System PN 53889
Balboa Instruments

System Model # VSP-VS511S-DCAH

Base PCBA PN
VS511S – 53890
Circuit Board Configuration

Wiring Color Key
- 120 Volt Connections
- 240 Volt Connections
- Black AC Jumpers
- 12 Volt Connections
- Relay Control Wires
**System Type**

- J23 + W1 – 2-Speed Pump 1
- OR 1-Speed Pump 1 with DIP Switch A5
- J47 + W2 – Circ Pump (Hot 120V or 240V)
- OR Audio Visual power output
- J17/26 + W7 – 1-Speed Blower
- OR Single-Speed Pump 2 (With jumper from Black AC to J46)
- J29 + W1 – Ozone (Must be same voltage as Pump 1, EVEN IF a circ pump is used for filtration)
- Note X-03 option at right
- J20 – Spa Light (12V only)

System can be configured for any Duplex Topside Panel or a Serial Standard Panel.

**Legend Code Format:**

- VS501 S X03 P
  - System Type
  - Expander Board Identifier
  - Metal (M) or Plastic (P) Enclosure
  - Standard (S) or Duplex (D) Panel Designator

**X-Mount P**
PN 53933
Used for mounting any Expander Board in a plastic enclosure.
Standoffs attach to heater mounting bracket.
X-2SP Kit
Adapter PN 25339 is used in conjunction with an X-03 to run a 2-speed pump 2.
J4 connects to Black AC as usual.
Jumper from Black AC to J46 must be in place on Main PCBA to jump out the Blower fuse.
Connect 2-speed pump to J7 on X-03.
No Blower is available when this kit is used.
Represents a VS511.
DIP Switches and Jumpers

**Switchbank A**

<table>
<thead>
<tr>
<th>Switch</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>Test Mode OFF</td>
</tr>
<tr>
<td>A2</td>
<td>Panel option N/A</td>
</tr>
<tr>
<td>A3</td>
<td>Pump 2 ON</td>
</tr>
<tr>
<td>A4</td>
<td>Aux Freeze</td>
</tr>
<tr>
<td>A5</td>
<td>1-speed P1 w/Circ</td>
</tr>
<tr>
<td>A6</td>
<td>60 Hz</td>
</tr>
<tr>
<td>A7</td>
<td>N/A</td>
</tr>
<tr>
<td>A8</td>
<td>Degrees F</td>
</tr>
<tr>
<td>A9</td>
<td>Circ Pump OFF</td>
</tr>
<tr>
<td>A10</td>
<td>50 Amp</td>
</tr>
</tbody>
</table>

**Jumper Key**

J45: Jumper on Pin 1 and 2 will power J29 (Ozone) with Pump 1 Low. Jumper on Pin 2 and 3 will power J29 (Ozone) 24 hours (for Circ mode).
The Ozone Generator and Pump 1 must be the same voltage. J45 should be set on pins 1 and 2 to operate the Ozone Generator with Pump 1 Low.

If you are configuring the Ozone to run 24 hours with a circ pump by setting J45 to pins 2 and 3, connect W13 directly to White AC or Red AC without the other wires. The pin next to ground determines voltage on these connectors. Ground is typically the bottom pin of the white connector (if the flat sides of the top and bottom holes are to the left and the heater connections are on the bottom edge of the board).

The pin next to the bottom (ground) pin of J29 is fed by W13 and sets the voltage in the connector.

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.
Panel Configurations

Electronic Spa Controls

Mode

Jets 1
Jets 2
Light
Standard Digital System

Warm
Heat

Cool

Balboa

102°F