

# MX504SZ Hot Sheet

## Maax Spas System PN 55257-01

System Model # VSP-MX504SZ-DCAH  
Software Version # 39  
EPN # 4161

Base PCBA - PN 55258-01

See back page for panel information



# Basic System Features and Functions

## Power Requirements

- 240VAC, 60Hz, 40A, Class A GFCI-protected service (Circuit Breaker rating = 50A max.)
- 4 wires (hot, hot, neutral, ground)

## Setup 1 (As Manufactured)

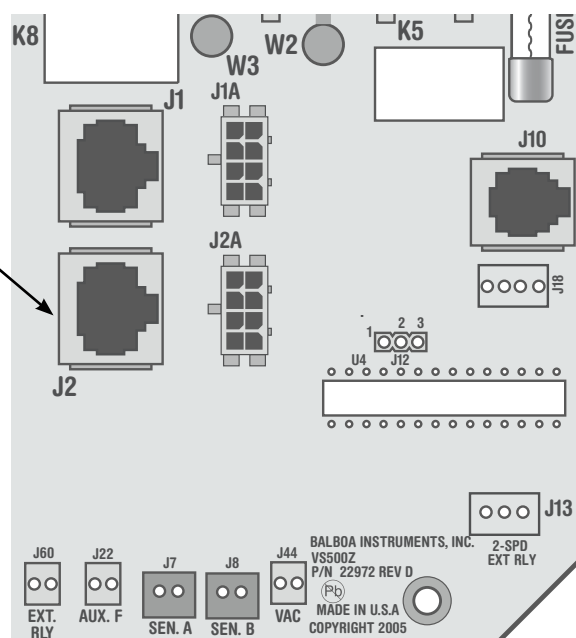
- 240V Pump 1, 2-Speed
- 240V Pump 2, 1-Speed
- 240V Ozone
- 12V Spa Light
- 120V AV (Stereo)
- 240V 5.5kW Heater

## Setup 2

- 240V Pump 1, 2-Speed
- 240V Pump 2, 1-Speed
- 240V Blower on X-P231 board
- 240V Ozone
- 12V Spa Light
- 120V AV (Stereo)
- 240V 5.5kW Heater

## Additional Options

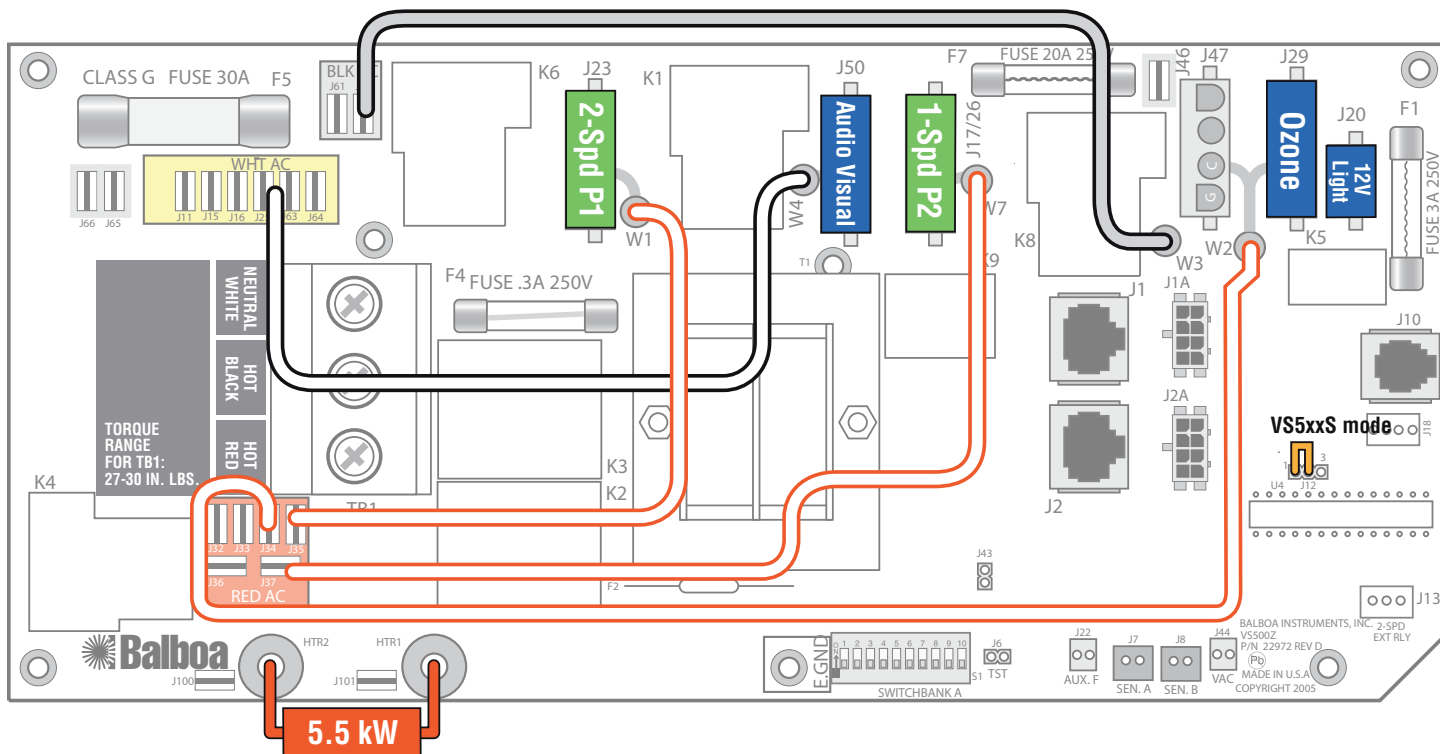
- Full Feature Dolphin Remote and Spa-only Dolphin Remote
- IR Receiver Module  
Connects to terminal J1 or J2
- Ozone Generator  
Connects to terminal J29
- MoodEFX Lighting  
Connects to Spa Light terminal J20
- FiberEFX Lighting  
Connects to Spa Light terminal J20
- Stereo System  
Connects to A.V. terminal J50



# Wiring Configuration and DIP Settings

## Setup 1 (As Manufactured)

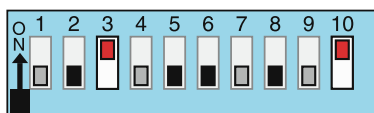
- 240V Pump 1, 2-Speed
- 240V Pump 2, 1-Speed
- 240V Ozone
- 12V Spa Light
- 120V Audio\Visual (Stereo)
- 240V 5.5kW Heater
- Serial Standard Main Panel



**WARNING:** Main Power to system should be turned OFF BEFORE adjusting DIP switches.

**SSID #**  
100  
93  
39

### Switchbank A



- |                        |                               |
|------------------------|-------------------------------|
| A1, Test Mode OFF      | A6, 60 Hz                     |
| A2, See Table 1        | A7, Off-board Blower Disabled |
| A3, J17/26 Enabled     | A8, Degrees F                 |
| A4, Aux Freeze         | A9, Circ Pump OFF             |
| A5, N/A when A9 is OFF | A10, See Table 1              |

### VS51x/VS5xxS/VS5xxD Compatible



### J43



### Wiring Color Key

- 120 Volt Connections
- 240 Volt Connections
- Black AC Jumpers
- 12 Volt Connections
- Relay Control Wires

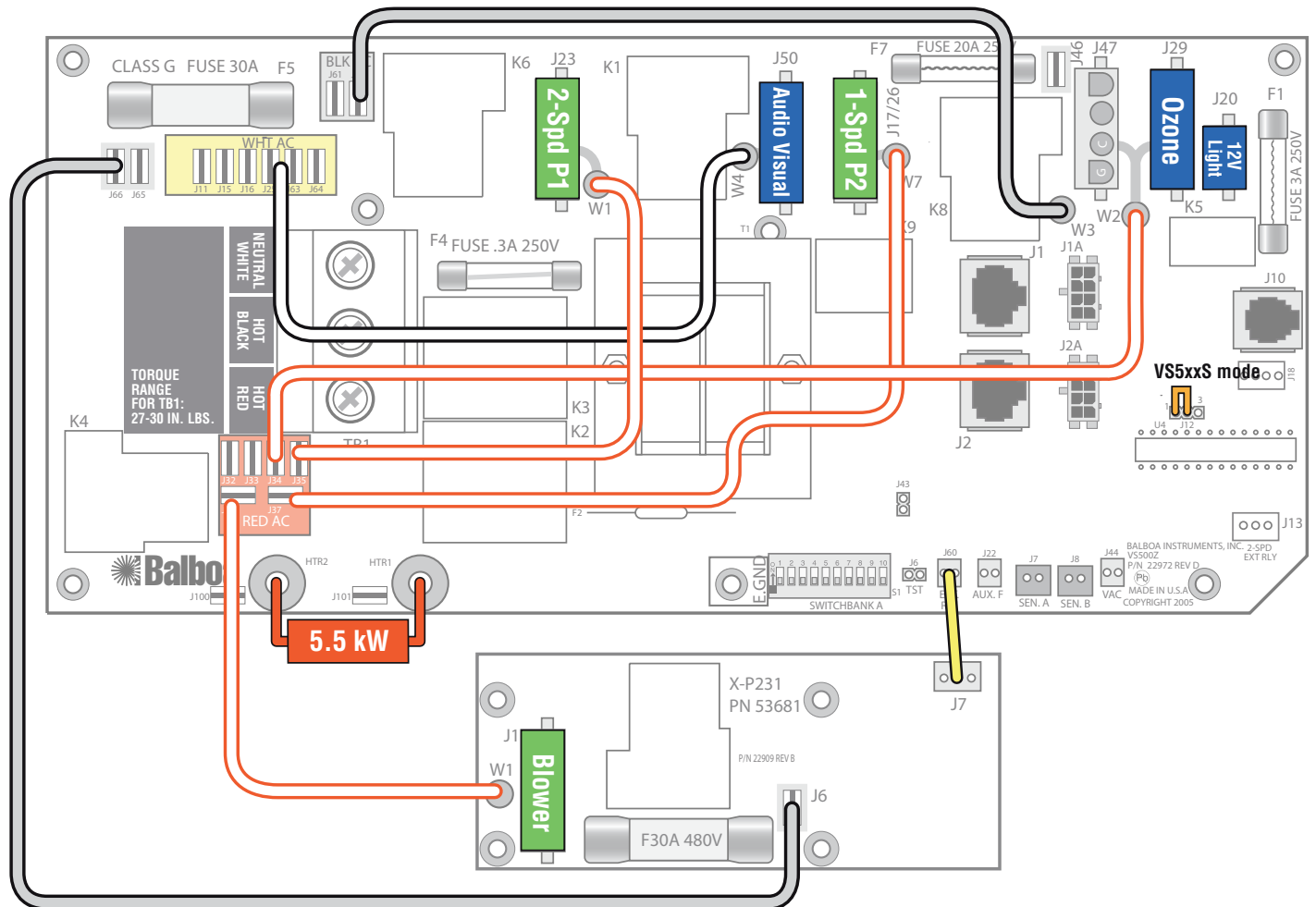
### Connector Key

- Typically Line voltage
- Typically Line voltage for 2-speed pumps
- Neutral (Common)
- Ground
- Note flat sides in connector

# Wiring Configuration and DIP Settings

## Setup 2

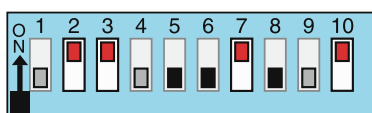
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# DIP Switches and Jumpers Definitions

**WARNING:**

- Setting DIP switches incorrectly may cause abnormal system behavior and/or damage to system components.
- Refer to Switchbank illustration on Wiring Configuration page for correct settings for this system.
- Contact Balboa if you require additional configuration pages added to this hot sheet.

## DIP Switch Key

|            |       |                                                                               |
|------------|-------|-------------------------------------------------------------------------------|
| A1         | ..... | Test Mode (normally Off)                                                      |
| A2 and A10 | ..... | Control amp draw requirements (See Table 1)                                   |
| A3         | ..... | In "ON" position, J17/26 equipment enabled                                    |
|            | ..... | In "OFF" position, J17/26 equipment disabled                                  |
| A4         | ..... | Aux Freeze (must be OFF)                                                      |
| A5         | ..... | A5 is disabled when A9 is OFF                                                 |
|            | ..... | In "ON" position, Two-speed pump 1                                            |
|            | ..... | In "OFF" position, One-speed pump 1 (A9 must be On and a circ pump installed) |
| A6         | ..... | In "ON" position, 50Hz operation                                              |
|            | ..... | In "OFF" position, 60Hz operation                                             |
| A7         | ..... | In "ON" position, off-board pump enabled                                      |
|            | ..... | In "OFF" position, off-board pump disabled                                    |
| A8         | ..... | In "ON" position, temperature is displayed in degrees Celsius                 |
|            | ..... | In "OFF" position, temperature is displayed in degrees Fahrenheit             |
| A9         | ..... | In "ON" Position, 24 Hour Circ Pump with 3°F shut off                         |
|            | ..... | In "OFF" position, no circ pump                                               |

**Table 1**

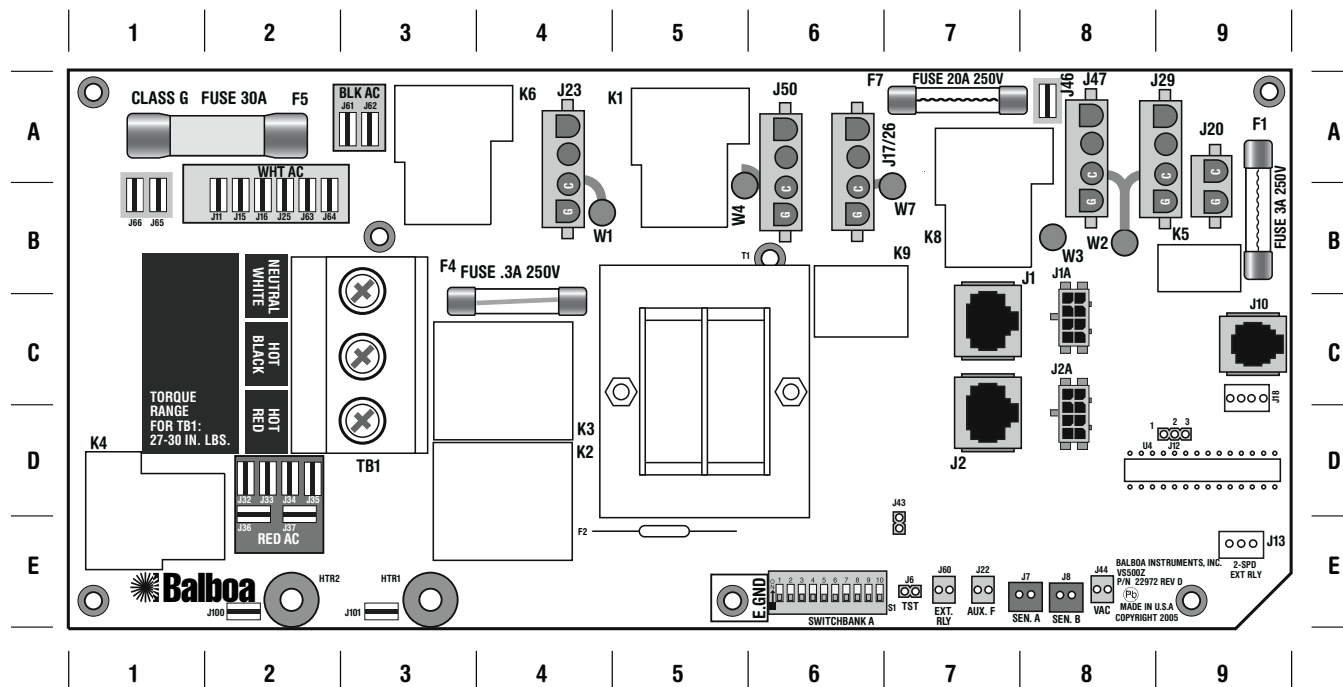
**# of Hi-Speed  
Pumps/Blower  
Before Heat Disabled**

| <b>A2</b> | <b>A10</b> |   |
|-----------|------------|---|
| OFF       | OFF        | 0 |
| ON        | OFF        | 1 |
| OFF       | ON         | 2 |
| ON        | ON         | 3 |

## Jumper Key

- J12** Jumper on Pin 1 and 2 will enable VS51x/VS5xxS/VS5xxD compatibility mode.  
Jumper on Pin 2 and 3 will enable VS50x compatibility mode (Do not use with Serial or Deluxe Panels).
- J43** When jumper is placed on 2 pins during power-up, system will reset persistent memory.  
Leave on 1 pin only to enable persistent memory feature.

# Configuration Options



## Output Features

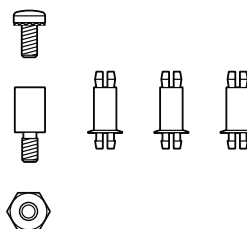
## Quadrant

|        |   |    |                                                |     |
|--------|---|----|------------------------------------------------|-----|
| J23    | + | W1 | - 2-Speed Pump 1                               | 4-A |
|        |   |    | - OR 1-Speed Pump 1 with DIP Switch A5         |     |
| J50    | + | W4 | - Audio Visual - always hot, no relay          | 6-A |
| J17/26 | + | W7 | - 1-Speed Blower (W3 to J46)                   | 6-B |
|        |   |    | - OR Single-Speed Pump 2 or Pump 3 (W3 to J62) |     |
| J47    | + | W2 | - Circ Pump                                    | 8-A |
| J29    | + | W2 | - Ozone (Same voltage as Circ Pump, if used)   | 9-A |
|        |   |    | - Note X-03 option board for retro fit         |     |
| J20    |   |    | - Spa Light (12V only)                         | 9-A |

System can be factory configured for either a Duplex Topside Panel, a Serial Standard Panel, or a Digital Deluxe Panel.

Note: Some panels styles are not available depending on system configuration. Consult your Balboa product representative for details.

120V Conversion Option - Add jumper from Red AC (J32) to White AC (J11) and set DIP switch A10 to ON.

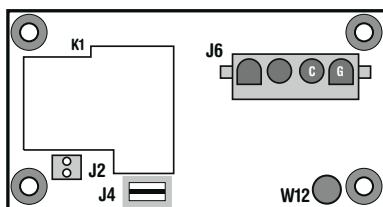


## X-Mount P

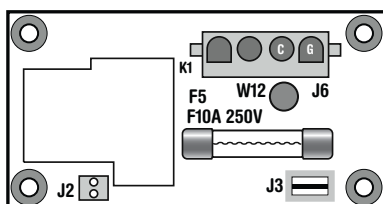
PN 53933

Used for mounting any Expander Board in a plastic enclosure. Standoffs attach to heater mounting bracket.

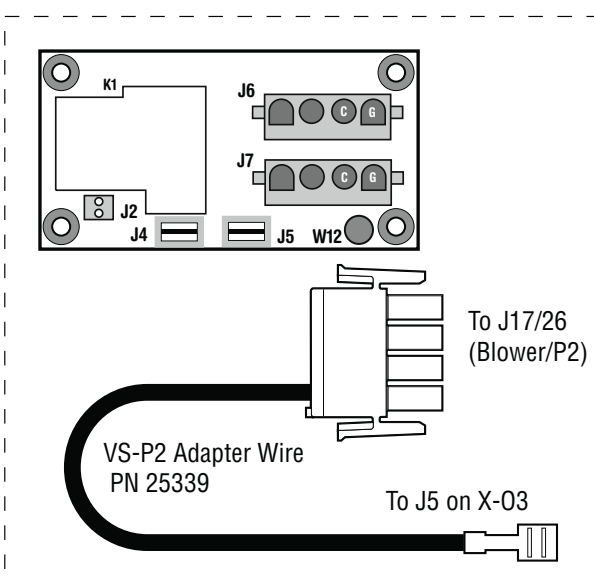
# Expander Options



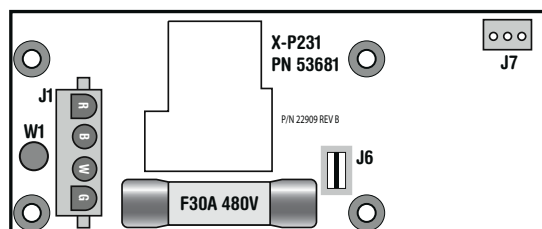
**X-P** **PN 53544**  
Used for a 1-speed Pump output.



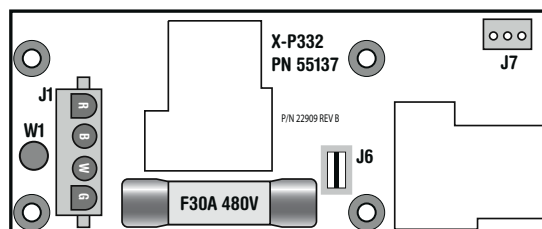
**X-B** **PN 53310**  
Used for a Blower output ONLY.



**X-2SP Kit** **PN 53913**  
Adapter PN 25339 is used in conjunction with an X-03 to run a 2-speed pump 2. No Blower is available when this kit is used.  
• J4 connects to Black AC (3-A) using J61 or J62 on main board.  
• Connect 2-speed pump to J7 on X-03.



**X-P231** **PN 53681**  
Can replace the X-P in cases where branch circuit protection is needed for high amperage devices that would over-burden power input fuse F5 (1-A) on the main PCBA.  
• J6 on the X-P231 connects directly to Black AC by using J66 or J65 on the main board (1-B).  
• Connect J7 wire on the X-P231 to **J60** on the main board (7-E).  
• Connect W1 on the X-P231 to Red AC on the main board (2-D).



**X-P332** **PN 55137**  
Used for an additional 2-speed Pump output.  
• J6 on the X-P332 connects directly to Black AC by using J66 or J65 on the main board (1-B).  
• Connect J7 wire on the X-P332 to **J13** on the main board (9-E).  
• Connect W1 on the X-P332 to Red AC on the main board (2-D).

## NOTE Regarding J12 (Quadrant 9-D):

When J12 on the Main Board is jumpered on pins 2 & 3, the system is in VS50xZ compatibility mode.

If J12 on the Main Board is jumpered on pins 1 & 2, the system is in VS51xZ/VS5xxSZ/VS5xxDZ compatibility mode.

# Ozone Connections

**Ozone Connector Voltage:** The VS500Z circuit board is factory configured to deliver a preset voltage (120V or 240V) to the on-board ozone connector (J29). See the ratings table on the wiring diagram attached to the cover of the enclosure for the configured voltage. For 240V output W2 connects to Red AC and for 120V output W2 connects to White AC.

The voltage to the ozone connector can be changed in the field if required. W2 just needs to be set for the required voltage.

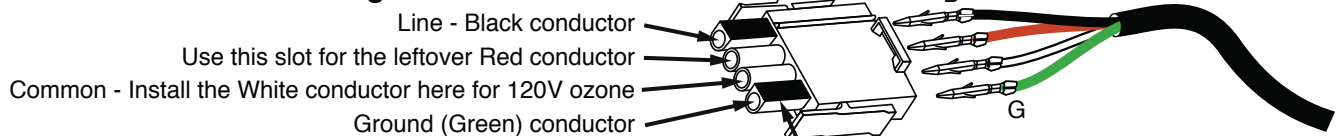
**WARNING: Changing the voltage of the ozone connector also effects the voltage supplied to the circ pump connector (J47). Any equipment controlled by that connector may be damaged if the wrong voltage is selected.**

**Balboa Ozone Generator:** If the board is set up to operate a 120V ozone generator, the connector on the ozone generator is likely to be configured correctly, but should be compared to the illustration below.

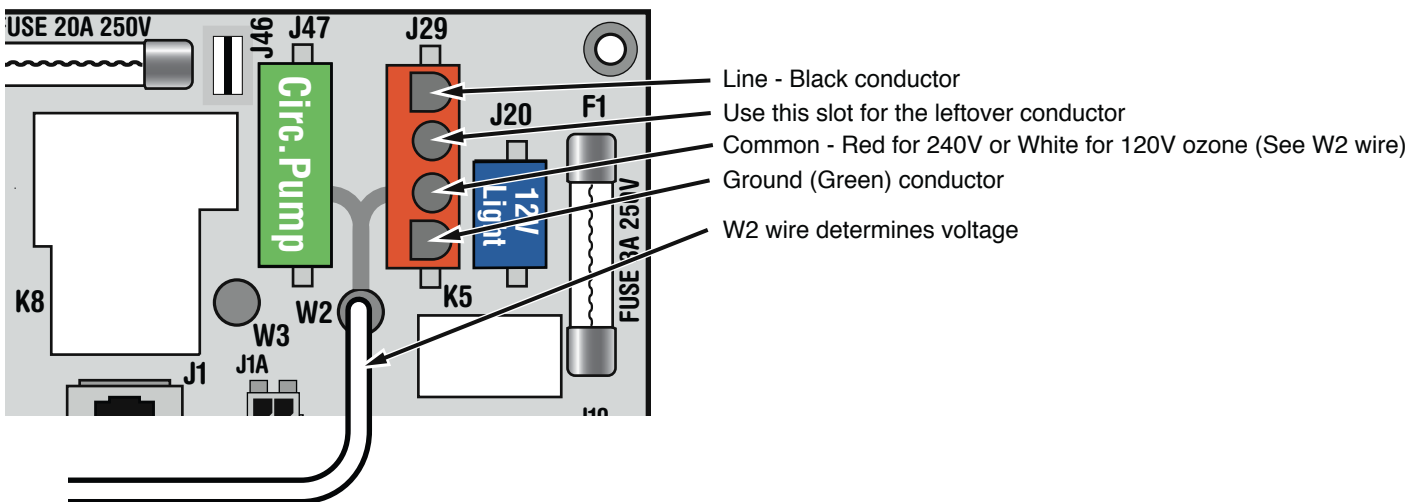
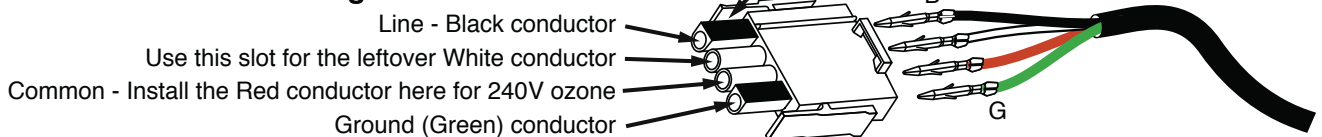
If a 240V ozone generator is required, be sure the red wire in the ozone cord is positioned in the connector next to the green ground wire as described below.

*Note: A special tool is required to remove the pins from the connector body once they are snapped in place. Check with your Balboa Account Manager for information on purchasing a pin-removal tool.*

## Balboa Ozone connector configuration for 120V 60Hz



## Balboa Ozone connector configuration for 240V 60Hz



# Serial Panel Configurations

## SETUP 1



VL702S

PN 54539-01 without Overlay

example overlay 12527 (Customer supplied)

- Connects to Main Panel terminal J1

## SETUP 2



VL702S

PN 54539-01 without Overlay

example overlay 12528 (Customer supplied)

- Connects to Main Panel terminal J1