

# CS5100 Hot Sheet

## Cal Spas System PN 54756

System Model # VSP-CS5100-YCAH

Software Version # 35

EPN # 2525

Base PCBA - PN 55841

PCB VS500Z - PN 22972 Rev C or D

Base Panels

VL260 – PN 54754



# Basic System Features and Functions

## Power Requirements

- 240VAC, 60Hz, 48A, Class A GFCI-protected service (Circuit Breaker rating = 60A max.)
- 4 wires (hot, hot, neutral, ground)

## System Outputs

### Setup 1 (As Manufactured)

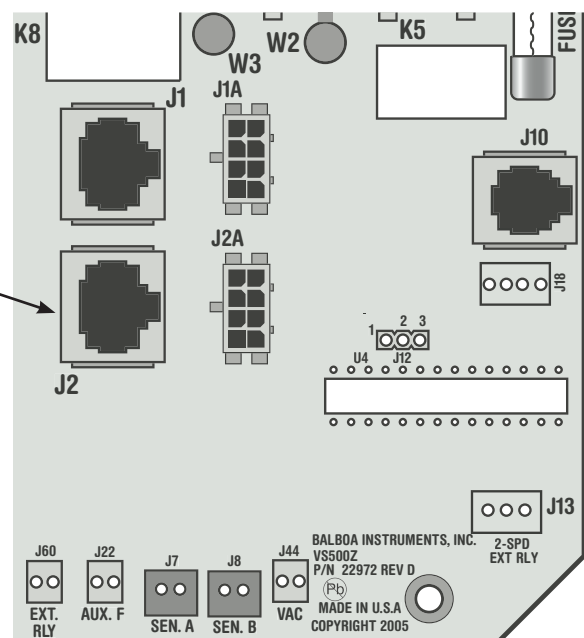
- 240V Pump 1, 2-Speed
- 240V Pump 2, 1-Speed
- 120V Ozone\*
- 12V Spa Light
- 240V 5.5kW Heater\*\*

\* Ozone and Circ Pump must be same voltage.

\*\* Heater wattage is rated at 240V. When running 120V to heater, output is approximately 25%.

## Additional Options

- Full Feature Dolphin Remote and Spa-only Dolphin Remote
- IR Receiver Module  
Connect to terminal J1 or J2
- Mood EFX Lighting  
Connect to Spa Light terminal J20
- Fiber EFX Lighting  
Connect to Spa Light terminal J20



# Basic System Features and Functions

Any time you change a DIP Switch, other than A1, you must reset Persistent Memory for your new DIP Switch Settings changes to take effect. If you do not reset Persistent Memory, your system may function improperly.

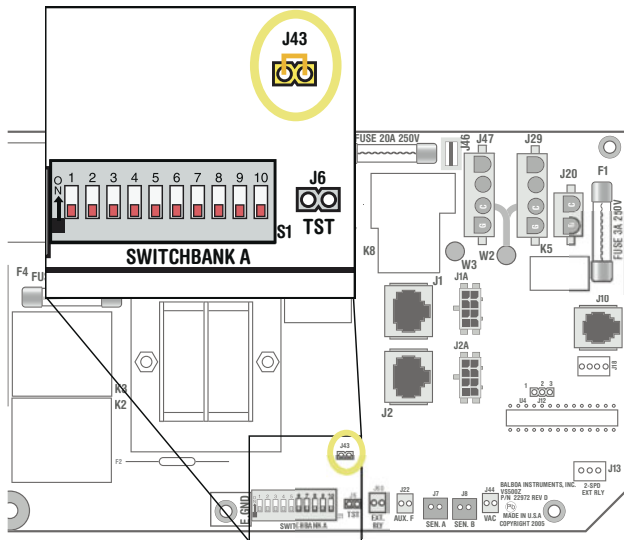
## To reset Persistent Memory:

- Power down by disconnecting power source from spa.
- Put a jumper across J43, covering both pins. (See illustration below)
- Power up by connecting power source to spa.
- Wait until “P-” is displayed on your panel.
- Power down again.
- Remove jumper from J43 (May also move to cover 1 pin only)
- Power up again.

## About Persistent Memory and Time of Day Retention:

This system uses memory that doesn't require a battery to store a variety of settings. What we refer to as Persistent Memory stores the filter settings, the set temperature, and the heat mode.

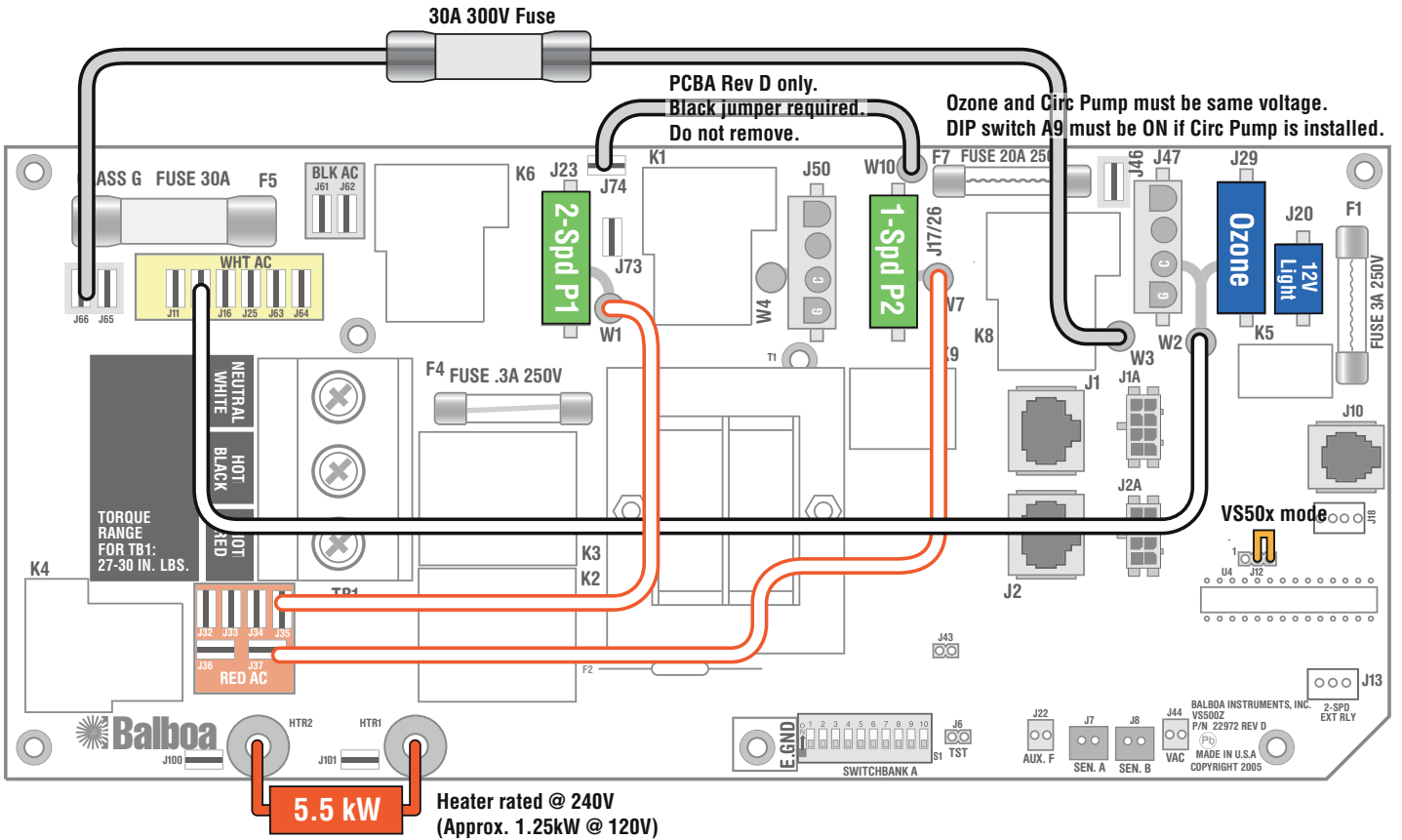
Persistent Memory is not used for Time of Day. Only models with a Serial Deluxe panel installed (VS5xxDZ and GS5xxDZ) can display the time. However, during power loss to the spa, the system will lose the correct time, and reset to 12:00 PM when power is restored.



# Wiring Configuration and DIP Settings

## Setup 1 (As Manufactured)

- 240VPump1,2-Speed
- 240VPump2,1-Speed
- 12VSpaLight
- 12VOzone
- 240V5.5kWHeater
- VL260MainPanel



**WARNING:** Main Power to system should be turned OFF BEFORE adjusting DIP switches.  
**WARNING:** Persistent Memory (J43) must be RESET to allow new DIP switch settings to take effect. (See Persistent Memory page)

**SSID #**

20  
63  
35

**Switchbank A**

A1, Test Mode OFF      A6, Safety Suction  
 A2, Mode changes allowed      A7, J17/26, P1, TE, LT  
 A3, Mini Panel      A8, Degrees F  
 A4, Aux Freeze      A9, Circ Pump OFF  
 A5, 60Hz      A10, High Amp mode

**VS50x Compatible**

J12

**J43 Memory Reset**

**Wiring Color Key**

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

**Board Connector Key**

- 1 Typically Line voltage
- 2 Typically Line voltage for 2-speed pumps
- 3 Neutral (Common)
- 4 Ground

Note flat sides in connector

**Panel Button Assignments**

1=J17/26      3=Temp  
 2=Pump 1      4=Light



**Panel Button Positions**


# DIP Switches and Jumpers Definitions

## SSID 20 63 35

## Base Model VS501Z

### DIP Switch Key

- A1 Test Mode (normally OFF)
- A2 "ON" position: Standard mode only  
"OFF" position: Std/Ecn/Sleep mode changes allowed
- A3 "ON" position: use Mini Panel \*   
"OFF" position: use Digital Duplex or Light Duplex panel 
- A4 Aux Freeze (must be OFF)
- A5 "ON" position: 50Hz operation  
"OFF" position: 60Hz operation
- A6 Safety Suction (normally OFF)
- A7 "ON" position: Button layout will be: Pump 1, Light, Temp Down, Temp Up with J17/26 on 1-button Aux panel \*\*  
"OFF" position: Button layout will be: J17/26, Pump 1, Temp, Light
- A8 "ON" position: temperature is displayed in degrees Celsius  
"OFF" position: temperature is displayed in degrees Fahrenheit
- A9 "ON" position: 24 Hour Circ Pump with 3°F shut off, Ozone runs with Circ Pump  
"OFF" position: no Circ Pump, Ozone runs with Pump 1-low during filter cycles only
- A10 "ON" position: heater is disabled while any high-speed pump or blower is running (low amperage mode)  
"OFF" position: heater can run while any/all high-speed pumps or blowers are running (high amperage mode)

\* Panels with button layout  are not compatible when either A3 or A7 is ON.

\*\* J2 panel connector on Main Board must be a 6-pin connector.

Note: J17/26 is required. For no J17/26, use VS500Z.

### Jumper Key

#### J12 **Factory set. DO NOT MOVE.**

Jumper must be on Pins 1 and 2 for VS51xZ/VS5xxSZ/VS5xxDZ software.

Jumper must be on Pins 2 and 3 for VS50xZ software.

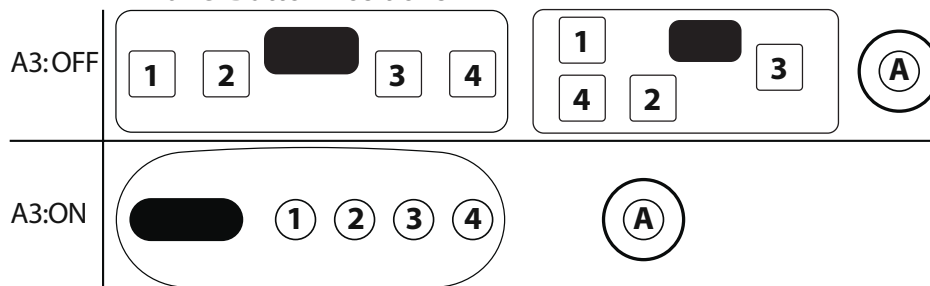
#### J43 When jumper is placed on 2 pins during power-up, system will reset persistent memory.

Leave on 1 pin only to enable persistent memory feature.

#### 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.

### Panel Button Positions



### Panel Button Assignments

A7:OFF	1=J17/26 2=Pump 1	3=Temp 4=Light
A7:ON	1=Pump 1 2=Light	3=Temp Down 4=Temp Up

Aux=J17/26

# 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.**

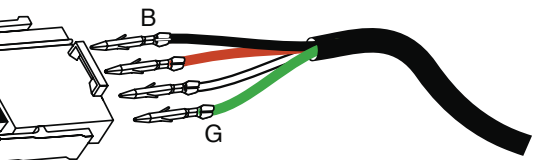
**Balboa Ozone Generator:** If the board is set up to operate a 120V ozone generator, the connector on the ozone generator is likely to be configured correctly, but should be compared to the illustration below.

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

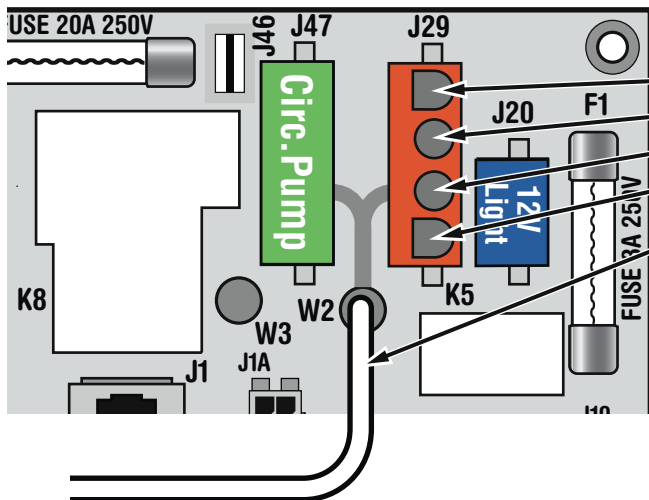
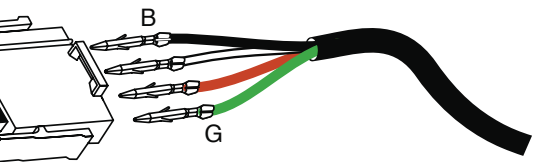
- Line - Black conductor
- Use this slot for the leftover Red conductor
- Common - Install the White conductor here for 120V ozone
- Ground (Green) conductor



Flat sides of sockets as shown

## Balboa Ozone connector configuration for 240V 60Hz

- Line - Black conductor
- Use this slot for the leftover White conductor
- Common - Install the Red conductor here for 240V ozone
- Ground (Green) conductor



- Line - Black conductor
- Use this slot for the leftover conductor
- Common - Red for 240V or White for 120V ozone (See W2 wire)
- Ground (Green) conductor
- W2 wire determines voltage

# Duplex Panel Configurations

## SETUP 1



VL260

PN 54754 with Overlay PN 11930

- Connects to Main Panel terminal J1