PENTAIR

FLECK NXT2 TIMER

SERVICE MANUAL

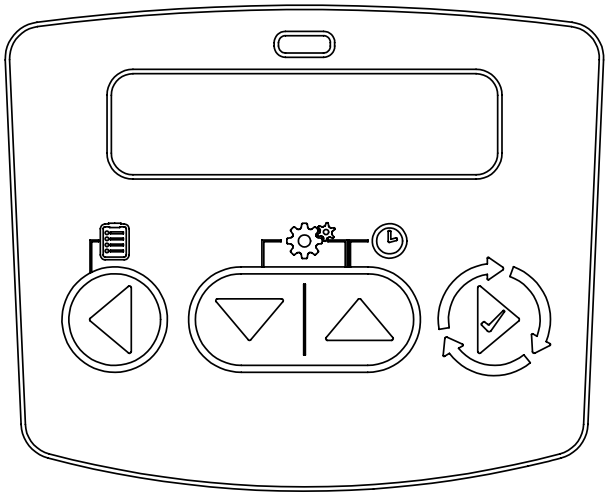
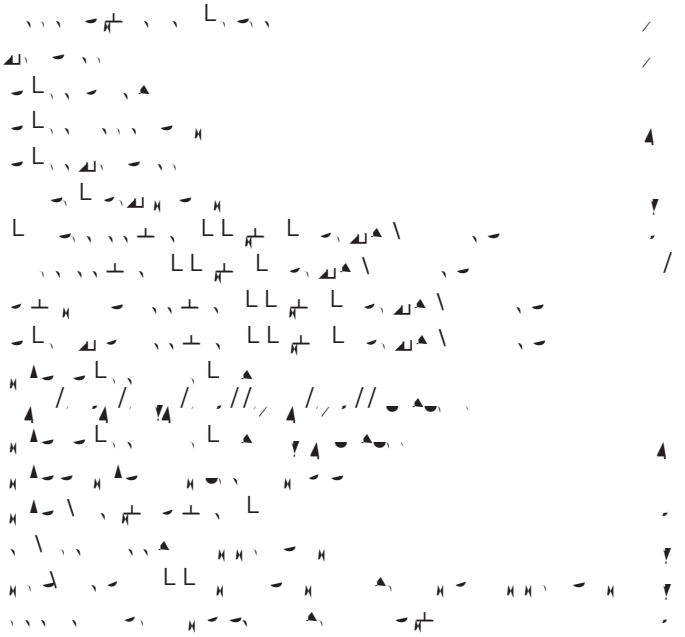


TABLE OF CONTENTS



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.

- **Fleck**

FEATURES

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

Regeneration Day Override Feature

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

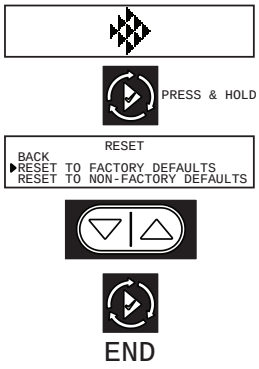
Softener/Filter Meter Immediate

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.

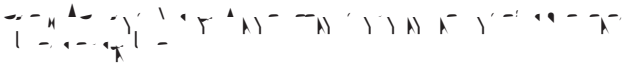
Use the up/down buttons to select.

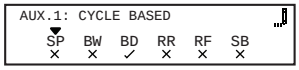
Press the Extra Cycle button to set the desired option and return to the Service screen.

Lock Window

Settings Review

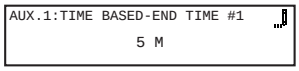
Auxiliary Relays



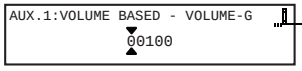


Activates during selected cycle step

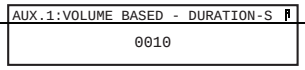
Activates upon selected start time
(Range: 0-91 minutes)



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



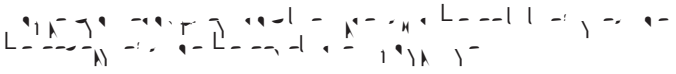
Activates when selected volume (gallon)
is reached (Range: 0-99999)



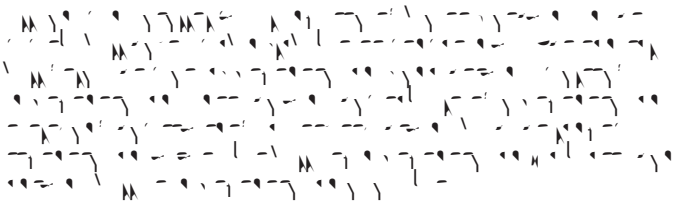
Selected Duration in Seconds
(Range: 0-9999 seconds)

SYSTEM DEFINITIONS

System 4 - Single Unit

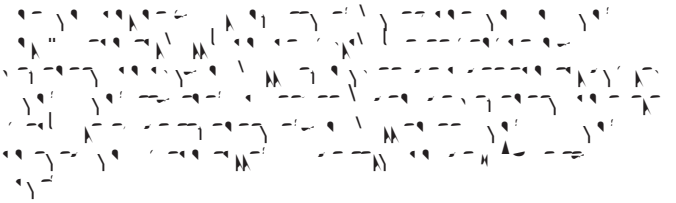


System 5 (2-8 Units) Parallel Interlock)

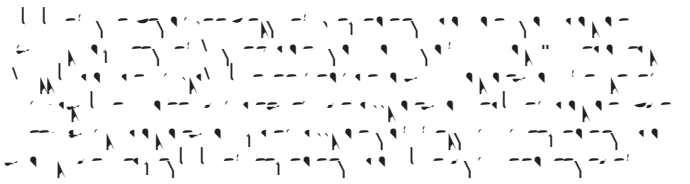


System 6 (2-8 Units) Parallel Series Regeneration

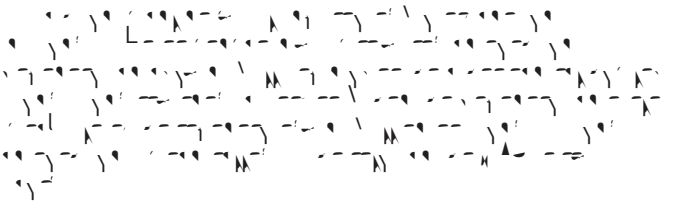
System 7 (2 Units) Alternating Immediate



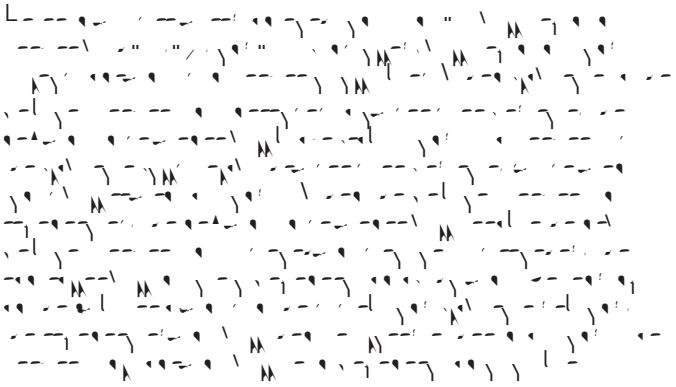
System 8 (2 Units) Alternating Delayed



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



System 14 (2-8 Units) Demand Recall



SETTINGS REVIEW
ON
▸OFF

Example:
On: View settings without the ability to alter settings.
Off: User has ability to alter settings.

LANGUAGE
PORTUGUES
▸ENGLISH
FRANCAIS

Example:
English, Francais, Duetsch, Italiano,
Espanol, Nederlandse, Portugues

ASSISTANCE NAME 1

Example:
12 characters maximum.

ASSISTANCE NAME 2

Example:
12 characters maximum.

ASSISTANCE PHONE

Example:
14 characters maximum.

SYSTEM
SYSTEM 4
▸SYSTEM 5
SYSTEM 6

Example:
4, 5, 6, 7, 8, 9, 14

VALVE
2815
▸2850
2900

Example:
2510, 2750, 2815, 2900, 3150, 3900

REGEN. FLOW
UPFLOW
▸DOWNFLOW
FILTER

Example:
Upflow
Downflow
Filter

REGEN. TYPE
SOFTENER METER DEL
▸SOFTENER METER IMM
TIME CLOCK

Example:
Softener Meter Delayed
Softener Meter Immediate
Time Clock
Day of the Week.

UNITS
METRIC
▸US

Example:
Metric
US

CAPACITY - GRAINS
0023828

Example:
Range: 0-9,999,999 grains

Example:
Range: 0-199 GPG

RESERVE
FIXED VOLUME
▸WEEKLY RESERVE
VARIABLE RESERVE

Example:
Fixed Volume
Weekly Reserve
Variable Reserve
Fixed %

REMOTE REGENERATION
DELAYED
▸OFF
IMMEDIATE

Example:
Off, Immediate, Delayed

REMOTE SIGNAL DURATION
1 S

Example:
Range:
1-90 seconds (Service)
60-300 seconds (Standby)

DAY OVERRIDE/TIME-DRIVEN
10 D

Example:
Range: Off - 99 Days

REGEN. TIME
02:00HR

Example:
Range: 0 - 23 Hours 59 Minutes.

MASTER PROGRAMMING MODE
FLOW CHART

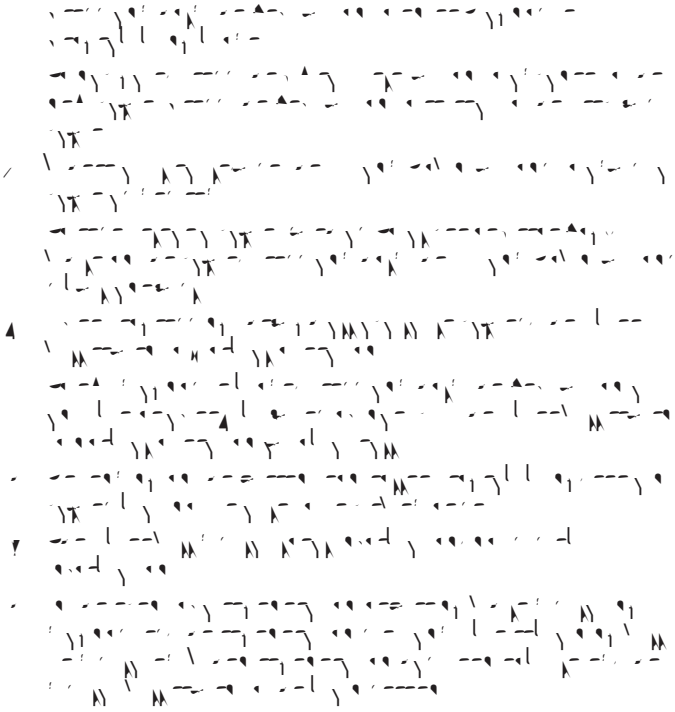
Example:
Start Lock Window
End Lock Window

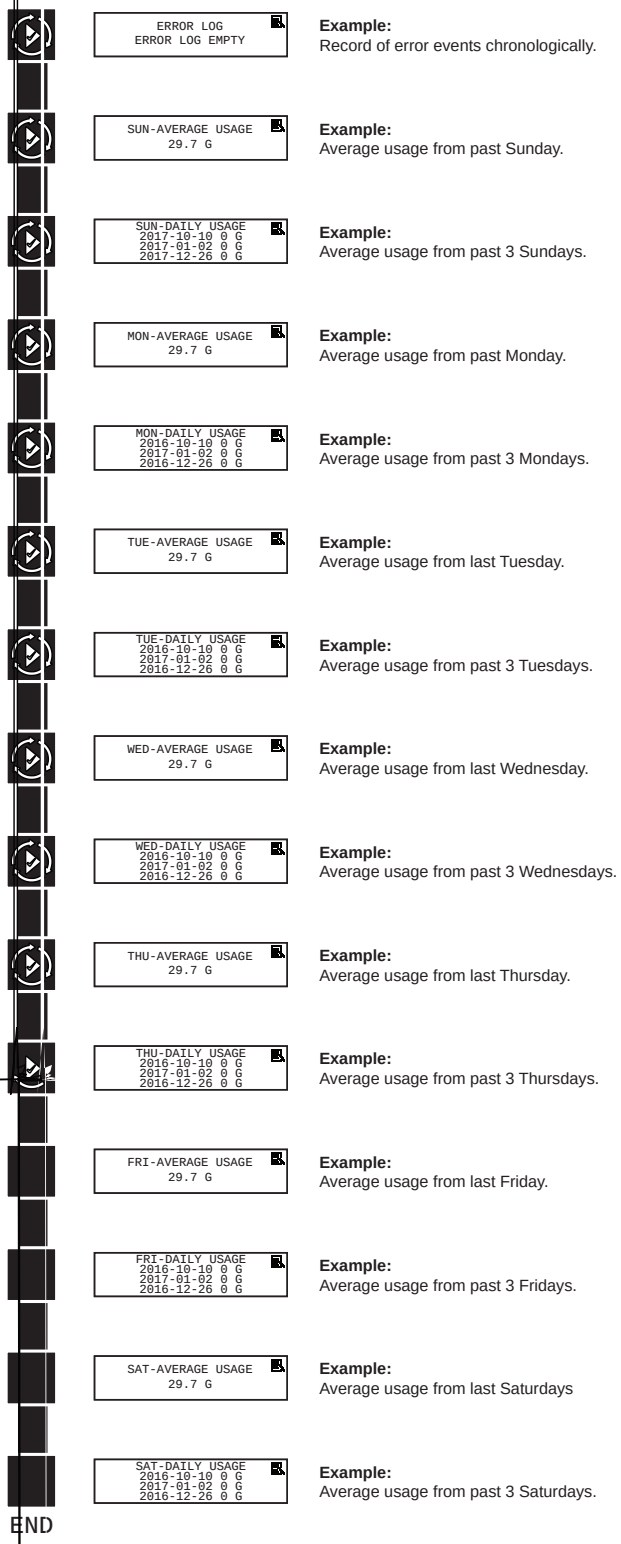
Example:
Range: 0 - 240 M

Example:
Range: 0 - 240 M

DIAGNOSTIC PROGRAMMING MODE FLOW CHART

Diagnostic Programming Mode

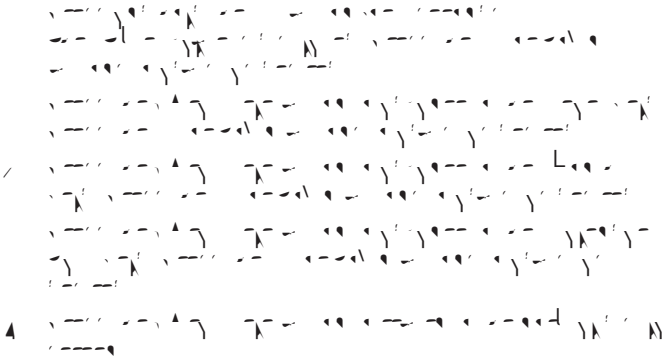




TIME OF DAY PROGRAMMING MODE FLOW CHART

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

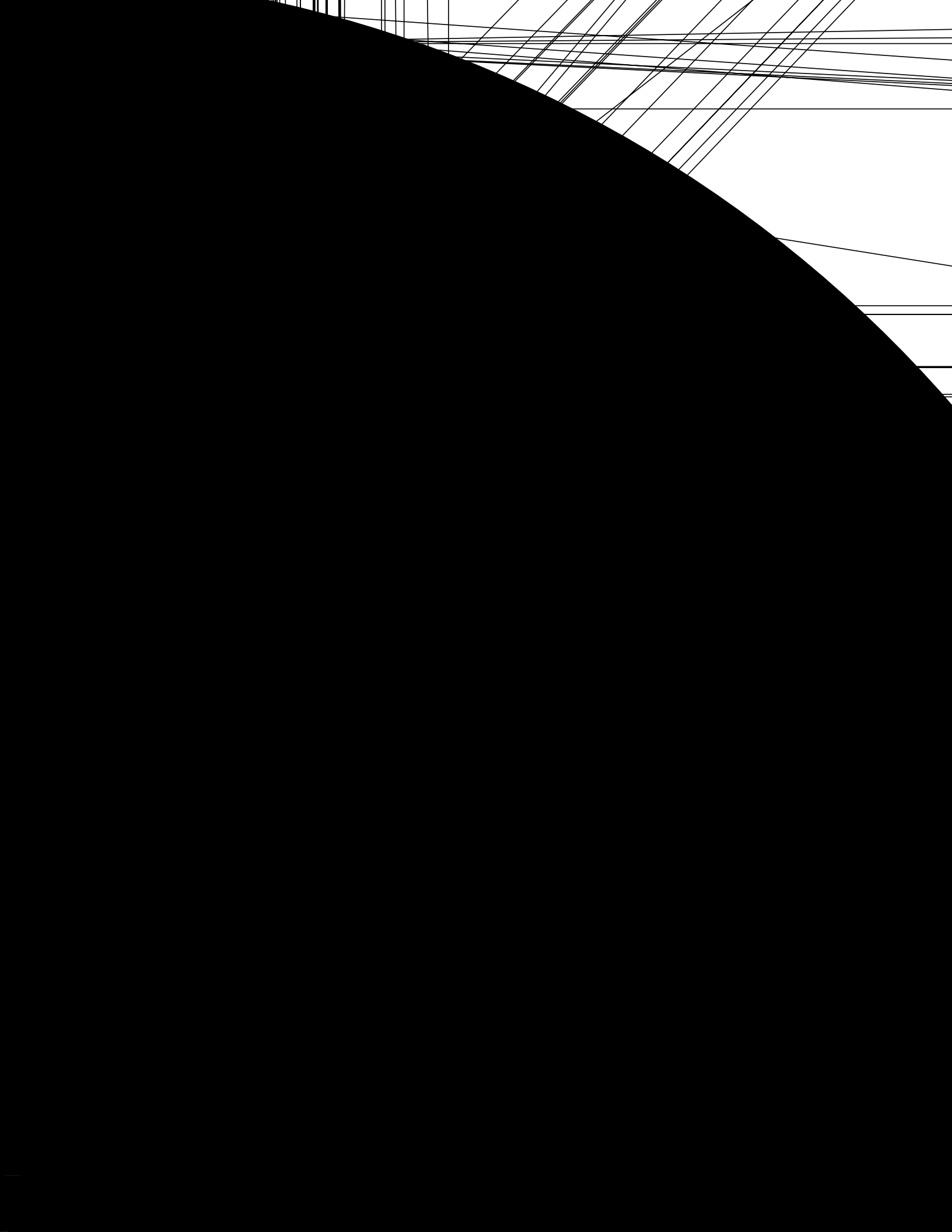
END

						Series	Alternating	Alternating	Alternating	Demand Recall			
											US	Metric	
Settings Review	x	x	x	x	x	x	x	x	x	x		On, Off	
Language	x	x	x	x	x	x	x	x	x	x		English Francais Deutsch Italiano Espanol Nederlands Portugues	
Assistance Name 1, 2	x	x	x	x	x	x	x	x	x	x		Custom	
Assistance Phone	x	x	x	x	x	x	x	x	x	x		Custom	
Regen Type	x	x	x	x	x	x	x	x	x	x		Time Clock Day of the Week Softener/Filter Metered Immediate Softener/Filter Metered Delayed	
Valve	x	x	x	x	x	x	x	x	x	x		2510 275	
Regen Flow	x	x	x	x	x	x	x	x	x	x		Upflow, Downflow, Filter	
Units	x	x	x	x	x	x	x	x	x	x		US, Metric	
Remote Regeneration	x	x	x	x	x	x	x	x	x	x		Off, Immediate, Delayed	
Auxilliary 1,2	x	x	x	x	x	x	x	x	x	x		Off, Alarm Based, Cycle Based, Time Based,	
Lock Window 1,2	x	x	x	x	x	x	x	x	x	x		On, Off	
Meter Type			x	x	x	x	x	x	x	x		Paddle (0.75", 1", 1.5", 2", 3") Turbine (0.75", 1.25", 1.5") Generic	
Continuous Flow Detect			x	x	x	x	x	x	x	x		On, Off	
Save as Non Factory	x	x	x	x	x	x	x	x	x	x		On, Off	
Lock Settings	x	x	x	x	x	x	x	x	x	x		Off, Delayed, Enter Code, Time Based	
Day Override/Time Driven	x		x	x	x	x	x	x	x	x		Off-99 Days	
Regen Time	x	x		x		x		x				Any	
Day of the Week		x				x						SU, MO, TU, WE, TH, FR, SA	
Capacity			x	x	x	x	x	x	x	x	0-9,999,999 Grains	0-9,999,999 Grams, 0-560,287 Lx°DH,	0-1,000,000 Lx°FTH, 0-701,557 Lx°EH
Hardness			x	x	x	x	x	x	x	x	0-199 GPG	0-19,999 mg/L, 0-1,402 °EH,	0-199.9 °FTH, 0-112 °DH
International Hardness Units			x	x	x	x	x	x	x	x		mg/L, °EH, °FTH, °DH	
Reserve				x		x						Weekly Reserve, Variable Reserve, Fixed %, Fixed Volume	
Number of Tanks (Max)	1	1	1	1	8	8	2	2	8	8		2, 3, 4, 5, 6, 7, 8	
Push Settings					x	x	x	x	x	x		On, Off	
Trip Point #1-7 GPM										x	0-1,999 GPM	0-7,569 LPM	
Trip Point #1-7 SD										x		1-90s	
Trip Point #1-7 STBD										x		60-300s	

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

Item No.	QTY	Part No.	Description

Service Assemblies

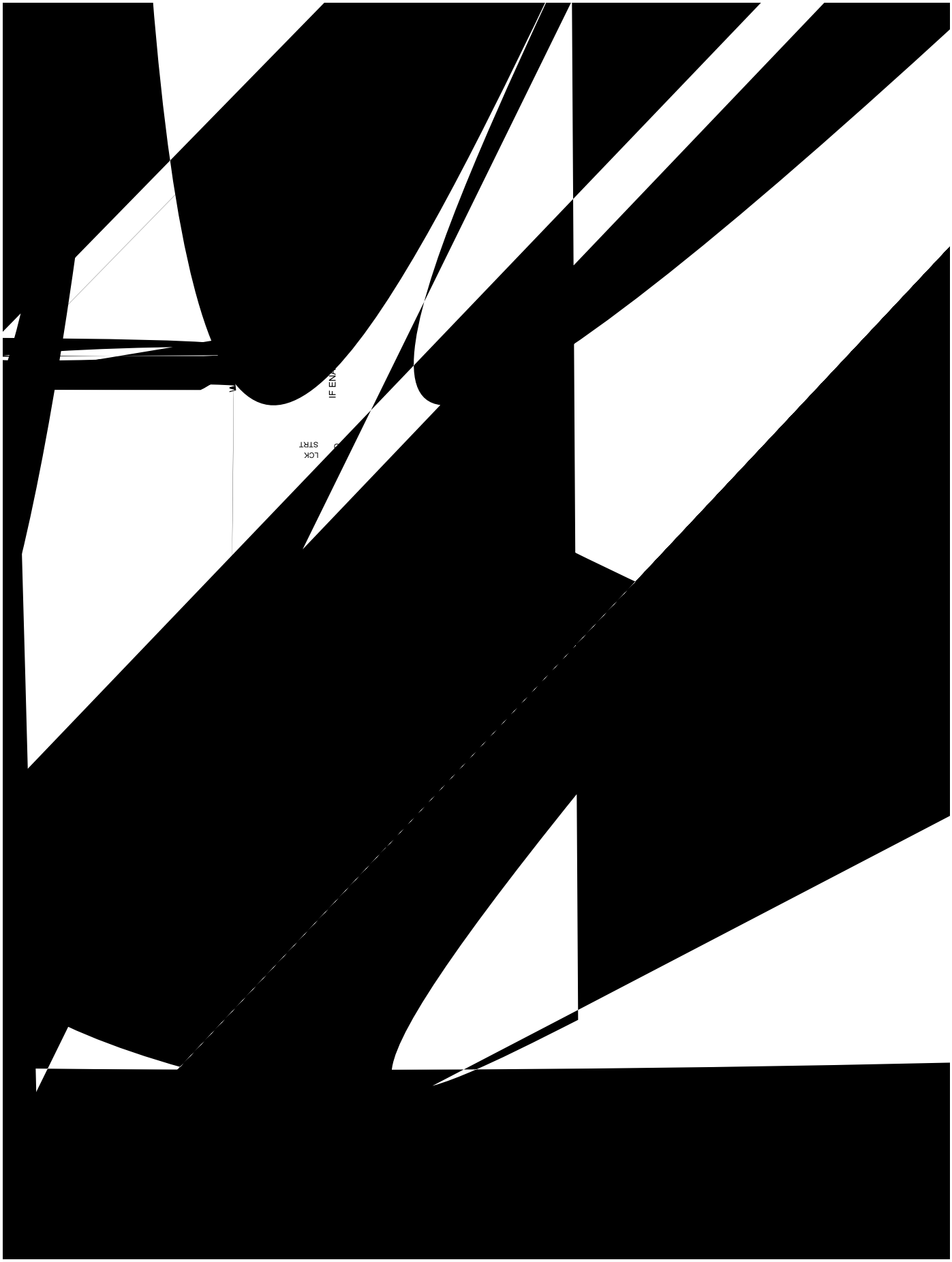


NXT TO NXT2 CONVERSION KITS

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



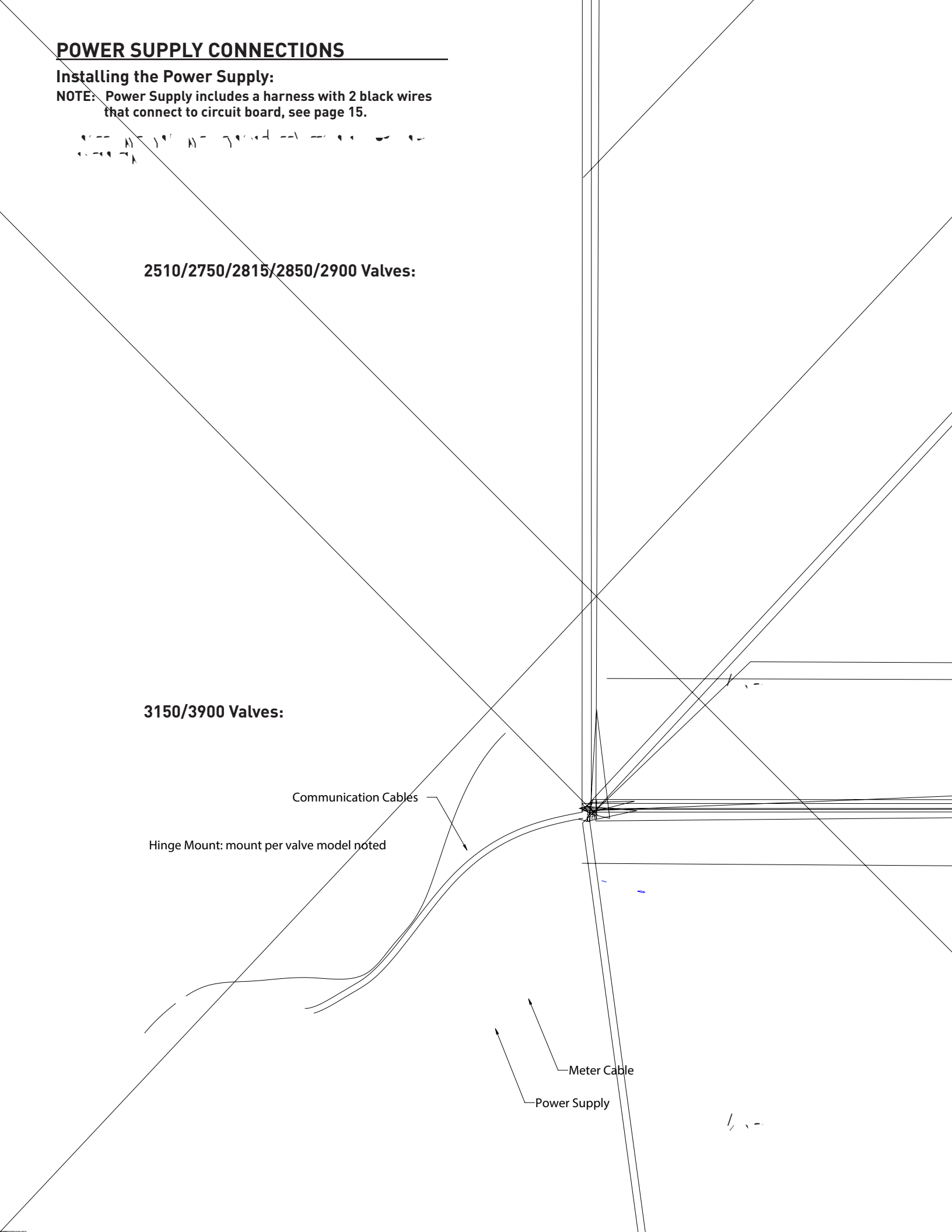
POWER SUPPLY CONNECTIONS

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:

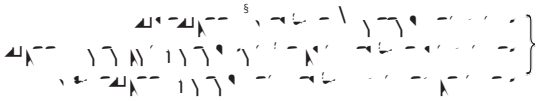


ERROR CODES AND TROUBLESHOOTING

Detected Errors

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



waterpurification.pentair.com

PENTAIR

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

44381 REV A JL18