



FLECK NXT2 TIMER

SERVICE MANUAL

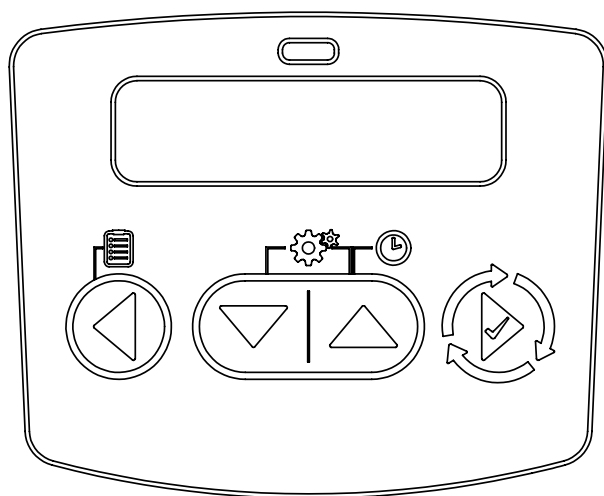


TABLE OF CONTENTS


IMPORTANT PLEASE READ:


- 7 The information, specifications and illustrations in this manual are based on the latest information available at the time of release. The manufacturer reserves the right to make changes at any time without notice.
- 7 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.
- 7 This unit is designed to be installed on potable water systems only.
- 7 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.
- 7 It is established that when daytime water pressure exceeds 80 psi (5.5 bar), the maximum pressure rating of 125 psi (8.6 bar) can be exceeded. A pressure regulator must be installed on this system or warranty is voided.
- 7 Do not install the unit where temperatures may drop below 32°F (0°C) or above 120°F (52°C).
- 7 Do not place the unit in direct sunlight. Black units will absorb radiant heat, increasing internal temperatures.
- 7 Do not strike the valve or any of the components.
- 7 Warranty of this product extends to manufacturing defects. Misapplication of this product may result in failure to properly condition water, damage to product, or personal injury.
- 7 A prefilter should be used on installations in which free solids are present.
- 7 In some applications local municipalities treat water with Chloramines. High Chloramine levels may damage valve components.
- 7 Correct and constant voltage must be supplied to the controller to maintain proper function.
- 7 The system is intended to treat only potable quality water. It is not intended as the permanent primary treatment of water from a source that is contaminated, such as from radon, pesticides, insecticides, sewage or wastewater.
- 7 This system is not intended for use by persons (including children) with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
- 7 Children shall not play with the system.
- 7 Cleaning shall not be made by children without supervision.
- 7 Periodic cleaning and maintenance may be required to function properly.
- 7 All plumbing and electrical should be done in accordance with local codes.
- 7 An uninterrupted power supply is required. The control uses a transformer to supply 24 VDC. Please make sure your voltage supply is compatible with your unit before installation.


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.

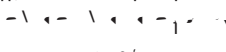
FEATURES


7 

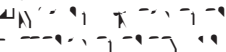
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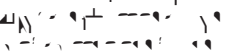
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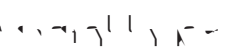
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Handwritten musical score for "The Rose Tree" in G major, Op. 100, No. 1. The score is written on ten staves. It begins with a treble clef, a key signature of one sharp (F#), and a common time signature (C). The melody is written on the first staff, and the accompaniment is written on the second staff. The piece consists of a single system of music, followed by a double bar line and a final measure. The handwriting is in ink on aged paper.

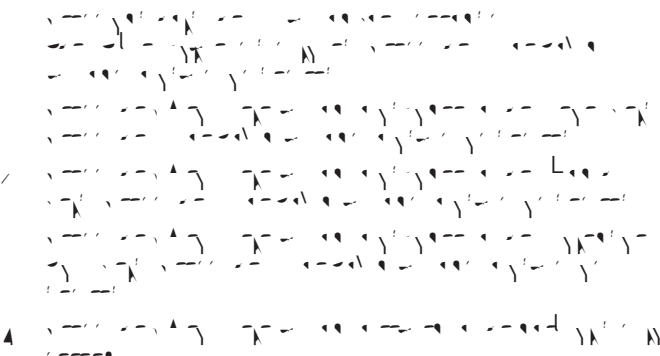
Display Icons



TIMER OPERATION

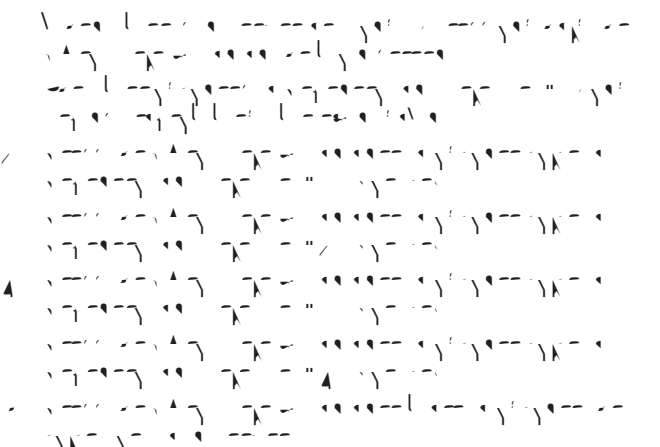
Setting the Time of Day

NOTE: Set Time of Day on any unit and the rest of the units in the system will update the Time of Day automatically.



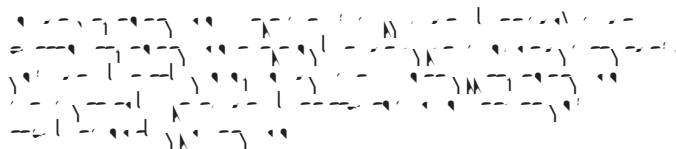
NOTE: Press and hold the Left button to exit without saving.

Manually Initiating a Regeneration



NOTE: A manually initiated or queued regeneration can be cleared by pressing and holding the Back button. 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



CYCLE 1/5
BACKWASH 00:10:00

CYCLE 2/5
DRAW 00:60:00

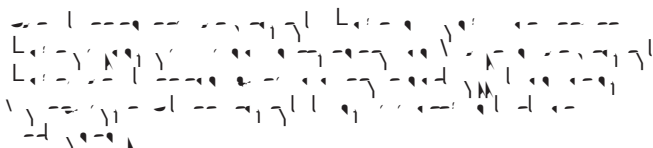
CYCLE 3/5
RAPID RINSE 00:10:00

CYCLE 4/5
TANK REFILL 00:12:00

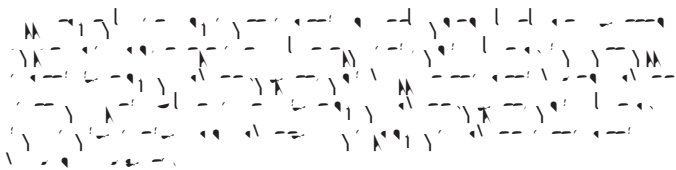


Press the Extra Cycle button during a system queued Regeneration Cycle to immediately advance the valve to the next cycle step position and resume normal step timing.

Timer Operation During Programming



Timer Operation During A Power Failure



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.

Flow Meter Equipped Timer



TIMER FEATURES

Remote Lock

When the unit is in the Service screen, the Remote Lock feature can be used to lock the unit. This feature is used to prevent the unit from being reset or the timer from being changed. The unit will be locked for 30 minutes. The unit will be unlocked when the 30 minutes has expired. The unit will be locked when the unit is in the Service screen and the Remote Lock feature is selected. The unit will be unlocked when the unit is in the Service screen and the Remote Lock feature is selected.

Regeneration Day Override Feature

The Regeneration Day Override feature allows the user to override the default regeneration day. The user can select a day of the week for regeneration. The unit will regenerate on the selected day. The unit will regenerate on the selected day.

Lock Settings (access to Master Programming)

The Lock Settings feature allows the user to lock the unit. The user can select the lock settings. The unit will be locked for the selected time. The unit will be locked for the selected time.

Time Based
Delayed
Enter Code

Capacitive Buttons

The capacitive buttons are used to navigate the unit. The user can press the buttons to select the desired option. The unit will be in the Service screen when the user presses the buttons.

LED Status indicator

The LED status indicator is used to indicate the status of the unit. The user can see the status of the unit by looking at the LED status indicator. The unit will be in the Service screen when the user presses the buttons.

Power Loss Backup

The Power Loss Backup feature allows the user to backup the unit. The user can select the backup settings. The unit will be backed up when the user selects the backup settings.

Continuous Flow Detect

The Continuous Flow Detect feature allows the user to detect the flow of water. The user can select the flow settings. The unit will detect the flow of water when the user selects the flow settings.

Remote Regeneration

The Remote Regeneration feature allows the user to regenerate the unit. The user can select the regeneration settings. The unit will regenerate when the user selects the regeneration settings.

Regeneration Types

Softener/Filter Meter Delayed
Softener/Filter Meter Immediate
Time Clock
Day of the Week
Remote Regeneration

The regeneration types are used to regenerate the unit. The user can select the regeneration type. The unit will regenerate when the user selects the regeneration type.

Reset to Factory Defaults

The Reset to Factory Defaults feature allows the user to reset the unit. The user can select the reset settings. The unit will be reset when the user selects the reset settings.



PRESS & HOLD

RESET
BACK
RESET TO FACTORY DEFAULTS
RESET TO NON-FACTORY DEFAULTS



END

Power on the unit.
When Pentair logo appears,
press and hold the Extra Cycle button.
The Reset menu appears.

Use the up/down buttons to select.

Press the Extra Cycle button to set the
desired option and return to the
Service screen.

Lock Window

The Lock Window feature allows the user to lock the unit. The user can select the lock settings. The unit will be locked when the user selects the lock settings.

Settings Review

The Settings Review feature allows the user to review the settings. The user can select the review settings. The unit will review the settings when the user selects the review settings.

Auxiliary Relays



AUX. 1: CYCLE BASED						
SP	BW	BD	RR	RF	SB	
x	x	✓	x	x	x	

Activates during selected cycle step

AUX. 1: TIME BASED-START TIME #1	
1	M

Activates upon selected start time
(Range: 0-91 minutes)

AUX. 1: TIME BASED-END TIME #1	
5	M

Deactivates upon selected end time
(Range: Start Time plus 1 minute)

AUX. 1: VOLUME BASED - VOLUME-G	
00100	

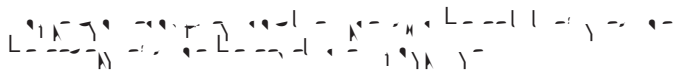
Activates when selected volume (gallon)
is reached (Range: 0-99999)

AUX. 1: VOLUME BASED - DURATION-S	
0010	

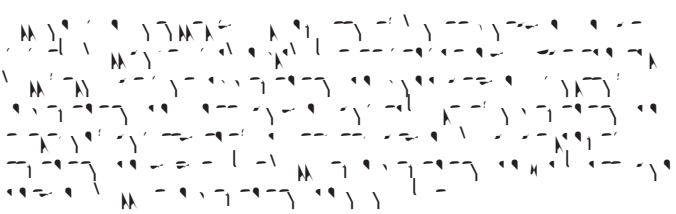
Selected Duration in Seconds
(Range: 0-9999 seconds)

SYSTEM DEFINITIONS

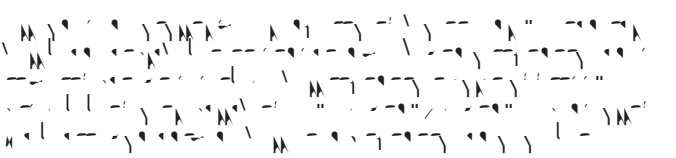
System 4 - Single Unit



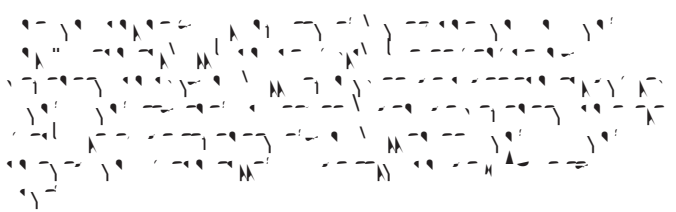
System 5 (2-8 Units) Parallel Interlock)



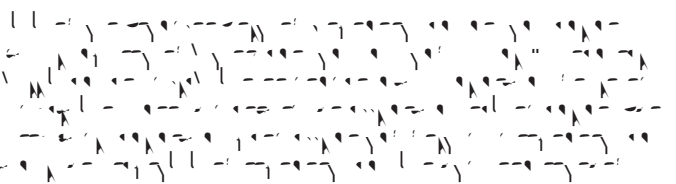
System 6 (2-8 Units) Parallel Series Regeneration



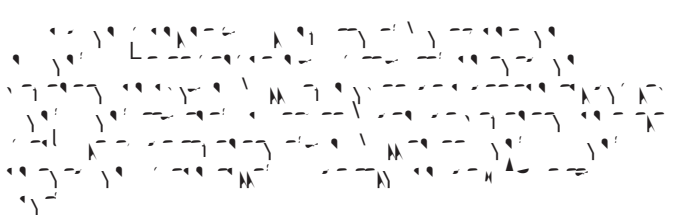
System 7 (2 Units) Alternating Immediate



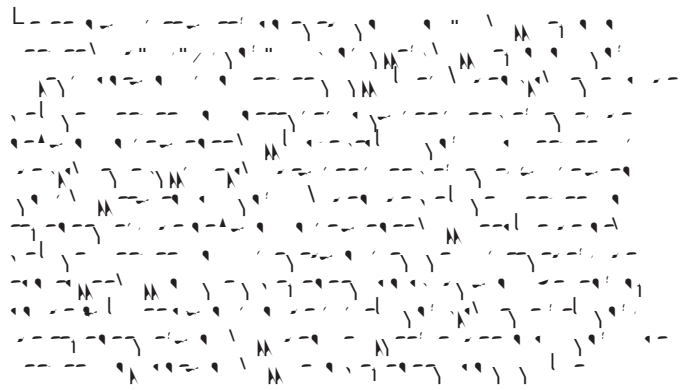
System 8 (2 Units) Alternating Delayed



System 9 (2-8 Units) Alternating with Standby Units



System 14 (2-8 Units) Demand Recall



	<div>SETTINGS REVIEW</div> <div>ON</div> <div>OFF</div>	Example: On: View settings without the ability to alter settings. Off: User has ability to alter settings.
	<div>LANGUAGE</div> <div>PORTUGUES</div> <div>ENGLISH</div> <div>FRANCAIS</div>	Example: English, Francais, Duetsch, Italiano, Espanol, Nederlandse, Portugues
	<div>ASSISTANCE NAME 1</div> <div></div> <div></div>	Example: 12 characters maximum.
	<div>ASSISTANCE NAME 2</div> <div></div> <div></div>	Example: 12 characters maximum.
	<div>ASSISTANCE PHONE</div> <div></div> <div></div>	Example: 14 characters maximum.
	<div>SYSTEM</div> <div>SYSTEM 4</div> <div>SYSTEM 5</div> <div>SYSTEM 6</div>	Example: 4, 5, 6, 7, 8, 9, 14
	<div>VALVE</div> <div>2815</div> <div>2850</div> <div>2900</div>	Example: 2510, 2750, 2815, 2900, 3150, 3900
	<div>REGEN. FLOW</div> <div>UPFLOW</div> <div>DOWNFLOW</div> <div>FILTER</div>	Example: Upflow Downflow Filter
	<div>REGEN. TYPE</div> <div>SOFTENER METER DEL</div> <div>SOFTENER METER IMM</div> <div>TIME CLOCK</div>	Example: Softener Meter Delayed Softener Meter Immediate Time Clock Day of the Week.
	<div>UNITS</div> <div>METRI C</div> <div>US</div>	Example: Metric US
	<div>CAPACITY - GRAINS</div> <div>0023828</div>	Example: Range: 0-9,999,999 grains
		Example: Range: 0-199 GPG
	<div>RESERVE</div> <div>FIXED VOLUME</div> <div>WEEKLY RESERVE</div> <div>VARIABLE RESERVE</div>	Example: Fixed Volume Weekly Reserve Variable Reserve Fixed %
	<div>REMOTE REGENERATION</div> <div>DELAYED</div> <div>OFF</div> <div>IMMEDIATE</div>	Example: Off, Immediate, Delayed
	<div>REMOTE SIGNAL DURATION</div> <div>1 S</div>	Example: Range: 1-90 seconds (Service) 60-300 seconds (Standby)
	<div>DAY OVERRIDE/TIME-DRIVEN</div> <div>10 D</div>	Example: Range: Off - 99 Days
	<div>REGEN. TIME</div> <div>02: 00HR</div>	Example: Range: 0 - 23 Hours 59 Minutes.

MASTER PROGRAMMING MODE

FLOW CHART



ON LOCK WINDOW #1
OFF

Example:
Start Lock Window
End Lock Window

BACKWASH
10 M

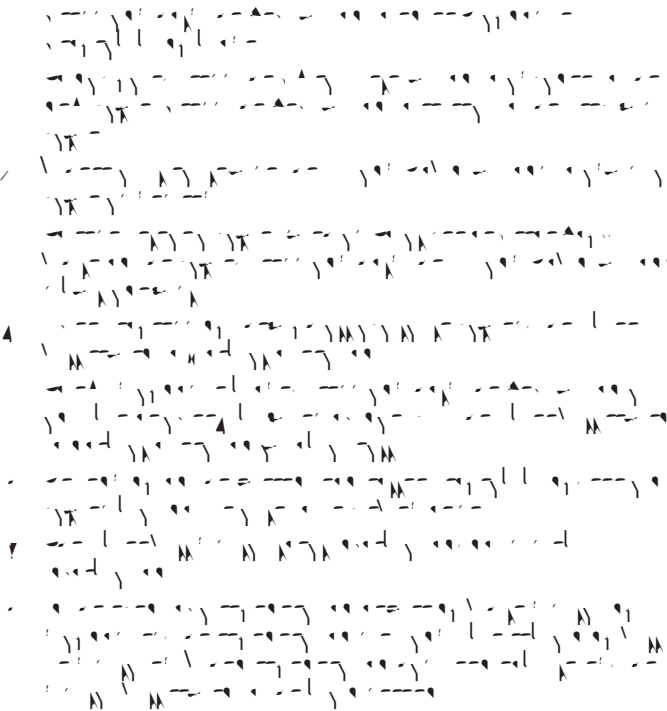
Example:
Range: 0 - 240 M

DRAW
60 M

Example:
Range: 0 - 240 M

DIAGNOSTIC PROGRAMMING MODE FLOW CHART

Diagnostic Programming Mode



ERROR LOG
ERROR LOG EMPTY

Example:
Record of error events chronologically.



SUN-AVERAGE USAGE
29.7 G

Example:
Average usage from past Sunday.



SUN-DAILY USAGE
2017-10-10 0 G
2017-01-02 0 G
2017-12-26 0 G

Example:
Average usage from past 3 Sundays.



MON-AVERAGE USAGE
29.7 G

Example:
Average usage from past Monday.



MON-DAILY USAGE
2016-10-10 0 G
2017-01-02 0 G
2016-12-26 0 G

Example:
Average usage from past 3 Mondays.



TUE-AVERAGE USAGE
29.7 G

Example:
Average usage from last Tuesday.



TUE-DAILY USAGE
2016-10-10 0 G
2017-01-02 0 G
2016-12-26 0 G

Example:
Average usage from past 3 Tuesdays.



WED-AVERAGE USAGE
29.7 G

Example:
Average usage from last Wednesday.



WED-DAILY USAGE
2016-10-10 0 G
2017-01-02 0 G
2016-12-26 0 G

Example:
Average usage from past 3 Wednesdays.



THU-AVERAGE USAGE
29.7 G

Example:
Average usage from last Thursday.



THU-DAILY USAGE
2016-10-10 0 G
2017-01-02 0 G
2016-12-26 0 G

Example:
Average usage from past 3 Thursdays.



FRI-AVERAGE USAGE
29.7 G

Example:
Average usage from last Friday.



FRI-DAILY USAGE
2016-10-10 0 G
2017-01-02 0 G
2016-12-26 0 G

Example:
Average usage from past 3 Fridays.



SAT-AVERAGE USAGE
29.7 G

Example:
Average usage from last Saturdays



SAT-DAILY USAGE
2016-10-10 0 G
2017-01-02 0 G
2016-12-26 0 G

Example:
Average usage from past 3 Saturdays.

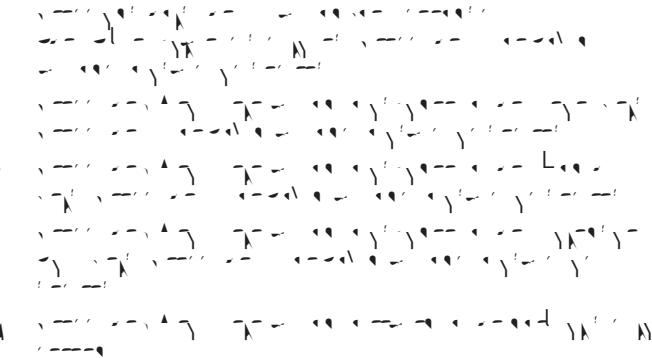
END

TIME OF DAY PROGRAMMING MODE

FLOW CHART

Setting the Time of Day

NOTE: Set Time of Day on any unit and the rest of the units in the system will update the Time of Day automatically.



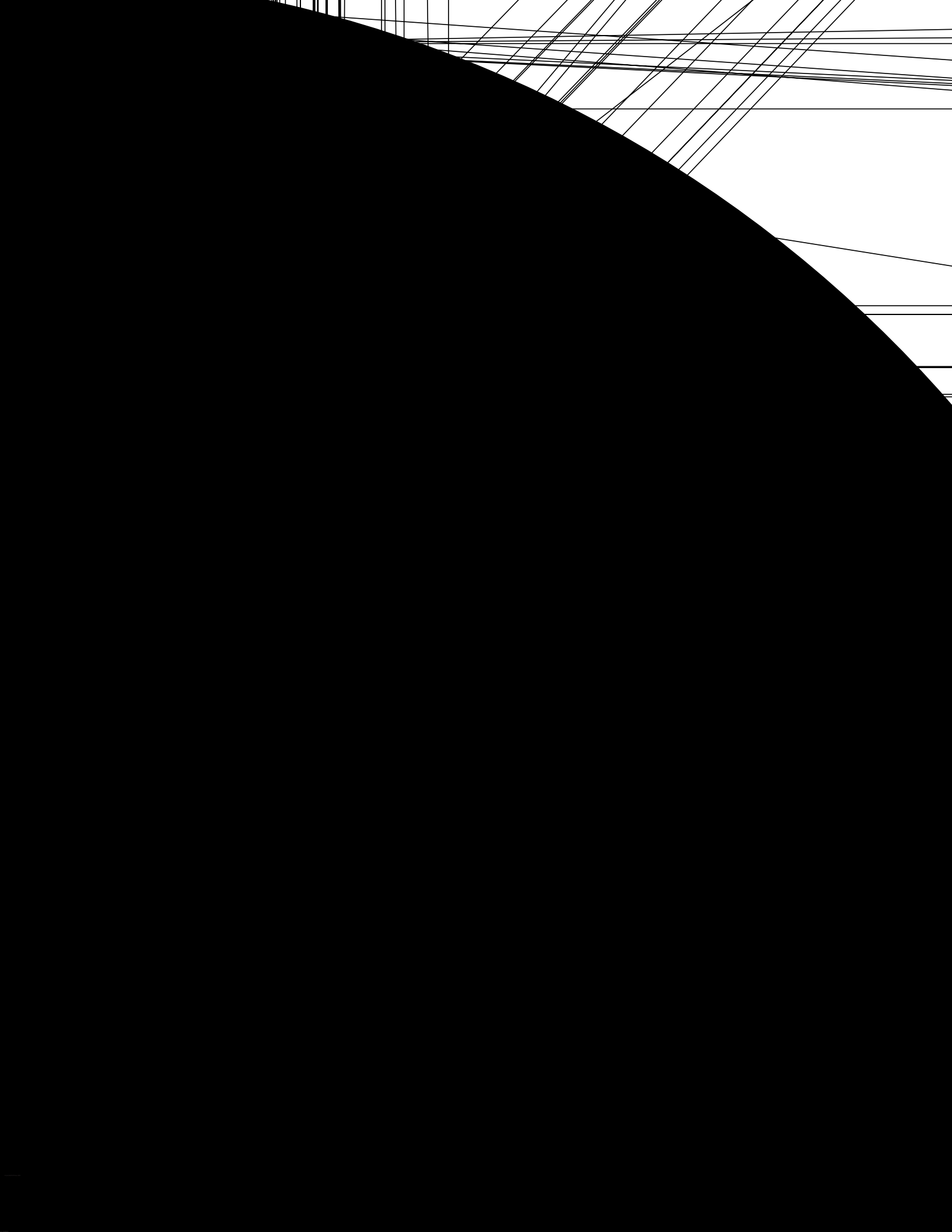
NOTE: Press and hold the Left button to exit without saving.

	<div>TIME 11:00AM</div>	Example: 12 or 24 hour formats available
	<div>YEAR 2018</div>	Example: Set current year
	<div>MONTH JAN</div>	Example: Set current month
	<div>CALENDAR DAY 22</div>	Example: Set current day
END		

Settings Review										US		Metric	
												On, Off	
Language	x	x	x	x	x	x	x	x	x			English	
	x	x	x	x	x	x	x	x	x			Francais	
Assistance Name 1, 2 Assistance Phone	x	x	x	x	x	x	x	x	x			Deutsch	
	x	x	x	x	x	x	x	x	x			Italiano	
	x	x	x	x	x	x	x	x	x			Espanol	
	x	x	x	x	x	x	x	x	x			Nederlands	
	x	x	x	x	x	x	x	x	x			Portugues	
Regen Type	x	x	x	x	x	x	x	x	x			Custom	
	x	x	x	x	x	x	x	x	x			Custom	
Valve	x	x	x	x	x	x	x	x	x			Time Clock	
	x	x	x	x	x	x	x	x	x			Day of the Week	
Regen Flow	x	x	x	x	x	x	x	x	x			Softener/Filter Metered Immediate	
	x	x	x	x	x	x	x	x	x			Softener/Filter Metered Delayed	
Units	x	x	x	x	x	x	x	x	x			2510	
	x	x	x	x	x	x	x	x	x			2750	
Remote Regeneration	x	x	x	x	x	x	x	x	x			0-100%	
	x	x	x	x	x	x	x	x	x			0-100%	
Auxiliary 1,2	x	x	x	x	x	x	x	x	x			0-100%	
	x	x	x	x	x	x	x	x	x			0-100%	
Lock Window 1,2	x	x	x	x	x	x	x	x	x			0-100%	
	x	x	x	x	x	x	x	x	x			0-100%	
Meter Type	x	x	x	x	x	x	x	x	x			0-100%	
	x	x	x	x	x	x	x	x	x			0-100%	
Continuous Flow Detect	x	x	x	x	x	x	x	x	x			0-100%	
	x	x	x	x	x	x	x	x	x			0-100%	
Save as Non Factory	x	x	x	x	x	x	x	x	x			0-100%	
	x	x	x	x	x	x	x	x	x			0-100%	
Lock Settings	x	x	x	x	x	x	x	x	x			0-100%	
	x	x	x	x	x	x	x	x	x			0-100%	
Day Override/Time Driven	x	x	x	x	x	x	x	x	x			0-100%	
	x	x	x	x	x	x	x	x	x			0-100%	
Regen Time	x	x	x	x	x	x	x	x	x			Any	
	x	x	x	x	x	x	x	x	x			Any	
Day of the Week	x	x	x	x	x	x	x	x	x			SU, MO, TU, WE, TH, FR, SA	
	x	x	x	x	x	x	x	x	x			SU, MO, TU, WE, TH, FR, SA	
Capacity										0-9,999,999 Grains		0-9,999,999 Grams, 0-560,287 Lx°DH,	
										x		0-1,000,000 Lx°FTH, 0-701,557 Lx°EH	
Hardness	x	x	x	x	x	x	x	x	x	0-199 GPG		0-19,999 mg/L, 0-1,402 °EH,	
	x	x	x	x	x	x	x	x	x	x		0-199.9 °FTH, 0-112 °DH	
International Hardness Units												mg/L, °EH, °FTH, °DH	
Reserve	x	x	x	x	x	x	x	x	x			Weekly Reserve, Variable Reserve, Fixed %, Fixed Volume	
	x	x	x	x	x	x	x	x	x				
Number of Tanks (Max)										1		2, 3, 4, 5, 6, 7, 8	
Push Settings												On, Off	
Trip Point #1-7 GPM												0-7,569 LPM	
Trip Point #1-7 SD												1-90s	
Trip Point #1-7 STBD												60-300s	

NXT2 TIMER ASSEMBLY
(2510, 2750, 2850, 2900, 3150, 3900 VALVES)

Item No.	QTY	Part No.	Description
		4	1/2" NPT X 1/2" NPT
Service Assemblies			
	/		1/2" NPT X 1/2" NPT
/	/		1/2" NPT X 1/2" NPT



NXT TO NXT2 CONVERSION KITS

Item No.	QTY	Part No.	Description
		/	99-186 99-1 H A
		/	99-186 99-1 H A
		/	99-186 99-1 H A
		/	99-186 99-1 H A

NOTE: Conversion Kits do not include wiring harness; save and reuse existing NXT wiring harness. Region-specific power supply is included.

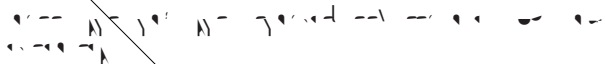
NXT2 WIRING DIAGRAM



POWER SUPPLY CONNECTIONS

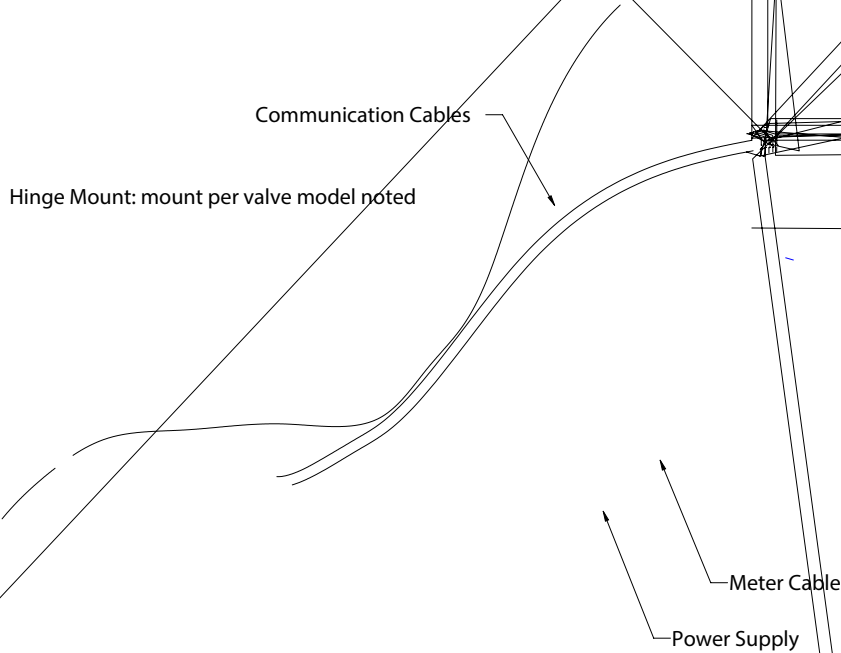
Installing the Power Supply:

NOTE: Power Supply includes a harness with 2 black wires that connect to circuit board, see page 15.



2510/2750/2815/2850/2900 Valves:

3150/3900 Valves:



ERROR CODES AND TROUBLESHOOTING

Detected Errors

-
- A handwritten musical score for the song 'The Rose Tree'. The score is written on five-line staves. The first staff begins with a treble clef and a key signature of one flat (B-flat). The melody is written in a simple, folk-like style. The lyrics 'The Rose Tree' are written below the first staff. The score continues with several more staves, each with its own line of lyrics. The handwriting is clear and legible. The paper appears to be aged or slightly discolored. The overall style is that of a personal or working manuscript.

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
<p> </p>	<p> </p>	<p> </p>
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