



PENTAIR

FLECK NXT2 TIMER

SERVICE MANUAL

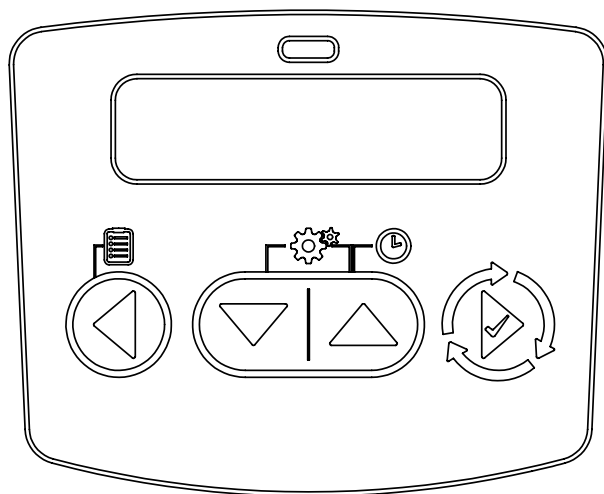


TABLE OF CONTENTS

IMPORTANT PLEASE READ:

- The information, specifications and illustrations in this manual are based on the latest information available at the time of 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

Handwritten musical score for the song "The Rose Tree". The score is written on ten staves. The first five staves contain the German lyrics, and the last five staves contain the English lyrics. The melody is written on a single line for each staff, with a key signature of one sharp (F#) and a common time signature (C). The tempo is marked "Allegretto".

German Lyrics:

1. Einmal, einmal, einmal, einmal
 2. Einmal, einmal, einmal, einmal
 3. Einmal, einmal, einmal, einmal
 4. Einmal, einmal, einmal, einmal
 5. Einmal, einmal, einmal, einmal

English Lyrics:



1. Once, once, once, once
 2. Once, once, once, once
 3. Once, once, once, once
 4. Once, once, once, once
 5. Once, once, once, once

[illegible]

Figure 6

Figure 6 shows two plots related to the model fit. The top plot displays the observed data points (black dots) against the fitted values (red line). The bottom plot shows the residuals (black dots) against the fitted values (red line).

۱. ا. ب. ج. د. هـ. ز. ح. ط. ی. ک. ل. م. ن. س. ع. ف. ق. ر. ش. ت. ث. ذ. ظ.

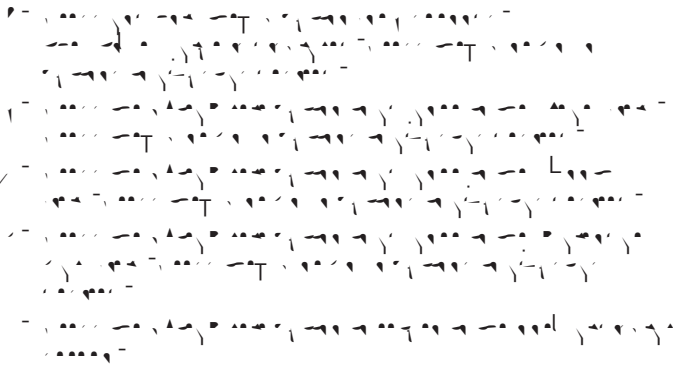
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cons

TIMER OPERATION

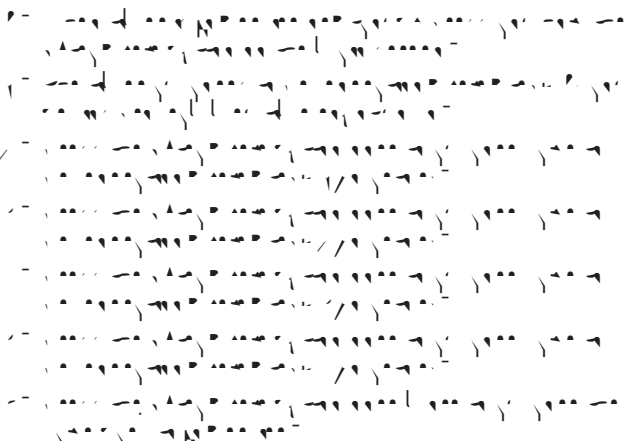
Setting the Time of Day

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



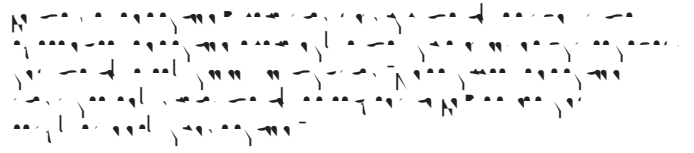
NOTE: Press and hold the Left button to exit without saving.

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

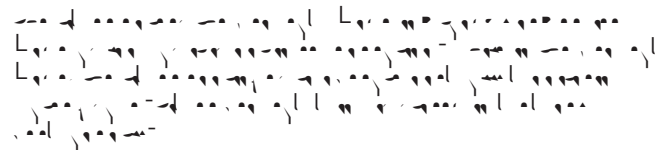


CYCLE 4/5
TANK REFILL 00:12:00

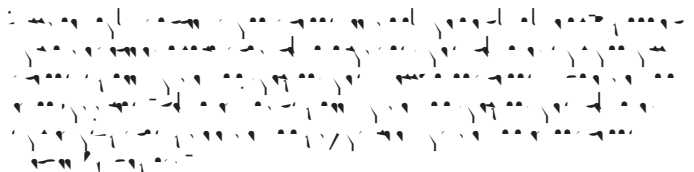


Press the Extra Cycle button during a system queued Regeneration Cycle to immediately advance the valve to the next cycle step position and resume normal step timing.

Timer Operation During Programming

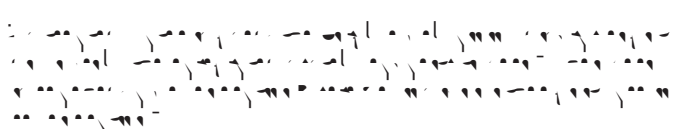


Timer Operation During A Power Failure



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 from the remote control. This feature is useful when the unit is in the Service screen and the user wants to lock the unit from the remote control.

Regeneration Day Override Feature

The Regeneration Day Override feature allows the user to override the default regeneration day. This feature is useful when the user wants to regenerate the unit on a different day than the default.

Lock Settings (access to Master Programming)

The Lock Settings feature allows the user to access the Master Programming screen. This feature is useful when the user wants to change the lock settings. The options are:

- Time Based**
- Delayed**
- Enter Code**

Capacitive Buttons

The capacitive buttons are used to navigate through the menu. The buttons are located on the front of the unit. The buttons are used to select the desired option.

LED Status indicator

The LED status indicator is used to indicate the status of the unit. The indicator is located on the front of the unit. The indicator is used to indicate the status of the unit.

Power Loss Backup

The Power Loss Backup feature allows the user to backup the settings. This feature is useful when the user wants to backup the settings.

Continuous Flow Detect

The Continuous Flow Detect feature allows the user to detect continuous flow. This feature is useful when the user wants to detect continuous flow.

Remote Regeneration

The Remote Regeneration feature allows the user to regenerate the unit from the remote control. This feature is useful when the user wants to regenerate the unit from the remote control.

Regeneration Types

The Regeneration Types feature allows the user to select the regeneration type. The options are:

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

Reset to Factory Defaults

The Reset to Factory Defaults feature allows the user to reset the unit to the factory defaults. This feature is useful when the user wants to reset the unit to the 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.

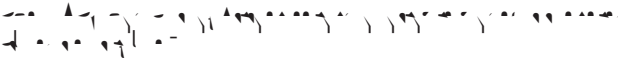
Lock Window

The Lock Window feature allows the user to lock the unit. This feature is useful when the user wants to lock the unit.

Settings Review

The Settings Review feature allows the user to review the settings. This feature is useful when the user wants to review the settings.

Auxiliary Relays



▼

⋮

x

x

✓

x

x

x

Activates during selected cycle step

⋮

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

⋮

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

▼

▲

⋮

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

⋮

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

SYSTEM DEFINITIONS

System 4 - Single Unit

When a single unit is used, the system is defined as System 4. The unit is connected to the system bus and the system is defined as System 4.

System 5 (2-8 Units) Parallel Interlock)

When two or more units are used, the system is defined as System 5. The units are connected to the system bus and the system is defined as System 5. The units are connected to the system bus and the system is defined as System 5.

System 6 (2-8 Units) Parallel Series Regeneration

When two or more units are used, the system is defined as System 6. The units are connected to the system bus and the system is defined as System 6. The units are connected to the system bus and the system is defined as System 6.

System 7 (2 Units) Alternating Immediate

When two units are used, the system is defined as System 7. The units are connected to the system bus and the system is defined as System 7. The units are connected to the system bus and the system is defined as System 7.

System 8 (2 Units) Alternating Delayed




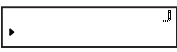

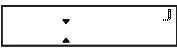

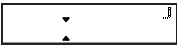

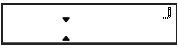

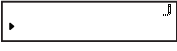





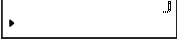

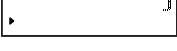



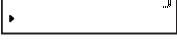

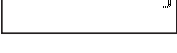

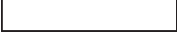

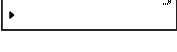

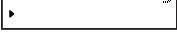

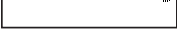

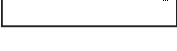

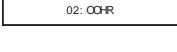
When two units are used, the system is defined as System 8. The units are connected to the system bus and the system is defined as System 8. The units are connected to the system bus and the system is defined as System 8.

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

When two or more units are used, the system is defined as System 9. The units are connected to the system bus and the system is defined as System 9. The units are connected to the system bus and the system is defined as System 9.

System 14 (2-8 Units) Demand Recall

When two or more units are used, the system is defined as System 14. The units are connected to the system bus and the system is defined as System 14. The units are connected to the system bus and the system is defined as System 14.

		Example: On: View settings without the ability to alter settings. Off: User has ability to alter settings.
		Example: English, Francais, Duetsch, Italiano, Espanol, Nederlandse, Portugues
		Example: 12 characters maximum.
		Example: 12 characters maximum.
		Example: 14 characters maximum.
		Example: 4, 5, 6, 7, 8, 9, 14
		
		
		
		
		Example: 2510, 2750, 2815, 2900, 3150, 3900
		Example: Upflow Downflow Filter
		Example: Softener Meter Delayed Softener Meter Immediate Time Clock Day of the Week.
		Example: Metric US
		Example: Range: 0-9,999,999 grains
		Example: Range: 0-199 GPG
		Example: Fixed Volume Weekly Reserve Variable Reserve Fixed %
		Example: Off, Immediate, Delayed
		Example: Range: 1-90 seconds (Service) 60-300 seconds (Standby)
		Example: Range: Off - 99 Days
		Example: Range: 0 - 23 Hours 59 Minutes.

MASTER PROGRAMMING MODE

FLOW CHART



Example:
Start Lock Window
End Lock Window

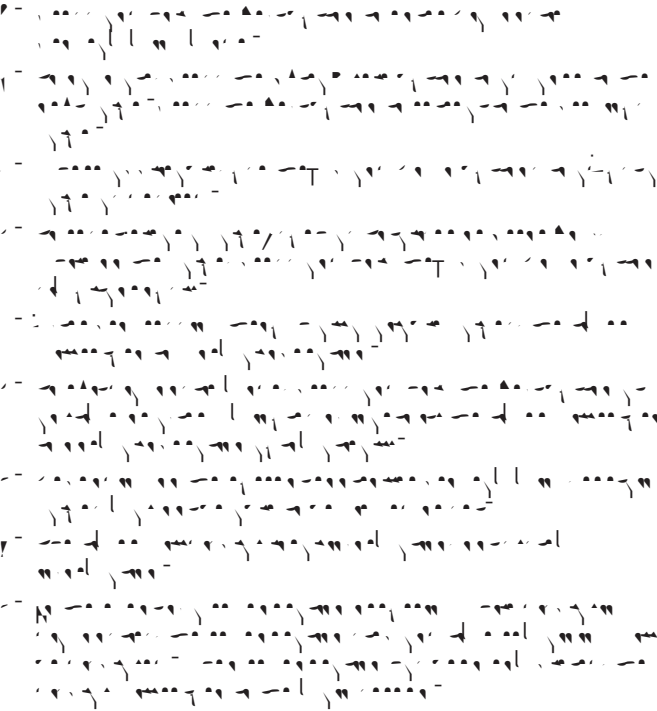
Example:
Range: 0 - 240 M

Example:
Range: 0 - 240 M

DIAGNOSTIC PROGRAMMING MODE

FLOW CHART

Diagnostic Programming Mode



Example:
Record of error events chronologically.



Example:
Average usage from past Sunday.



Example:
Average usage from past 3 Sundays.



Example:
Average usage from past Monday.



Example:
Average usage from past 3 Mondays.



Example:
Average usage from last Tuesday.



Example:
Average usage from past 3 Tuesdays.



Example:
Average usage from last Wednesday.



Example:
Average usage from past 3 Wednesdays.



Example:
Average usage from last Thursday.



Example:
Average usage from past 3 Thursdays.



Example:
Average usage from last Friday.



Example:
Average usage from past 3 Fridays.



Example:
Average usage from last Saturdays



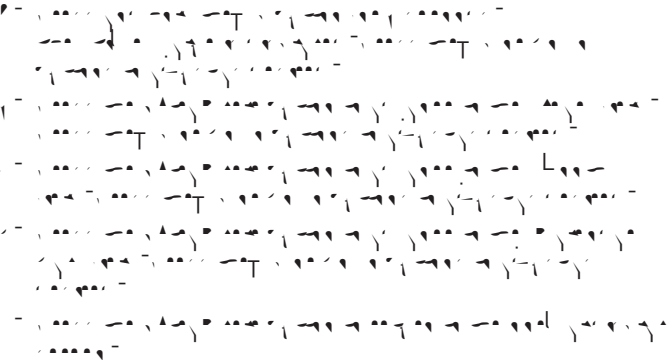
Example:
Average usage from past 3 Saturdays.

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.



Example:
12 or 24 hour formats available



Example:
Set current year



Example:
Set current month



Example:
Set current day

Settings Review										US		Metric	
	x	x	x	x	x	x	x	x	x	On, Off	English		
Language											Francais		
	x	x	x	x	x	x	x	x	x		Deutsch		
											Italiano		
											Espanol		
											Nederlands		
Assistance Name 1, 2													
Assistance Phone	x	x	x	x	x	x	x	x	x	Custom	Custom		
Regen Type	x	x	x	x	x	x	x	x	x	Day of the Week	Day of the Week		
										Softener/Filter Metered Immediate	Softener/Filter Metered Delayed		
2510													
2710													
Valve	x	x	x	x	x	x	x	x	x				
Regen Flow	x	x	x	x	x	x	x	x	x	Upflow, Downflow, Filter	Upflow, Downflow, Filter		
	x	x	x	x	x	x	x	x	x	US, Metric	US, Metric		
Remote Regeneration	x	x	x	x	x	x	x	x	x	Off, Immediate, Delayed	Off, Immediate, Delayed		
Auxiliary 1,2	x	x	x	x	x	x	x	x	x	Off,	Off,		
										Alarm Based,	Alarm Based,		
Lock Window 1,2	x	x	x	x	x	x	x	x	x	Cycle Based,	Cycle Based,		
										Time Based,	Time Based,		
Meter Type										On, Off	On, Off		
Continuous Flow Detect										Paddle (0.75", 1", 1.5", 2", 3")	Paddle (0.75", 1", 1.5", 2", 3")		
	x	x	x	x	x	x	x	x	x	Turbine (0.75", 1.25", 1.5")	Turbine (0.75", 1.25", 1.5")		
Lock Settings	x	x	x	x	x	x	x	x	x	Generic	Generic		
Day Override/Time Driven	x	x	x	x	x	x	x	x	x	On, Off	On, Off		
										Off, Delayed, Enter Code, Time Based	Off, Delayed, Enter Code, Time Based		
Regen Time	x	x	x	x	x	x	x	x	x	Off-99 Days	Off-99 Days		
Day of the Week	x	x	x	x	x	x	x	x	x	Any	Any		
SU, MO, TU, WE, TH, FR, SA													
Capacity										0-9,999,999 Grains	0-9,999,999 Grams, 0-560,287 Lx°DH,		
	x	x	x	x	x	x	x	x	x	0-1,000,000 Lx°FTH, 0-701,557 Lx°EH	0-1,000,000 Lx°FTH, 0-701,557 Lx°EH		
Hardness										0-199 GPG	0-199 GPG		
	x	x	x	x	x	x	x	x	x	0-1,402 °EH,	0-1,402 °EH,		
0-199.9 °FTH, 0-112 °DH													
International Hardness Units													
Reserve										mg/L, °EH, °FTH, °DH	mg/L, °EH, °FTH, °DH		
Weekly Reserve, Variable Reserve, Fixed %, Fixed Volume													
2, 3, 4, 5, 6, 7, 8													
Number of Tanks (Max)	1	1	1	8	8	2	2	8	8	On, Off	On, Off		
Push Settings										0-7,569 LPM	0-7,569 LPM		
Trip Point #1-7 GPM										1-90s	1-90s		
Trip Point #1-7 STBD										60-300s	60-300s		

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

Item No. QTY Part No. Description

1 1 2510 2510 Valve

Service Assemblies

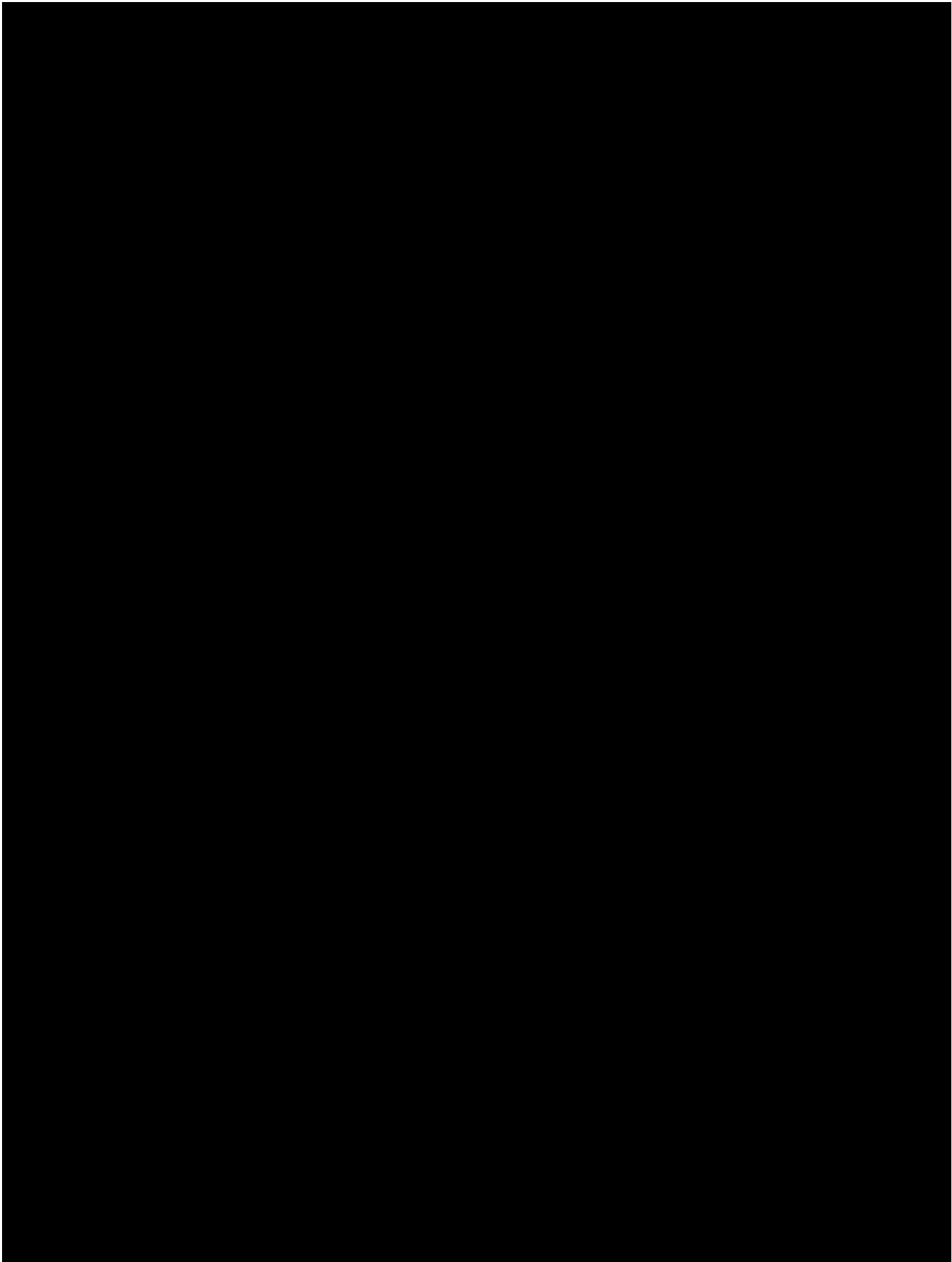
1 1 2510 2510 Valve

NXT TO NXT2 CONVERSION KITS

Item No.	QTY	Part No.	Description

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

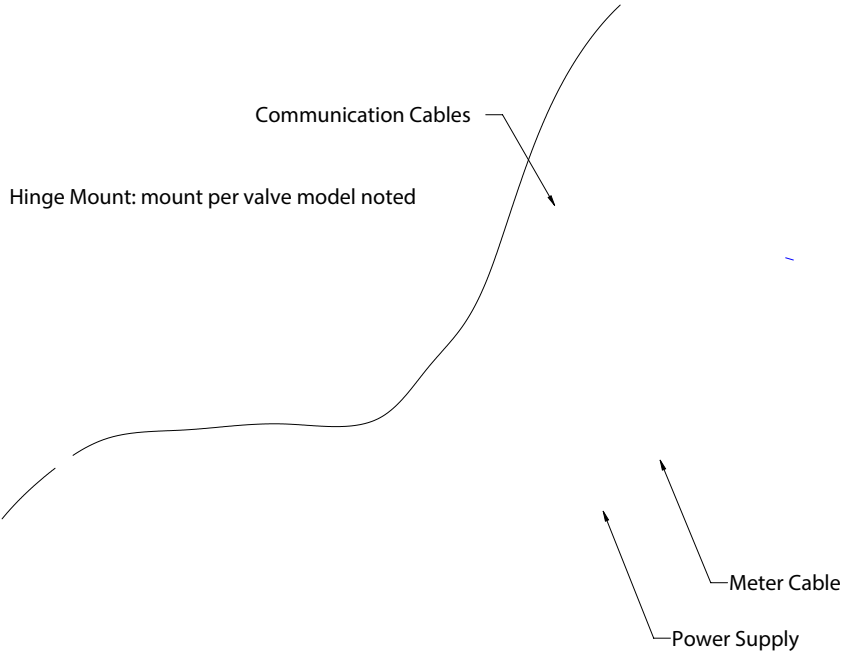
Installing the Power Supply:

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:

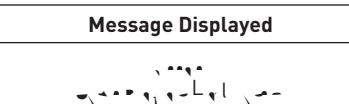
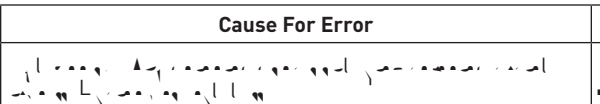
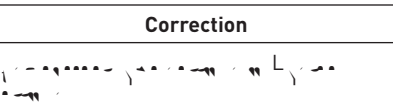
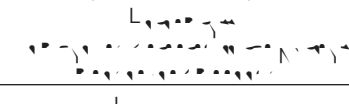
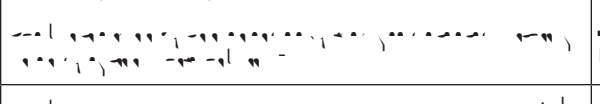
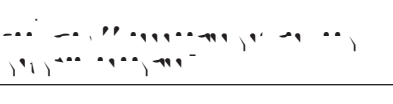
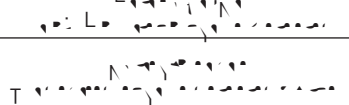
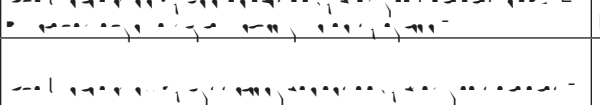
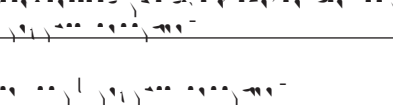
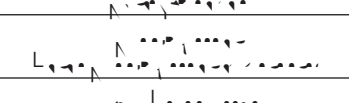
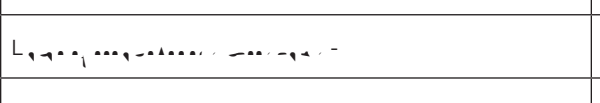
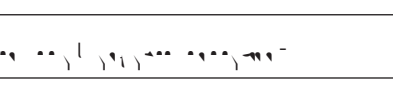
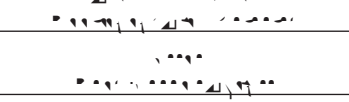
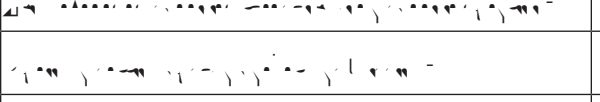
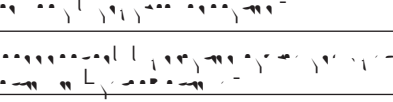
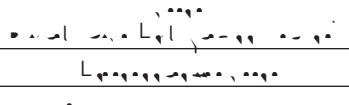
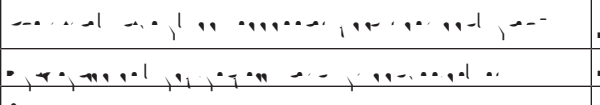
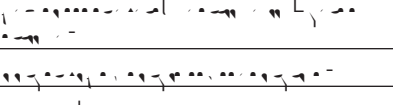
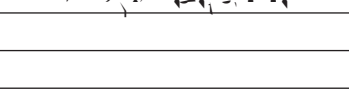
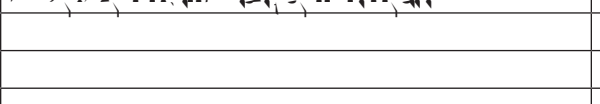
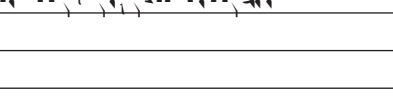


































































































ERROR CODES AND TROUBLESHOOTING

Detected Errors

-
- A handwritten musical score for the song "The Rose Tree". The score is written on ten staves. The first staff begins with a treble clef, a key signature of one sharp (F#), and a 2/4 time signature. The melody is written in a simple, folk-like style with many eighth and sixteenth notes. The lyrics "The Rose Tree" are written below the first staff. The score continues with several more staves of music, each with corresponding lyrics. The handwriting is in ink on aged, slightly yellowed paper. The overall style is that of a personal or family 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
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		
		



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

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