STANDARD & PLATINUM MODELS

OWNER'S REFERENCE GUIDE

Tuff Spas
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IMPORTANT! READ FIRST!

Thank you for your purchase of a Tuff Spa. When starting up any new spa there can be initial issues/questions that may arise. Please read below for possible fixes/answers that may help you to understand what is happening and if you need to call for support or if the issue can be resolved without the help of a technician.

Air Locks

If your spa is freshly filled but the pump isn't pushing water through then you probably have an air lock. Air locks are the most common occurrence when filling up a spa for the first time or refilling it for regular maintenance. This is caused by the buildup of air in the plumbing lines which will not allow water or air to flow through the jets. If left un-attended, the pump and/or heater can overheat from lack of water flow. This type of damage is not covered under the warranty. You can decrease the chances of getting an air lock by removing the filter and putting the hose down the opening. If you still get an air lock the easiest way to remedy this situation is to repeatedly cycle between low- and high-speed on the topside controls. If this does not fix the issue you will have to open the access panel that houses the pump. Once the panel is removed, locate the pump and you will see two large, white nuts attached to the pump. Take a large pair of channel locks and loosen either nut with the pump in high-speed. Continue to loosen the nut until the jets begin to work. Doing this will cause water to come out the nut you are loosening which is normal. Once the jets are functioning properly, tighten the nut back up and put the panel back on. Air locks are not considered a defect and are a normal part of a fresh fill. Therefore, if a technician comes out to remove the air lock, this is not covered under the labor portion of the warranty and any fees associated will be the responsibility of the spa owner.

Spa Is Constantly Running

While it may seem that the spa is running all the time, it almost certainly is not. When the spa is initially turned on it will run non-stop until the water has reached the set temperature. After this, the spa will run 1 hour out of every 12 hours (2 hours per day). Additionally, the pump runs once every 30 minutes to verify that the spa is at the correct temperature. If during this check, the temperature has dropped and the spa must heat, the spa will stay on as long as it takes to reach the correct temperature. So while it may seem the spa is constantly running, this is simply part of the heating and filtration process. Please reference included Balboa Quick Reference Guide for more information on filtration cycle settings.

Spa Will Not Heat Up to Temperature

If your temperature is increasing but does not reach the temperature the spa has been set to please check the following: Make sure the cover is properly closed. Make sure there are no error codes on the topside control display on the top edge of your spa and that the temperature is correctly set. Check to make sure the heat indicator light is on when the spa is in low speed. Have the technician who installed the spa make sure all wires are properly connected. If all of these things check out then there is likely a programming issue with the circuit board. Call our technical support line and we can guide you to make sure that the circuit board is properly wired for your voltage. If a technician comes out and finds the issue is not related to the spa, any fees associated will be the responsibility of the spa owner.

Breaker Trips Off & Shuts Down Shortly After Power Up

Typically this means that either the spa was incorrectly wired during setup or when rewired for 240v by an electrician. Less likely, this indicates an issue with the GFCI cord. There could also point to insufficient power to the spa. Please call the company that installed the spa and have them come back out to check the electrical current at the spa. If a technician comes out and finds the issue is not related to the spa, any fees associated will be the responsibility of the spa owner.

When the Spa Starts There Is a "Clicking" Noise

This could indicate a faulty motor or incorrect wiring at setup. Please call the company that installed the spa and have them come back out to check the electrical current at the spa. If a technician comes out and finds the issue is not related to the spa, any fees associated will be the responsibility of the spa owner.

There Is Moisture Around the Bottom of My Spa

While leaks in new spas are not impossible, because every spa is water tested at the factory for leaks, they are extremely rare. Please keep in mind that moisture around the spa can be caused from opening and closing the cover which may have moisture on it, from splash out, or overflow from bathers. If several days go by and you feel the water level in the spa is dropping quickly or that there is a large amount of water pooling outside the tub proceed as follows: First, make sure the drain cap is on and the drain is shut off. Secondly, turn off the power and take off the two access panels located directly under the digital topside and check the unions located on the pump and equipment pack to make sure they are tight and not leaking. If this does not correct the issue please contact the company you purchased the spa from. If a technician comes out and finds the issue is not related to the spa, any fees associated will be the responsibility of the spa owner.

Error Codes

If you receive any error codes on the topside controls please reference the Balboa Quick Reference Guide that came with your spa. This will explain the possible causes and solutions which will help to identify/resolve any issue before having to call for technical support. If still have questions or cannot resolve the issue, please contact your dealer or our technical support line.

Chemicals

Read and understand the spa chemistry guidelines supplied by your dealer or local chemical supplier. There are many solutions available to balance your water chemistry. If you are unfamiliar with water chemistry, your best option is to work with your dealer or your local chemical supplier. It is unhealthy to use your spa when the water is not in proper chemical balance.

Do not use Calcium Hypochlorites or Trichlors. Doing so may cause corrosion to metal components and possibly fade your spa surface. This will not be covered under the warranty.

General Startup

❖ Filling Your Spa

Confirm that the drain valve is closed. Unthread and remove the filter. Place garden hose in the void where the filter was, this will help to eliminate air locks. With the electrical breaker in the OFF position and/or the power cord un-plugged, fill to an approximate water level that will not allow water to over flow the spa when bathers are in the hot tub. Every bather's density is different and therefore water level may vary (remember to make sure that the filter is covered). Once the spa is filled, power can then be supplied to your spa.

NOTE: Please ensure that the water level does not cover or submerge any equipment for an extended period of time when people enter the spa due to water displacement. If this happens, please lower the water level to prevent this as it could cause damage to the spa components that would not be covered under warranty.

❖ Adjusting Massage Jets

To adjust for direction, rotate the "eyeball" of the jet in the desired direction. To adjust for flow, turn the outer jet face counter clockwise to increase flow and clockwise to decrease flow. At no time fully decrease flow to all the jets. This may cause your pump to malfunction and suffer catastrophic failure which will not be covered under the warranty.

❖ Air Adjustment

To introduce air into the jets, turn the air controls (located on the spa's top edge) counter clockwise. To decrease air flow, turn the air controls clockwise.

❖ Suction Fitting

Keep the suction fitting (located in the foot well area) of the spa unobstructed and free from debris at all times. Only remove the suction-fitting screen for cleaning. Never remove it while the spa is connected to electrical power.

Care and Maintenance Instructions

❖ Cleaning the Filter Cartridge

1. Disconnect power
2. Remove the filter cover
3. Unthread the Filter Cartridge counter clockwise
4. Rinse dirt and debris away thoroughly with a garden hose
5. Replace filter cartridge and cover
6. Reconnect power

❖ Replacement Filter Cartridge Part Numbers

-150, 350 Models – Unicel 4CH-20, Pleatco PSG25P4, or Filbur FC-0125
-250, 450, 650 Models – Unicel 5CH-402, Pleatco PJW40SC-F2M, or Filbur FC-2811
Please check with your dealer for any spa models not listed here.

❖ Water Chemistry

Read and understand the spa chemistry guidelines supplied by your dealer or local chemical supplier. There are many solutions available to balance your water chemistry. If you are unfamiliar with water chemistry, your best option is to work with your dealer or your local chemical supplier. It is unhealthy to use your spa when the water is not in proper chemical balance.

Warning:
Do not use Calcium Hypochlorites, Trichlors, or Bromine. Doing so may cause corrosion to your equipment and possibly fade your spa surface. This will not be covered under the warranty.

❖ Minimum Weekly Maintenance

1. Test water for chlorine and pH
2. Adjust chlorine to 1-3ppm
3. Adjust pH to 7.2-7.8

❖ Winterizing

If the Spa is to be transported or stored in temperatures 32º F (0º C) or lower, it is critical that the spa be fully winterized. For specific, regional winterization guides, please contact your local dealer. Below are general guidelines:

1. The spa must be completely free of water
2. The drain valve must remain in the open position
3. The drain valve cap must be removed and stored
4. The filter cartridge element must be removed, dried and stored
5. Remove the plug from the pump housing

❖ Hard Top Covers

1. Hot and cold weather natural causes the material to expand and contract which may allow for gaps and/or inconsistencies between the cover and spa. As long as the seal sits on the top edge of the spa any inconsistencies or small gaps around the edge of the cover will not affect the ability of the cover to retain heat and is purely aesthetic.
2. The high-grade resin from which the spas are constructed can be easily cleaned with a mild soap and water solution.
3. Any bolts/screws on the cover may need to be tightened on occasion, depending on use.

❖ Soft Top Covers

1. Soft top covers are composed of a vinyl skin and high-density foam insert. They have straps and two-part clips which are attached to the spa.
2. The vinyl surface can be cared for with any mild household cleanser or products made for the care and maintenance of vinyl products.

❖ Cleaning Your Tuff Spa

1. The filter should be cleaned every 3-6 months with your garden hose. You may also choose to use a filter cleaner. Follow the directions provided with the cleaner.
2. If the shell gets dirty, you can simply use pressurized water to clean the majority of the dirt. In some cases, you may need to use a mild soap and water solution. In this instance, you will need to thoroughly rinse the spa. If not, you will have an issue with bubbles.
3. Refill spa with fresh water to the recommended level. The water line should cover all the upper jets in the spa. If you encounter an air lock, refer to the "Relieving Air Locks" section above.

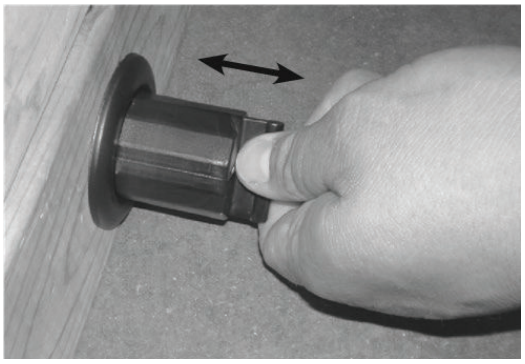
❖ Light Operating Instructions

The LED light on your Tuff Spa consists of several colors including Bright White, Aqua Blue, Soothing Violet, Ocean Blue, Majestic Gold, Shamrock Green, and Fiery Red. It also includes Chameleon Mode that rotates through the colors slowly and Party Mode which rotates through all available colors rapidly. To progress to the next lighting sequence, turn the unit off and then on again within 2-3 seconds. If the light is off for 7 or more seconds, it will remain the last color displayed.

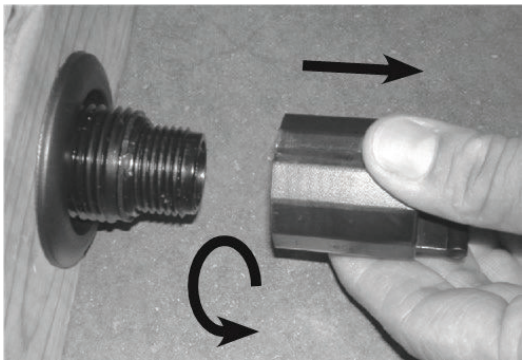
❖ Draining Your Spa

DISCONNECT THE POWER TO YOUR HOT TUB

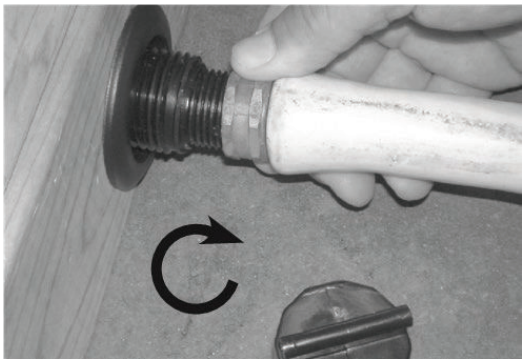
150, 250, 450, 650 Models:



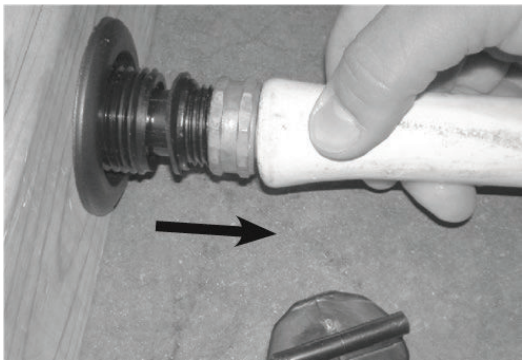
Pull knob out from the housing approximately 2" until it snaps into place.



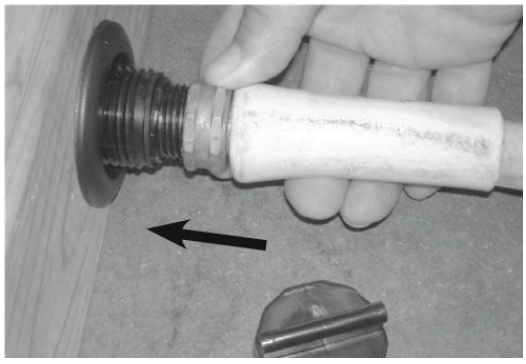
Remove cap by unthreading counter clockwise.



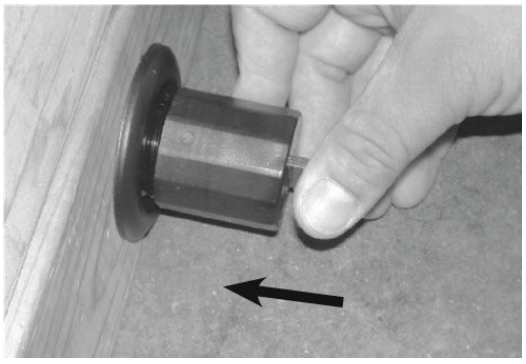
Thread hose onto the spa drain.



Pull the hose outward to allow water to flow. Push inward to shut water flow off.



To disconnect the hose, push the hose inward approximately ½" to shut the water flow off. Unthread the hose.



Thread the cap back on then push the internal back into the housing until it snaps into place

350, 550 Models:
Remove the panel below the topside controller and locate the drain hose (3/4" flex pipe with drain attachment). Remove the drain assembly cap and attach a garden hose. Twist the valve allowing water to flow out. This is a gravity drain and as such will be slow so you may not see water draining immediately. If you need to drain the spa more quickly, you may rent/buy a submersible pump.

DO NOT LEAVE SPA EMPTY FOR EXTENDED PERIODS OF TIME. LEAVING THE SPA EMPTY MAY RESULT IN THE JET HOUSING GASKETS DRYING OUT, CAUSING LEAKS AND/OR WARPING. THIS TYPE OF DAMAGE IS NOT COVERED UNDER THE WARRANTY.

Troubleshooting

❖ "LF" Error Code Fixes

1. The most common reason for this error code is a lack of water in the hot tub. The water line should be equal to the top of the highest jets (please refer to the "Filling Your Spa" section above). If it is not, add water to the spa to reach this level, then reset spa power. This will reset the memory and the error should be cleared.
2. The 2nd most common reason for this error is an air lock during a fresh fill of water into the spa. Air locks are common when filling up a spa for the first time. Please see "Relieving Air Locks" section for tips on relieving air locks. If after the air lock is remedied, you may still have a "LF" error on the topside. To reset the memory, simply reset spa power. This should clear the error code.
3. The 3rd most common reason for this error code is a dirty filter or a clog in the line. Power off the spa, remove the filter, and reset power. If the issue persists, please contact your dealer for additional assistance.

❖ "Why Is My Spa Constantly Running?"

All Tuff Spas are fitted with state-of-the-art technology that automatically filter your spa as well as check to ensure the spa is always at the desired temperature. Part of this process is that the spa pump runs twice a day for at least 1 hour each time to filter. While it does come from the factory set to run 1 hour every 12 hours, it is possible for this to be adjusted. Please reference included Balboa Quick Reference Guide for more information on filtration cycle settings. Additionally, the pump runs once every 30 minutes to verify that the spa is at the correct temperature. So, while it may seem the spa is constantly running, this is simply part of the heating and filtration process. If you still feel the spa is running constantly, please contact your dealer.

Optional Tuff Spa Safety Strap Installation

Locate all the parts necessary to complete the assembly (Fig. 1). Take the strap with clip and female piece and place them so that they are centered between the two halves of the cover (Fig. 2). Unclip the strap from the female piece but do not move the female piece (Fig. 3). Remove the small screws from the bag and use three of them to secure the female piece to spa (Fig. 4). Clip the strap back into the female piece and pull the strap so it is tight. Center the black strap mounting peice and screw on the back portion of the strap and screw it into place (Fig. 5).

Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 5

- **Many troubleshooting inquiries can be handled by your dealer by phone.**

- **Side panel removal allows easy access to all interior spa plumbing for easy inspection or repair, allowing for total jet accessibility in seconds rather than minutes.**

- **Most parts are readily available from the factory, if not already in stock at your local dealer.**

Quick Tip Guide

1. **For 120v (volt) hook up, use a dedicated circuit (15 Amp minimum, 20 Amp recommended) within the cord distance.**
2. **Spa cover must be closed for the spa to properly heat. Heating time depends on air temperature but generally the spa will average 24 to 48 hours to heat on 120v. The spa will automatically filter twice a day for 1 hour each time (to change this see page 3 of the ML260 User Guide attached). Jets must all be open when the spa is not used for proper heating and filtration. The pump will continue to run until reaching the set temperature. The spa cord has a GFCI protection device. If it repeatedly trips, disconnect the plug from the receptacle until the fault has been identified and corrected by a spa technician.**
3. **If an extension cord is used, it must be as short as possible and at least 10 gauge (for outdoor use). Inferior cords may cause spa controls to malfunction and void your equipment warranty.**
4. **The heating spa will cause condensation to form on the outside and bottom of the spa which may cause reason to believe the spa is leaking. For this reason, small "leaks" should be allowed a few days prior to further investigation.**
5. **The spa pump has an automatic high temperature shut off. If the motor stops, it will auto start after it cools.**
6. **All tubing, manifolds, valves, etc. can be easily accessed throughout the spa by removing the panels.**
7. **To convert the spa to 240v please contact your dealer or a licensed electrician. A 4-wire minimum 8 gauge cord on a dedicated 50-amp circuit is needed for 240v applications.**

Tuff Spa Startup

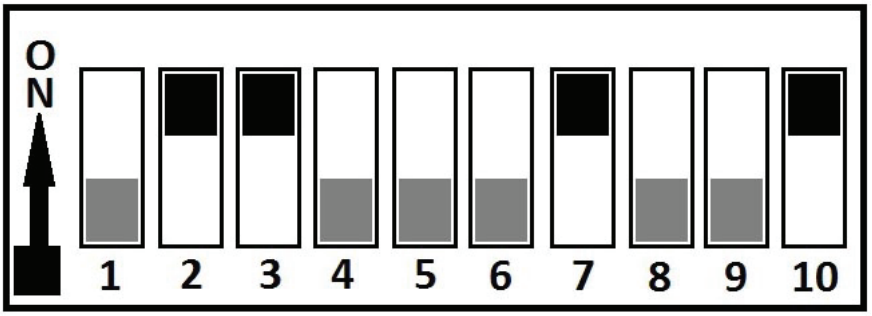
❖ Selecting Tuff Spa Site Location

It is important your new spa be installed on a solid, flat, and level surface that is engineered to carry a load of 75 pounds per square foot. Spas should not be placed near or below electrical or telephone cables. If there is not a dedicated 120v receptacle within 10' of your spa, contact a **Licensed Electrician** to supply power near the spa. A GFCI Power Cord is supplied with all 120v applications. For 240v you will need a licensed electrician to run the necessary wiring unless proper wiring is already at site location.

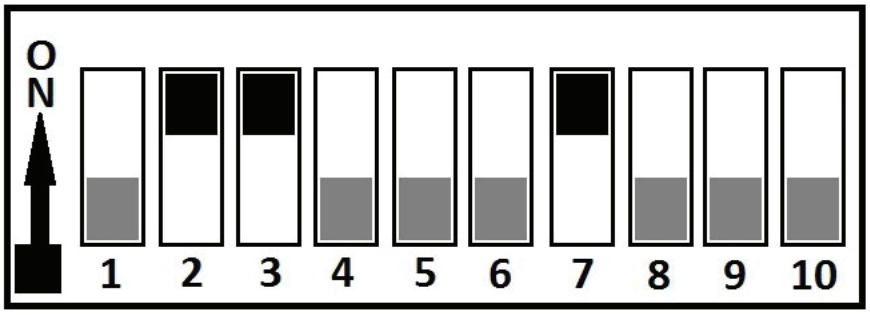
❖ 120v to 240v Conversion

1. Remove the necessary panel and locate the spa control pack
2. Remove the pack cover and locate the 120v electrical wiring. Remove the 3-wire, 120v cord and connect the 4-wire, 240v hookup (50-amp breaker required)
3. Locate the jumper wire that connects J11 to J32, remove it
4. Locate the DIP Switch bank and move #10 to the OFF position (down)
5. Turn power on

120v Tuff Spa DIP Switch Settings



240v Tuff Spa DIP Switch Settings



❖ Relieving Air Locks

Occasionally, on a fresh fill or refill, an air lock may occur. This is caused by the build up of air in the plumbing lines which will not allow water or air to flow through the jets. If left un-attended, the pump and/or heater can be damaged or overheat from lack of water flow. This type of damage is not covered under the warranty. The easiest way to remedy this situation is to repeatedly cycle between low- and high-speed on the topside controls. If this does not fix the issue you will have to open the access panel that houses the pump. Once the panel is removed, locate the pump and you will see two large, white nuts attached to the pump. One is horizontal to the pump and the other is vertical. Take a large pair of channel locks and loosen the horizontal nut with the pump in high-speed. Continue to loosen the nut until the jets begin to work. Doing this will cause water to come out the nut you are loosening which is normal. Once the jets are functioning properly, tighten the nut back up and put the panel back on.

Balboa 300F-Series Operation Guide

For Systems with Software v41 Only.

Initial Start-up

Your spa will enter Priming Mode (Pr) when it is energized. **During Priming Mode, press "Jets" button repeatedly and be sure the pump is free of air.** Priming Mode lasts less than 5 minutes. Press "Temp" to exit. After Priming Mode, the spa will run in Standard Mode (see Mode section). Some panels may not have a "Temp" button. On these panels the "Set," "Warm," or "Cool" buttons are used.

Pump 1 low-speed is responsible for heating and filtration and will be referred to simply as the pump.

In multi-button sequences, if the buttons are pressed too quickly in sequence, they may not register.

Button shapes and labels may vary.

Temp Control (80°F - 104°F / 26°C - 40°C)

The last measured water temperature is constantly displayed.

The water temperature displayed is current only when the pump has been running for at least 1 minute.

On panels with a single "Temp" or "Set" button, to display the set temperature, press the button once. To change the set temperature, press the button a second time before the display stops flashing. Each press of the button will continue to either raise or lower the set temperature. If the opposite direction is desired, allow the display to revert to the current water temperature. Press the button to display the set temperature, and again to make the temperature change in the desired direction.

On panels with "Warm" and "Cool" buttons, to display the set temperature, press "Warm" or "Cool" once. To change the set temperature, press a temperature button again before the display stops flashing. Each press of "Warm" or "Cool" will adjust the set temperature.

After three seconds, the display will stop flashing and begin to display the current spa temperature.

Jets

Press "Jets" to turn the pump on or off, and to shift between low and high speeds (if equipped). If left running, the pump will turn off after a preset length of time, which on some systems may be as long as 2 hours for low speed. Low speed may run automatically at times, during which it cannot be deactivated from the panel, but high speed may be operated. The ozone generator (if installed) will activate anytime low speed is running.

Light

Press "Light" to operate the spa light. Turns off after 4 hours.

Mode

Depending on system configuration, mode changing may not be available and will be locked in Standard Mode.

Mode is changed by pressing "Temp," then "Light".

Standard Mode maintains set temperature. St will be displayed momentarily when you switch into Standard Mode.

Economy Mode heats the spa to the set temperature only during filter cycles. Ec will display when water temp is not current, and will alternate with water temp when the pump is running.

Sleep Mode heats the spa to within 20°F/10°C of the set temperature only during filter cycles. SL will display when water temp is not current, and will alternate with water temp when the pump is running.

Preset Filter Cycles

The first preset filter cycle begins 6 minutes after the spa is energized. The second preset filter cycle begins 12 hours later.

Filter duration is programmable for 1, 2, 3, 4, 5, 6, 7, or 8 hours. The default filter time is 1 hour.

To program, press "Temp," then "Jets." Press "Temp" to adjust. Press "Jets" to exit programming.

Diagnostic Messages

Message	Meaning	Action Required
	No message on display. Power has been cut off to the spa.	The control panel will be disabled until power returns. Spa settings will be preserved until next power up.
`--`	Temperature unknown.	After the pump has been running for 1 minute, the current water temperature will be displayed.
`HH`	"Overheat" - The spa has shut down.* One of the sensors has detected 118°F/47.8°C at the heater.	DO NOT ENTER THE WATER. Remove the spa cover and allow water to cool. Once the heater has cooled, reset by pushing any button. If spa does not reset, shut off the power to the spa and call your dealer or service organization.
`OH`	"Overheat" - The spa has shut down.* One of the sensors has detected that the spa water is 110°F/43.5°C.	DO NOT ENTER THE WATER. Remove the spa cover and allow water to cool. At 107°F/41.7°C, the spa should automatically reset. If spa does not reset, shut off the power to the spa and call your dealer or service organization.
`SA`	Spa is shut down.* The sensor that is plugged into the Sensor "A" jack is not working.	If the problem persists, contact your dealer or service organization. (May appear temporarily in an overheat condition.)
`Sb`	Spa is shut down.* The sensor that is plugged into the Sensor "B" jack is not working.	If the problem persists, contact your dealer or service organization. (May appear temporarily in an overheat condition.)
`Sn`	Sensors are out of balance. If alternating with spa temperature, it may just be a temporary condition. If flashing by itself, spa is shut down.*	If the problem persists, contact your dealer or service organization.
`HL`	A significant difference between temperature sensors has been detected. This could indicate a flow problem.	If the water level is normal, make sure all pumps have been primed. If problem persists, contact your dealer or service organization.
`LF`	Persistent low flow problems. (Displays on the fifth occurrence of `HL` message within 24 hours.) Heater is shut down, but other spa functions continue to run normally.	Follow action required for `HL` message. Heating capability of the spa will not reset automatically; you may press any button to reset.
`dr`	Possible inadequate water, poor flow, or air bubbles in detected in the heater. Spa is shut down for 15 minutes.	If water level is normal, make sure all pumps have been primed. Press any button to reset. This message will reset within 15 minutes. If problem persists, contact your dealer or service organization.
`dY`	Inadequate water detected in heater. (Displays on third occurrence of `dr` message.) Spa is shut down.*	Follow action required for `dr` message. Spa will not automatically reset. Press any button to reset manually.
`IC`	"Ice" - Potential freeze condition detected. ** - Even when spa is shut down, some equipment will turn on if freeze protection is needed.*	No action required. All equipment will automatically activate regardless of spa status. The equipment stays on 4 minutes after the sensors detect that the spa temperature has risen to 45°F/7.2°C or higher. An optional freeze sensor may be added to protect against extraordinary freeze conditions. Auxiliary freeze sensor protection is advisable is colder climates. See your dealer for details.

Warning! Shock Hazard! No User Serviceable Parts.

Do not attempt service of this control system. Contact your dealer or service organization for assistance. Follow all owner's manual power connection instructions. Installation must be performed by a licensed electrician and all grounding connections must be properly installed.

P/N 40887_A 11/08/2007

VS300FL4 Hot Sheet

Balboa Instruments
System PN 54626-01

System Model # VSP-VS300FL4-CCAJ
Software Version # 41
EPN # 2668

Base PCBA - PN 54604-01
PCB VS500Z - PN 22972 Rev D

Base Panels
VL401 (LCD Lite Duplex) – PN 54665
VL403 (LED Lite Duplex) – PN 54664
VL406U – PN 55350

Optional Base Panels
VL200 (Mini) – PN 55123
VL240 (MVP240) – PN 55080
VL260 (MVP260) – PN 55081

Template used: 40732_C.pdf 11/08/2007
54626-01_97_A.pdf 11/21/2007

BALBOA water group

Basic System Features and Functions

Power Requirements

- 120/240VAC, 60Hz, 16/32A, Class A GFCI-protected service (Circuit Breaker rating = 20/40A max.)
- 3 wires [hot, neutral, ground]/4 wires [hot, hot, neutral, ground]

System Outputs

Setup 1 (As Manufactured)

- 120V Pump 1, 2-Speed
- 120V Ozone *
- 12V Spa Light
- 4.0kW @ 240V Heater **
- VL401, VL403, or VL406U Panel (DIP switch A3 must be OFF)

Optional Panels

- VL200, VL240, or VL260 Panel (DIP switch A3 must be ON)

* Ozone runs with P1-low and must be same voltage as Pump 1.

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

Additional Options

- MoodEFX Lighting
  Connects to Spa Light terminal J20
- FiberEFX Lighting
  Connects 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.

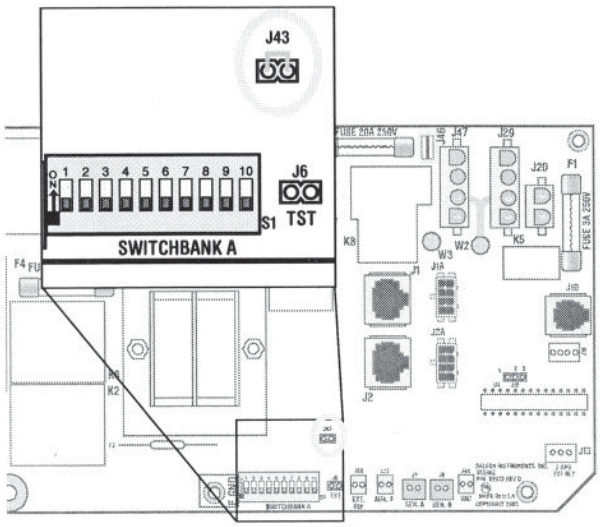
To reset Persistent Memory:

- 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 "Pr" 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.



J43 on VS5xxZ and VS300 Series Main Board Shown.

Power Up Display Sequence

Upon power up, you should see the following on the display:

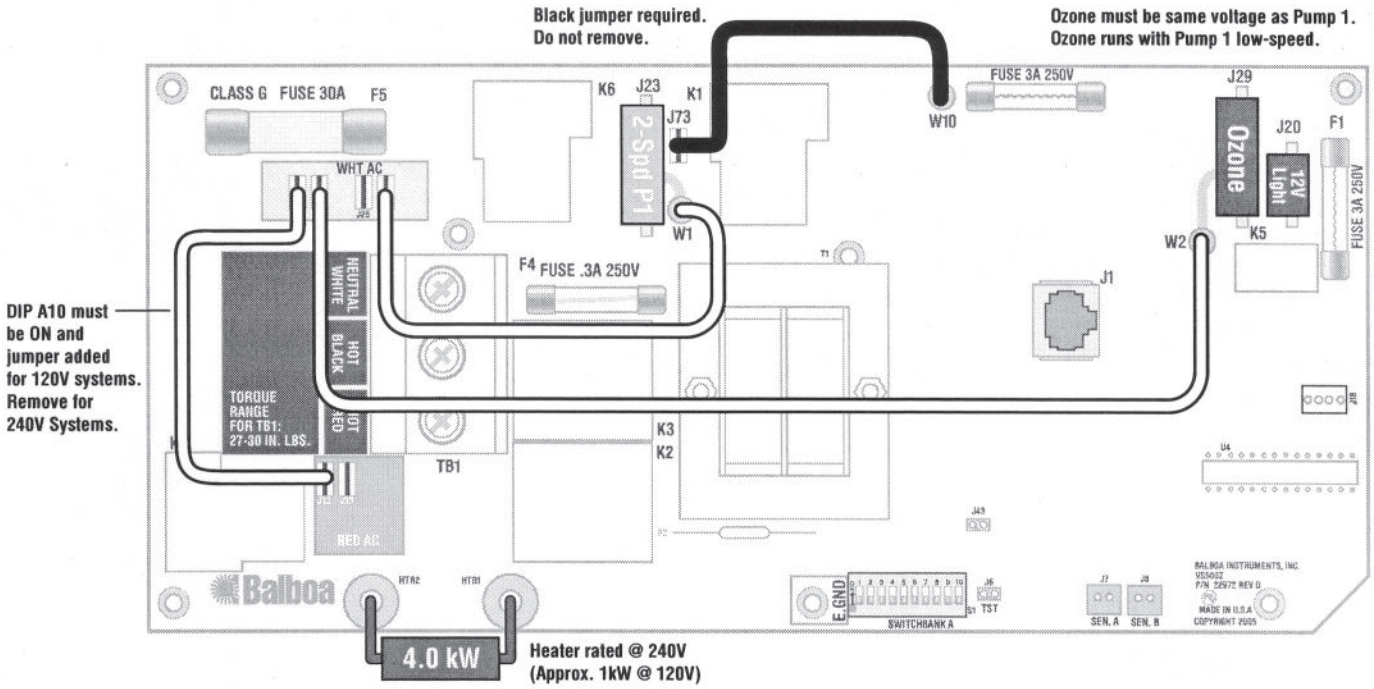
- Three numbers in a row, which are the SSID (the System Software ID). The third display of these numbers is the Software Version, which should match the version of your system. For example, if these three numbers are 100 67 38, that is a VS511SZ at version 38.
- Displayed next is: "24" (indicating the system is configured for a heater between 3 and 6 kW) or "12" (indicating the system is configured for a heater effectively* between 1 and 3 kW). "24" should appear for all VS models running at 240VAC. "12" should appear for all VS models running at 120VAC, as well as all GS models. (*A heater which is rated at 4 kW at 240VAC will function as a 1 kW heater at 120VAC.)
- "Pr" will appear to signal the start of Priming Mode.

At this point, the power up sequence is complete. Refer to the Reference Card for the VS or GS System model of your spa for information about how the spa operates from this point on, including how to adjust the Time of Day if using a Serial Deluxe style panel.

Wiring Configuration and DIP Settings

Setup 1 (As Manufactured)

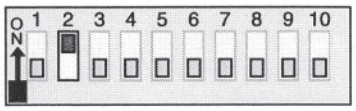
- 120V Pump 1, 2-Speed
- 12V Spa Light
- 120V Ozone
- 240V 4.0kW Heater (Approx. 1.0kW @ 120V)
- VL401, VL403, or VL406U Main Panel



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 #
100
59
41

Switchbank A

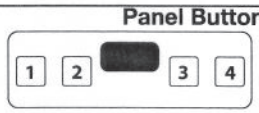


A1, Test Mode OFF
A2, P1, LT, TD, TU
A3, Duplex Panel
A4, N/A (must be OFF)
A5, P1-high timeout, Table 1
A6, 60 Hz
A7, Mode changes allowed
A8, Degrees F
A9, P1-low timeout, Table 1
A10, High Amp mode

J43
Memory Reset

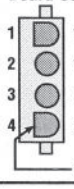
Panel Button Assignments
1=Pump 1
2=Light
3=Temp Down
4=Temp Up

Panel Button Positions



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

DIP Switches and Jumpers Definitions

SSID 100 59 41 Base Model VS300F

DIP Switch Key

A1 Test Mode (normally OFF)

A2 "ON" position: Button layout will be: Pump 1, Light, Temp Down, Temp Up *
"OFF" position: Button layout will be: Unused, Pump 1, Temp, Light

A3 "ON" position: use Mini Panel *
"OFF" position: use Lite Duplex or Digital Duplex panel

A4 N/A (must be OFF)

A5 Pump 1 high-speed timeout, see Table 1

A6 "ON" position: 50Hz operation
"OFF" position: 60Hz operation

A7 "ON" position: Standard mode only
"OFF" position: Std/Ecn/Sleep mode changes allowed

A8 "ON" position: temperature is displayed in degrees Celsius
"OFF" position: temperature is displayed in degrees Fahrenheit

A9 Pump 1 low-speed timeout, see Table 1

A10 "ON" position: heater is disabled while the high-speed pump is running (low amperage mode)
"OFF" position: heater can run while the high-speed pump is running (high amperage mode)

Table 1 Pump 1 Timeouts

A5	A9	Low-spd	Hi-spd
OFF	OFF	2 hours	15 min
ON	OFF	2 hours	30 min
OFF	ON	15 min	15 min
ON	ON	30 min	30 min

* Panels with button layout are not compatible when A2 or A3 is ON.

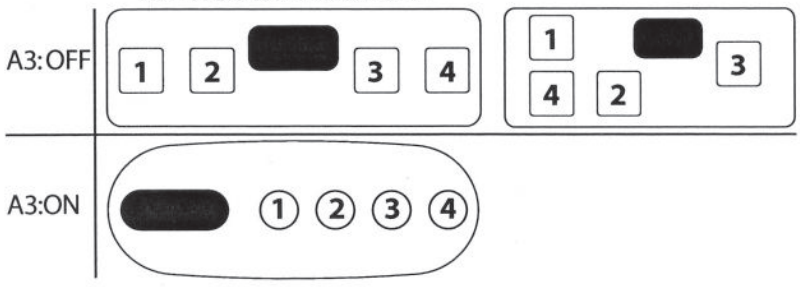
Note: No blower or second pump available.

Jumper Key

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

A2:OFF	1=Unused 2=Pump 1	3=Temp 4=Light
A2:ON	1=Pump 1 2=Light	3=Temp Down 4=Temp Up

Quick Tip Guide

1. **Spa cover must be closed for the spa to properly heat. Heating time depends on air temperature but generally the spa will average 12 to 24 hours to heat on 240v. The spa will automatically filter twice a day for 2 hours each time (to change this see page 3 of the ML260 User Guide attached). Jets must all be open when the spa is not used for proper heating and filtration. The pump will continue to run until reaching the set temperature. If it repeatedly trips, turn the power off at the breaker box until the fault has been identified and corrected by a spa technician.**
2. **The heating spa will cause condensation to form on the outside and bottom of the spa which may cause reason to believe the spa is leaking. For this reason, small "leaks" should be allowed a few days prior to further investigation.**
3. **The spa pump has an automatic high temperature shut off. If the motor stops, it will auto start after it cools.**
4. **All tubing, manifolds, valves, etc. can be easily accessed throughout the spa by removing the panels.**
5. **A 4-wire, 8 gauge cord on a dedicated 50-amp circuit is needed for this 240v application.**

Tuff Spa Startup

❖ Selecting Tuff Spa Site Location

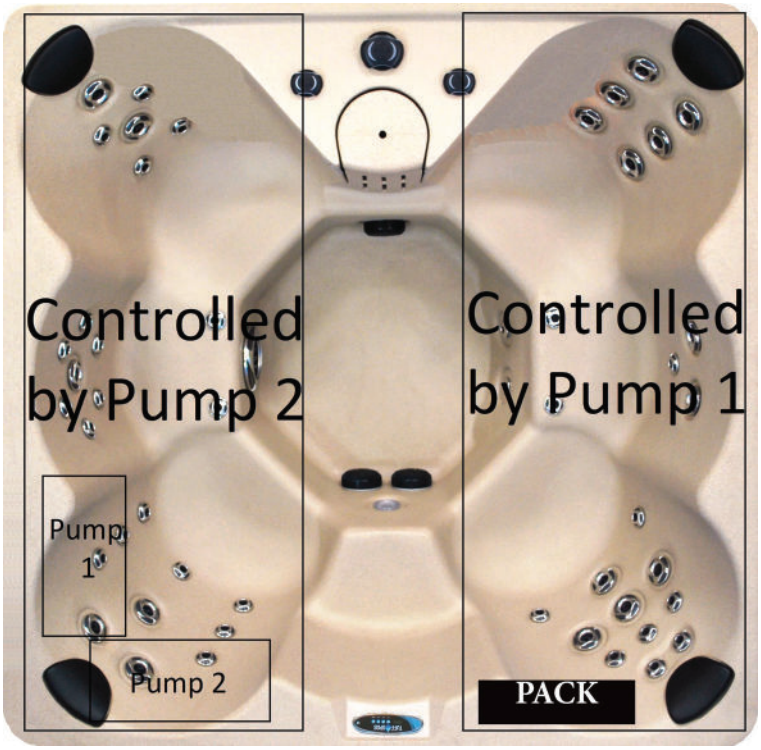
It is important your new spa be installed on a solid, flat, and level surface that is engineered to carry a load of 75 pounds per square foot. Spas should not be placed near or below electrical or telephone cables. For the 240v you will need a licensed electrician to run the necessary wiring unless proper wiring is already at site location.

❖ Relieving Air Locks

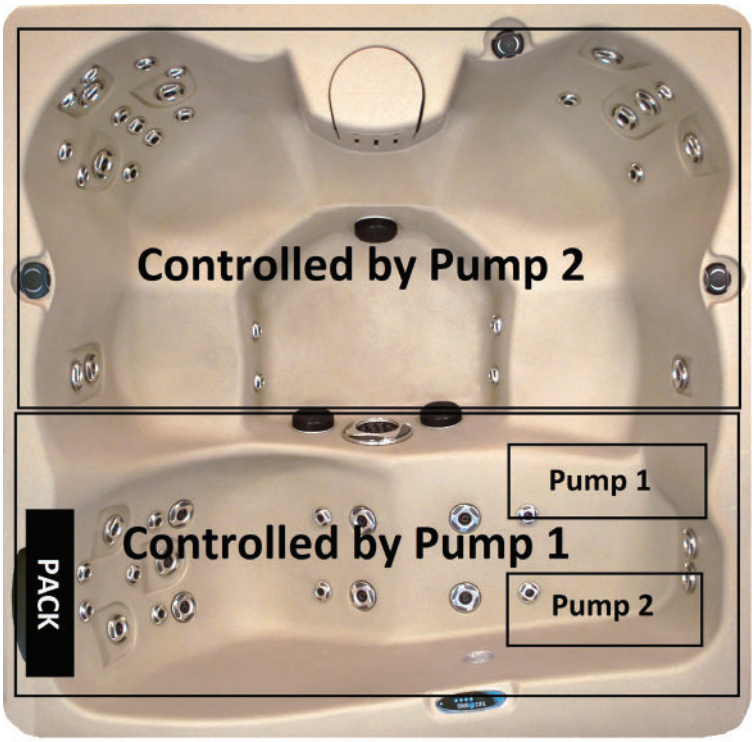
Occasionally, on a fresh fill or refill, an air lock may occur. This is caused by the build up of air in the plumbing lines which will not allow water or air to flow through the jets. If left un-attended, the pump and/or heater can be damaged or overheat from lack of water flow. This type of damage is not covered under the warranty. The easiest way to remedy this situation is to repeatedly cycle between low- and high-speed on the topside controls. If this does not fix the issue you will have to open the access panel that houses the pumps. Once the panel is removed, locate the pump and you will see two large, white nuts attached to the pump. One is horizontal to the pump and the other is vertical. Take a large pair of channel locks and loosen the horizontal nut with the pump in high-speed. Continue to loosen the nut until the jets begin to work. Doing this will cause water to come

out the nut you are loosening which is normal. Once the jets are functioning properly, tighten the nut back up and put the panel back on. Please refer to the graphics below to determine which pump needs to be relieved of an air lock based on which jets are not functioning.

TT450



TT650



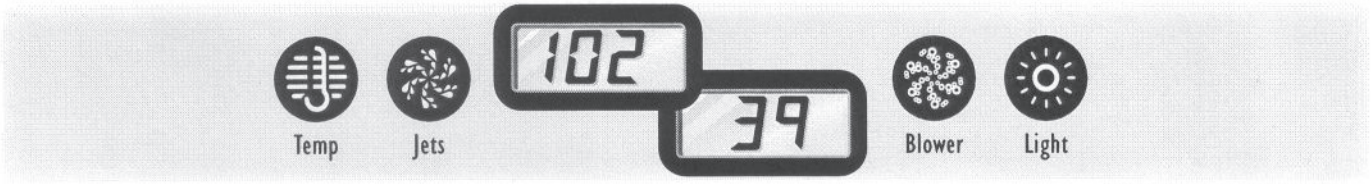
Balboa 500Z-Series Operation Guide

Initial Start-up

Your spa will enter Priming Mode (Pr) when it is energized. **During Priming Mode, press "Jets" button(s) repeatedly and be sure all pumps are free of air.** Priming Mode lasts less than 5 minutes. Press "Temp" to exit. After Priming Mode, the spa will run in Standard Mode (see Mode section). Some panels may not have a "Temp" button. On these panels the "Set," "Warm," or "Cool" buttons are used.

The pump responsible for heating and filtration (pump 1 low-speed on non-circ system, or the circ pump on circ systems) will be referred to simply as the pump.

In multi-button sequences, if the buttons are pressed too quickly in sequence, they may not register.



Button shapes and labels may vary.

Temp Control (80°F - 104°F / 26°C - 40°C)

The last measured water temperature is constantly displayed.

The water temperature displayed is current only when the pump has been running for at least 2 minutes.

On panels with a single "Temp" or "Set" button, to display the set temperature, press the button once. To change the set temperature, press the button a second time before the display stops flashing. Each press of the button will continue to either raise or lower the set temperature. If the opposite direction is desired, allow the display to revert to the current water temperature. Press the button to display the set temperature, and again to make the temperature change in the desired direction.

On panels with "Warm" and "Cool" buttons, to display the set temperature, press "Warm" or "Cool" once. To change the set temperature, press a temperature button again before the display stops flashing. Each press of "Warm" or "Cool" will adjust the set temperature.

After three seconds, the display will stop flashing and begin to display the current spa temperature.

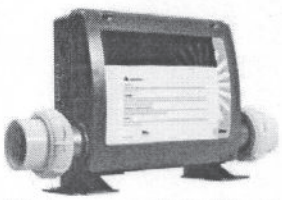
Jets 1

Press "Jets 1" to turn pump 1 on or off, and to shift between low and high speeds (if equipped). The low-speed will turn off after 4 hours. High-speed will turn off after 15 minutes. Low-speed may run automatically at times, during which it cannot be deactivated from the panel, but high-speed may be operated.

Jets 2/Jets 3/Blower (If equipped)

Press the corresponding button once to turn the device on or off. The device will turn off after 15 minutes. Pump 2 may be two-speed on some systems.

Some systems use this one button to control two devices. The first button press will activate one device. Press again to have both devices active. Press again to turn off the first device only. Press one more time to turn both devices off.



Light

Press "Light" to operate the spa light. Turns off after 4 hours.

Mode

Depending on system configuration, mode changing may not be available and will be locked in Standard Mode.

Mode is changed by pressing "Temp," then "Light".

Standard Mode maintains set temperature. St will be displayed momentarily when you switch into Standard Mode.

Economy Mode heats the spa to the set temperature only during filter cycles. Ec will display when water temp is not current, and will alternate with water temp when the pump is running.

Sleep Mode heats the spa to within 20°F/10°C of the set temperature only during filter cycles. SL will display when water temp is not current, and will alternate with water temp when the pump is running.

Preset Filter Cycles

The first preset filter cycle begins 6 minutes after the spa is energized. The second preset filter cycle begins 12 hours later. Filter duration is programmable for 2, 4, 6, or 8 hours or for continuous filtration (indicated by FL). The default filter time is 2 hours for non-circ systems and 4 hours for circ systems.

To program, press "Temp," then "Jets 1." Press "Temp" to adjust. Press "Jets 1" to exit programming.

For non-circ systems, low-speed pump 1 and the ozone generator (if installed) run during filtration.

For 24 hour circulation systems, the circ pump and the ozone generator (if installed) run 24 hours. In hot environments, the circ pump may turn off for 30 minute periods, except during filter cycles.

For non-24 hour circulation systems, the circ pump and ozone generator (if installed) run during filtration (and may also run automatically at other times).

At the beginning of each filter cycle all other equipment will run briefly to purge the plumbing.

This document covers VS and GS systems 500Z through 521Z with Balboa Panels VL200 through VL406.
www.balboa-instruments.com

BALBOA water group

Diagnostic Messages

Message	Meaning	Action Required
	No message on display. Power has been cut off to the spa.	The control panel will be disabled until power returns. Spa settings will be preserved until next power up.
--	Temperature unknown.	After the pump has been running for 2 minutes, the current water temperature will be displayed.
HH	"Overheat" - The spa has shut down.* One of the sensors has detected 118°F/47.8°C at the heater.	DO NOT ENTER THE WATER. Remove the spa cover and allow water to cool. Once the heater has cooled, reset by pushing any button. If spa does not reset, shut off the power to the spa and call your dealer or service organization.
OH	"Overheat" - The spa has shut down.* One of the sensors has detected that the spa water is 110°F/43.5°C.	DO NOT ENTER THE WATER. Remove the spa cover and allow water to cool. At 107°F/41.7°C, the spa should automatically reset. If spa does not reset, shut off the power to the spa and call your dealer or service organization.
SA	Spa is shut down.* The sensor that is plugged into the Sensor "A" jack is not working.	If the problem persists, contact your dealer or service organization. (May appear temporarily in an overheat condition.)
Sb	Spa is shut down.* The sensor that is plugged into the Sensor "B" jack is not working.	If the problem persists, contact your dealer or service organization. (May appear temporarily in an overheat condition.)
Sn	Sensors are out of balance. If alternating with spa temperature, it may just be a temporary condition. If flashing by itself, spa is shut down.*	If the problem persists, contact your dealer or service organization.
HL	A significant difference between temperature sensors has been detected. This could indicate a flow problem.	If the water level is normal, make sure all pumps have been primed. If problem persists, contact your dealer or service organization.
LF	Persistent low flow problems. (Displays on the fifth occurrence of HL message within 24 hours.) Heater is shut down, but other spa functions continue to run normally.	Follow action required for HL message. Heating capability of the spa will not reset automatically; you may press any button to reset.
dr	Possible inadequate water, poor flow, or air bubbles in detected in the heater. Spa is shut down for 15 minutes.	If water level is normal, make sure all pumps have been primed. Press any button to reset. This message will reset within 15 minutes. If problem persists, contact your dealer or service organization.
dY	Inadequate water detected in heater. (Displays on third occurrence of dr message.) Spa is shut down.*	Follow action required for dr message. Spa will not automatically reset. Press any button to reset manually.
IC	"Ice" - Potential freeze condition detected. ** - Even when spa is shut down, some equipment will turn on if freeze protection is needed.*	No action required. All equipment will automatically activate regardless of spa status. The equipment stays on 4 minutes after the sensors detect that the spa temperature has risen to 45°F/7.2°C or higher. An optional freeze sensor may be added to protect against extraordinary freeze conditions. Auxiliary freeze sensor protection is advisable is colder climates. See your dealer for details.

Warning! Shock Hazard! No User Serviceable Parts.

Do not attempt service of this control system. Contact your dealer or service organization for assistance. Follow all owner's manual power connection instructions. Installation must be performed by a licensed electrician and all grounding connections must be properly installed.

P/N 40789_E 04/21/2010

BALBOA water group

VS511Z Hot Sheet

Balboa Instruments
System PN 54382-04

System Model # VSP-VS511Z-DCAH
Software Version # 43
EPN # 2720

Base PCBA - PN 54383-04
PCB VS500Z - PN 22972 Rev D

Base Panels
VL401 (LCD Lite Duplex) – PN 54251
VL402 (LCD Duplex Digital) – PN 54107
VL403 (LED Lite Duplex) – PN 54104-01
VL404 (LED Duplex Digital) – PN 51248

Template used: 40600_P.pdf 01/07/2008
54382-04_97_A.pdf 02/21/2008

BALBOA water group

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]

System Outputs

Setup 1 (As Manufactured)

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

Optional Devices

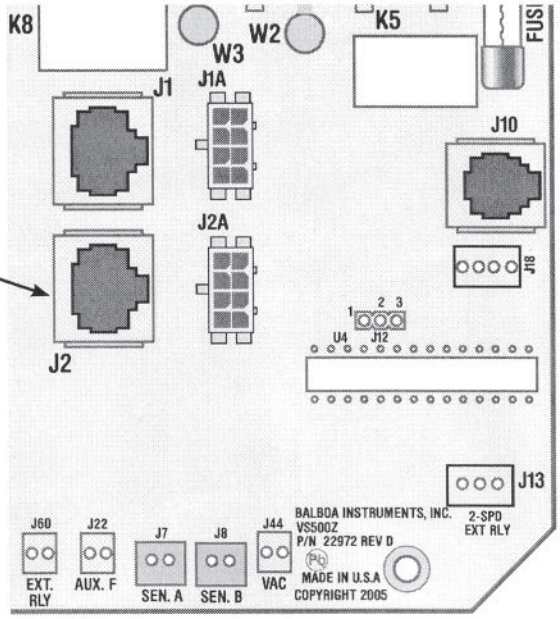
- 120V Circ Pump *

* 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
  Connects to terminal J1 or J2
- MoodEFX Lighting
  Connects to Spa Light terminal J20
- FiberEFX Lighting
  Connects 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.

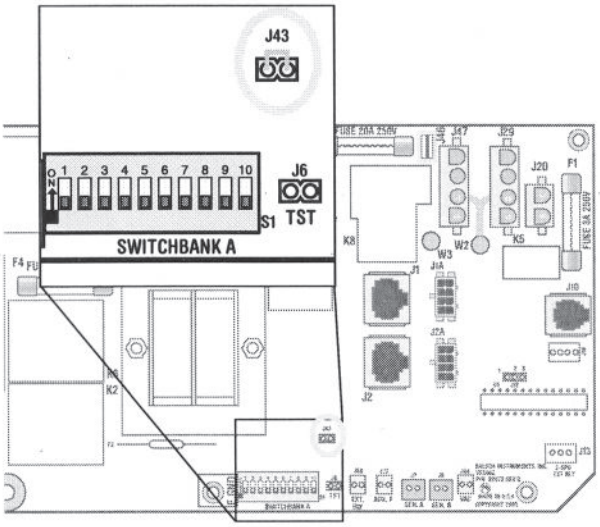
To reset Persistent Memory:

- 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 "Pr" 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.



J43 on VS5xxZ and VS300 Series Main Board Shown.

Power Up Display Sequence

Upon power up, you should see the following on the display:

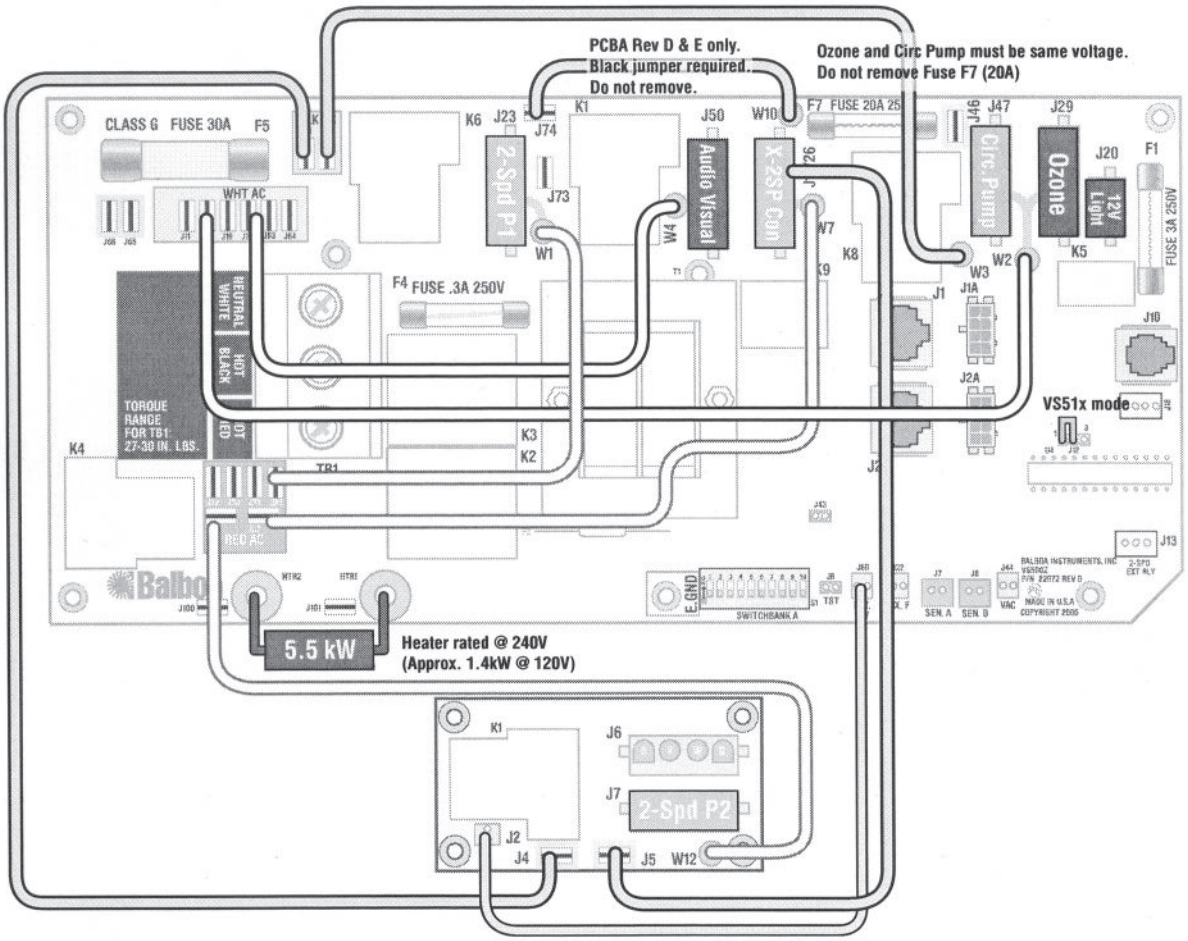
- Three numbers in a row, which are the SSID (the System Software ID). The third display of these numbers is the Software Version, which should match the version of your system. For example, if these three numbers are 100 67 38, that is a VS511SZ at version 38.
- Displayed next is: "24" (indicating the system is configured for a heater between 3 and 6 kW) or "12" (indicating the system is configured for a heater effectively* between 1 and 3 kW).
  "24" should appear for all VS models running at 240VAC.
  "12" should appear for all VS models running at 120VAC, as well as all GS models. (*A heater which is rated at 4 kW at 240VAC will function as a 1 kW heater at 120VAC.)
- "Pr" will appear to signal the start of Priming Mode.

At this point, the power up sequence is complete. Refer to the Reference Card for the VS or GS System model of your spa for information about how the spa operates from this point on, including how to adjust the Time of Day if using a Serial Deluxe style panel.

Wiring Configuration and DIP Settings

Setup 1 (As Manufactured)

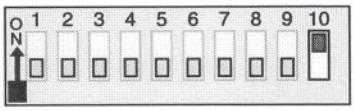
- 240V Pump 1, 2-Speed
- 240V Pump 2, 2-Speed
- 120V Ozone
- 12V Spa Light
- 120V A\V (Stereo)
- 240V 5.5kW Heater
- Duplex Main Panel
- 120V Circ Pump (optional)



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 #
100
67
43

Switchbank A



A1, Test Mode OFF
A2, See Table 1
A3, Duplex Panel
A4, Aux Freeze
A5, 2-speed P1
A6, 60 Hz
A7, Mode changes allowed
A8, Degrees F
A9, Non-Circ Mode
A10, See Table 1

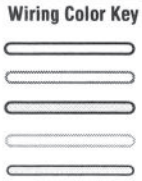
VS51x/VS5xxS/VS5xxD Compatible

J43

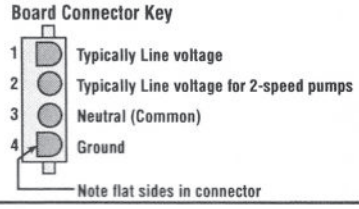
Panel Button Assignments
1=Pump 2
2=Pump 1
3=Temp
4=Light

Panel Button Positions

Wiring Color Key



Board Connector Key



DIP Switches and Jumpers Definitions

SSID 100 67 43 Base Model VS511Z

DIP Switch Key

A1 Test Mode (normally OFF)

A2+A10 Control amp draw requirements (See Table 1)

A3 "ON" position: use Mini Panel 
"OFF" position: use Digital Duplex or Light Duplex panel 

A4 Aux Freeze (must be OFF)

A5+A9 Pump 1 speeds and Circ Modes:

A5	A9	Circ Mode	Pump 1 Speed
OFF	OFF	Non-circ	2-speed
ON	OFF	Circ "acts like Pump 1 low" (filters/polls/ect)	1-speed
OFF	ON	24 hours with 3°F shut-off	1-speed
ON	ON	24 hours with 3°F shut-off	2-speed

A6 "ON" position: 50Hz operation
"OFF" position: 60Hz operation

A7 "ON" position: Standard mode only
"OFF" position: Std/Ecn/Sleep mode changes allowed

A8 "ON" position: temperature is displayed in degrees Celsius
"OFF" position: temperature is displayed in degrees Fahrenheit

Note: Panel layout is always Pump 2, Pump 1, Temp, Light

Table 1

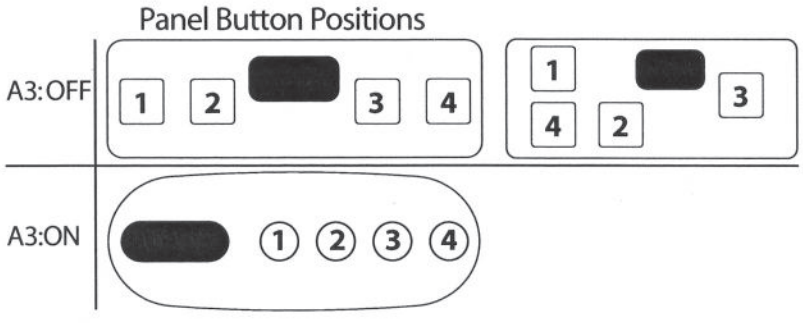
A2	A10	# of Hi-Speed Pumps/Blower Before Heat Disabled
OFF	OFF	0
ON	OFF	1
OFF	ON	2
ON	ON	3

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 Assignments

1=Pump 2 **3=Temp**
2=Pump 1 **4=Light**

IMPORTANT SAFETY INSTRUCTIONS

READ AND FOLLOW ALL INSTRUCTIONS

TO REDUCE THE RISK OF INJURY:

- Spa water should never exceed 40° C (104° F). Water temperatures between 38° C (100° F) and 40° C (104° F) are considered safe for a healthy adult. Lower water temperatures are recommended for extended use (exceeding 15-20 minutes) and for younger children.
- Excessive water temperature has a high potential for causing fetal damage, during the early months of pregnancy, pregnant or possibly pregnant women should limit spa temperatures to 30° C (100° F).
- Before entering a spa, the user should measure the water temperature with an accurate thermometer since the tolerance of temperature regulating devises may vary as much as plus or minus 3° C (5° F).
- The use of alcohol, drugs or medication before or during spa use may lead to unconsciousness with the possibility of drowning.
- Persons suffering from obesity or with a medical history of heart disease low or high blood pressure, circulatory system problems, or diabetes should consult a physician before using a spa.
- Persons using medication should consult a physician before using a spa. Some medication may induce drowsiness while other medication may affect heart rate, blood pressure, and circulation.
- Do not sit or stand on the edge of the spa or cover.

Hyperthermia occurs when the internal temperature of the body reaches a level several degrees above the normal body temp plus or minus temperature of 98.8° F. The symptoms of hyperthermia include dizziness, fainting, drowsiness, lethargy and an increase in the internal body temperature. The affects of hyperthermia include (1) unawareness of impending hazard, (2) Failure to perceive heat, (3) Failure for the need to exit the Spa, (4) Physical inability to exit Spa, (5) Fetal damage to pregnant women, and (6) Unconsciousness resulting in a danger of drowning.

WARNING The use of Alcohol, Drugs or medication can greatly increase the risk of fatal hyperthermia.

DANGER: RISK OF ELECTRIC SHOCK

Do not permit any electric appliance such as a light, telephone, radio, or television within 5 feet of a spa or hot tub.

IMPORTANT SAFETY INSTRUCTIONS

READ AND FOLLOW ALL INSTRUCTIONS

WARNING: CHILDREN SHOULD NOT USE SPA OR HOT TUBS WITHOUT ADULT SUPERVISION
AVERTISSEMENT: NE PAS LAISSER LES ENFANTS UTILISER UNE CUVE DE RELAXATION SANS SURVEILLANCE

WARNING: DO NOT USE SPAS OR HOT TUBS UNLESS ALL SUCTION GUARDS ARE INSTALLED TO PREVENT BODY AND HAIR ENTRAPMENT
AVERTISSEMENT: POUR EVITER QUE LES CHEVEUX OU UNE PARTE DU CORPS PUISSENT ETRE ASPIRES, NE PAS UTILISER UNE CUVE DE RELAXATION SI LES GRILLES DE PRISE D'ASPIRATION NE SONT PAS TOUTES EN PLACE

WARNING: PEOPLE USING MEDICATIONS AND/OR HAVING ADVERSE MEDICAL HISTORY SHOULD CONSULT A PHYSICIAN BEFORE USING A SPA OR HOT TUB.
AVERTISSEMENT: LES PERSONNES QUI PRENNENT DES MEDICAMENTS OU ONT DES PROBLEMES DE SANTE DEVRAIENT CONSULTER UN MEDECIN AVANT D'UTILISER UNE CUVE DE RELAXATION

WARNING: PEOPLE WITH INFECTIOUS DESEASES SHOULD NOT USE A SPA OR HOT TUB
AVERTISSEMENT: LES PERSONNES ATTEINES DE MALADIES INFECTIEUSES NE DEVRAIENT PAS UTILISER UNE CUVE DE RELAXATION

WARNING: TO AVOID INJURY EXERCISE CARE WHEN ENTERING OR EXITING THE SPA OR HOT TUB
AVERTISSEMENT: POUR EVITER DES BLESSURES, USER DE PRUDENCE EN ENTRANT DANS ONE CUVE DE RELAXATION ET E SORANT

WARNING: DO NOT USE DRUGS OR ALCOHOL BEFORE OR DURING THE USE OF A SPA OR HOT TUB TO AVOID UNCONSCIOUSNESS AND POSSIBLE DROWNING
AVERTISSEMENT: POUR EVITER L'EVANOUISSEMENT ET LA NOYADE EVENTUELLE, NE PRENDE NI DROGUE NI ALCOOL AVANT D'UTILISER UNE CUVE DE RELAXATION NI QUAND ON S'Y TROUVE

WARNING: PREGNANT OR POSSIBLY PREGNANT WOMEN SHOULD CONSULT A PHYSICIAN BEFORE USING A SPA OR HOT TUB
AVERTISSEMENT: LES FEMMES ENCEINTES, QUE LEUR GROSSESSE SOIT CONFIRMEE OU NON, DEVRAIENT CONSULTER UN MEDECIN AVANT D'UTILISER UNE CUVE DE RELAXATION
WARNING: WATER TEMPERATURE IN EXCESS OF 38° C MAY BE INJURIOUS TO YOUR HEALTH
AVERTISSEMENT: IL PEUT ETRE DANGEREUX POUR LA SANTE DE SE PLONGER DANS DE L'EAU A PLUS 38° C

IMPORTANT SAFETY INSTRUCTIONS

READ AND FOLLOW ALL INSTRUCTIONS

WARNING: BEFORE ENTERING THE SPA OR HOT TUB MEASURE THE WATER TEMPERATURE WITH AN ACCURATE THERMOMETER
AVERTISSEMENT: AVANT D'UTILISER ONE CUVE DE RELAXATION MESURE LA TEMPERATURE DE L'EAU A L'AIDE D'UN THERMOMETRE PRECIS

WARNING: DO NOT USE A SPA OR HOT TUB IMMIDIATELY FOLLOWING STRENUOUS EXERCISE
AVERTISSMENT: NE PAS UTILISER ONE CUVE DE RELAXATION IMMDIATEMENT APRES UN EXERCISE FATIGANT

WARNING: PROLONGED IMMERSION IN A SPA OR HOT TUB MAY BE INJURIOUS TO YOUR HEALTH
AVERTISSMENT: L'UTILISATION PROLONGEE D'UNE CUVE DE RELAXATION PEUT ETRE DENGEREUSE POUR LA SANTE

WARNING: DO NOT PERMIT ELECTRIC APPLIANCES (SUCH AS A LIGHT, TELEPHONE, RADIO OR TELEVISION WITHIN 1.5 M OF THIS SPA OR HOT TUB
AVERTISSMENT: NE PAS PLACER D'APPAREIL ELECTRIQUE (LUMINARE, TELPHONE, RADIO, TELEVISEUR ETC) A MOINS DE M DE CETTE COVE DE RELAXATION

CAUTION: MAINTAIN WATER CHEMISTRY IN ACCORDANCE WITH THE MANUFACTURE'S INSTRUCTIONS
ATTENTION: LA TENEUR DE LEAU EN MATIERS DISSOUTES DOIT ETRE CONFORME AUX DIRECTIVES DU FABRICANT

WARNING

Connect to a grounded, Grounding Type Receptacle Only
To reduce the risk of electric shock, replace damaged cord immediately
DO NOT BURY THE CORD

DANGER

To reduce the risk of injury to persons, DO NOT REMOVE Suction Fittings

TO ALL ORIGINAL PURCHASERS OF THIS PRODUCT

LIFETIME WARRANTY

Tuff Spas™ warrants the entire Spa Shell and Hard Cover surface against water loss and structural integrity due to defects in the spa for Lifetime. The shell has a prorated lifetime warranty, the customer will be responsible for a portion of the proration as follows: **Years 1-5=0% Years 6-lifetime=50%**. The cover has a non-prorated lifetime warranty. For original purchaser only, warranty is non-transferable.

3- YEAR EQUIPMENT WARRANTY

The Original Manufacturers provide limited warranties on the "Topside" Controls, Heater, Master Control center, and Pump for 3 years from date of manufacturing. See terms and conditions in separate manufacture documents.

1- YEAR PARTS WARRANTY

The Original Manufacturers provide limited warranties on all Plumbing and Fittings, Wiring, Cords, GFCI, Jets, Hard Cover Arm Bars, Vinyl Spa Covers, Pillows, Hard Cover Gaskets & Straps, and other non-electrical mechanical parts for 1 year. The ozone is also covered for 1 year. See terms and conditions in separate manufacture documents.

1- YEAR LABOR WARRANTY

Tuff Spas™ warrants all the labor involved with manufacturing defects for 1 year from date of purchase. This does not include electrical issues, ozone systems, issues with air locks or other issues that do not arise from defects in manufacturing. In some cases, the servicing dealer may charge you a reasonable repairperson travel/service charge that is not covered by this warranty. Please contact the dealer for information regarding any such charges.

PERFORMANCE OF WARRANTY

Tuff Spas™ shall repair or replace (at our option) warranted product if it fails or becomes defective during the warranty period. To obtain service in the event of a defect covered by this Warranty, contact your Tuff Spas™ dealer or Tuff Spas™ as soon as possible and take appropriate precautions to prevent further damage to your spa. Tuff Spas™ or a designated service technician will correct the defect subject to the terms in this warranty. In the event that a replacement or repair is necessary, costs for the removal of the defective spa, shipping costs for the replacement or repaired spa, and delivery and installation of the replacement or repaired spa will be the responsibility of the spa owner.

EXCEPTIONS TO WARRANTY

1. Any damage caused by negligent misuse, improper installation, improper water chemistry, and/or failure to follow instructions in the Owners Manual.
2. Cartridge filter elements, light bulbs, stereos and all stereo components, foam, insulation, and cover straps.

This warranty is void if the spa has been subject to any alteration, misuse, or abuse. Alteration shall include any component or plumbing change, electrical conversion, or the addition of any sanitation or water purification device or heating system, which contributes to a component or unit failure or unsafe operating system. Misuse and abuse shall include use of the spa in an application for which it is not designed. **Specifically: Damage caused by clogged or dirty cartridges, damage/discoloration to the spa surface caused by harsh chemicals or chemical misuse, and damage/discoloration to the spa surface caused by improper pH balance or other improper water chemistry maintenance. Damage to the spa surface caused by leaving the spa uncovered or without water, for long periods of time.**

Tuff Spas™ shall not be liable for injury to any person or any claim for damage however it shall arise. All consequential expenses including loss of use, transportation charges arising out of alleged deficiency of spa are specifically excluded. This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state. Some states do not allow the exclusion of consequential damages, so the above limitation may not apply to you.

Tuff Spas™ 121 S. 39th Ave. STE 2, Phoenix, AZ 85009

TO ALL ORIGINAL PURCHASERS OF ITS PRODUCT

Tuff Spas™
121 S. 39th Ave. STE 2
Phoenix, AZ 85009

Warranty Registration: Mail this in with a copy of your invoice or contract.

Name:_____ Dealer Name:_____

Address: _____City: _____

State: _____ Zip: _____ Phone: _____

Spa Model & Serial #: _____ Date of Purchase ___/___/___

NOTES

Quality Leisure Products
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