shaft, Impeller, SS |
| 3..... | 1..... | 15532 | Seat, Impeller Shaft, Hex |
| 4..... | 1..... | 15374-01..... | Impeller, 2" Meter |
| 5..... | 1..... | 15381 | Plug, Impeller 2" Meter |
| 6..... | 1..... | 17798 | Screw, Slot Hex WSH HD |
| 7..... | 1..... | 13847 | O-ring, -137 |
| 8..... | 1..... | 14716 | Meter Cap Assy, ELEC, Plastic, Paddlewheel |
| 9..... | 4..... | 12473 | Screw, Hex WSH, 10-24 x 5/8 |
| | 4..... | 21716 | Screw, Hex Head, M5 x 16 |
| 10..... | 1..... | 61439 | Meter Sleeve w/O-ring, MACHD |
| 11..... | 2..... | 16080 | O-ring, -032 |
| 12..... | 1..... | 14680 | Flow Straightener |
| 13..... | 1..... | 14568 | Fitting, Nipple, 2" |
| | 1..... | 14568-10..... | Fitting, Nipple, 2", BSP, Brass |
| | 1..... | 14568-10NP..... | Fitting, Nipple, 2", BSP, Brass, NP |
| 14..... | 1..... | 14679 | O-ring, -227 |
| 15..... | 1..... | 14569 | Nut, Quick Connect |
| 16..... | 1..... | 60615 | Meter Assy, 2" INLN, NPT, ELEC, BRS, PDL, 1.5" SLV |
| | 1..... | 60615NP..... | Meter Assy, 2" INLN, NPT, ELEC, NP, PDL, 1.5" SLV |
| | 1..... | 60615-20..... | Meter Assy, 2" INLN, BSP/MET, ELEC, BRS, PDL, 1.5" SLV |
| | 1..... | 60615-20NP..... | Meter Assy, 2" INLN, BSP/MET, ELEC, NP, PDL, 1.5" SLV |



| Item No. | QTY | Part No. | Description |
|----------|--------|-----------------|--|
| 17..... | 1..... | 60616 | Meter Assy, 2" INLN, NPT, ELEC, BRS, PDL |
| | 1..... | 60616NP..... | Meter Assy, 2" INLN, NPT, ELEC, NP, PDL |
| | 1..... | 60616-20..... | Meter Assy, 2" INLN, BSP/MET, ELEC, BRS, PDL |
| | 1..... | 60616-20NP..... | Meter Assy, 2" INLN, BSP/MET, ELEC, NP, PDL |
| 18..... | 1..... | 19121 | Meter Cable Assembly, |
| | 1..... | 19121-08..... | Meter Cable Assembly, 35 inch long with connector |
| | 1..... | 19121-09..... | Meter Cable Assembly, 100 inch long with connector |
| | 1..... | 19121-10..... | Meter Cable Assembly 304 inch long with connector |

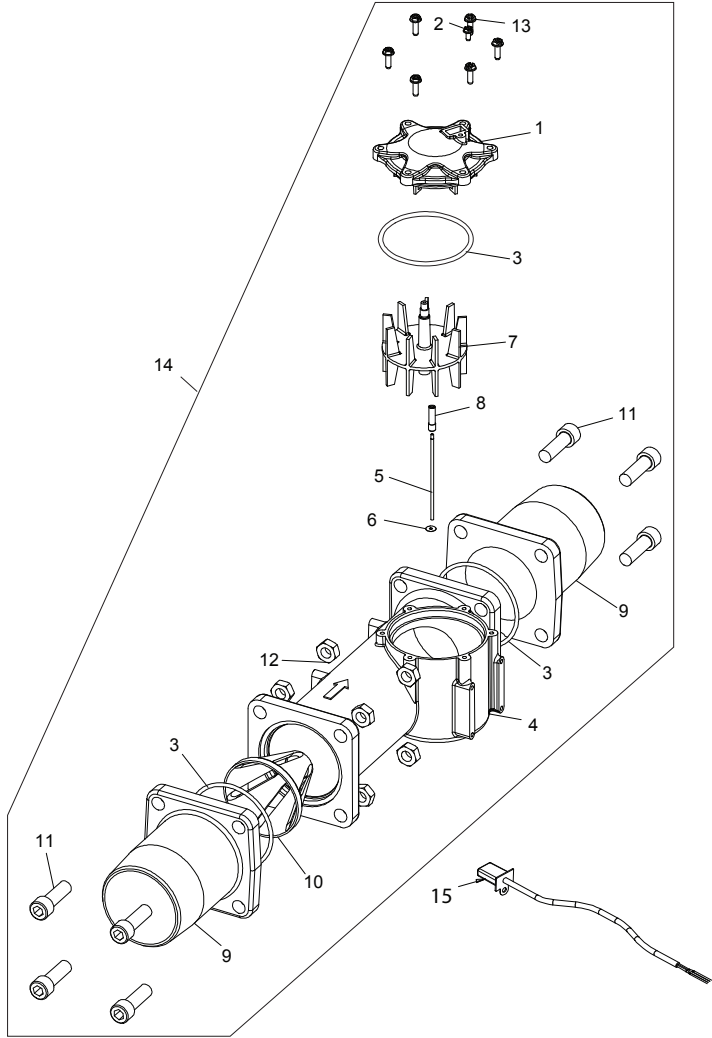
2 INCH STAINLESS STEEL METER ASSEMBLY



| Item No. | QTY | Part No. | Description |
|----------|--------|---------------|--|
| 1..... | 1..... | 62048-01..... | Service Kit, 2 inch Meter, Standard Range |
| | 1..... | 62048-02..... | Service Kit, 2 inch Meter, Extended Range |
| 2..... | 1..... | 61934-10..... | Meter Assy, 2 inch, Inline, Stainless Steel, NPT, Standard Range |
| | 1..... | 61934-11..... | Meter Assy, 2 inch, Inline, Stainless Steel, NPT, Extended Range |
| | 1..... | 61934-20..... | Meter Assy, 2 inch, Inline, Stainless Steel, BSP, Standard Range |
| | 1..... | 61934-21..... | Meter Assy, 2 inch, Inline, Stainless Steel, BSP, Extended Range |
| 3..... | 1..... | 44026 | Union, 2 inch, NPT (Optional on models with electronic controls) |
| | 1..... | 44027 | Union, 2 inch, BSP (Optional on models with electronic controls) |

| Item No. | QTY | Part No. | Description |
|----------|--------|---------------|--|
| 4..... | 1..... | 19791 | Meter Cable Assembly, |
| | 1..... | 19791-02..... | Meter Cable Assembly, 28 inch long with connector |
| | 1..... | 19791-04..... | Meter Cable Assembly, 100 inch long with connector |
| | 1..... | 19791-05..... | Meter Cable Assembly 304 inch long with connector |

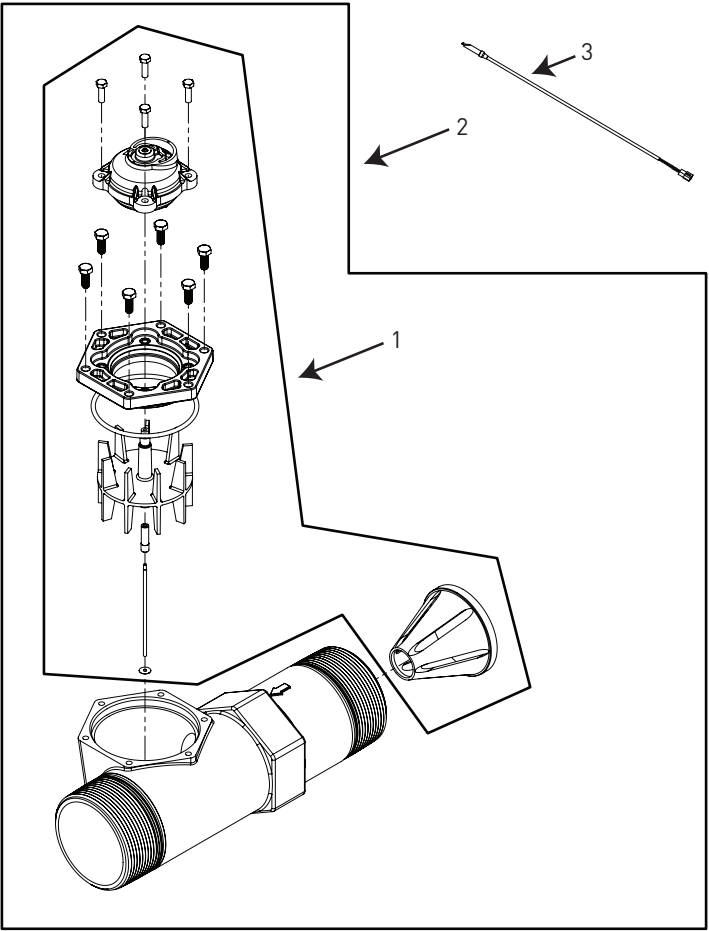
3 INCH BRASS METER ASSEMBLY



| Item No. | QTY | Part No. | Description |
|---------------|---------------|--|-------------|
| 1.....1..... | 14716-01..... | Meter Cap Assy, 3" ELEC, Plastic, Paddlewheel | |
| 2.....1..... | 17798 | Screw, Hex Washer Head, #8-16 x 0.38 | |
| 3.....3..... | 15707 | O-ring, -236 | |
| 4.....1..... | 16254-20..... | Body Meter, 3900, BSP | |
| 5.....1..... | 16279 | Shaft, Impeller, SS | |
| 6.....1..... | 16574 | Washer, Plain, SS | |
| 7.....1..... | 16252 | Impeller, 3900 | |
| 8.....1..... | 15381 | Plug, Impeller, 2" Meter | |
| 9.....2..... | 16328-10..... | Adapter, Flange, 3" BSP | |
| 10.....1..... | 16280 | Flow Straightener | |
| 11.....8..... | 40118 | Screw, SCKT HD, 1/2-13 UN | |
| 12.....8..... | 16386 | Nut, Hex, Jam, 1/2-13, 18-8 S.S. | |
| 13.....6..... | 12473 | Screw, Hex Washer Head, #10-24 x 0.625 | |
| 14..... | 60617 | Meter Assy, 3" INLN, NPT, Electronic, BRS BDY, Paddlewheel | |
| | 60617-10..... | Meter Assy, 3" INLN, BSP, Electronic, BRS BDY, Paddlewheel | |

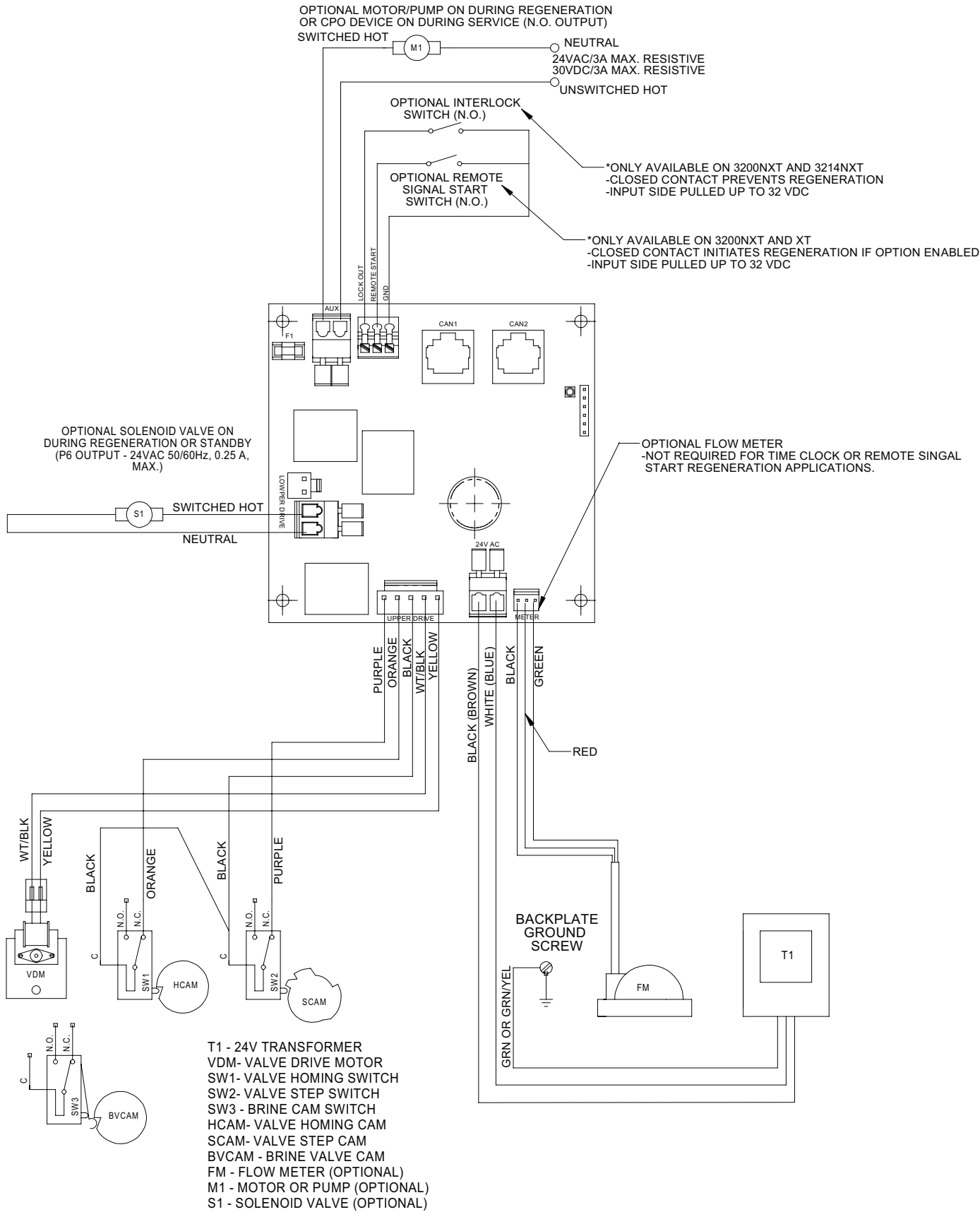
| Item No. | QTY | Part No. | Description |
|----------|--------|---------------------|---|
| 15..... | 1..... | 19121 | Meter Cable Assembly, |
| | | 19121-08..... | Meter Cable Assembly, 35 inch long with connector |
| | | 19121-09..... | Meter Cable Assembly, 100 inch long with connector |
| | | 19121-10..... | Meter Cable Assembly 304 inch long with connector |

3 INCH STAINLESS STEEL METER ASSEMBLY



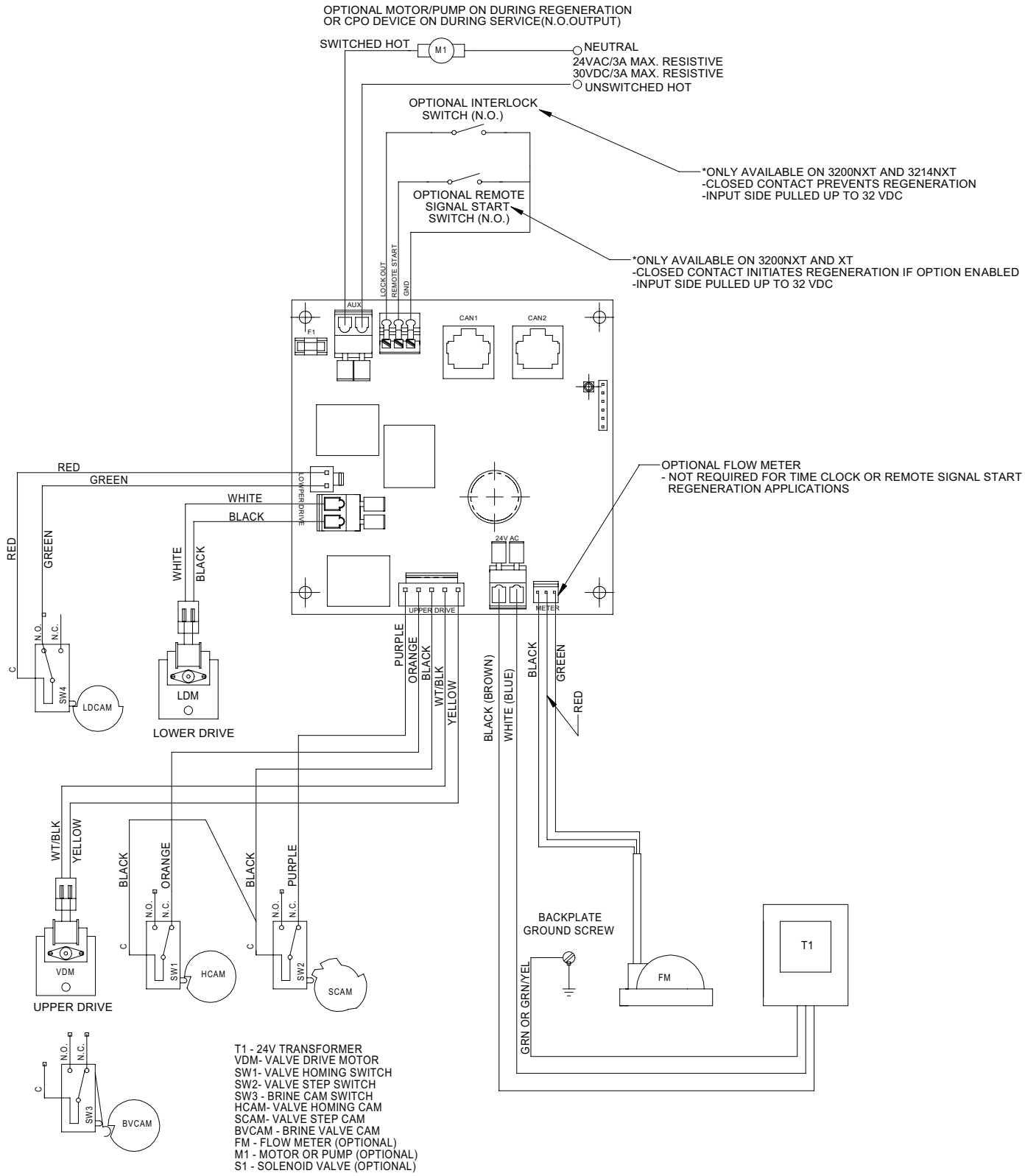
| Item No. | QTY | Part No. | Description |
|----------|--------|---------------|--|
| 1..... | 1..... | 62078-01..... | Service Kit, 3 Inch Meter, Standard Range |
| | 1..... | 62078-02..... | Service Kit, 3 Inch Meter, Extended Range |
| 2..... | 1..... | 61935-10..... | Meter Assy, 3 Inch, Inline, Stainless Steel, NPT, Standard Range |
| | | 61935-11..... | Meter Assy, 3 Inch, Inline, Stainless Steel, NPT, Extended Range |
| | | 61935-20..... | Meter Assy, 3 Inch, Inline, Stainless Steel, BSP, Standard Range |
| | | 61935-21..... | Meter Assy, 3 Inch, Inline, Stainless Steel, BSP, Extended Range |
| 3..... | 1..... | 19791 | Meter Cable Assembly, |
| | | 19791-02..... | Meter Cable Assembly, 28 inch long with connector |
| | | 19791-04..... | Meter Cable Assembly, 100 inch long with connector |
| | | 19791-05..... | Meter Cable Assembly 304 inch long with connector |

SINGLE PISTON WIRING DIAGRAM



NOTE:
VALVE SHOWN IN SERVICE

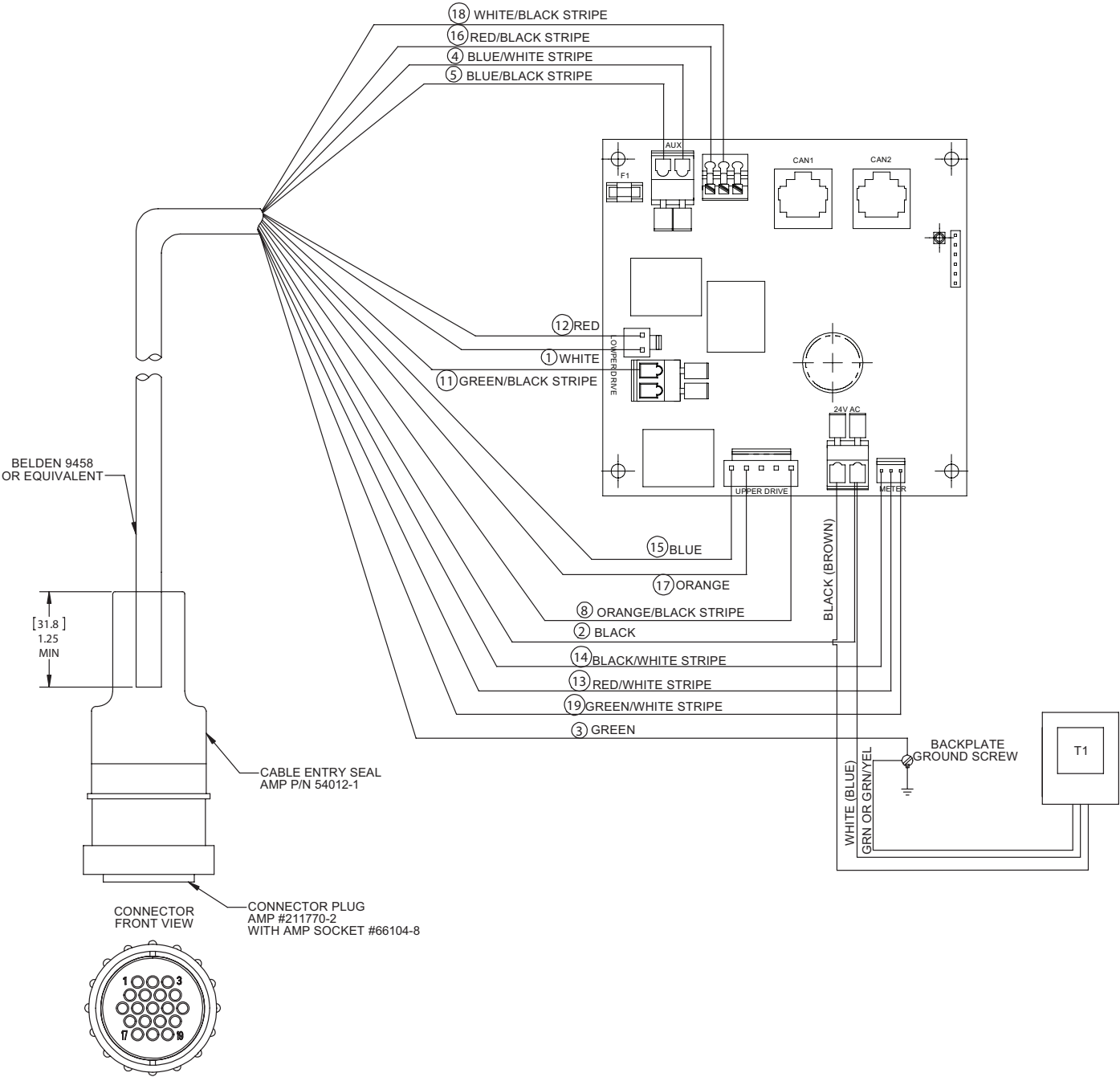
DUAL PISTON WIRING DIAGRAM



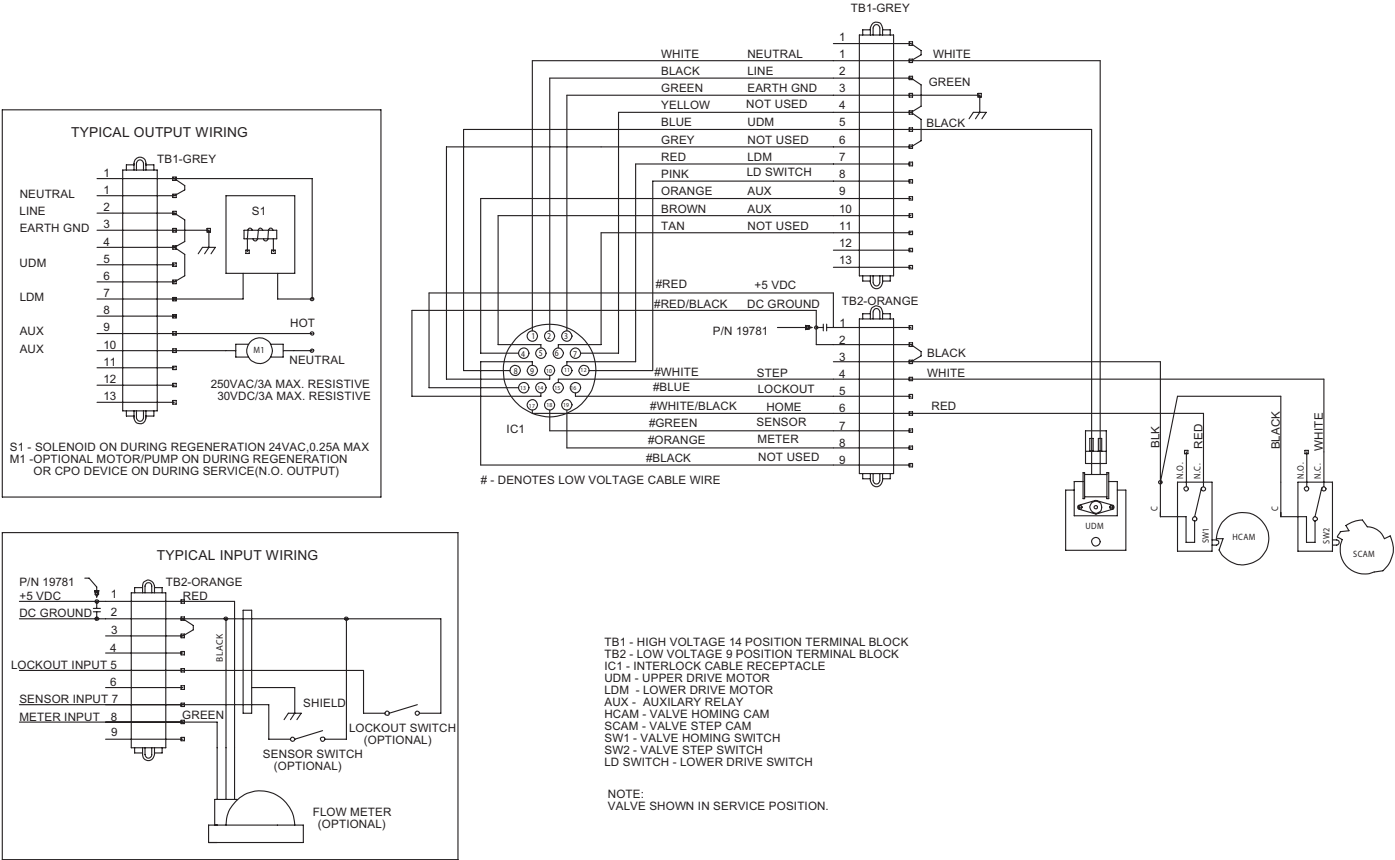
NOTE:
VALVE SHOWN IN SERVICE

42140_Rev C

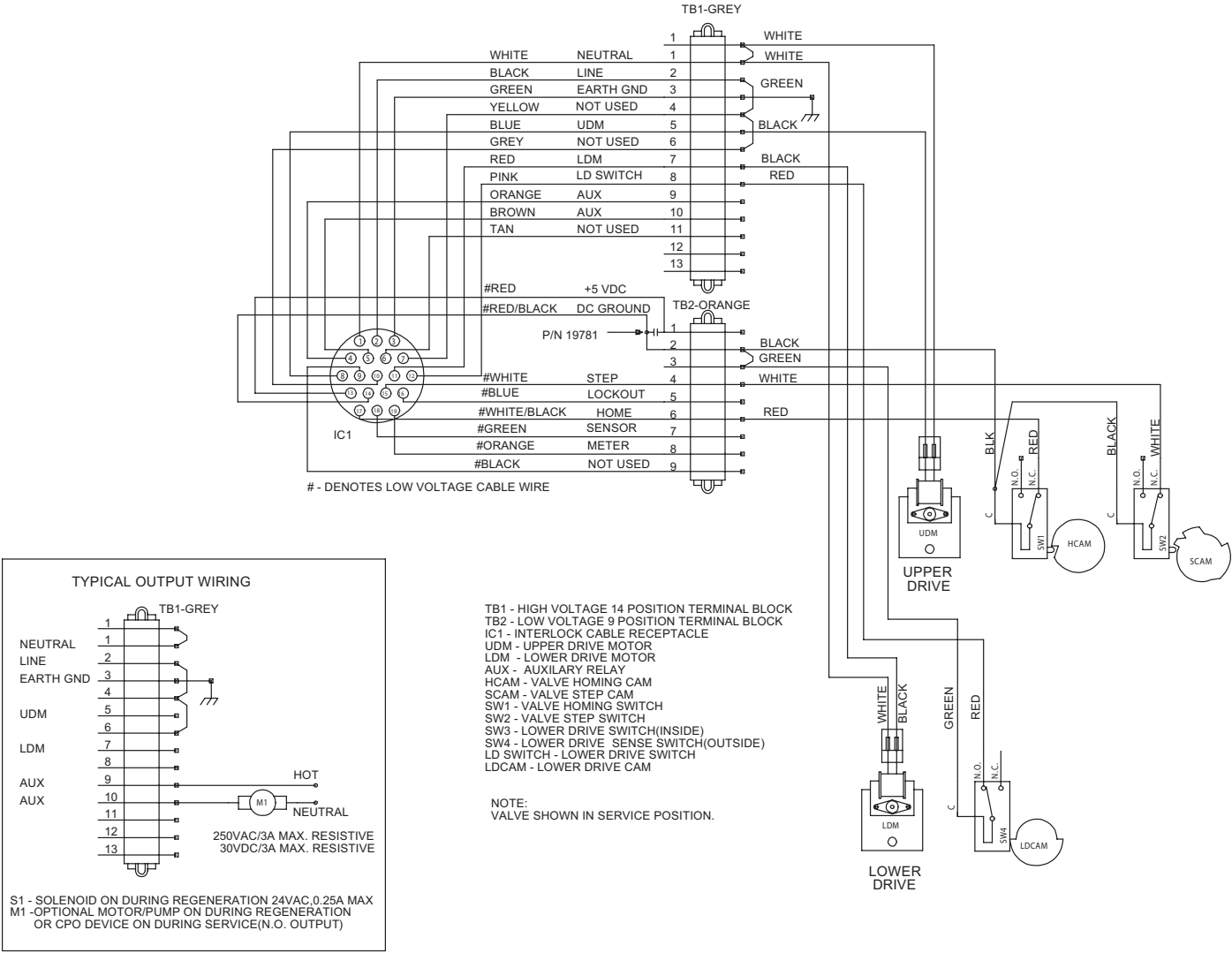
REMOTE TIMER WIRING DIAGRAM



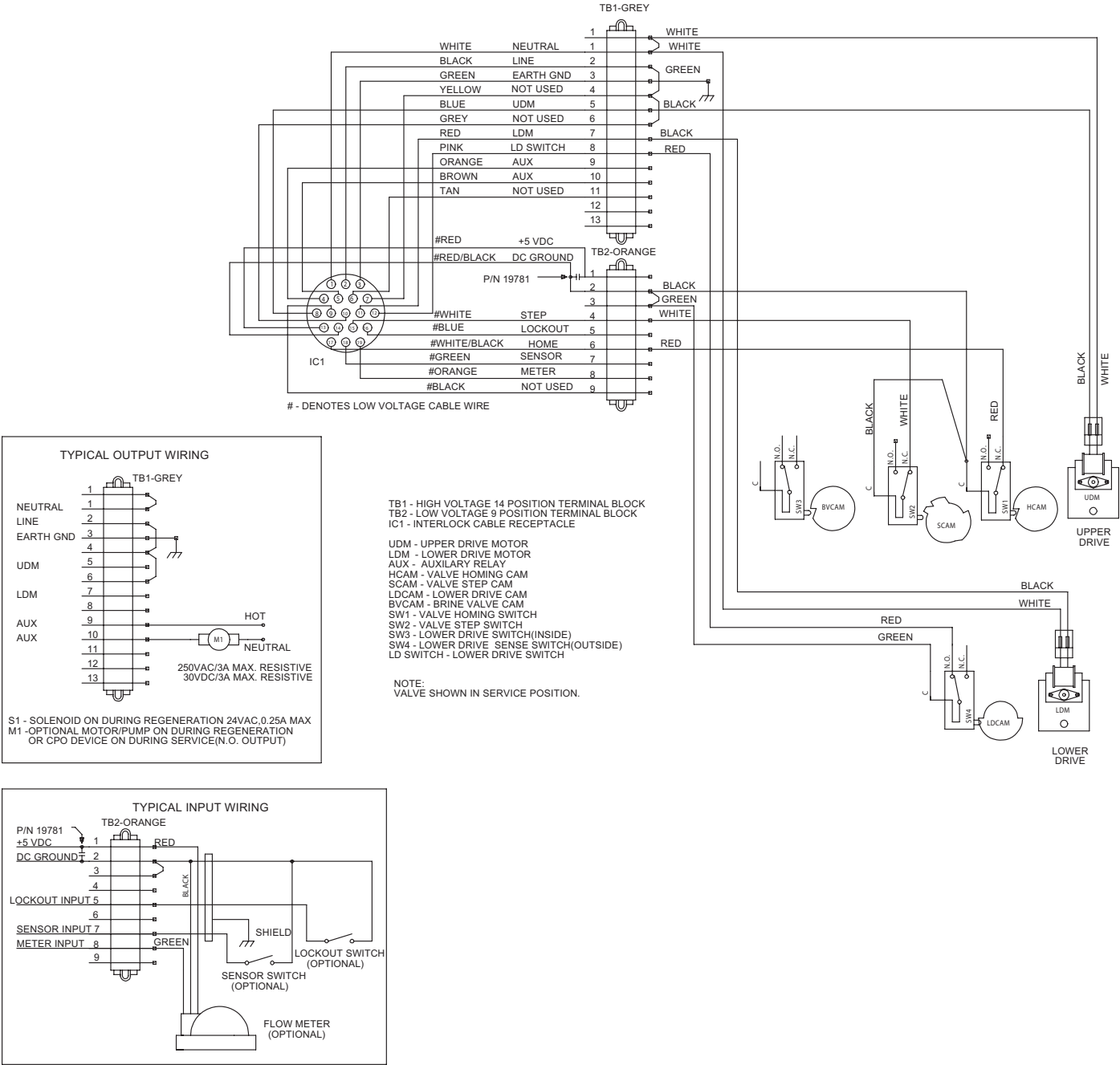
2750/2850 REMOTE TIMER WIRING DIAGRAM

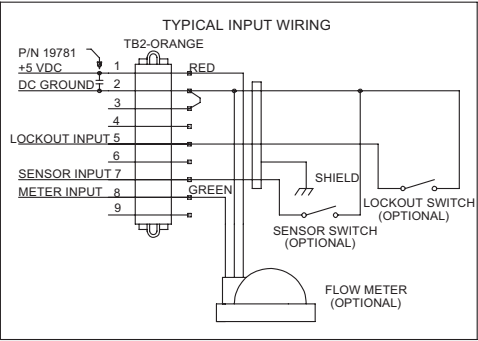
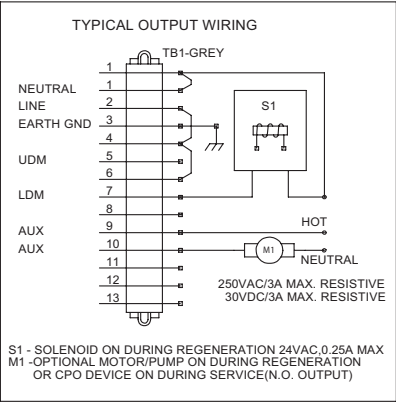
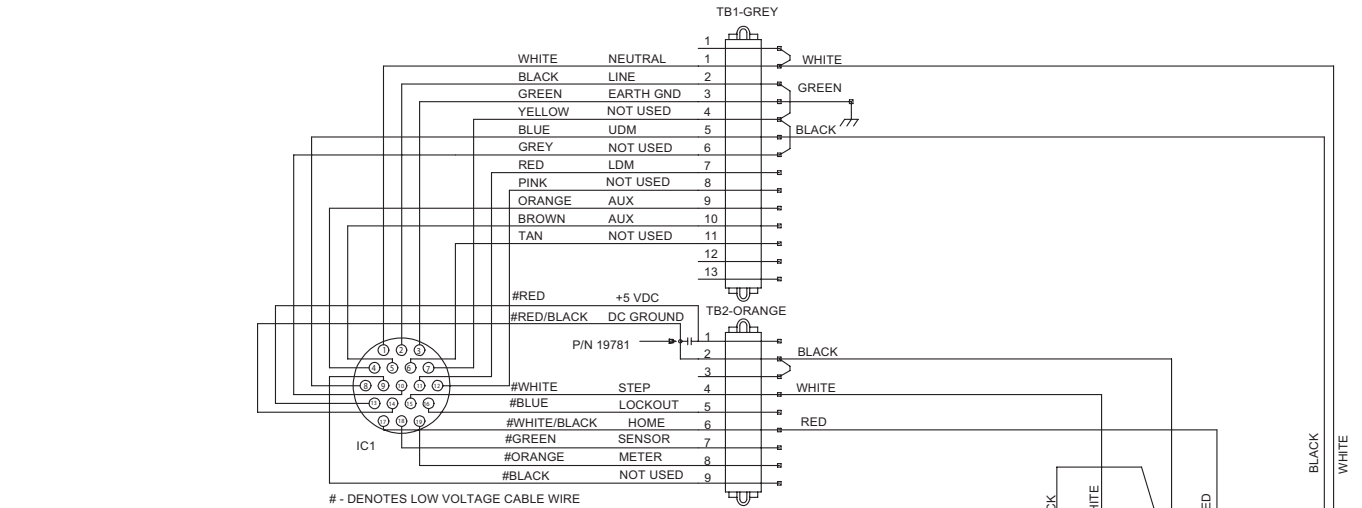


2900 REMOTE TIMER WIRING DIAGRAM



3900 REMOTE TIMER WIRING DIAGRAM





TB1 - HIGH VOLTAGE 14 POSITION TERMINAL BLOCK
TB2 - LOW VOLTAGE 9 POSITION TERMINAL BLOCK
IC1 - INTERLOCK CABLE RECEPTACLE
UDM - UPPER DRIVE MOTOR
LDM - LOWER DRIVE MOTOR
AUX - AUXILIARY RELAY
HCAM - VALVE HOMING CAM
SCAM - VALVE STEP CAM
BVCAM - BRINE VALVE CAM
SW1 - VALVE HOMING SWITCH
SW2 - VALVE STEP SWITCH

NOTE:
VALVE SHOWN IN SERVICE POSITION.

TROUBLESHOOTING

Detected Errors

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.

| Message Displayed | Cause For Error | Correction |
|---------------------------------------|--|---|
| Flashing time | Power outage. | Program time by holding UP on Unit #1. |
| Detected Error = Matching Address | Two or more units programmed with the same valve address number. | Program each unit with unique valve address number in Master Programming. |
| Detected Error = Program Mismatch | Master program parameters do not match between two or more controls. | Confirm Master Programming for each unit. |
| Detected Error = No Message #1 | No power to Control #1. | Power Control #1. |
| | Communication Cable to Valve Address #1 bad or missing. | Connect or replace Communication Cable. |
| Detected Error = No Message #2 | No power to Control #2. | Power Control #2. |
| | Communication Cable to Valve Address #2 bad or missing. | Connect or replace Communication Cable. |
| Detected Error = No Message #3 | No power to Control #3. | Power Control #3. |
| | Communication Cable to Valve Address #3 bad or missing. | Connect or replace Communication Cable. |
| Detected Error = No Message #4 | No power to Control #4. | Power Control #4. |
| | Communication Cable to Valve Address #4 bad or missing. | Connect or replace Communication Cable. |
| Detected Error = E2 Reset Unit | This message appears after a software reset. | Reprogram control using Master Programming section. |
| Test Mode | Circuit Board was not programmed at factory. | Replace Circuit Board. |
| Black Squares on screen | Bad Circuit Board. | Replace Circuit Board. |
| INI on screen for more than 2 minutes | Circuit board not getting feedback from cycle switch. | Inspect Motor - should be rotating. |
| | | Connect wire harness to cycle switch. |
| | | Check Cycle Micro Switch. |
| CHG on screen for more than 2 minutes | Control programmed incorrectly as 2900 or 3900 valve type. | Reprogram unit as Stager Valve type. |

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