

Hilo - Santo - Santo S - Tonga

# *Celebrity*

SPA OWNER'S MANUAL



**LEISUREBAYSPAS**

**“Trend Setting Innovations Since 1973”**

**This Manual Contains**

**IMPORTANT SAFETY  
INSTRUCTIONS**

**READ AND FOLLOW ALL INSTRUCTIONS**

**“SAVE THESE INSTRUCTIONS”**

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## SANTO S AND TONGA EQUIPMENT

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# WARNING SIGN MUST BE POSTED

An important WARNING sign is packed with your Leisure Bay Spa. This sign must be posted in a prominent place in close proximity to the spa installation site immediately upon completion of spa installation.

 <h2 style="margin: 0;">WARNING</h2>	
<p>DURING PREGNANCY, SOAKING IN HOT WATER MAY CAUSE DAMAGE TO THE FETUS. LIMIT USE TO 10 MINUTES AT A TIME.</p>	
<h3 style="margin: 0;">PREVENT DROWNING</h3> <p>SPA HEAT SPEEDS UP EFFECTS OF ALCOHOL, DRUGS, OR MEDICINE AND CAN CAUSE UNCONSCIOUSNESS. IMMEDIATELY LEAVE SPA IF UNCOMFORTABLE OR SLEEPY.</p>	<h3 style="margin: 0;">PREVENT CHILD DROWNING</h3> <p>WATER ATTRACTS CHILDREN. ALWAYS ATTACH A SPA COVER AFTER EACH USE.</p>
<small>PL601035 Rev A</small>	

**THIS WARNING SIGN MUST BE POSTED BEFORE THE SPA IS USED!**

# THIS SPA IS FOR RESIDENTIAL USE ONLY!



LEISUREBAYSPAS

## IMPORTANT SAFETY INSTRUCTIONS

When installing and using this electrical equipment, basic safety precautions should always be followed, including the following:

### 1. READ AND FOLLOW ALL INSTRUCTIONS

### 2. Warning

To reduce the risk of injury, do not permit children to use this product unless they are closely supervised at all times.

3. A wire connector is provided on this unit to connect a minimum No. 8AWG (8.4mm) solid copper conductor between this unit and any metal equipment, metal enclosures of electrical equipment, metal water pipe, or conduit within 5 feet (1.5m) of the unit.

### 4. Danger Risk of Injury

(For cord and plug connected units)

- A. Replace damaged cord immediately
- B. Do not bury cord
- C. Connect to a grounded, grounding type receptacle only.

#### 4A. (For units with a G.F.C.I.)

**WARNING** - This product is provided with a Ground Fault Circuit Interrupter "G.F.C.I." on the end of the spa's power cord. This G.F.C.I. must be tested before each use. With the product operating depress the "test" button on the G.F.C.I. The spa should not operate. Depress the "Reset" button on the G.F.C.I. The product should now operate normally. If the spa fails to operate in this manner, there is a ground current flowing indicating a possible electric shock. Disconnect the power until the fault has been identified and corrected by a certified licensed electrician.

### 5. Warning

**FOR PERMANENTLY INSTALLED UNITS** - The electrical supply for this product must include a suitably rated switch or circuit breaker to open all ungrounded supply conductors to comply with Section 442-20 of the National Electric Code. ANSI / NFPA 70-1987. In addition, all 230 volt installations must be protected by a 230 volt Ground Fault Circuit Interrupter "G.F.C.I.". Any G.F.C.I. circuit breaker used in the house panel must read current returning through the neutral conductor. 230 volt 2 conductor G.F.C.I. circuit breakers will not operate correctly for your application.

### 6. Danger

**Risk of Accidental Drowning.** Extreme caution must be exercised to prevent unauthorized access by children. To avoid accidents, ensure that children cannot use this spa unless they are supervised at all times. For additional protection, select a cover which is classified by the Underwriters Laboratories Meeting ASTM F1346-91 requirements.

### 7. Danger

**Risk of Injury.** The suction fittings in this spa are sized to match the specific water flow created by the pump. Should the need arise to replace the suction fittings or the pump, be sure that the flow rates are compatible.

Never operate spa if suction fittings are broken or missing. Never replace a suction fitting with one less than the flow rate marked on the original suction fitting.

### 8. Danger

**Risk of Electric Shock.** Install at least 5 feet (1.5m) from all metal surfaces. As an alternative, a spa may be installed within 5 feet (1.5m) of metal surfaces if each metal surface is permanently connected by a minimum No. 8AWG (8.4mm) solid copper conductor to the wire connector on the terminal box that is provided for this purpose.

### 9. Danger

**Risk of Electric Shock.** Do not permit any electric appliance, such as light, telephone, radio, or television, within 5 feet (1.5m) of a spa.

### 10. Warning To reduce risk of injury:

- A. The water in a spa should never exceed 104°F (40°C). Water temperatures between 100°F (38°C) and 104°F (40°C) are considered safe for a healthy adult. Lower water temperatures are recommended for your children and when spa use exceeds 10 minutes.
- B. Since excessive water temperatures have high potential for fetal damage during the early months of pregnancy, pregnant or possibly pregnant women should limit spa water temperatures to 100°F (38°C).
- C. Before entering spa, the user should measure the water temperature with an accurate thermometer since the tolerance of water temperature-regulating devices vary.
- D. The use of alcohol, drugs, or medication before or during spa use may lead to unconsciousness with the possibility of drowning.
- E. 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.
- F. Persons using medication should consult a physician before using a spa since some medication may induce drowsiness while other medication may affect heart rate, blood pressure, and circulation.

### 11. Warning Sign

Included with this spa is a warning sign. It is extremely important that this sign be permanently placed in clear view of any persons using the spa. Occasional spa users may not be aware of some of the dangers hot water poses to pregnant women, small children, and people under the influence of alcohol, drugs or medication. If you did not receive a warning sign or your sign has become damaged, please contact your spa dealer and ask for sign number PL601035 Rev A.

## SAVE THESE INSTRUCTIONS



LEISUREBAYSPAS

## IMPORTANT SAFETY PRECAUTIONS

*Your spa can be a source of great pleasure. It offers healthful stimulating recreation and is a delightful fun center for you, your family and friends. However, it contains large quantities of water and is deep enough to present inherent dangers to life and health unless the following safety rules are strictly observed.*

**1. Never permit the spa to be used unless it is attended by at least one person other than the bather.**

Someone should be present to lend assistance if the bather should be in trouble due to injuries, cramps, drowning especially in case of children, etc.

**2. Always use care in and around your spa.**

The spa has many rigid, unyielding parts and many areas that become wet and slippery. These all are potentially dangerous when rough play is permitted or if care is not used, particularly when entering or leaving the spa.

**3. Keep the water sanitary and healthful at all times.**

Your filter system will remove suspended particles from the water. Regular application of spa chemicals in proper quantities will destroy harmful bacteria and prevent formation of algae. Your surface skimmer will remove insects, leaves, and other debris from the water surface. Unsanitary water is a serious health hazard.

**4. The water in your spa should NOT be warmer than 100°F - 104°F (38° - 40°C).**

Always keep an accurate thermometer in the water because your spa's thermostat may be in error. Use a high quality, shatterproof thermometer with increments of one degree or less.

The National Spa and Pool Institute considers a temperature of 100°F (38°C) safe and comfortable for a healthy adult. Most healthy adults can enjoy this water temperature for as long as desired, although it may raise the body temperature to the water temperature and eventually become uncomfortable (like a fever). At higher water temperatures the soaking time should be shorter. Never soak for more than 20 minutes when the water temperature is 102°F (39°C) or higher. If you are planning a long rest in the spa, lower the water temperature closer to normal body temperature, about 99°F (37.2°C). Some people find even lower water temperatures relaxing and pleasing. Try different water temperatures in the 98°-102°F (36.6°-39°C) range until you find what temperatures suit you best.

**5. Hot water can raise the body temperature high enough to cause heat stroke.**

This can be fatal even to healthy adults. If you have any questions about your own fitness or whether you should soak in the spa, check with your physician.

**6. Prolonged immersion in hot water may induce hyperthermia.**

Hyperthermia occurs when internal body temperature reaches a level several degrees above the normal body temperature of 98.6°F (36.6°C). The symptoms of hyperthermia include: (1) dizziness, (2) fainting, (3) drowsiness, (4) lethargy and (5) increase in the internal body temperature. The effects of hyperthermia include: (1) unawareness of impending hazard, (2) failure to perceive heat, (3) failure to recognize the need to exit spa, (4) physical inability to exit spa and (5) unconsciousness resulting in danger of drowning.

**7. WARNING-The use of alcohol, drugs or medication can greatly increase the risk of fatal hyperthermia in hot tubs or spas.**

Despite the popular image of people in spas drinking wine or other alcoholic beverages, DO NOT use alcoholic beverages before or during spa use. Alcohol and certain drugs and medications, are depressants which cause slowed reflexes and drowsiness, especially in conjunction with the relaxed soaking in hot water. This can lead to sleep or unconsciousness and possibly result in drowning. Using your spa with other people who are also drinking or under the influence of drugs or medications is not a preventative measure since they are likely to become similarly affected by the combinations of alcohol, drugs or medication and hot water soaking.

Soaking in hot water causes changes in the circulatory system, such as enlargement of blood vessels near the skin. Therefore, people with a medical history of heart disease, circulatory problems, diabetes, low or high blood pressure should check with their physician before using spas. Additionally, people taking medications causing drowsiness, such as tranquilizers, narcotics, antihistamines, or anticoagulants should not use spas without asking their physician.

**8. Broken or missing drain covers should be replaced immediately.**

Accidents can occur when long hair or a body part is trapped by suction from a drain or outlet whose cover is broken or removed. Children are particularly vulnerable, and they should be warned against danger.

## DO NOT :

**Do not use electrical appliances in or around your spa. Do not use glass or other breakable items in or around your spa. Do not remove spa cabinet panels and attempt to make repairs. Do not attempt electrical repairs. Retain a certified licensed electrician.**

## SAVE THESE INSTRUCTIONS

# Selecting A Good Location



## Site Selection...

Your new spa will provide you and yours with hour upon hour of healthy, relaxing enjoyment. The following suggestions and recommendations will help you select a safe and compatible site for your spa, maximizing your enjoyment.

### **READ ALL SAFETY INSTRUCTIONS!**

*See pages 1 and 2 for other safety requirements and instructions*

#### 1. Certified Licensed Electrician Required

Electrical installation, (approval of and connection to power source) must be completed by a qualified certified licensed electrician in compliance with all codes.

#### 2. No Overhead Power Lines

Do not locate your spa under overhead power lines or in near proximity to existing buried or exposed electrical circuits. See your certified licensed electrician.

#### 3. Childproof Your Spa

Plan for limiting access of children. Precautions such as self closing and locking gates or access doors, fencing and other child barriers, as dictated by the site would be recommended.

#### 4. UL Safety Cover Required

In addition to its insulating factors, a good cover also provides a measure of additional protection from unwanted access. Select a cover which is classified by the Underwriters Laboratories meeting ASTM F1346-91 requirements.

## **LEVEL, FLAT & SOLID LOAD BEARING SITE CRITICAL**

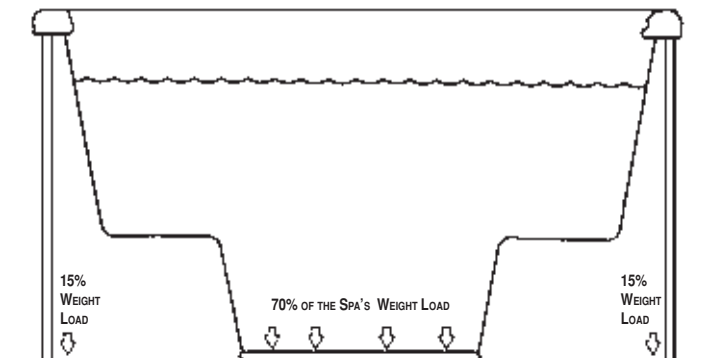
### Solid Load Bearing Site

The site must provide a solid foundation with a minimum load bearing capacity of 135 pounds per square foot (61.23 kgr per 929.03 sq. cm). Concrete slabs and decks must be designed to support this weight. Do not select a site composed of individual unsupported bricks, blocks or other materials which will shift unevenly and cause damage to your spa's internal frame.



### Level Site, Flat Surface

A level site is critical to both the performance and enjoyment of your spa. Water is unforgiving and will always settle level. A flat and level site provides the surface necessary to properly disperse weight between the footwell which bears most of the spa's weight and the structural frame which primarily provides stabilization and secondary support. The importance of proper support for the footwell in conjunction with the spa cabinet cannot be overstressed.



Solid, Level, Flat Surface Capable of Supporting 135 Pounds Per Sq. Ft.

**THE BULK OF YOUR SPA'S WEIGHT IS SUPPORTED BY THE FOOTWELL**  
**Failure to provide support will result in damage to the spa's shell and will void the shell warranty!**



# WARNING: DO NOT SUPPLY POWER TO AN EMPTY SPA!

## FILLING YOUR SPA

Filling your spa is the first step in maintaining water quality and chemical balance. Use only clear, uncontaminated potable water when filling the spa.

When Filling the spa open all jets and air controls.



### Water Level

The correct water fill level varies with each individual installation. Every person entering a spa displaces a given volume of water.

### Suggested "Fill Range" Provided

A fill range label has been placed on the surface skimmer face plate at the factory (see fig. 1). This label has a suggested minimum and maximum fill level that will provide a starting point for selecting a water level that meets your individual needs.

### Chemically Treat Water Immediately

To assure the maintenance of water quality, it is imperative that you chemically treat the spa water immediately upon completion of filling. See the treatment sections on pages 18 and 19.

fig. 1

## WINTERIZING YOUR SPA

*Warning: Allowing the spa water to freeze will cause severe damage to the spa shell, equipment, and plumbing.*

A spa can be a great asset to your health and relaxation during the winter months. However, for those who will be using a spa in freezing cold weather it is critical that a water temperature be maintained well above freezing.

### Freeze Protection

Your Leisure Bay spa is equipped with a special feature called freeze protection. If the high limit sensor detects 40°F (4°C) at the heater, then all the equipment is automatically activated to provide freeze protection. This equipment stays on until the sensor detects 45°F (7°C) at the heater.

**WARNING:** We strongly recommend that you inspect and test your spa and controls on a daily basis during periods when temperatures are below 32°F (0°C). Every installation is different and many factors contribute to possible freeze damage situations; rate of temperature drop, thermal cover insulating properties, thermal cover installation, spa installation location, wind exposure, power outage, spa water temp., etc. The spa's freeze protection system is designed to protect your spa from unforeseen freeze situations. However, in severe freeze conditions or if you do not plan to use your spa for a period of time, it may be impossible for the freeze protect system to fully protect your spa. When severe conditions threaten, we strongly recommend that you have the unit drained and winterized by a "Spa Professional." Properly winterizing a spa is a complicated process and should not be attempted by an amateur.

## DRAINING YOUR SPA

*(Warning: Do not supply power to an empty spa!)*



### 1. Turn Power Off

Turn power off at the spa consoles and deactivate disconnect switches at the G.F.C.I. plug or load center.

### 2. Locate Spa Drain Valve

Located under the lower corner of the spa as you are facing the console. See arrow.



Figure 1

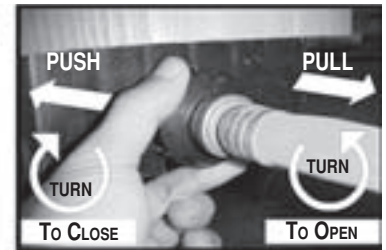


Figure 2

### 3. Remove Drain Valve Safety Cap

Remove safety drain cap (see figure 1) and store for use when refilling your spa. Attach a standard garden hose to the drain valve.

### 4. Attach Hose & Select Safe Suitable Drain

Remove safety drain cap (see figure 1) and store for use when refilling your spa. Attach a standard garden hose to the drain valve.

### 4. Attach Hose & Select Safe Suitable Drain

Route the hose to a sewer drain capable of safely assimilating 300 plus gallons of water which may contain both unsanitary contaminants and chemical residue. To open drain valve twist counter clockwise and pull (see figure 2).

**CAUTION:** Drain waste water may contain chemical residue and unsanitary contaminants which could be a hazard to health or the environment. Drain to specified sanitary sewer only.

# ELECTRICAL DATA FOR THE USE OF CERTIFIED LICENSED ELECTRICIAN

**WARNING: Shock Hazard! Under No Circumstances Should This Spa Be Installed By Anyone Other Than A Certified Licensed Electrician!**

All wiring **MUST** be in accordance with the National Electrical Code and all local codes.



**LEISUREBAYSPAS**

## HILO AND SANTO CONVERTIBLE EQUIPMENT PACKAGE

This convertible equipment pack is designed to accept either 120 or 240 volt power input.

Your spa has a factory installed 120 volt power cord with a G.F.C.I. 20 amp configured plug connector designed for use with a NEMA 5-20R receptacle. See below for further details. Conversion from the standard 120 volt cord connection to a 240 volt hard wire connection must be completed by a certified licensed electrician in accordance with the National Electrical Code and all local codes.

### A G.F.C.I. MUST BE A INTEGRAL PART OF THE CONNECTION

The National Electrical Code requires that both 120 and 240 volt circuits be protected by a Ground Fault Circuit Interrupter "G.F.C.I." and a Disconnect Switch: See National Electric Code Article 680-42 & 680-12

## WARNING:

**THIS G.F.C.I. PLUG PROVIDES GROUND FAULT PROTECTION FOR THE SPA AND SHOULD NEVER BE REMOVED, ALTERED OR DISABLED FOR ANY REASON!**

This G.F.C.I. plug has one vertical and one horizontal blade in addition to a grounding prong. This plug configuration is to be plugged into a like receptacle. **Under no circumstance should this configuration be modified.**

### A NEMA 5-20R 20 AMP RECEPTACLE IS REQUIRED

A NEMA 5-20 amp receptacle is required for a power cord installation. This receptacle must be installed in accordance with the National Electrical Code and all local codes.

### ISOLATED, DEDICATED 120 VOLT, 20 AMP CIRCUIT IS REQUIRED

All 120 volt installations require an isolated, dedicated 120 volt circuit to provide the power necessary for the proper operation of the electrical equipment.

### SAFETY FACTORS IN PLACEMENT OF THE 20 AMP RECEPTACLE

Special consideration should be given to safety when selecting a location for the 20 amp receptacle. The receptacle should be placed no closer than six (6) feet (1.8m) from the spa and in such a manner as to be out of the way of traffic to and from the spa and normal foot traffic. The power cord should be situated so it will not cause any other type of hazard.

### WIRE SIZING MUST MEET ELECTRICAL CODES

All installations are different. Wire sizing must meet the National Electrical Code and all local code specifications.



Ground fault interrupter plug & power cord fished through arched corner of the spa



NEMA 5-20 20 amp Receptacle



G.F.C.I. Equipped Plug



Load Center

**WARNING: USE COPPER CONDUCTORS ONLY!**



**LEISUREBAYSPAS**

## ***GROUND FAULT CIRCUIT INTERRUPTER***



Your Leisure Bay Spa has a factory mounted power cord which is equipped with a Ground Fault Circuit Interrupter “G.F.C.I.” built within the plug housing.

The G.F.C.I. has two mode buttons. The first is labeled “Test.” This button has a dual function. First it acts as a disconnect switch. Depress this button and power to the spa is disconnected. The same action is preformed to test the G.F.C.I. circuit.

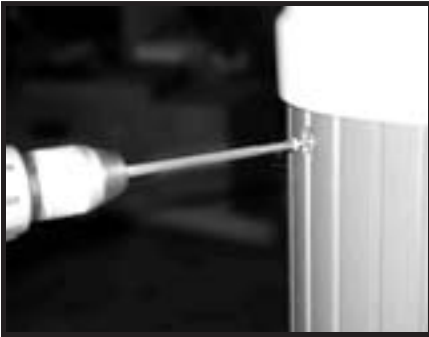
The second button labeled “Reset” also has two functions. The “Reset” button is also the connect (on) switch. Depressing the “Reset” button returns power to the spa equipment. This same button is used to “Reset” the G.F.C.I. during a test cycle. See page 1 number 4A.

**Should a G.F.C.I. circuit test fail immediately disconnect the power plug and contact a certified licensed electrician to diagnose and correct the problem.**



# Cabinet Panel Removal & Installation Instructions

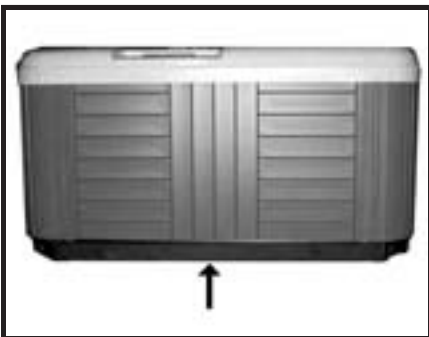
*(For Use By Qualified Professionals Only)*



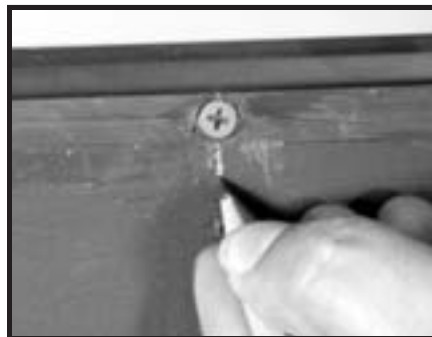
1. Remove and save fastener from corners.



2. Remove corner.



3. Locate bottom center screw.



4. Place a small mark on the base board below the screw. This will serve as a reference point during installation



5. Remove side bottom screws leaving the center one for last. Remove center screw while supporting panel in place



6. After the center screw is removed, the panel will slide down, then remove panel.



7. When Installing the panel, ensure that it is completely inserted in the top channel. Then follow the removal steps in reverse order.

**WARNING: Shock Hazard!**

**Spa Cabinet panels should be removed by qualified spa service professionals only!**

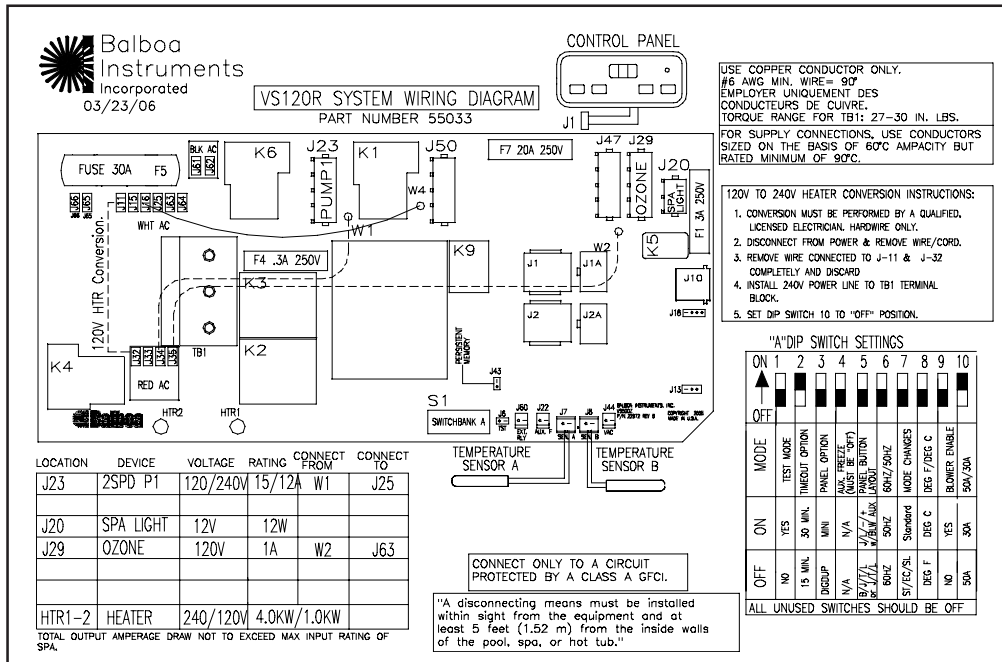
# ELECTRICAL DATA FOR THE USE OF CERTIFIED LICENSED ELECTRICIAN

**WARNING: Shock Hazard! Under No Circumstances Should This Spa Be Installed By Anyone Other Than A Certified Licensed Electrician!**

All wiring **MUST** be in accordance with the National Electrical Code and all local codes.



## HILO AND SANTO CONTROL WIRING DIAGRAM



### Conversion of the Equipment

The conversion of the equipment package from a factory installed 120 volt system to a hardwired 240 volt system must be completed by a certified licensed electrician.

### A G.F.C.I. AND A DISCONNECT SWITCH ARE REQUIRED

The National Electrical Code requires that spas connected to 240 volts circuits be equipped with a "G.F.C.I." and Disconnect Switch. See National Electric Code Articles 680-12 and 680-42.

**LEISURE BAY'S SPAS ARE NOT EQUIPPED WITH A 240V G.F.C.I. OR A DISCONNECT SWITCH. A G.F.C.I. SHOULD BE INSTALLED BY A CERTIFIED LICENSED ELECTRICIAN**

### OUTDOOR LOAD CENTER

The addition of an outdoor load center such as a Siemens W0408ML 1125 or equal must be added to the circuit. This type of load center provides both a G.F.C.I. and Disconnect Switch in a convenient configuration as required by the National Electric Code.

(See page 9 for suggested wiring configuration)

### ISOLATED, DEDICATED 240 VOLT, 30 OR 40 AMP CIRCUITS ARE REQUIRED

An isolated, dedicated 240 volt, 30 or 40 amp circuit is required to provide the power necessary to properly operate the 240V equipment package.

### PERMANENTLY HARD WIRED

All 240 volt operations wiring must be permanently hard wired, installed in grounded conduit and installed in compliance with the National Electrical Code and all local codes.

### WIRE SIZING MUST MEET ELECTRICAL CODES

All installations are different. Wire sizing must meet the National Electrical Code and all local code specifications.

See pages 9 & 10 for more conversion details.

**WARNING: USE COPPER CONDUCTORS ONLY!**

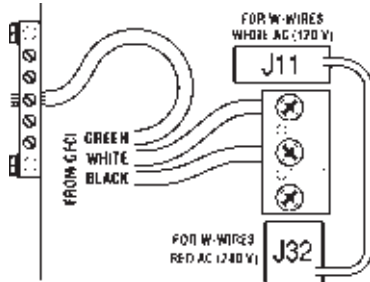
# ELECTRICAL DATA FOR THE USE OF CERTIFIED LICENSED ELECTRICIAN

**WARNING: Shock Hazard! Under No Circumstances Should This Spa Be Installed By Anyone Other Than A Certified Licensed Electrician!**

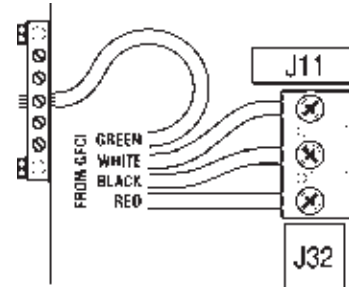
All wiring **MUST** be in accordance with the National Electrical Code and all local codes.

## CONVERSION OF HILO AND SANTO FROM 120V TO 240V

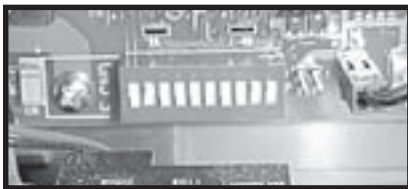
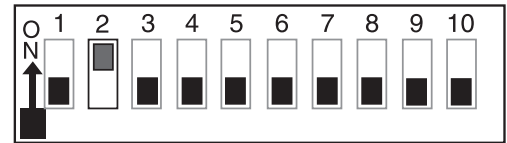
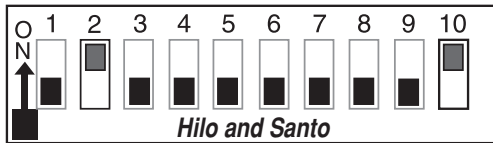
- Terminal Block Torque field connections should be between 21 and 23 inch lbs.
- Readily accessible disconnecting means to be provided at time of installation.
- Connect only to a circuit protected by a Class A Ground Fault Circuit Interrupter "G.F.C.I." mounted at least 6 feet (1.8m) from the inside walls of the spa and in line of sight from the equipment compartment.
- Remove white wire from J11 to J32 and move key #10 to Off position for 40 amp configuration.



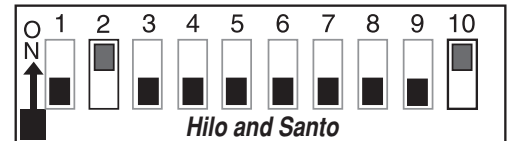
120V Power Connection



240V Power Connection



### DIP SWITCH KEY



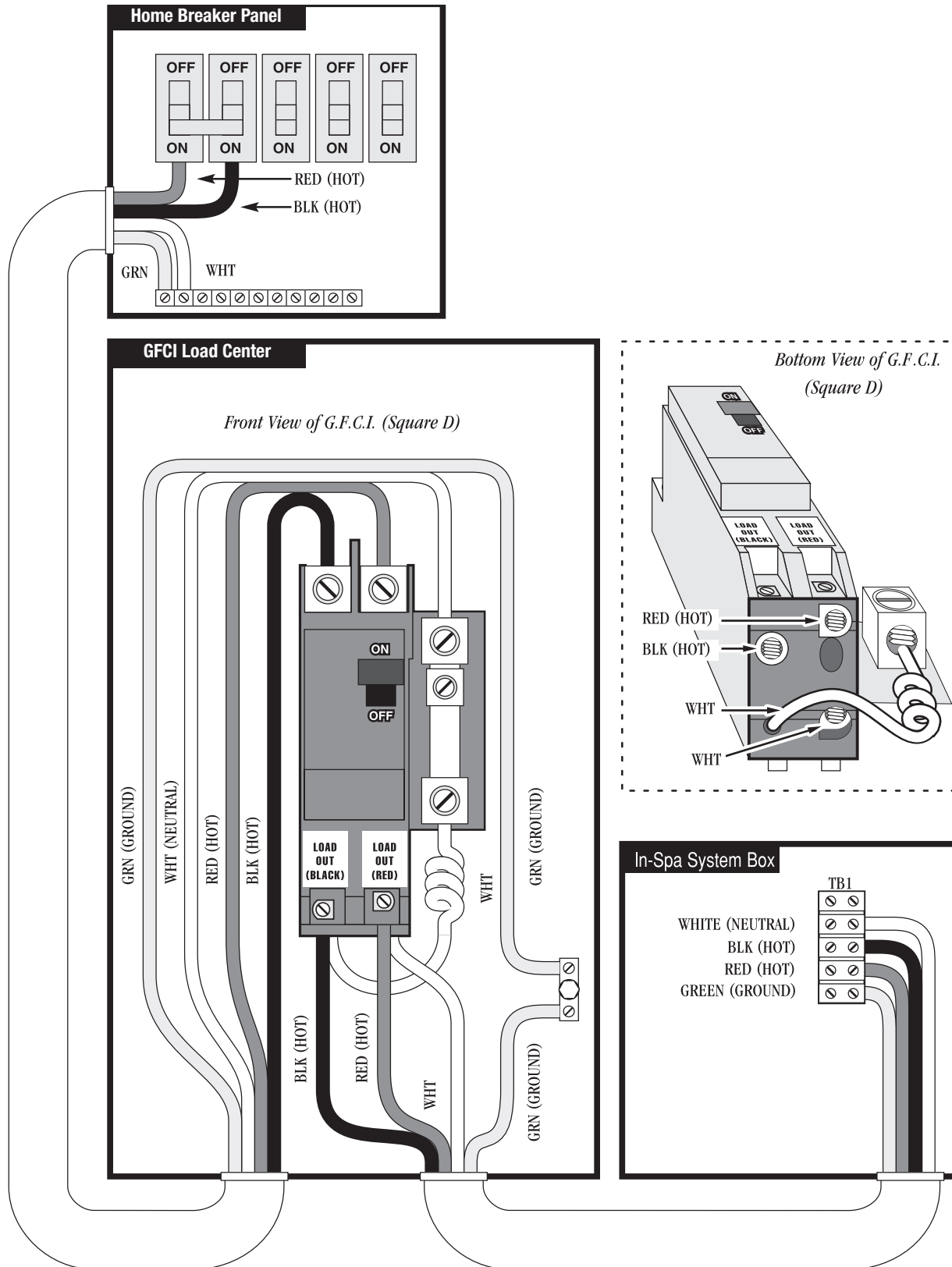
- |  |   |
|--|---|
| <p><b>1 Test Mode (normally off)</b></p> <p><b>2 Pump Time Out</b><br/>In "ON" position, Pump turns off after 30 minutes<br/>In "OFF" position, Pump turns off after 15 minutes</p> <p><b>3 Panel Option (must be OFF)</b><br/>In "ON" position, enables mini panel<br/>In "OFF" position, enables current panel</p> <p><b>4 Aux Freeze (must be OFF)</b></p> <p><b>5 Panel Button Layout (must be OFF)</b><br/>In "ON" position, enables J/L/-/+w/BLW/AUX<br/>In "OFF" position, enables B/J/T/L or J/T/L</p> | <p><b>6 Frequency (must be OFF)</b><br/>In "ON" position, 50Hz operation<br/>In "OFF" position, 60Hz operation</p> <p><b>7 Mode Changes (must be OFF)</b><br/>In "ON" position, standard mode only<br/>In "OFF" position, enables standard/economy/sleep</p> <p><b>8 Temperature Display</b><br/>In "ON" position, temperature is displayed in degrees Celsius<br/>In "OFF" position, temperature is displayed in degrees Fahrenheit</p> <p><b>9 Blower / Pump 2 Enable</b><br/>In "ON" position, enables pump 2<br/>In "OFF" position, disables pump 2</p> <p><b>10 Amperage Setting</b><br/>In "ON" position, for Low Amp service<br/>In "OFF" position, for High Amp service</p> |
|--|---|



A grounding lug has been provided on the exterior of the pack chassis to allow connection of a ground wire to a local grounding point to be establish in compliance with the National Electric Code (NEC) and all local codes.

# REQUIRED WIRING FOR 240 VOLT INSTALLATION

## Wiring Schematic



# ELECTRICAL DATA FOR THE USE OF CERTIFIED LICENSED ELECTRICIAN

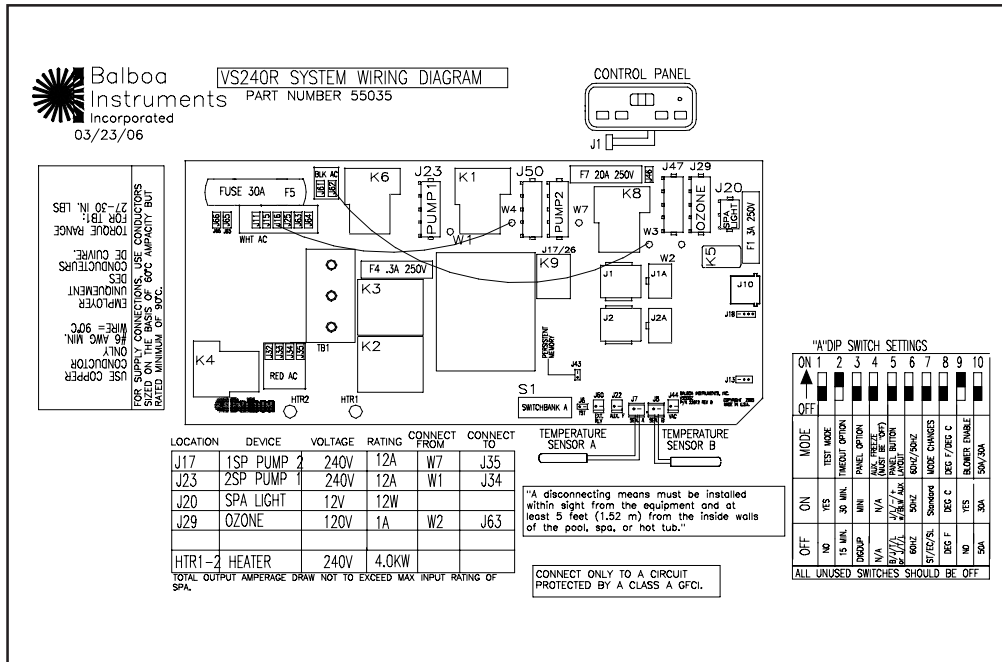
**WARNING: Shock Hazard! Under No Circumstances Should This Spa Be Installed By Anyone Other Than A Certified Licensed Electrician!**

All wiring **MUST** be in accordance with the National Electrical Code and all local codes.



## TONGA AND SANTO S CONTROL WIRING DIAGRAM

LEISUREBAYSPAS



**WIRING SYSTEM MUST BE COMPLETED BY A CERTIFIED LICENSED ELECTRICIAN.**

### A G.F.C.I. AND A DISCONNECT SWITCH ARE REQUIRED.

The National Electrical Code requires that spas connected to 240 volt circuits be equipped with a G.F.C.I. and Disconnect Switch. See National Electric Code Articles 680-12 and 680-42.

**LEISURE BAY'S SPAS ARE NOT EQUIPPED WITH A 240V G.F.C.I. OR A DISCONNECT SWITCH. A G.F.C.I. SHOULD BE INSTALLED BY A CERTIFIED LICENSED ELECTRICIAN**

### OUTDOOR LOAD CENTER PROVIDES BOTH

The addition of an outdoor load center such as a Siemens W0408ML 1125 or equal must be added to the circuit. This type of load center provides both a G.F.C.I. and Disconnect Switch in a convenient configuration as required by the National Electric Code.

### ISOLATED, DEDICATED 240 VOLT, 40 OR 50 AMP CIRCUITS ARE REQUIRED

An isolated, dedicated 240 volt, 40 or 50 amp circuit is required to provide the power necessary to properly operate the 240V equipment package.

### PERMANENTLY HARD WIRED

All 240 volt operations wiring must be permanently hard wired and installed in grounded conduit and installed in compliance with the National Electrical Code and all local codes.

### WIRE SIZING MUST MEET ELECTRICAL CODES

All installations are different. Wire sizing must meet the National Electrical Code and all local code specifications.

**WARNING: USE COPPER CONDUCTORS ONLY!**

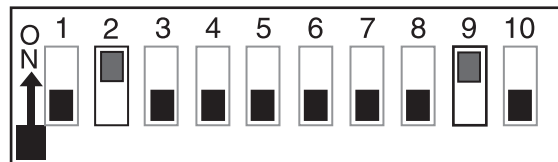
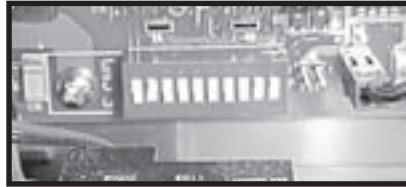


# ELECTRICAL DATA FOR THE USE OF CERTIFIED LICENSED ELECTRICIAN

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## TONGA AND SANTO S DIP SWITCH CONFIGURATION



*Tonga and Santo S Factory Set*

## DIP SWITCH KEY

- |  |  |
|--|--|
| <p><b>1 Test Mode (normally off)</b></p> <p><b>2 Pump Time Out</b><br/>In "ON" position, Pump turns off after 30 minutes<br/>In "OFF" position, Pump turns off after 15 minutes</p> <p><b>3 Panel Option (must be OFF)</b><br/>In "ON" position, enables mini panel<br/>In "OFF" position, enables current panel</p> <p><b>4 Aux Freeze (must be OFF)</b></p> <p><b>5 Panel Button Layout (must be OFF)</b><br/>In "ON" position, enables J/L/-/+/w/BLW/AUX<br/>In "OFF" position, enables B/J/T/L or J/T/L</p> <p><b>6 Frequency (must be OFF)</b><br/>In "ON" position, 50Hz operation<br/>In "OFF" position, 60Hz operation</p> | <p><b>7 Mode Changes (must be OFF)</b><br/>In "ON" position, standard mode only<br/>In "OFF" position, enables standard/economy/sleep</p> <p><b>8 Temperature Display</b><br/>In "ON" position, temperature is displayed in degrees Celsius<br/>In "OFF" position, temperature is displayed in degrees Fahrenheit</p> <p><b>9 Blower / Pump 2 Enable</b><br/>In "ON" position, enables pump 2<br/>In "OFF" position, disables pump 2</p> <p><b>10 Amperage Setting</b><br/>In "ON" position, for Low Amp service<br/>In "OFF" position, for High Amp service</p> |
|--|--|



A grounding lug has been provided on the exterior of the pack chassis to allow connection of a ground wire to a local grounding point to be established in compliance with the National Electric Code (NEC) and all local codes.

# Personal Comfort Control Console


The Leisure Bay Personal Comfort Control Console is your direct link to the most sophisticated solid state spa control center available. With a simple touch of the finger you can select any spa's functions from turning on the lights to powering up the jets. This state of the art control console allows you to program the spa's various operating functions to suit your individual needs by following the user friendly directions which follow. Should you have any questions regarding operations please contact your local Leisure Bay dealer.




## Initial Start-Up

When your spa is first activated, it will perform a self diagnostics test showing a series of numbers followed by Pr, then by – along with the low speed pump. Also the internal clock that keeps track of the filtration cycles every 12 hours will start at that point. The system is preset to heat up to 100°F and it is also preset to run on low speed for two hours. (F2)


## Temperature Adjustment 70°-104°F

When the temp pad  is touched once, the LCD will flash and display the temperature which has been set. While flashing, press the temp pad again to increase or decrease the temperature. For the opposite temp. setting wait until LCD stops flashing, then press the temp pad again to change. The temperature will change in 1°F increments. After 5 seconds, the LCD automatically display the current spa temperature.

## Jets

Press the  pad to turn the pump on and off. If left running, the pump will automatically turn off after 30 minutes, (Factory preset). For 15 minutes, see page 9 for dip switch settings.

## Light

Press the  pad to turn the spa light on and off. If the light is left on, it will automatically turn off in 4 hours.

## Freeze Protection





If the high-limit sensor detects 44°F at the heater, then the equipment is automatically activated to provide freeze protection. This is a normal spa function; no corrective action is necessary. The equipment stays on until the sensor detects 45°F at the heater. Freeze protection is enabled regardless of the spa's status.

## Standby Mode

The spa can be disabled when the filter needs to be replaced. To place the system in standby mode, press the  pad then the  pad and the display will show "59". All spa functions are disabled except for freeze control. Press any panel button to resume spa operation.

## Spa Water Maintenance

This function enables you to program the amount of water filtration and (ozone purification "optional") time.

Press the  then the  to enter the programming mode. Once in the programming mode press  to select the filtration time. Once selected, press the  button to exit the programming.

(F2) In this mode the water will be filtered for 2 hours every 12 hours.

(F4) In this mode the water will be filtered for 4 hours every 12 hours.

(F6) In this mode the water will be filtered for 6 hours every 12 hours.

(FC) In this mode the water will be filtered continuously.

## FOR ADDITIONAL FEATURES (see page 15)

## Display Messages (see page 16)

**WARNING: SHOCK HAZARD! NO USER SERVICEABLE PARTS. Do not attempt service of this control. Contact your dealer or service center for assistance. Follow all owner's manual power connection instructions. Installation must be performed by a certified licensed electrician and all grounding connections must be properly installed.**

# Personal Comfort Control Console


The Leisure Bay Personal Comfort Control Console is your direct link to the most sophisticated solid state spa control center available. With a simple touch of the finger you can select any spa's functions from turning on the lights to powering up the jets. This state of the art control console allows you to program the spa's various operating functions to suit your individual needs by following the user friendly directions which follow. Should you have any questions regarding operations please contact your local Leisure Bay dealer.





## Initial Start-Up

When your spa is first activated, it will perform a self diagnostics test showing a series of numbers followed by Pr, then by – along with the low speed pump. Also the internal clock that keeps track of the filtration cycles every 12 hours will start at that point. The system is preset to heat up to 100°F and it is also preset to run on low speed for two hours. (F2)


## Temperature Adjustment 70°-104°F

When the temp pad  is touched once, the LCD will flash and display the temperature which has been set. While flashing, press the temp pad again to increase or decrease the temperature. For the opposite temp. setting wait until LCD stops flashing, then press the temp pad again to change. The temperature will change in 1°F increments. After 5 seconds, the LCD automatically display the current spa temperature.

## Jets

Press the  pad to turn pump 1 and press  pad to turn pump 2 (Tonga Model Only) on and off. If left running, the pump will automatically turn off after 30 minutes, (Factory preset). For 15 minutes, see page 12 for dip switch settings.

## Light

Press the  pad to turn the spa light on and off. If the light is left on, it will automatically turn off in 4 hours.

## Freeze Protection





If the high-limit sensor detects 44°F at the heater, then the equipment is automatically activated to provide freeze protection. This is a normal spa function; no corrective action is necessary. The equipment stays on until the sensor detects 45°F at the heater. Freeze protection is enabled regardless of the spa's status.

## Standby Mode

The spa can be disabled when the filter needs to be replaced. To place the system in standby mode, press the  pad then the  pad and the display will show "S9". All spa functions are disabled except for freeze control. Press any panel button to resume spa operation.

## Spa Water Maintenance

This function enables you to program the amount of water filtration and (ozone purification "optional") time.

Press the  then the  to enter the programming mode. Once in the programming mode press  to select the filtration time. Once selected, press the  button to exit the programming.

(F2) In this mode the water will be filtered for 2 hours every 12 hours.

(F4) In this mode the water will be filtered for 4 hours every 12 hours.

(F6) In this mode the water will be filtered for 6 hours every 12 hours.

(FC) In this mode the water will be filtered continuously.

## FOR ADDITIONAL FEATURES (see page 15)

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LEISUREBAYSPAS

# Additional Features

## Spa Heating Modes

The **Heating Mode** offers the ability to control your heater in special circumstances. Your spa is preset at the factory to **Standard Mode**. However, the **Heating Mode** can be changed to **Economy** or **Sleep** by pressing the  then  button. With each press of the buttons, the display will cycle through the three different modes described below:

- 1. Standard Mode (ST):** Your spa is preset to this mode. This mode operates the heater whenever needed to maintain the programmed spa water temperature. (See **Temperature Adjustment**).
- 2. Economy Mode (EC):** This mode operates the heater only during programmed **Heating Cycles** (See “Setting Heating Cycles” below). This mode is ideal for areas that charge a premium for electricity during peak hours. This mode will maintain the thermostat setting. If it does not reach the thermostat setting, you may have to allow for more heating time by increasing the **Heating Cycles**.
- 3. Sleep Mode (SL):** This mode works in the same manner as the **Economy Mode** except the thermostat setting is automatically lowered by 20 degrees. This mode is best suited for extended leaves from home when it is not important to maintain constant water temperature, such as vacations or business trips.

## Summer Set Temperature

In hot weather, it is possible for water temperature to exceed the temperature setting. This is especially common when your temperature setting is lower than air temperature. If the water temperature exceeds the temperature setting more than 3°, an automatic safety circuit will turn off all of the electrical systems. The systems will remain off until either the water temperature cools to below the setting, or the setting is increased above the water temperature.



# LEISUREBAYSPAS

## Display 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 temperature will be displayed.
HH	"Overheat" - The spa has shut down. One of the sensors has detected 118°F 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.	DO NOT ENTER THE WATER. Remove the spa cover and allow water to cool. At 107°F, the spa should automatically reset. If spa does not reset, shut off the power to the spa and call your dealer or service organization.
IC	"Ice" - Potential freeze condition detected.	No action required. The pump and blower automatically will activate regardless of spa status.
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 situation and disappear when the heater cools.)
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 situation and disappear when the heater cools.)
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.	Check water level in spa. Refill if necessary. If the water level is okay, make sure the 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.	Check water level in spa. Refill if necessary. If water level is okay, make sure the pumps have been primed. Press any button to reset, or this message automatically 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.

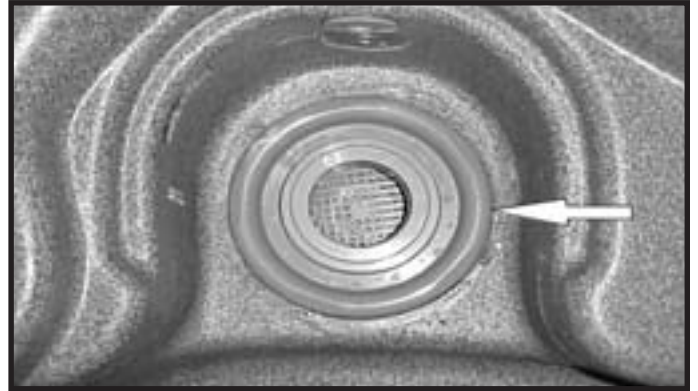


## CLEANING YOUR SPA FILTER

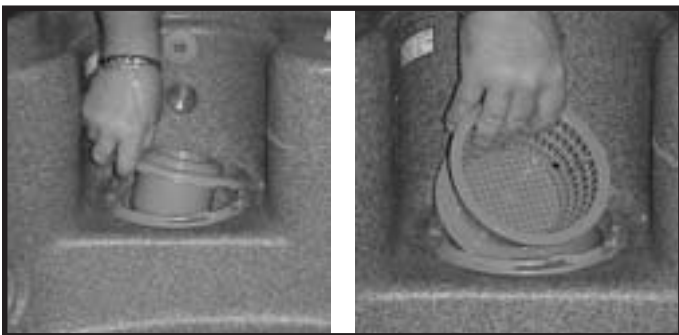
Proper care and cleaning of your spa filter is very important to the enjoyment of your spa. The filter is designed to remove emerged debris and contaminants, providing clear clean water for the bather. The most important maintenance step is to establish a cleaning routine to fit your use pattern. Heavy use and introduction of contaminants such as oily body lotions could mean cleaning on a weekly basis while average use might require only monthly cleaning.



1. Activate the standby mode or turn off electrical power. Remove filter cover and set aside.



2. To remove floating weir and basket rotate it a 1/4 turn counter clockwise.



3. Remove the floating weir and basket.



4. Remove filter cartridge and wash it with a garden hose inside and out until the cartridge is clean. Reinsert the filter and follow the steps in the reverse sequence.

### NOTE:

1. Body oils, algae, and suntan oil can form a coating on the spa filter cartridge pleats which may not be thoroughly removed by the garden hose. To remove such substances, soak the filter in a solution of filter cleaner. Various brands of such cleaners are readily available at your local dealer.
2. Improper spa filter maintenance will alter the spa sensing device on your spa. This will lead to faulty heater and or pump operation. But generally, cleaning or replacing the filter cartridge regularly will remedy this situation.



# Water Purification & Maintenance

## You Deserve Pure, Crystal Clear Water

Pure, crystal clear water is part of the reward you receive for owning your very own spa. Maintaining water quality is a simple matter when a Use/Maintenance Routine is established early on in ownership.

## Use/Maintenance Routine

The tasks required to maintain superior water quality are divided into two categories, Regular and Special. “Regular” tasks include those that should be routinely performed regardless of use pattern. For example, the spa filter should be cleaned at a minimum monthly, even if the spa is used only occasionally. “Special” tasks are those performed to compensate for increased spa use. For example, the filter on a spa that has experienced a heavy bather load resulting from vacation time and visiting friends or relatives might need cleaning on a weekly basis or more. Planning and establishing a routine of Regular and Special maintenance as required by time and bather load will significantly simplify your spa maintenance.

## Starting Point For Developing A Use/Maintenance Routine

No hard set rules can be established for creation of a spa maintenance program since each individual spa has its own unique location conditions and bather patterns. The following chart of regular and special maintenance tasks is meant to provide a starting point. Water testing and experience will be the final indicators of what your routine should be.

	<b>LIGHT USAGE</b>	<b>AVERAGE USAGE</b>	<b>ABOVE AVG. USAGE</b>	<b>HEAVY USAGE</b>
Test & Adjust pH (7.2-7.8 Range)	Weekly	Twice Weekly	Thrice Weekly	Daily
Test & Maintain Bromine (3.0-5.0 ppm)	Weekly	Twice Weekly	Daily	Daily
Vacuum Spa	Monthly	Twice Monthly	Thrice Monthly	Weekly
Clean Spa Shell Water Line	Weekly	Weekly	Twice Weekly	Daily
Clean Spa Filter	Monthly	Twice Monthly	Twice Monthly	Weekly
Test & Maintain Alkalinity	Bi-Weekly	Weekly	Twice Weekly	Twice Weekly
Add “Non Chlorine Shock”			Weekly	As Required
Test & Maintain Calcium Hardness	Weekly	Weekly	Weekly	Weekly
Clean Cartridge with Chemical Cleaner	Quarterly	Monthly	Twice Monthly	As Required

**ALWAYS FOLLOW THE MANUFACTURERS DIRECTIONS & INSTRUCTIONS ON THE CHEMICAL CONTAINER’S LABEL**

**IMPROPER WATER BALANCE WILL DAMAGE YOUR SPA’S SHELL & EQUIPMENT**



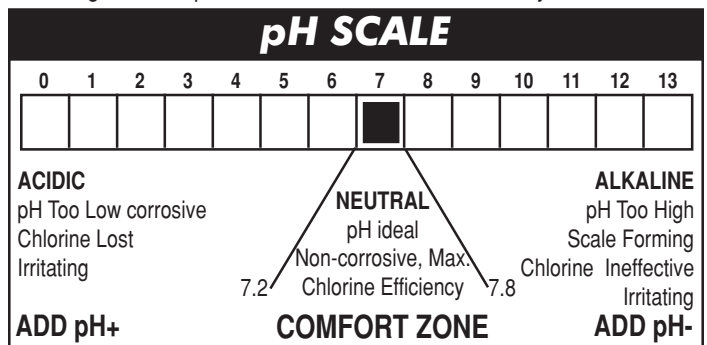
### Water Balance Is Critical

Unlike ordinary drinking water, spa water is held captive in your spa and is used over and over. All water contains minerals, metals and other dissolved solids. In the case of spa water, these materials tend to concentrate due to normal usage and evaporation. Therefore, it is critical that you test and treat your spa water to maintain proper balance.

### pH

pH is the measure of the degree of pH acidity or alkalinity of pool water. Practically speaking, it tells if water is neutral or how far away from neutral.

pH is a measure on a scale, to which numbers have been assigned, from 1 to 14. Seven is the middle of the scale and is considered exactly neutral. Readings below 7 are increasingly acidic, above 7 are increasingly basic or alkaline. Under normal conditions, it has been found that the proper pH for spa water is approximately 7.5 with pH 7.2-7.7 being an acceptable range. The chart to the right indicates different tendencies at assigned pH readings and what chemical to add.



### Total Alkalinity

Alkalinity represents the amount of alkaline minerals in water. It is the measure of the buffering capacity or resistance to a change in pH of water. It minimizes changes in pH, making pH easier to control. Alkalinity and pH are sometimes confused. pH is a measure of DEGREE of acidity of water. Alkalinity is a QUANTITATIVE measure, telling you the total amount or quantity of alkaline minerals present. The proper alkalinity range is 80-120 ppm. If alkalinity is allowed to drift, corrosion or scaling may result. Have your spa water tested periodically for alkalinity by a qualified dealer.

### Calcium Hardness

Total Hardness is used to describe the total amount of dissolved calcium and magnesium bicarbonates, as well as smaller quantities of other minerals in water. Unbalanced water, high in hardness, can cause water to become cloudy. Scale can form inside pipes restricting water flow and reducing their efficiency. Scale can also discolor a spa's interior. On the other hand, low hardness and unbalanced water can contribute to corrosive water conditions. Therefore, a certain amount of hardness is desirable. The desired range is between 100-200 ppm. Once again, your water should be tested periodically for hardness.

## CLEANING THE SPA

From time to time it will be necessary to clean the exposed surface areas of your spa shell and cabinet. Do not use cleaners or compounds that contain harsh abrasives or caustic chemicals. Avoid using rubbing or buffing compounds.

### Water Marks On Spa Shell

Water marks on the spa shell are best removed by applying a commercially available alcohol based window washing compound such as plain Windex to a soft rag or paper towel and wiping the surface in a circular motion.

### Removing Tub Ring

Tub ring is best removed with a specialized commercially available cleaner such as Sun Surface Cleaner. Ask your local dealer for recommendations. Always apply with a soft wet sponge or paper towel.

### Cleaning The Spa Cabinet

Use a mild dish detergent diluted with tap water and applied with a soft wet sponge or paper towel to clean the spa cabinet. Never use abrasive or caustic compounds.



**Do not use cleaners or compounds that contain harsh abrasives or caustic chemicals. Avoid using rubbing or buffing compounds.**







