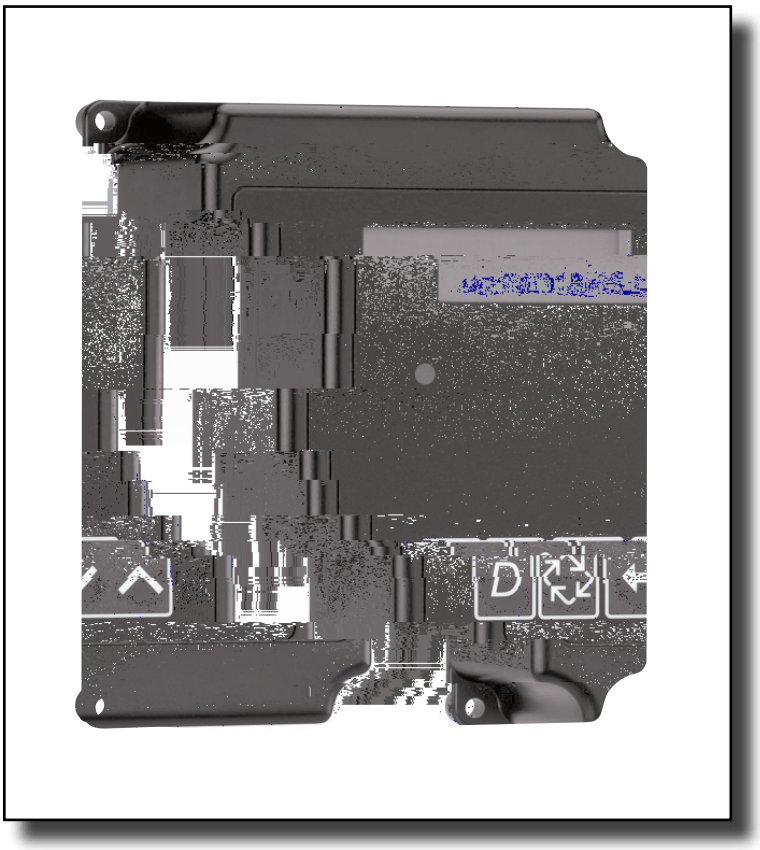
3200NXT

Service Manual



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

Table of Contents

IMPORTANT PLEASE READ:

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-
-

Job Specification Sheet

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

Programming Mode:

Master Programming Mode:

Valve Type: **2750 / 2850 / 2900s / 3150 / 3900 / Stager**

3

3

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.
2.
3.
4.

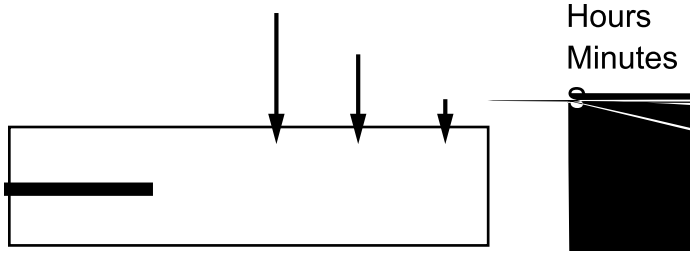
NOTE: The “D” button (Diagnostic) can be pressed to exit without saving.

Manually Initiating a Regeneration

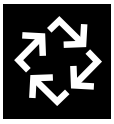
1.
2.
3.
4.
5.
6.
7.

NOTE:

Timer Operation During Regeneration



Example:



Flow Meter Equipped Timer

ner Operation During Programming

Operation During A Power Failure

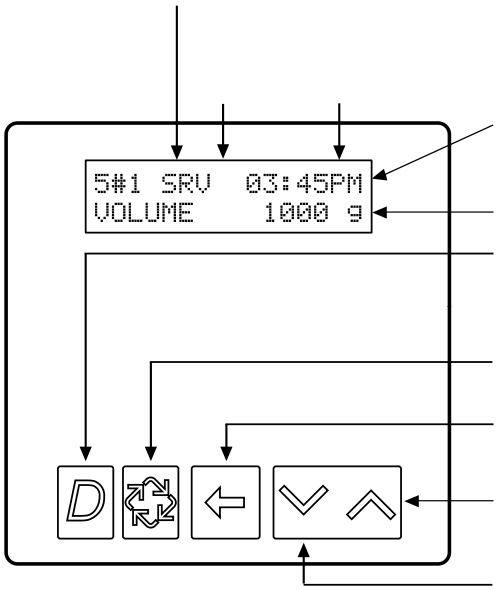
ockout

n Day Override Feature

G

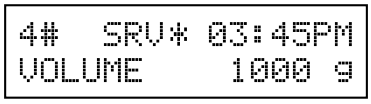
er must be g

Timer Display Features



Timer Display - Screen Examples

Example:

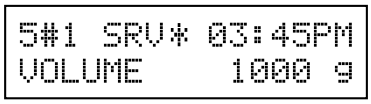


Example:

1.

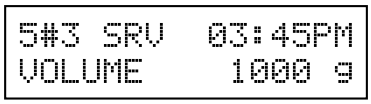
or

2.



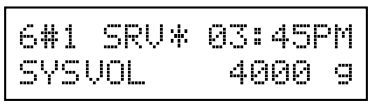
Example:

1.



Example:

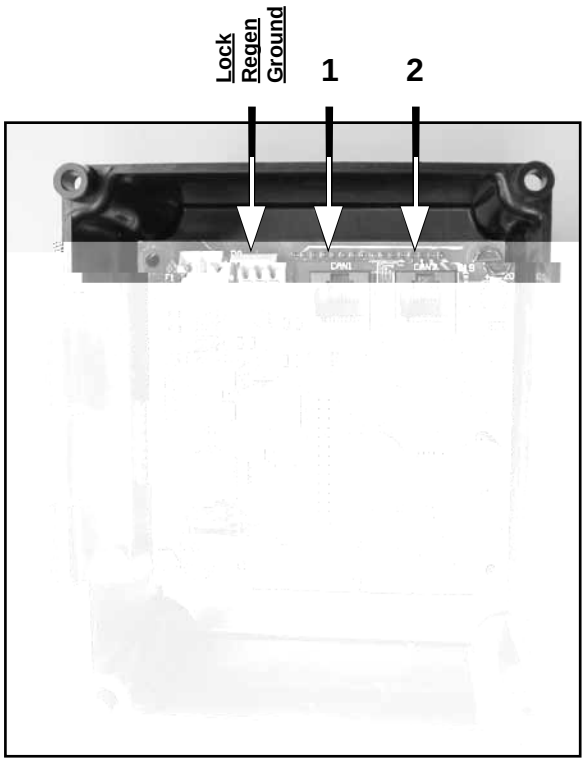
1.



Example:

1.

Network/Communication Cables & Connections



3200NXT Circuit Board

Two-Unit System:
Three-Unit System:
Four-Unit Systems:

Master Programming Mode Flow Chart

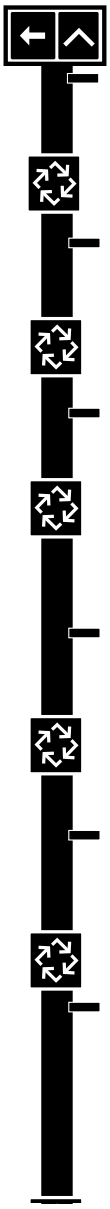
NOTE: Depending on current option settings, some displays cannot be viewed or set.

Entering Master Programming Mode:

1.

2.

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



SELECT LANGUAGE:
ENGLISH

Example:
English

Options: English
Spanish
Portuguese
German
French

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 TYPE:
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

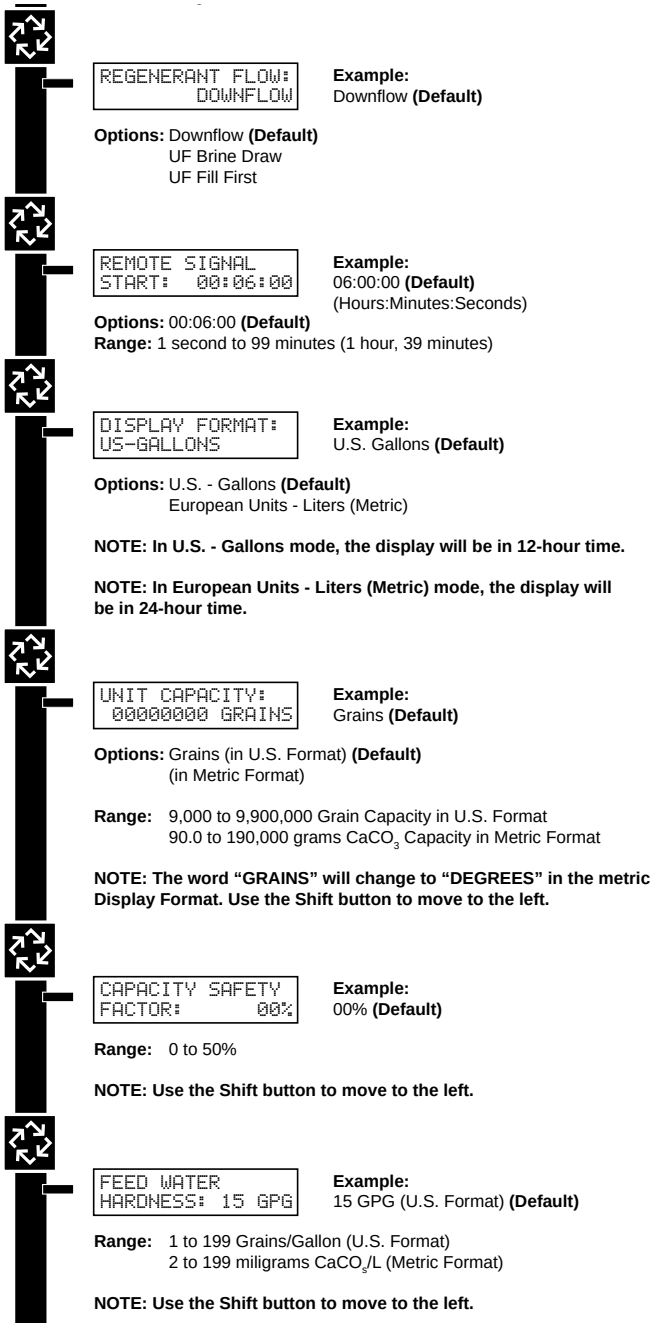
Example:
2750 **(Default)**

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 - Liters (Metric)

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

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

UNIT CAPACITY:
00000000 GRAINS

Example:
Grains **(Default)**

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

Range: 9,000 to 9,900,000 Grain Capacity in U.S. Format
90.0 to 190,000 grams $CaCO_3$ 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.

FEED WATER
HARDNESS: 15 GPG

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

Range: 1 to 199 Grains/Gallon (U.S. Format)
2 to 199 miligrams $CaCO_3$/L (Metric Format)

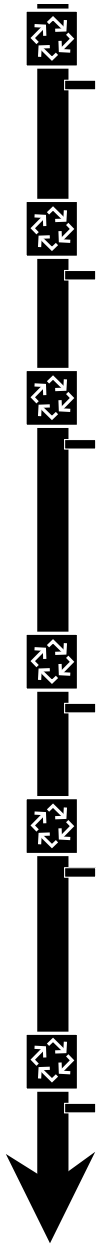
NOTE: Use the Shift button to move to the left.

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.

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

Master Programming Mode Flow Chart

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.

```
CPO AUX RELAY
VOLUME:   000 g
```

Example:
Chemical Pump Auxiliary Relay Volume at 0 Gallons

Range: 000 to 999 gallons in U.S. Format
0.000 to 9.999 L in Metric Format

```
CPO AUX RELAY
TIME:   00:00:00
```

Example:
Chemical Pump Auxiliary Relay at 0 Hours, 0 Minutes, & 0 Seconds

Range: 00:00:00 to 02:00:00

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.

```
FLOW METER:
     1.0 PADDLE
```

Example:
1.0 Paddle Flow Meter

Options: 1.0 Paddle
1.0 Turbine
1.5 Paddle
1.5 Turbine
2.0 Paddle
3.0 Paddle
Generic

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

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

Example:
Maximum Flow Rate of 0 gpm

Range: 20 - 2,000 gpm (U.S. Format)
2.0 - 200.0 L (Metric Format)

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

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

Example:
Add 1 Gallon for Each Pulse in U.S. Format

Options: Gallons (U.S. Format)
Liters (Metric Format)

Range: 1 - 99 Gallons (U.S. Format)
0.1 - 09.9 L (Metric Format)
Pulses: 1 - 99

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

Example:
Master Programming Mode is Exiting

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:

OR

12:01 PM or 12:01HR

Exiting Master Programming Mode:

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:

Master Reset:

1. Choice of Language

1.
2.

```
SELECT LANGUAGE
  ENGLISH
```

2. System Type

1.
2.

```
SYSTEM TYPE:    4
  SINGLE UNIT
```

3. Valve Address

1.
2.

```
VALVE ADDRESS:
              # 2
```

4. System Size

1.
2.

```
SYSTEM SIZE:
       2 VALVES
```

5. Regeneration Type

1.
2.

6. Valve Type

1.
2.

```
VALVE TYPE:

```

7. Regenerant Flow

1.
2.

```
REGENERANT FLOW:
       DOWN FLOW
```

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

8. Remote Signal Start

1.
2.

9. Display Format

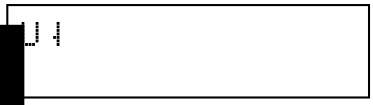
1.
2.

10. Unit Capacity

3

3 3

1.
2.
3.



11. Capacity Safety Factor

Range:

1.
2.
3.

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

12. Feed Water (Hardness)

U.S. Range:

Metric Range: 3

1.
2.
3.

```
FEED WATER
HARDNESS:015 GPG
```

13. Regeneration Day Override

Default:

Range:

NOTE:

1.
2.
3.

```
REGENERATION DAY
OVERRIDE: OFF
```

```
REGENERATION DAY
OVERRIDE:01 DAYS
```

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

14. Regeneration Time

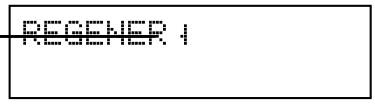
Default U.S.:

Default Metric:

1.

2.

3.



15. Regeneration Cycle Steps

16. Auxiliary Relay Output

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

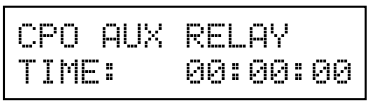
Start Time:

End Time:

18. Chemical Pump Auxiliary Relay Output Window

U.S. Range:

Metric Range:



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

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

1.
2.

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

20. Maximum Flow Rate

1.
2.
3.

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

21. Pulses per Gallon/Liter

1.
2.
3.

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

22. End of Master Programming Mode

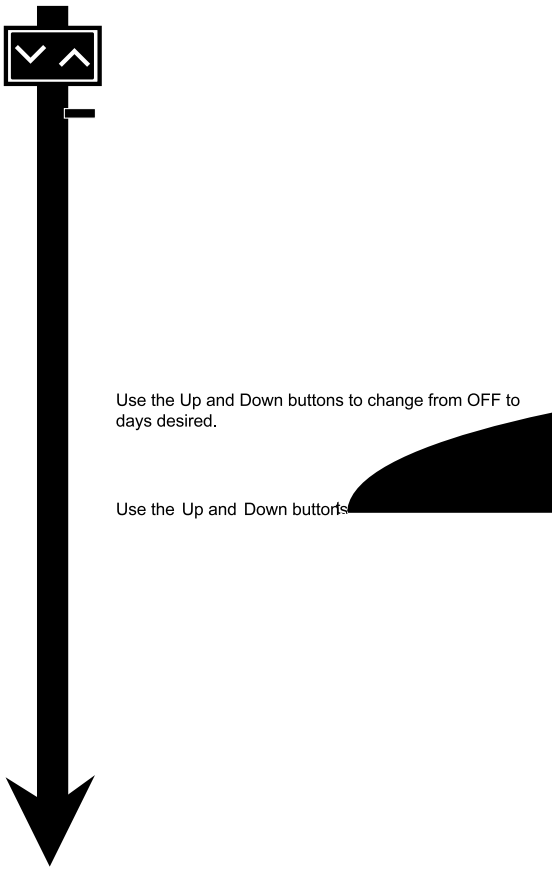
```
PROGRAMMING UNIT
PLEASE WAIT...
```

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:



Diagnostic Mode Flow Chart

Entering Diagnostic Mode:

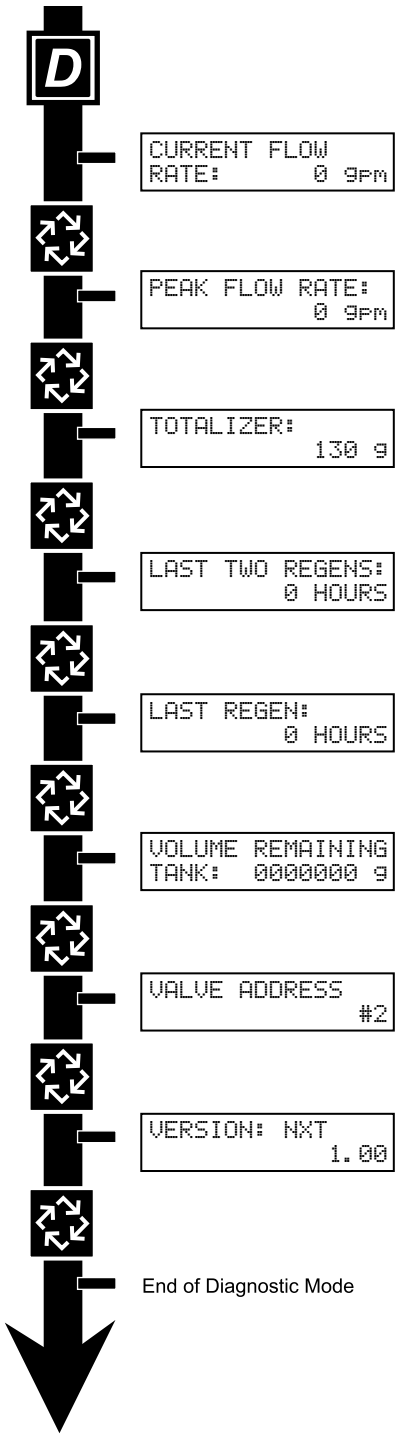
1.

2.

3.

4.

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



Diagnostic Programming Guide

Overview Diagnostic Mode

Entering and Exiting Diagnostic Mode

Current Flow Rate

1” Paddle Meter Maximum Flow Rate:

1.5” Paddle Meter Maximum Flow Rate:

2” Paddle Meter Maximum Flow Rate:

3” Paddle Meter Maximum Flow Rate:

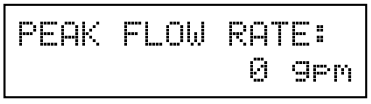
1” and 1.5” Turbine Meter:

1.

Peak Flow Rate

Range:

1.



Totalizer

NOTE: The user cannot edit below the current volume remaining.

1.

2.

Hours Between Last Two Regenerations

1.

Hours Since Last Regeneration

1.

Volume Remaining (This Tank Only)

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

1.
2.
3.

Volume Remaining (System)

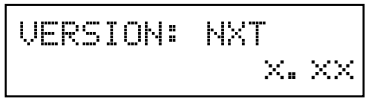
1.

Valve Address

1.

Software Version

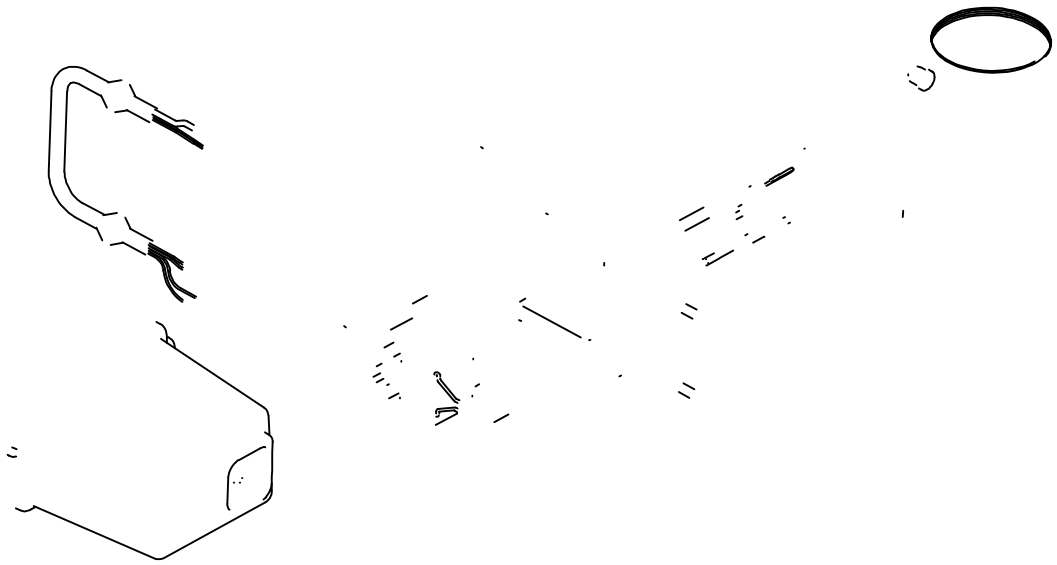
1.



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

Notes

2750/2850/2900 Upper & 2900 Lower Powerhead Assy

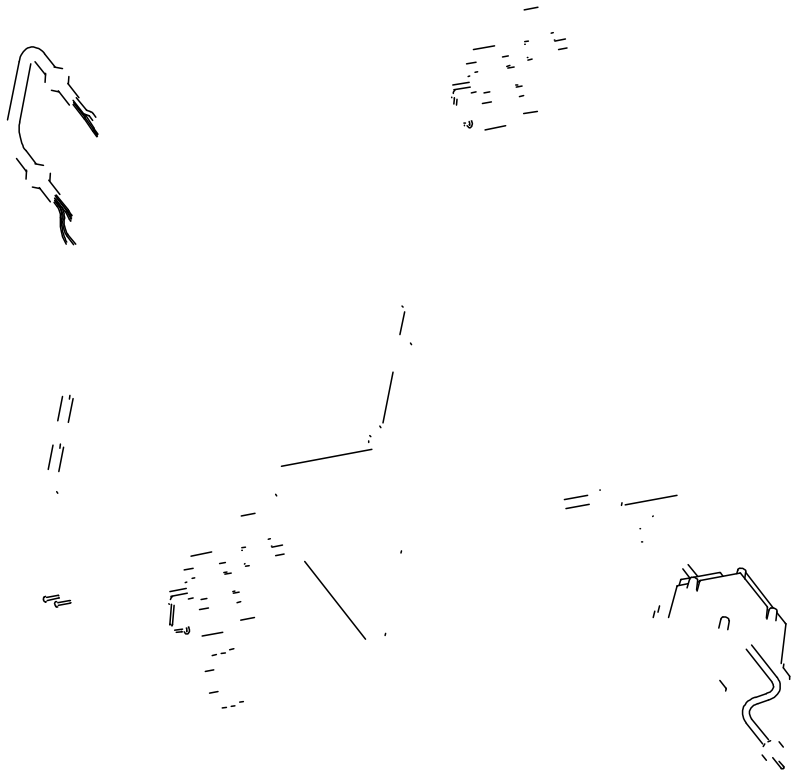


2750/2850/2900 Upper & 2900 Lower Powerhead Assy

Item No.	Quantity	Part No.	Description
1	1		
2	1		
3	1		
4	1	10909	
5	2	14923	
6	5	10302	
7	3	10218	
8	2	10231	
9	1	41544	
10	1	12777	
11	2	10338	
12	1	41034	
		41049	
		41050	
13	1	19691	
14	2	19800	
15	1	15806	
16	9	19801	
17	1	17967	
18	1	10896	
19	4	11805	
20	1	40943	
21	1	13547	
22	1	19121	
23	1		
24	1	40941	
25	1	17421	
26	2	41581	
27	1		
28	1	18626	
29	1	18746	
30	2	11224	
31	1	10250	
32	7	10872	
33	1	18709	
34	1	11381	
35	1	14759	
36	1	14769	
37	1	14775	
38	2	16346	
39	1	18725	
40	1	40388	
41	1	14813	
42	1	41102	
43	1	10269	
44	1	10712	
45	1	41692	
46	1		

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

3150/3900 Upper & 3900 Lower Drive Powerhead Assy

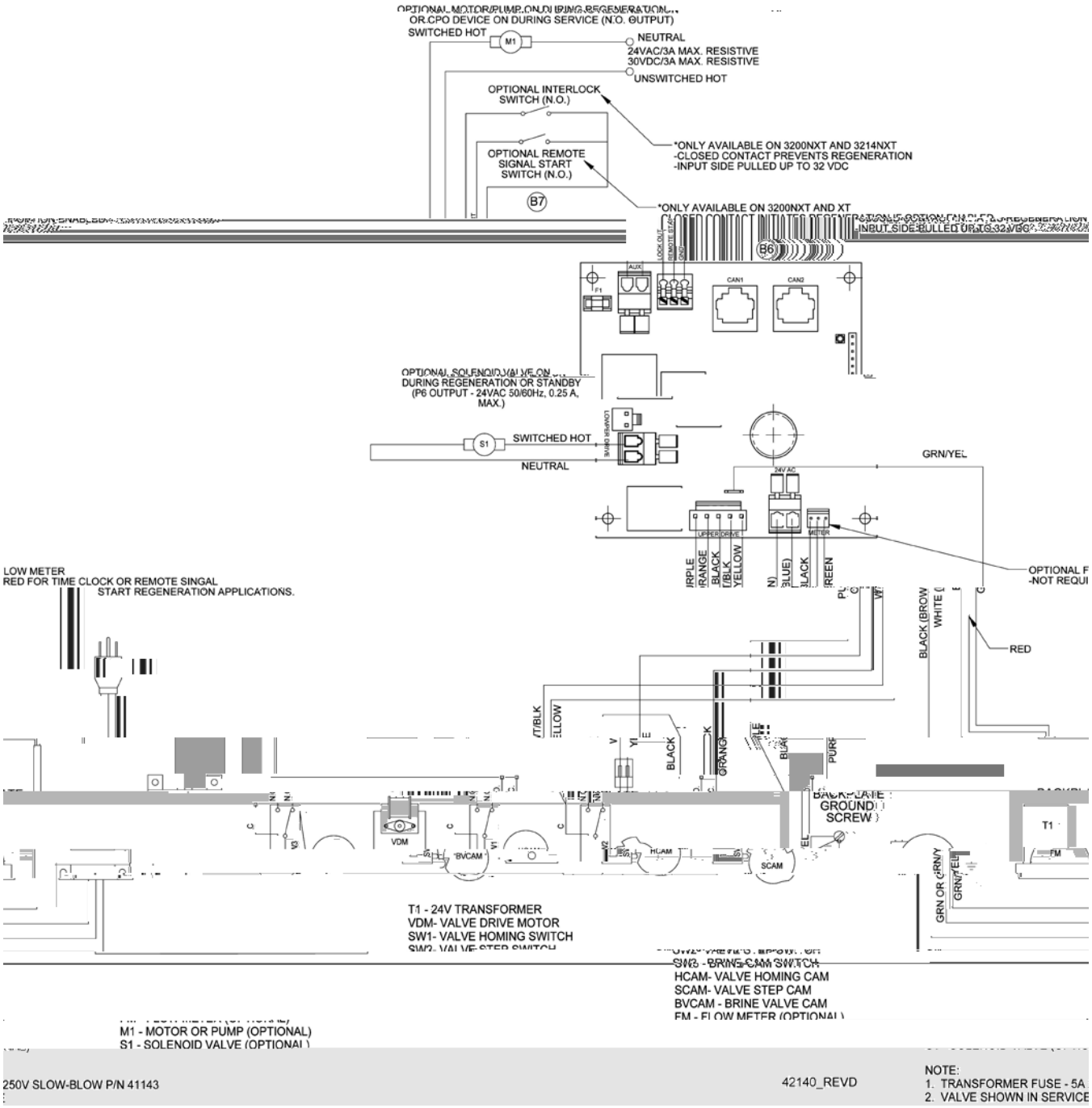


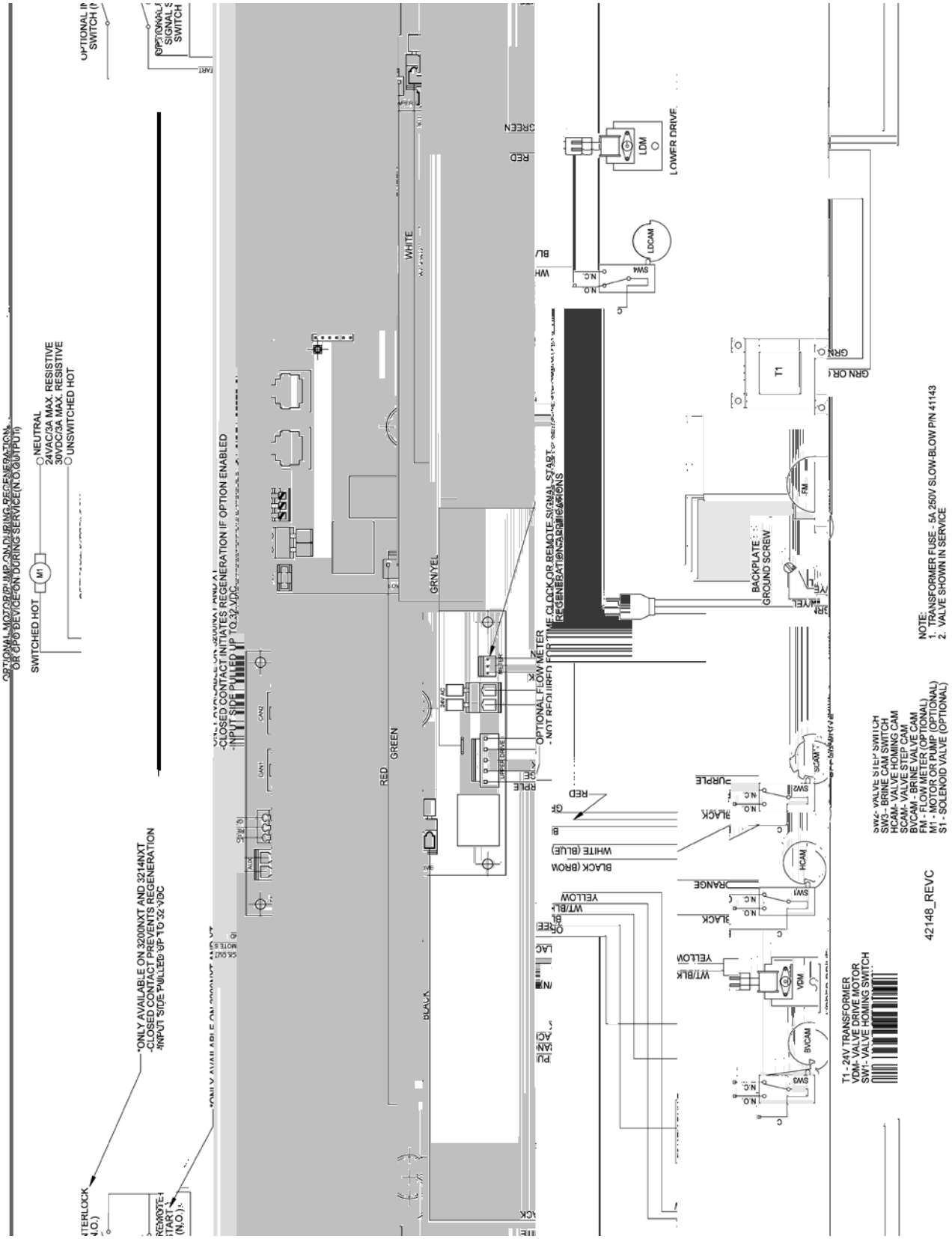
3150/3900 Upper & 3900 Lower Drive Powerhead Assy

Item No.	Quantity	Part No.	Description
1	1		
2	1	15120	
3	1	40391	
4	8	11224	
5	4	16346	
6	2	17797	
7	5	10302	
8	4	10218	
9	2	16053	
10	2	12624	
11	4	16052	
12	4	17567	
13	1	16494	
14	8	10231	
15	2	16046	
16	3	11774	
17	2	16047	
18	2	11709	
19	1	16048	
20	2	11898	
21	2	16045	
22	2	11381	
23	7	10872	
24	8	11235	
25	2	16050	
26	2	16059	
27	2	16051	
28	8	19800	
29	1	15806	
30	1	19591	
31	3	11080	
32	2	17967	
33	1	40941	
34	1	40943	
35	1	41034	
		41049	
		41050	
36	1	19121	
37	1		
38	1	17421	
39	2		
40	1	40392	
41	1	19305	
42	1	16086	
43	1	19315	
44	1	18726	
45	1	16048	
46	2	11805	
47	1	16495	
48	1	41102	
49	1	19801	
50	1	19691	
51	1	41692	
52	1		

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

2750/2850/3150 Input & Output Wiring




OPTIONAL MOTOR/PUMP ON DURING REGENERATION
OR CPD DEVICE ON DURING SERVICE (N.O. OUTPUTS)
NEUTRAL
24VAC/3A MAX. RESISTIVE
30VDC/3A MAX. RESISTIVE
UNSWITCHED HOT
SWITCHED HOT
M1
*ONLY AVAILABLE ON 3200NXT AND 3214NXT
-CLOSED CONTACT PREVENTS REGENERATION
-INPUT SIDE PULLED UP TO 32 VDC
-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 CAPABILITIES
LOWER DRIVE
LDM
LDCAM
SW4
T1
BACKPLATE
GROUND SCREW
FM
HCAM
SCAM
BVCAM
VDM
SW1
SW2
SW3
WHITE
GRN/YEL
RED
GREEN
BLACK
YELLOW
WT/BLK
ORANGE
PURPLE
BLACK (BROWN)
WHITE (BLUE)
NOTE:
1. TRANSFORMER FUSE - 5A 250V SLOW-BLOW P/N 41143
2. VALVE SHOWN IN SERVICE
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)
T1 - 24V TRANSFORMER
VDM- VALVE DRIVE MOTOR
SW1- VALVE HOMING SWITCH
42148_REVC

Troubleshooting

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.

NOTE:

Cause	Correction

Programming Errors

Programming Errors Detected:

Solution:

NOTE:

Cause	Correction

Example Error Screens

Detected Error
1.

No Message #1
1.
2.
3.

No Message #3
1.
2.
3.

Program Mismatch
1.

Exceed Unit Size
1.

Matching Address
1.

NOTE: The rest of the system will still function without this unit.

Notes

Notes