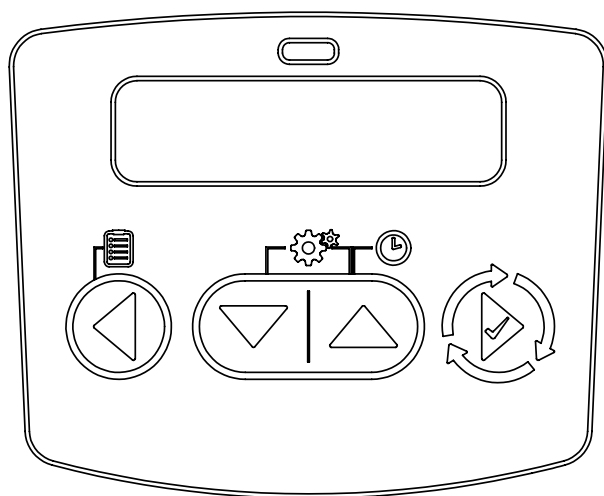




# **FLECK** NXT2 TIMER

## SERVICE MANUAL



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96	Product Brochure
97	Product Manual
98	Product Literature
99	Product Catalog
100	Product Brochure

## IMPORTANT PLEASE READ:

- ✓ 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.
- ✓ This manual is intended as a guide for service of the valve only. System installation requires information from a number of suppliers not known at the time of manufacture. This product should be installed by a plumbing professional.
- ✓ This unit is designed to be installed on potable water systems only.
- ✓ This product must be installed in compliance with all state and municipal plumbing and electrical codes. Permits may be required at the time of installation.
- ✓ 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.
- ✓ Do not install the unit where temperatures may drop below 32°F (0°C) or above 120°F (52°C).
- ✓ Do not place the unit in direct sunlight. Black units will absorb radiant heat, increasing internal temperatures.
- ✓ Do not strike the valve or any of the components.
- ✓ Warranty of this product extends to manufacturing defects.
- ✓ Misapplication of this product may result in failure to properly condition water, damage to product, or personal injury.
- ✓ A prefilter should be used on installations in which free solids are present.
- ✓ In some applications local municipalities treat water with Chloramines. High Chloramine levels may damage valve components.
- ✓ Correct and constant voltage must be supplied to the controller to maintain proper function.
- ✓ 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.
- ✓ 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.
- ✓ Children shall not play with the system.
- ✓ Cleaning shall not be made by children without supervision.
- ✓ Periodic cleaning and maintenance may be required to function properly.
- ✓ All plumbing and electrical should be done in accordance with local codes.
- ✓ 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

---

1. 本產品係採用最先進之雷射切割技術，切割精度極高，且無毛刺、無變形，品質優良。

2. 產品採用高品質之材料，具有優良之機械性能，且耐腐蝕、耐高溫，適用範圍廣泛。

3. 產品設計簡潔大方，外觀美觀，且易於安裝與維護，為工業生產之理想選擇。

4. 產品具有優良之密封性能，能有效防止液體滲漏，確保生產安全。

5. 產品價格合理，且提供完善的售後服務，為客戶提供最佳之解決方案。

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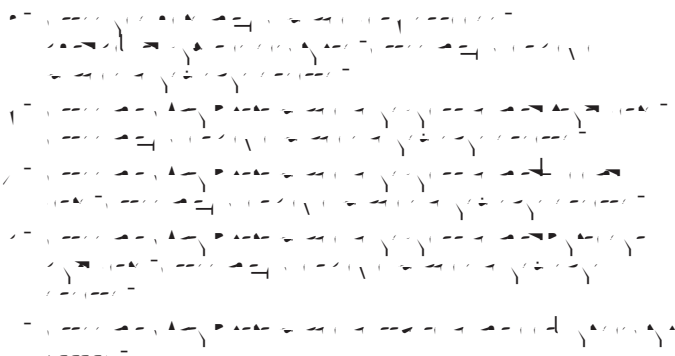
5. 產品價格合理，且提供完善的售後服務，為客戶提供最佳之解決方案。



## 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.



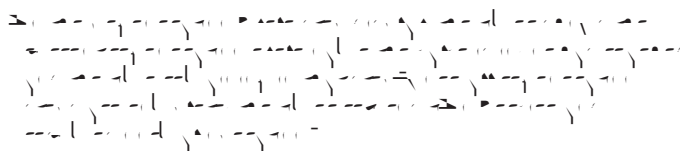
**NOTE:** Press and hold the Left button to exit without saving.

### 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

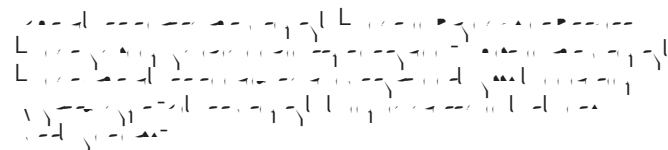
TANK REFILL

00:12:00

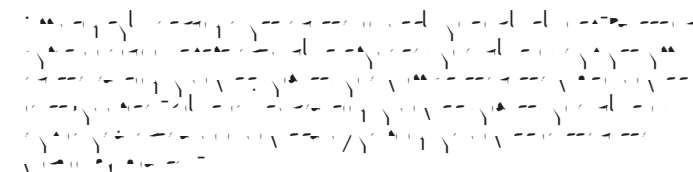


Press the Extra Cycle button during a system queued Regeneration Cycle to immediately advance the valve to the next cycle step position and resume normal step timing.

### Timer Operation During Programming

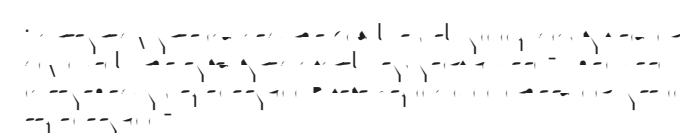


### Timer Operation During A Power Failure



**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



## Remote Lock

## Lock Settings (access to Master Programming)

### *Time Based*

**Delayed**

**Enter Code**

## Capacitive Buttons

### LED Status indicator

## Power Loss Backup

## Continuous Flow Detect

## Remote Regeneration

## Regeneration Types

**Softener/Filter Meter Delayed**

**Softener/Filter Meter Immediate**

### Time Clock

**Day of the Week**

### Remote Regeneration

## Reset to Factory Defaults



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

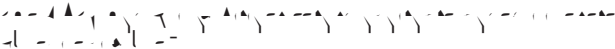
Use the up/down buttons to select.

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

## Lock Window

## Settings Review

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

When the system is in the standby position, the unit is in the standby position. When the system is in the standby position, the unit is in the standby position.

### System 5 (2-8 Units) Parallel Interlock)

When the system is in the standby position, the unit is in the standby position. When the system is in the standby position, the unit is in the standby position.

### System 6 (2-8 Units) Parallel Series Regeneration

When the system is in the standby position, the unit is in the standby position. When the system is in the standby position, the unit is in the standby position.

### System 7 (2 Units) Alternating Immediate

When the system is in the standby position, the unit is in the standby position. When the system is in the standby position, the unit is in the standby position.

### System 8 (2 Units) Alternating Delayed

When the system is in the standby position, the unit is in the standby position. When the system is in the standby position, the unit is in the standby position.

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

When the system is in the standby position, the unit is in the standby position. When the system is in the standby position, the unit is in the standby position.

### System 14 (2-8 Units) Demand Recall

When the system is in the standby position, the unit is in the standby position. When the system is in the standby position, the unit is in the standby position.



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

MASTER PROGRAMMING MODE

FLOW CHART

---



LOCK WINDOW #1  
ON  
OFF

**Example:**  
Start Lock Window  
End Lock Window

BACKWASH  
10 M

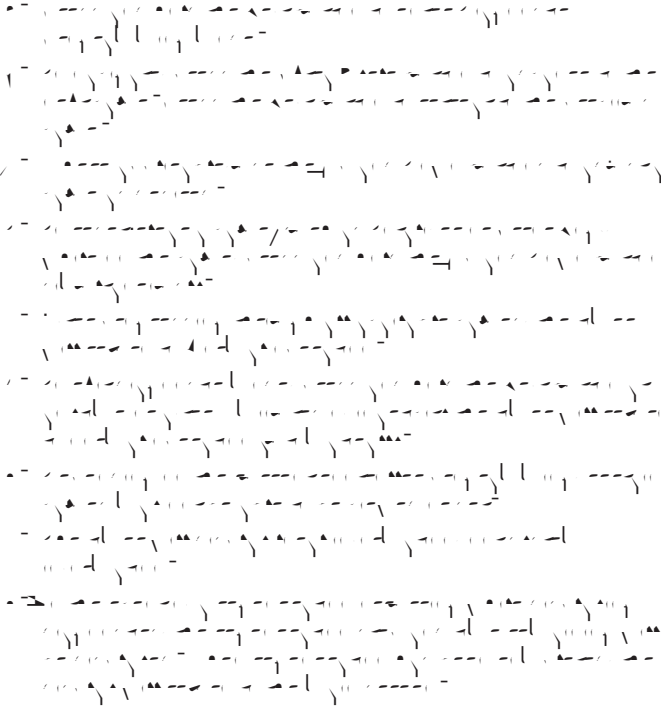
**Example:**  
Range: 0 - 240 M

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.

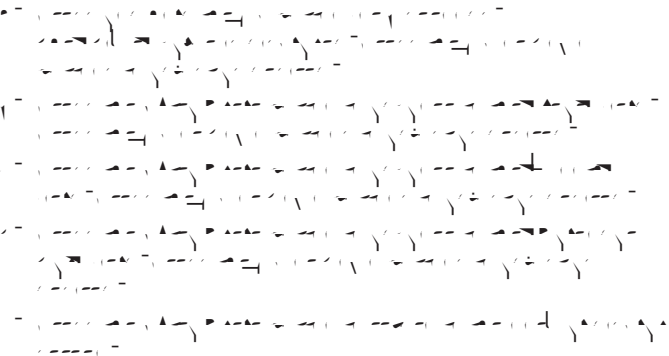
END

# 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.

TIME  
11:00AM

**Example:**  
12 or 24 hour formats available

YEAR  
2018

**Example:**  
Set current year

MONTH  
JAN

**Example:**  
Set current month

CALENDAR DAY  
22

**Example:**  
Set current day

END

Settings Review										Series										Demand Recall										US										Metric									
Language																																																	
Assistance Name 1, 2																																																	
Assistance Phone																																																	
Regen Type																																																	
Valve																																																	
Regen Flow																																																	
Units																																																	
Remote Regeneration																																																	
Auxiliary 1, 2																																																	
Lock Window 1, 2																																																	
Meter Type																																																	
Continuous Flow Detect																																																	
Save as Non Factory																																																	
Lock Settings																																																	
Day Override/Time Driven																																																	
Regen Time																																																	
Day of the Week																																																	
Capacity																																																	
Hardness																																																	
International Hardness Units																																																	
Reserve																																																	
Number of Tanks (Max)																																																	
Push Settings																																																	
Trip Point #1-7 GPM																																																	
Trip Point #1-7 SD																																																	
Trip Point #1-7 STBD																																																	

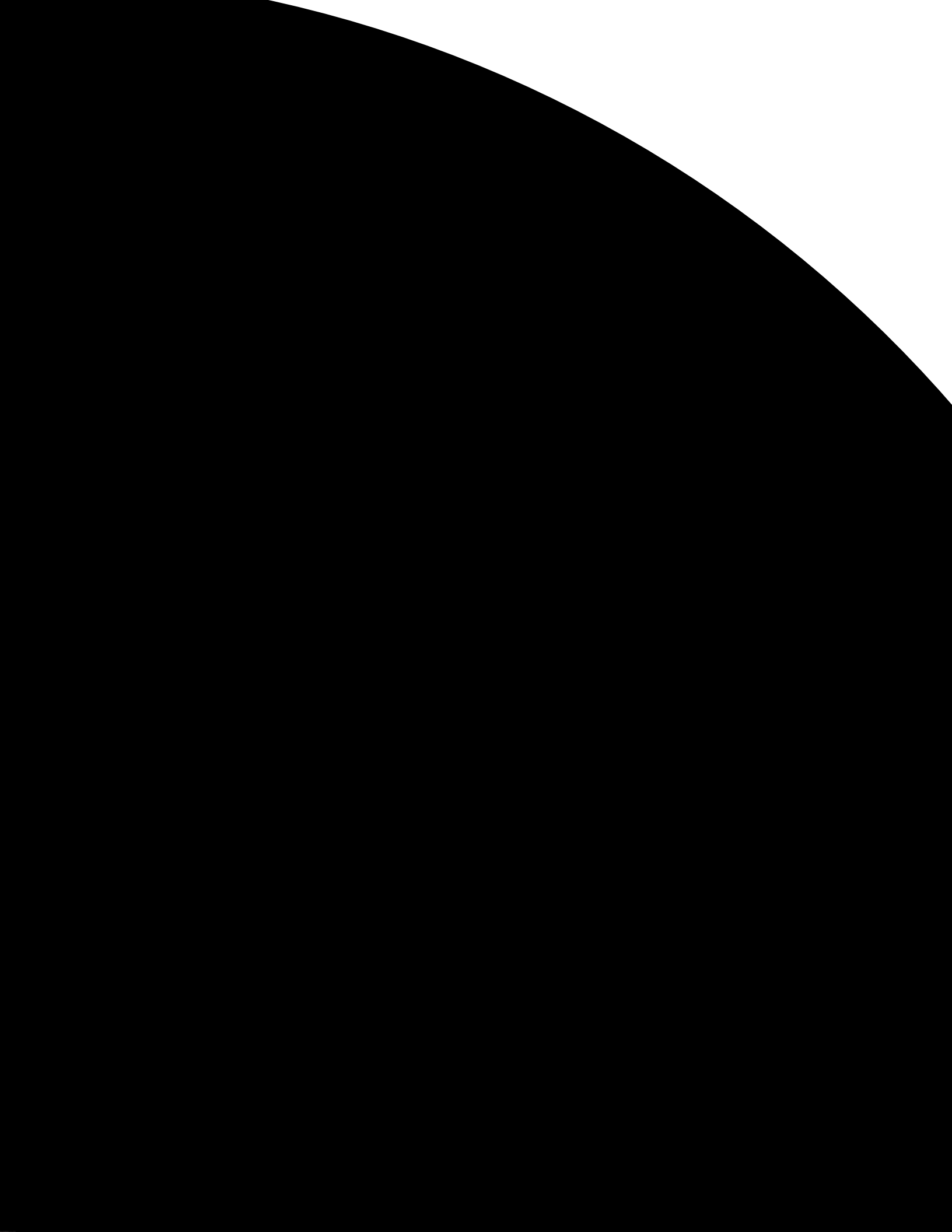
**NXT2 TIMER ASSEMBLY**  
**(2510, 2750, 2850, 2900, 3150, 3900 VALVES)**

**Item No.      QTY      Part No.      Description**

1      1      2510      2510 VALVE

**Service Assemblies**

1      1      2510      2510 VALVE

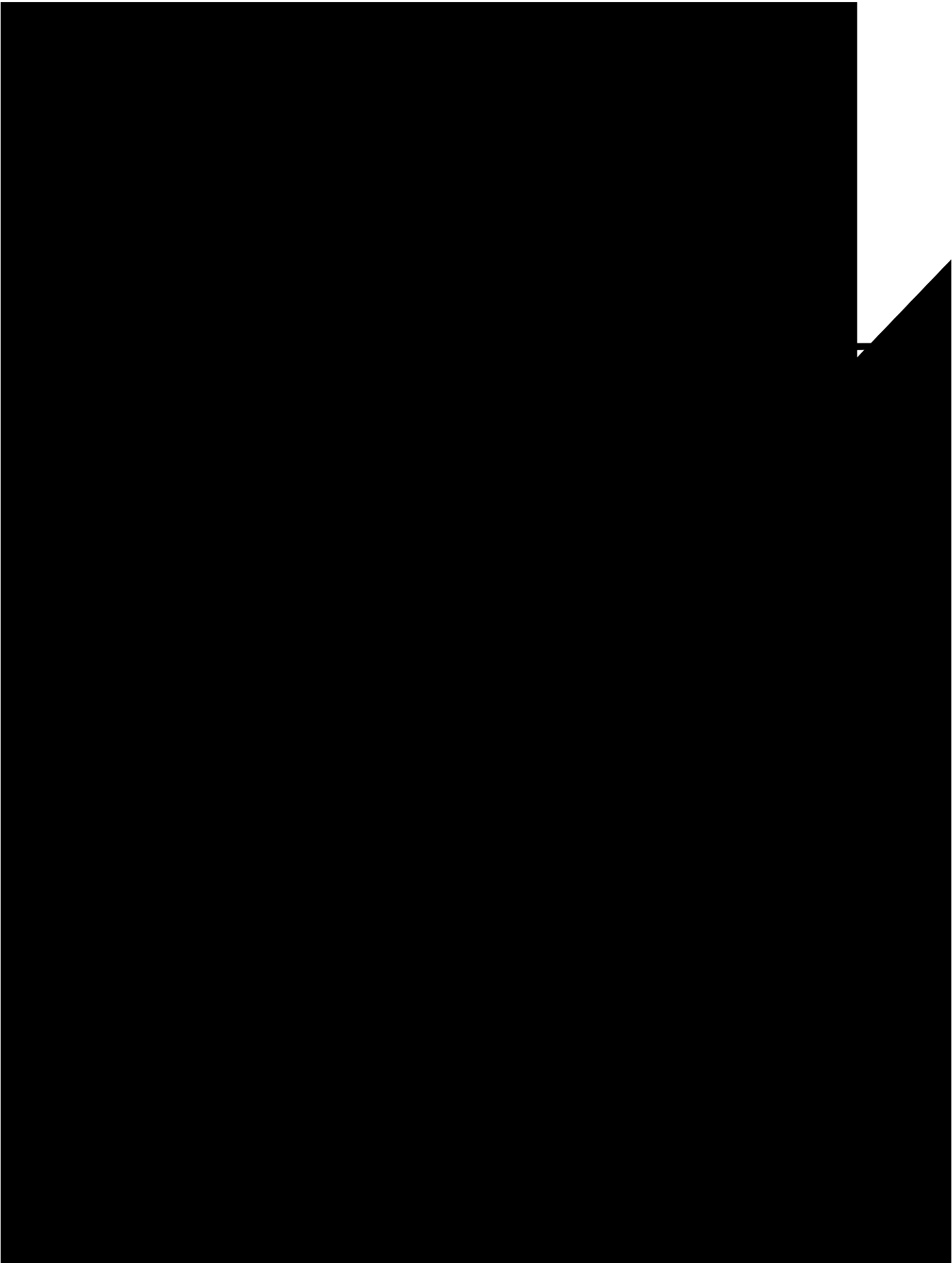


## NXT TO NXT2 CONVERSION KITS

Item No.	QTY	Part No.	Description
•	1	100-100-100	100-100-100
•	1	100-100-100	100-100-100
•	1	100-100-100	100-100-100
•	1	100-100-100	100-100-100

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





**POWER SUPPLY CONNECTIONS**

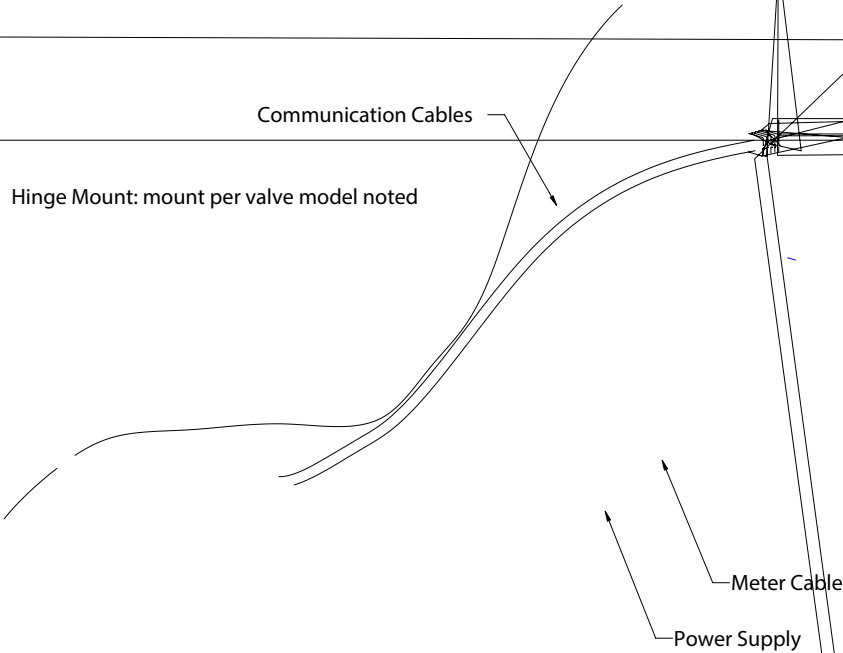
**Installing the Power Supply:**

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

2510/2750/2815/2850/2900 Valves:

2510/2750/2815/2850/2900 Valves:

3150/3900 Valves:



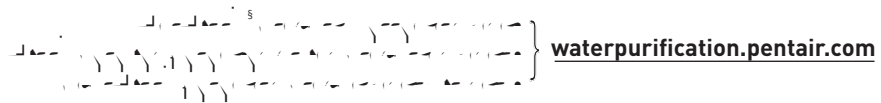
## **ERROR CODES AND TROUBLESHOOTING**

## Detected Errors

- 
- Handwritten musical score for the song "The Rose Tree". The score is written on ten staves. The first staff 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 lyrics are written below it. The second staff continues the melody and lyrics. The third staff continues the melody and lyrics. The fourth staff continues the melody and lyrics. The fifth staff continues the melody and lyrics. The sixth staff continues the melody and lyrics. The seventh staff continues the melody and lyrics. The eighth staff continues the melody and lyrics. The ninth staff continues the melody and lyrics. The tenth staff continues the melody and lyrics. The score is written in a clear, legible hand.

**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



13845 BISHOPS DR., SUITE 200, BROOKFIELD, WI 53005  
WATERPURIFICATION.PENTAIR.COM | CUSTOMER CARE: 800.279.9404 | tech-support@pentair.com

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44381 REV A JL18