

# Acrylic Spa Owner's Manual

United States and Canada



**MADE IN THE USA**

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Due to continuous improvement programs, all models, operation, and/or specifications are subject to change without prior notice.

LTR50001143, Rev. AW  
1/29/20

## CONTACT INFORMATION

For customer service, please contact your authorized dealer immediately. If you need additional information and/or assistance, contact:

**LMS Customer Service Department**  
**1462 East Ninth Street**  
**Pomona, CA 91766.**

Toll Free: 1-800-225-7727  
Fax: 1-909-629-3890

# Important Safety Instructions

## READ AND FOLLOW ALL INSTRUCTIONS.

### WARNING:

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

### DANGER -- Risk of accidental drowning:

Do not allow children to be in or around a spa unless a responsible adult supervises them. Keep the spa cover on and locked when not in use. See instructions enclosed with your cover for locking procedures.

### 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 the flow rates are compatible.

Never operate the spa if the suction fitting or filter baskets are broken or missing. Never replace a suction fitting with one that is rated less than the flow rate marked on the original suction fitting.

### DANGER -- Risk of electric shock:

Install the spa at least 5 feet (1.5 meters) from all metal surfaces. As an alternative, a spa may be installed within 5 feet of metal surfaces if each metal surface is permanently bonded by a minimum #8 AWG solid copper conductor to the outside of the spa's control box.

### DANGER -- Risk of electric shock:

Do not permit any external electrical appliances, such as lights, telephones, radios, televisions, and etc., within five feet (1.5 meters) of the spa. Never attempt to operate any electrical device from inside the spa.

### WARNING -- To reduce the risk of injury:

The spa water 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 young children and when spa use exceeds 10 minutes.

High water temperatures have a high potential for causing fetal damage during pregnancy. Women who are pregnant, or who think they are pregnant, should always check with their physician prior to spa usage.

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, a medical history of heart disease, low or high blood pressure, circulatory system problems or diabetes should consult a physician before using the spa.

Persons using medications should consult a physician before using the spa since some medications may induce drowsiness while others may affect heart rate, blood pressure and circulation.

### HYPERTHERMIA DANGER:

Prolonged exposure to hot air or water can induce hyperthermia. Hyperthermia occurs when the internal temperature of the body reaches a level 3°F to 6°F above the normal body temperature of 98.6°F (or 2°C to 4°C above 37°C). While hyperthermia has many health benefits, it is important not to allow your body's core temperature to rise above 103°F (39.5°C).

Symptoms of excessive hyperthermia include dizziness, lethargy, drowsiness and fainting. The effects of excessive hyperthermia may include:

- Failure to perceive heat
- Failure to recognize the need to exit spa or hot tub
- Unawareness of impending hazard
- Fetal damage in pregnant women
- Physical inability to exit the spa
- Unconsciousness

**WARNING:** The use of alcohol, drugs, or medication can greatly increase the risk of fatal hyperthermia.

**DANGER -- Risk of electric shock:**

- Replace a damaged power cord immediately.
- Do not bury the power cord.
- Connect to a grounded, grounding-type receptacle only.

**WARNING:** People with infectious diseases should not use a spa or hot tub.

**WARNING:** To avoid injury, exercise care when entering or exiting the spa or hot tub.

**WARNING:** Do not use drugs or alcohol before or during the use of a spa or hot tub to avoid unconsciousness and possible drowning.

**WARNING:** Do not use a spa or hot tub immediately following strenuous exercise.

**WARNING:** Prolonged immersion in a spa or hot tub may be injurious to your health.

**CAUTION:** Maintain water chemistry in accordance with manufacturer's instructions.

**SAVE THESE INSTRUCTIONS.**



# Preparing for Your New Portable Spa

## Pre-Delivery Checklist

Most cities and counties require permits for exterior construction and electrical circuits. In addition, some communities have codes requiring residential barriers such as fencing and/or self-closing gates on property to prevent unsupervised access to the property by children. Your dealer can provide information on which permits may be required and how to obtain them prior to the delivery of your spa.

| Before Delivery |  |
|-----------------|--|
|                 | Plan your delivery route               |
|                 | Choose a suitable location for the spa |
|                 | Lay a 5 - 8 cm concrete slab           |
|                 | Install dedicated electrical supply    |
| After Delivery  |  |
|                 | Place spa on slab                      |
|                 | Connect electrical components          |

## Planning the Best Location

### Safety First

Do not place your spa within 10 feet (3 m) of overhead power lines.

### Consider How You Will Use Your Spa

How you intend to use your spa will help you determine where you should position it. For example, will you use your spa for recreational or therapeutic purposes? If your spa is mainly used for family recreation, be sure to leave plenty of room around it for activity. If you will use it for relaxation and therapy, you will probably want to create a specific mood around it.

### Plan for Your Environment

If you live in a region where it snows in the winter or rains frequently, place the spa near a house entry. By doing this, you will have a place to change clothes and not be uncomfortable.

### Consider Your Privacy

In a cold-weather climate, bare trees won't provide much privacy. Think of your spa's surroundings during all seasons to determine your best privacy options. Consider the view of your neighbors as well when you plan the location of your spa.

### Provide a View with Your Spa

Think about the direction you will be facing when sitting in your spa. Do you have a special landscaped area in your yard that you find enjoyable? Perhaps there is an area that catches a soothing breeze during the day or a lovely sunset in the evening.

### Keep Your Spa Clean

In planning your spa's location, consider a location where the path to and from the house can be kept clean and free of debris.

Prevent dirt and contaminants from being tracked into your spa by placing a foot mat at the spa's entrance where the bathers can clean their feet before entering your spa.

### Allow for Service Access

Make sure the spa is positioned so that access to the equipment compartment and all side panels will not be blocked.

Many people choose to install a decorative structure around their spa. If you are installing your spa with any type of structure on the outside, such as a gazebo, remember to allow access for service. It is always best to design special installations so that the spa can still be moved, or lifted off the ground.

## Preparing a Good Foundation

Your spa needs a solid and level foundation. The area that it sits on must be able to support the weight of the spa, with water and the occupants who use it. If the foundation is inadequate, it may shift or settle after the spa is in place, causing stress that could DAMAGE YOUR SPA SHELL AND FINISH.

***Damage caused by inadequate or improper foundation support is not covered by the warranty. It is the responsibility of the spa owner to provide a proper foundation for the spa.***

Place the spa on an elevated 3 to 4" / 30 cm concrete slab. Pavers, gravel, brick, sand, timbers or dirt foundations are **not** adequate to support the spa.

We strongly recommend that a qualified, licensed contractor prepare the foundation for your spa.

If you are installing the spa indoors, pay close attention to the flooring beneath it. Choose flooring that will not be damaged or stained.

If you are installing your spa on an elevated wood deck or other structure, it is highly recommended that you consult a structural engineer or contractor to ensure the structure will support the weight of 150 pounds per square foot (732 kg / m<sup>2</sup>).

To properly identify the weight of your new spa when full, remember water weighs 8.33 lbs. per gallon, or 1 kg per liter. For example, an average 8' spa holds approximately 500 gallons, or 1892 liters, of water. Using this formula, you will find that the weight of the water alone is 4,165 lbs, or 1892 kg. Combined with the dry weight of the spa you will note that this spa will weigh approximately 5,000 lbs, or 2267 kg, when full of water.



## Opening the Front Door Panel for Electrical Hookup

The following electrical connections must be performed by a licensed electrical contractor. Unscrew and remove the two corner panels on each side of the spa's front door.



Then, unscrew and remove the front door panel.



Pictured to the right is the inside of the spa behind the front door. The electrician now has access to connect the spa for power. While the front door is off, refer to page 11 for instructions on ensuring the plumbing fittings are secure (but do not be tempted to over-torque or over-tighten these fittings).



Note that the drain pipe (left photo) is internal and remains within the spa cabinet during normal use. Once the electrical work is done, reattach and screw panels back in. (Front door first, then corner panels)



## 240 Volt Electrical Installation

All 240V spas must be permanently connected (hard wired) to the power supply. See the wiring diagram on page 8.

**These instructions describe the only acceptable electrical wiring procedure. Spas wired in any other way will void your warranty and may result in serious injury.**

When installed in the United States, the electrical wiring of this spa must meet the requirements of NEC 70 and any applicable local, state, and federal codes.

**The electrical circuit must be installed by an electrical contractor and approved by a local building or electrical inspector.**

**Failure to comply with state and local codes**

**may result in fire or personal injury and will be the sole responsibility of the spa owner.**

The power supplied to the spa must be on a dedicated GFCI protected circuit as required by NEC 70 with no other appliances or lights sharing the power.

Use copper wire with THHN insulation. Do not use aluminum wire.

Use the table below and on the next page to determine your GFCI and wiring requirements.

Wires that run over 100 feet must increase wire gauge to the next lower number. For example: A normal 50 amp GFCI with four #6 AWG copper wires that run over 100 feet would require you to go to four #4 AWG copper wires.

## 120 Volt Electrical Installation

Always follow applicable local, state and federal codes and guidelines.

Use only a dedicated electrical line with a 15 amp breaker.

Cord-and-plug connections may not use a cord longer than 15 feet (4.6 m) and must be plugged into a dedicated 15 amp GFCI connection (NEC 680.42(A) (2)). Do not use extension cords!

Always use a weatherproof-covered receptacle.

Receptacle shall be located not less than 5 feet (1.5 m) from and not exceeding 10 feet (3.0 m) from the inside wall of the spa. (NEC 680.43(A))

Do not bury the power cord. If your cord becomes damaged, replace it before next usage.

All 120V spas must have a GFCI. This can be either a 15 amp GFCI receptacle or a 15 amp GFCI cord and

plug kit as shown (CKIT110 - P/N ELE09700087).

### Testing the GFCI

Test the GFCI plug prior to first use and periodically when the spa is powered.

1. Plug in the GFCI into the power outlet. The indicator should turn on.
2. Press the TEST button. The GFCI will trip, the indicator will turn off, and the spa will stop operating.
3. Press the RESET button. The GFCI will reset, the indicator will turn on again, and the spa will turn back on.

The spa is now safe to use.

If the GFCI trips while the spa is in use, press the RESET button. If the GFCI does not reset, unplug the spa and call your local spa dealer for service. **DO NOT USE THE SPA!**

## Testing the GFCI Breaker

Test the GFCI breaker prior to first use and periodically when the spa is powered. To test the GFCI breaker follow these instructions (spa should be operating):

1. Press the TEST button on the GFCI. The GFCI will trip and the spa will shut off.

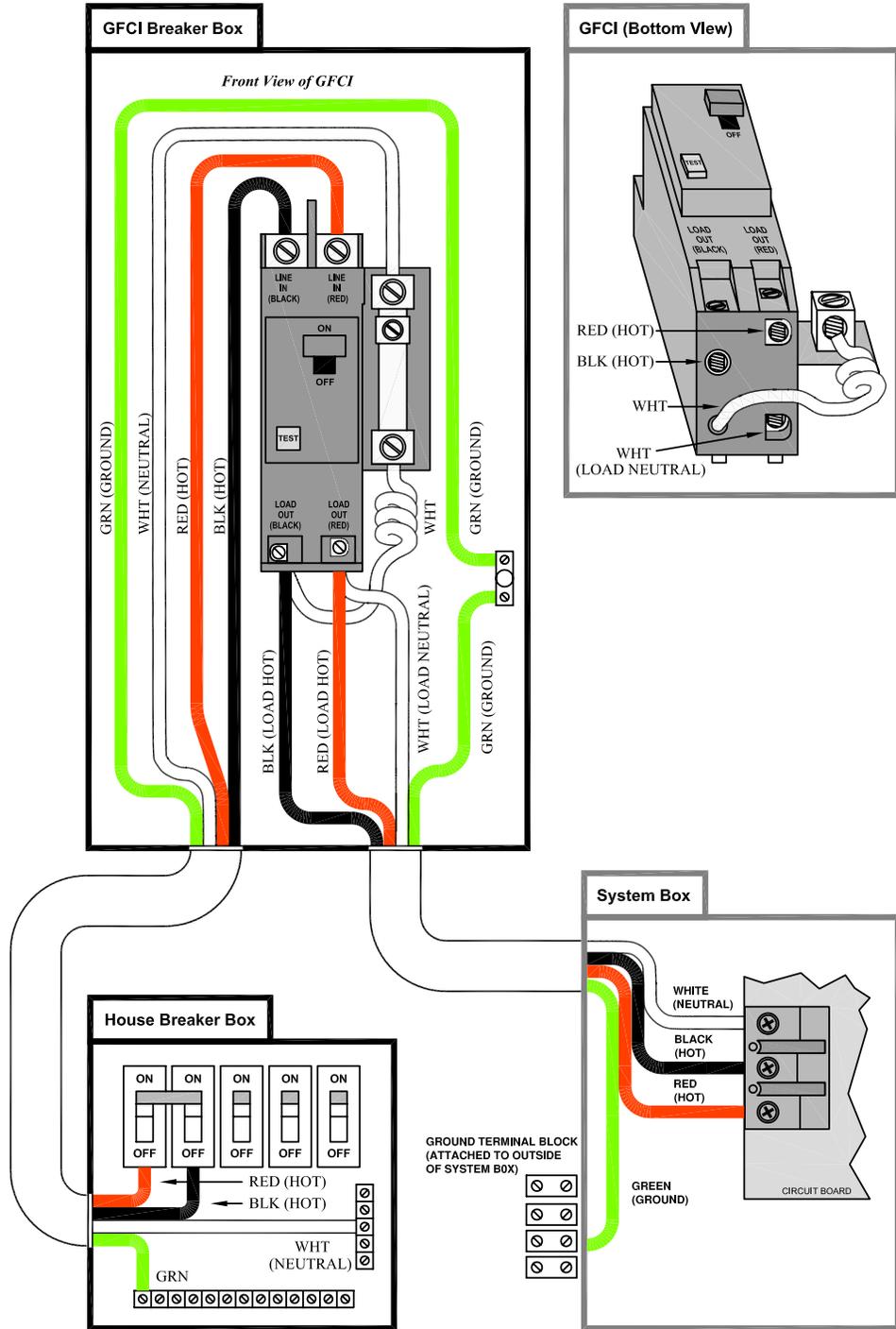
2. Reset the GFCI breaker by switching the breaker to the full OFF position, wait a moment, then turn the breaker back on. The spa should have power again.



## GFCI and Wiring Requirements

| Control System | Pumps  | GFCI Required   | Wires Required           |
|----------------|--------|-----------------|--------------------------|
| VS300          | 1 Pump | One 40 amp GFCI | Four #8 AWG copper wires |
| VS5100         | 2 Pump | One 50 amp GFCI | Four #6 AWG copper wires |

# GFCI Wiring Diagram (Balboa)



## Filling and Powering Up Your Portable Spa

### 1. Inspect the spa equipment.



After the spa has been placed on an approved surface and has been correctly wired by a licensed electrician, inspect all plumbing connections in the equipment area of your spa. Ensure that these connections are secure and that they did not loosen during shipment.

If your spa has gate valves, make sure they are all in the UP or OPEN position. **IMPORTANT NOTE: Depending on the year and model, your particular spa may not be equipped with gate valves.**

Never run the spa with the gate valves closed or without water circulating for long periods of time. Be careful not to over-tighten the plumbing fittings.

### 2. Remove the cartridge from filter canister.



Unscrew the cartridge and remove it.



After you remove the filter, remove the plastic wrapper and soak it in water for 30 minutes before you replace it. A dry filter can allow air into the filtration system which can cause the pump to fail to prime. Never try to pull the filter cartridge while the spa is running in low or high speed (i.e., any speed).

### 3. Fill the spa.



Place a garden hose in the filter canister and fill your spa with **regular tap water** about six inches from the top.

If the water level is too low or too high, your spa will not operate properly.



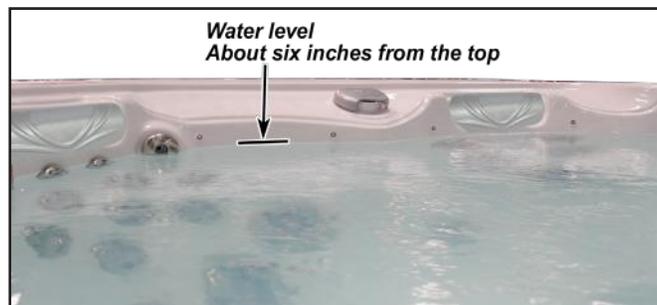
Always fill the spa through the filter canister! Failure to do so may cause air to be trapped in the filtration system and prevent the pumps from operating properly.

#### **Never fill your spa with soft water.**



Soft water makes it impossible to maintain the proper water chemistry and may cause the water to foam, which will ultimately harm the finish of the spa and void your warranty.

You may fill your spa with **well water provided the following conditions are met:** 1) Purchase and use a pre-filter to run the well water through on the fill-up. The pre-filter will be placed before the spa filter in the fill-up flow of water. 2) Have a Total Dissolved Solids (TDS) and metals test performed by a qualified person after the fill-up process but before any spa use.



#### 4. Turn on power to the spa.



When the spa is filled to the correct level, turn on the power at the GFCI breaker. (Ensure that the 120V spas are connected to the proper electrical outlet.)

#### 5. Prime the pump.



For **VS300**. Your spa will perform a self-diagnostic check and go into Priming Mode. The control panel will display either **RUN PUMPS PURG AIR ---** or **Priming Mode**, depending on which control panel you have.

Do the following:

1. Press the JETS or JETS 1 button once to start the pump in low speed.
2. Press it again to switch the pump to high speed.
3. If you have other pumps, press JETS 2 or JETS 3 to turn them on also.

Running the pumps helps the pumps prime.

After two minutes, the pump should prime. If it does not, follow the priming instructions on the next page. If it does, continue with the next step.

#### 6. Install the filter into the filter canister.



Make sure the filter has soaked at least 30 minutes before you install it. Insert the filter all the way and screw it in. Do not over-torque the cartridge during installation, just hand tighten gently.

#### 7. Adjust water chemistry.

Test and adjust the water chemistry. See the section on page 18 for instructions on water clarity.

#### 8. Let the spa heat up.

When the spa has finished priming, the heater will activate. Put the cover on and let the spa heat to the set temperature.

## Priming the Pump

New spa owners often have difficulty the first time they start their spa and the pump fails to prime. This can be frustrating, but these simple instructions can help you.

Sometimes air can become trapped in the pump while filling the spa. You will know this has happened when after you have filled and started the spa, the pump does not seem to function. You will hear the pump operating, but no water will be moving.

There are two methods of priming the pump.

### The first method will remove small air bubbles trapped in the pump.

1. Turn the spa on and wait for PR (Priming Mode) to appear on the topside display.
2. Press the JETS 1 button to turn on the pump and let it run for 10 seconds. The pump should be running in low speed.
3. Press the JETS 1 buttons again and let the pump run in high speed for 10 seconds.
4. Press the JETS 1 button again to turn off the pump. The pump should be left in the off position for 10 to 15 seconds.
5. Repeat steps 1 through 4 until water is flowing through all the jets and all air is removed from the plumbing.

### The second method will remove a large air lock within the pump.

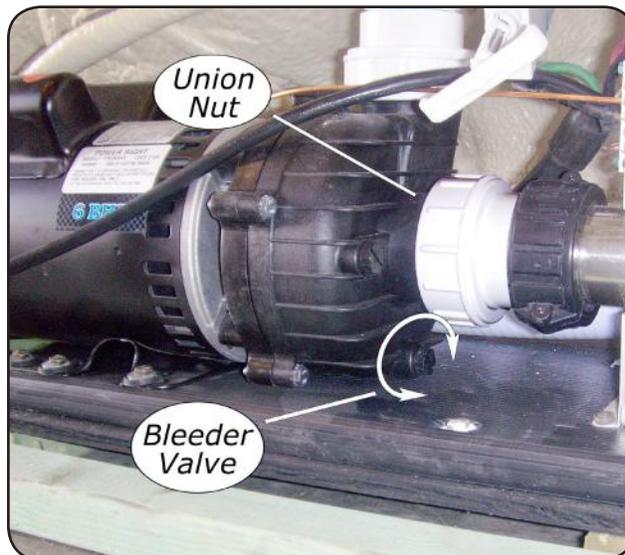
1. Using a Phillips screwdriver, remove the front panel from the spa and locate the pump.
2. While the spa is operating, turn the bleeder valve counter clockwise with a small pair of pliers or a flat head screwdriver until the air has been released from the pump.
3. If this is unsuccessful, loosen the white union nut on side of the pump with channel locks. When air is bled out, tighten the nut and set the pump on high speed.



The pump will not work properly while air is trapped in it. Continuing to operate the pump in this way will cause damage.

Whenever you fill your spa, fill it through the filter canister and make sure all jets are open.

Note: If you press the **Temp** button any time during Priming Mode, it will exit that mode and begin Standard Mode.



# Operating Your Spa

## Spa Topside Control (Balboa)

*For one pump systems*



*For two pump systems*



### Initial Start-up

When first powered up, your hot tub will perform a self-diagnostic check and go into priming mode. When the control panel displays **PR**, IMMEDIATELY do the following:

1. Press the JETS 1 button to turn on the pump and let it run for 10 seconds. The pump should be running in low speed.
2. Press the JETS 1 button again and let the pump run in high speed for 10 seconds.
3. Press the JETS 1 button again to turn off the pump. The pump should be left in the off position for 10 to 15 seconds.
4. Repeat steps 1 through 3 until water is flowing through all the jets and all air is removed from the plumbing.

When the hot tub has finished priming, the heater will be activated and the water temperature will be maintained in standard mode. The hot tub will heat to 100°F (37.5°C) at start up until the set temperature is changed as described below.

### Temperature Adjustment

**(Range 80°F to 104°F, 26°C to 40°C)**

The electronic control panel displays the actual water temperature in degrees Fahrenheit. The displayed temperature will only be current after the pump has been running for at least two minutes.

To display the temperature that the hot tub is set to:

- Press the **Temp** button. The temperature setting will flash.
- While the display is flashing, each time you press **Temp** button, the set temperature will change up or down one degree.
- If the desired temperature is opposite of the direction each press of the button is making, release button, allow display to stop flashing and then press **Temp** button to change temperature the other direction.

### Standard, Economy and Sleep Heating Modes

Your new hot tub is equipped with a heating feature that gives you complete control of the heating system. When the hot tub is powered up, it will automatically start in standard heating mode.

- **St** will light briefly on the main display. In this mode, the heating system will automatically maintain the set temperature. In the economy-heating mode, the heating system will only activate during filtration times.
- **Ec** will display solid if temperature is not current and will alternate with water temperature if measured temperature is current.
- Economy mode will heat the water to the set temperature while Sleep mode, indicated by a **SL** on the main display, will also only activate the heater during the filtering cycles but will only heat the water to within 20°F (10°C) of the set temperature. Like Economy mode, **SL** will display solid when temperature is not current and will alternate with actual temperature when it is current.

NOTE: Displayed temperature will only be current after the pump has been running for at least two minutes.

### Switching Modes

- Press the **Temp** button followed by the **Light** button.
- Press the same sequence to switch to the next mode.

### Activating the Jets

Press the **Jets 1** button:

- Once to activate low speed pump.
- Twice to activate high speed.
- Three times to return to turn pump off.

### Jets 2

Press the **Jets 2** button to turn pump 2 on. Press it once again to turn the pump 2 off.

### Light

Press the **Light** button to turn on the light. Press it once again to turn the light off.

### Automatic Time-outs

These features will automatically turn themselves off during periods of continuous use:

- Low speed pump After 4 hours
- High speed pumps After 15 minutes
- Hot tub light After 15 minutes

### Setting Filtration Cycles

Your hot tub is programmed to filter twice a day. The first cycle will begin six minutes after the hot tub is turned on and the second cycle 12 hours later.

The factory has programmed the cycle to last for one hour for single pump systems and two hours for two pump systems, but this can be changed to your preference.

To change the filtration cycle, press the **Temp** button then the **Jets** button. Press **Temp** button again to change the filtering cycle duration. See the table below for filtration settings and duration.

When desired duration is selected press the **Jets** button to exit.

| Single pump systems |          | Two pump systems |            |
|---------------------|----------|------------------|------------|
| Setting             | Duration | Setting          | Duration   |
| F1                  | 1 hour   | F2               | 2 hours    |
| F2                  | 2 hours  | F4               | 4 hours    |
| F3                  | 3 hours  | F6               | 6 hours    |
| F4                  | 4 hours  | F8               | 8 hours    |
| F5                  | 5 hours  | FC               | Continuous |
| F6                  | 6 hours  |                  |            |
| F7                  | 7 hours  |                  |            |
| F8                  | 8 hours  |                  |            |

Note: Single pump systems do not have continuous filtration.

To set the time of day you want filtration to begin, turn off the power to the hot tub at the time of day you would like one of the filtration cycles to begin, then turn it back on after 30 seconds. When power has been restored, set the filtration cycle as described above.

During filtration, the water temperature will appear on the main display.



## Electrical Power Efficiency

Your new spa comes equipped with an electric heater. Following the directions listed below will ensure the most efficient operation:

NOTE: This method is only for spa usage under two hours a week.

- Keep the spa's operating temperature 5°F below the desired usage temperature when not in use. One or two hours before use, set the temperature to the desired temperature.
- If the spa usage exceeds two hours a week, the set temperature should remain at the desired

usage temperature.

- The air venturis should be used sparingly. When open, water temperature drops quite rapidly and can also dissipate chemicals.

Allowing the water temperature to lower more than 10°F below the desired usage temperature and reheating it prior to usage will cause the heater to operate longer than it normally would maintaining the desired temperature. Doing this will increase your operating cost and makes your heater work more than necessary.

## Diagnostic Messages

| Message                      | Meaning  | Action Required  |
|------------------------------|--|--|
| <b>No message on display</b> | 1) Spa temperature is unknown.<br><br>2) Spa is in Economy or Sleep mode.<br><br>3) Power has been cut off to the spa. | 1) After pump has been running for 2 minutes temperature will be displayed.<br><br>2) In Economy or Sleep mode, the pump may be off for hours outside a filter cycle. If you wish to see the current spa temperature, either switch to Standard mode or turn Jets1 on for at least two minutes.<br><br>3) The control panel will be disabled until power returns. Spa settings and time of day will be preserved for 30 days with a battery back-up. |
| <b>BUF</b>                   | Internal problem detected.   | Repair required. Contact your dealer or service organization.  |
| <b>dr</b>                    | Insufficient water detected in heater. Spa will be shut down for 15 minutes.   | Check water level in spa. Refill if necessary. Make sure pumps are primed and filter cartridges are clean. Press any button to reset or wait 15 minutes and spa will automatically reset. If message spa does not reset, call your dealer or service organization.   |
| <b>dry dY</b>                | Insufficient water detected in heater. Spa is shut down.<br><br>(Displays on third occurrence of dr message.)          | Follow directions for dr message and press any button to reset spa. Spa will not automatically reset when dry or dY is displayed.  |
| <b>Ec</b>                    | Indicates heater is in Economy Mode.   | None.  |
| <b>--F or --C</b>            | Temperature unknown  | After the pump has been running for two minutes, the temperature will be displayed.  |
| <b>HL HFL</b>                | A difference in readings between temperature sensors has been detected indicating a possible water flow problem.       | Make sure spa is filled to proper level and that pumps are primed and filter cartridges are clean. If message does not reset, call your dealer or service organization.  |
| <b>IC ICE</b>                | Potential freeze condition detected.   | No action required. The pumps and the blower will automatically activate regardless of spa status.   |

| Message                          | Meaning   | Action Required  |
|----------------------------------|---|--|
| <b>LF</b>                        | Persistent low flow problems. Heater is shut down, but other spa functions continue to run normally. Displays on the fifth occurrence of the HL or HFL message within 24 hours.   | Follow action required for HL or HFL message. Heating capacity of the spa will not reset automatically. Press any button to reset.   |
| <b>OH<br/>OHS</b>                | Overheat protection. 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.   |
| <b>HH<br/>OHH</b>                | Overheat protection (spa is shutdown). One sensor has detected 118°F (48°C) at the heater.  | DO NOT ENTER THE WATER!<br><br>Remove the spa cover and allow spa to cool below 107°F (42°C). Press any button on the topside display to reset spa. If spa will not reset after spa has cooled, turn off power for approximately 30 seconds and then turn power back on. If display message is repeated then shut the power off to the spa and call your dealer or service organization. |
| <b>Pr</b>                        | When your spa is first actuated, it will go into priming mode.  | The priming mode will last for up to four minutes and then the spa will begin to heat and maintain the water temperature in the Standard mode.   |
| <b>SF</b>                        | Safety Suction. Spa is shut down.   | The display will show SF when a vacuum switch closes. All functions will turn off and the system will be disabled until a panel button is pressed.   |
| <b>SL</b>                        | Indicates heater is in Sleep Mode.  | None.  |
| <b>SA<br/>Sb<br/>SNA<br/>Snb</b> | Spa is shut down. The sensor that is plugged into the sensor "A" or "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.)   |
| <b>Sns<br/>Sn</b>                | Sensors are out of balance. <ul style="list-style-type: none"> <li>• If this is alternating with the temperature, it may just be a temporary condition.</li> <li>• If the display shows only this message (periodically blinking), the spa is shut down.</li> </ul> | Contact your dealer or service organization.   |
| <b>ST</b>                        | Indicates heater is in Standard Mode.   | None.  |
| <b>Stby</b>                      | Pressing a button combination on the user panel has activated Standby Mode.   | Press any button to leave Standby Mode and return to normal operation.   |

## Jets

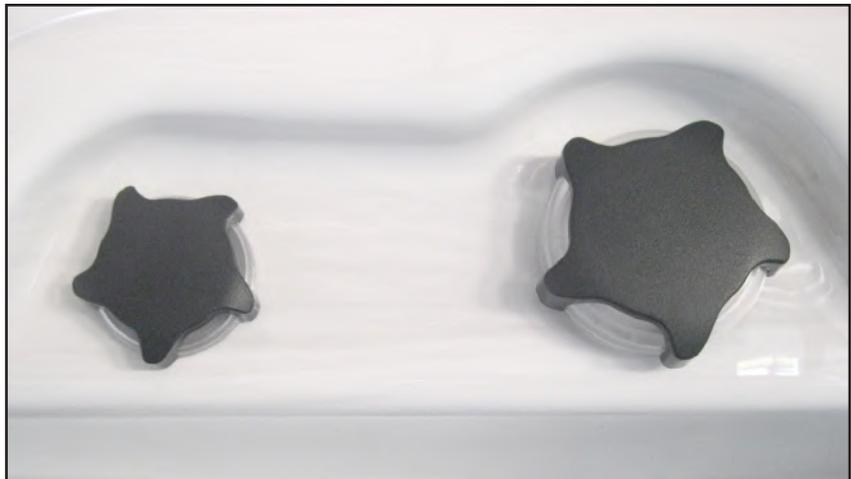
Almost all of the jets in your spa are adjustable. Rotating the face of an adjustable jet to the left (counter-clockwise) will decrease the amount of water flow through the jet. Rotating the face of an adjustable jet to the right (clockwise) will increase the amount of water flow through the jet. (See example shown below.)

Neck jets adjust in the opposite directions (counter-clockwise to increase, clockwise to decrease).



## Water Diverters

Water diverter knobs are 1" and 2" knobs located around the top of your spa. They allow you to divert water through jets from one side of the spa to the other, or from floor jets to wall jets. This is accomplished by rotating the knob to the left or right to increase or decrease the flow of water through the jets.



## Air Control

The air control is the 1" knob located around the top of your spa. The air control will let you add a mixture of air with the jet pressure. This is accomplished by rotating the knob to the left or right to increase or decrease the amount of airflow through the jets.



## Waterfall

Some spa series include a waterfall. When the booster pump is on, rotate the dial on top (for the cascade waterfall) or turn the knob (for the hydro streamer -- see below).



## Hydrostreamer Waterfall

Your spa may include two to eight streamer waterfalls. When the booster pump is on, turn the 1" diverter knob to adjust the rate of flow to the waterfall jets.

The waterfall jet faces are not adjustable. Do not turn the jet faces because you may accidentally remove them.

Always shut off water to the hydrostreamer jets before you place the cover on the spa. Water from the hydrostreamer jets sprays in an arc that is higher than the top surface of the spa. When water from the hydrostreamer sprays the bottom of the cover, it will collect and run to the edge of the spa and drip over the top.



## Cover Latches

When your hot tub is not in use, make sure you place the cover on top and latch it securely. Besides protecting your hot tub from sun damage and keeping out contaminants, it will prevent small children from drowning in the hot tub.

Your cover will have four clips attached to the ends of the four latches, two on each end of the hot tub cover. There will also be a small bag with eight wood screws.

After you place the cover on the hot tub, attach the clips to the side of the hot tub using the wood screws.

## Clear Water Plan

This section is intended for new spa owners with no experience with water chemistry. Everyone's experience with maintaining water quality is different, but there are some general concepts you need to know.

Water maintenance is not difficult, although it requires regular attention. The most important thing to understand about taking care of your spa water is that preventive action is much easier than correcting water quality issues.

### Contents of this section:

Testing and Adjusting Spa Water  
Sanitation  
Filtration  
Bather Load  
Starting the Spa with Fresh Water  
Maintenance Schedule  
Troubleshooting Water Clarity Problems

## The Key to Clear Water

Excellent water quality is a simple matter of four things:

### Regularity

Clear water requires regular maintenance. Establish a routine based on a regular schedule for your spa water maintenance.

Maintaining your water quality helps the enjoyment of your spa and extends your spa's life by preventing damage from neglect and chemical abuse.

See page 22 for the schedule of recommended maintenance.

### Filtration

Cleaning your filter regularly is the easiest and most effective single thing you can do to keep your water clear.

A clogged or dirty filter will cause the heater and pump to work harder than they need to, possibly causing them to fail.

The spa's heating system will only function with the proper amount of water flow through the system.

See page 21 for filter cleaning instructions.

### Sanitation

Sanitizers kill bacteria and viruses and keep the water clean. A low sanitizer level will allow microbes to grow quickly in the spa water.

We recommend using either chlorine or bromine as your sanitizer.

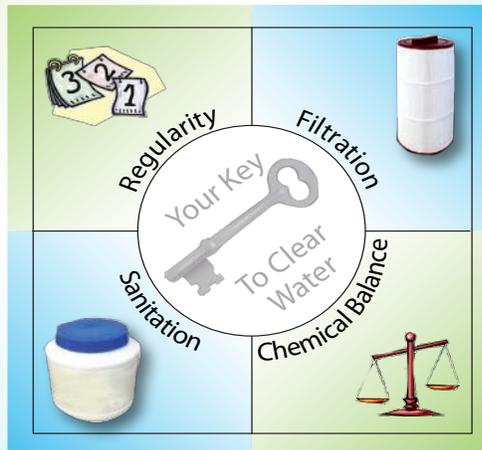
See page 20 to learn how to use sanitizer.

### Chemical Balance

You will need to test and adjust the chemical balance of your spa water. Although this is not difficult, it needs to be done regularly.

Depending on your choice of sanitizer, you need to test the level of calcium hardness, total alkalinity, and pH.

See page 19 to learn how to balance your spa water.



## Testing and Adjusting Spa Water

You have two types of testing methods to choose from:

- **The reagent test kit** is a method which provides a high level of accuracy. It is available in either liquid or tablet form.
- **Test strips** are a convenient testing method commonly used by spa owners.

### Balancing the Total Alkalinity

Total alkalinity (TA) is the measure of the total levels of carbonates, bicarbonates, hydroxides, and other alkaline substances in the water. TA can be considered a "pH buffer". It is the measure of the ability of the water to resist changes in pH level.

**The recommended total alkalinity is 80 - 120 ppm.**

If the TA is too low, the pH level will fluctuate widely from high to low. Low TA can be corrected by adding an alkalinity increaser.

If the TA is too high, the pH level will tend to be too high and may be difficult to bring down. High TA can be corrected by adding an alkalinity decreaser.

When the TA is balanced, it normally remains stable, although adding water with high or low alkalinity will raise or lower the TA level.

### Balancing the Calcium Hardness

Calcium hardness (CH) is a measure of the total amount of dissolved calcium in the water. Calcium helps control the corrosive nature of the spa's water and is why soft water is not recommended. The low calcium content of soft water is very corrosive to the equipment and can cause staining of the spa shell.

**The recommended calcium hardness is 150 - 200 ppm.**

If the CH is too low, add a calcium hardness increaser.

If the CH is too high, dilute the spa water with soft water.

When the CH is balanced, it normally remains stable, although adding soft water or very hard water will raise or lower the CH level.

### Balancing the pH

The pH level is the measure of the balance between acidity and alkalinity.

If the pH is too low, it can cause corrosion of metal fixtures and the heating element. Low pH can be corrected by adding a pH increaser.

If the pH is too high, it can cause scaling by allowing metals or minerals to form deposits and stain spa surfaces. High pH can be corrected by adding a pH decreaser.

### Ideal Water Chemistry

| Testing For:     | Ideal Range (ppm) |         |
|------------------|-------------------|---------|
|                  | Minimum           | Maximum |
| Total Alkalinity | 80                | 120     |
| Calcium Hardness | 150               | 200     |
| pH               | 7.2               | 7.6     |



## Sanitation

Sanitizers kill bacteria and other organic waste by breaking them down to non-harmful levels and are filtered out. Before you fill your spa, you need to decide which chemical sanitizer you wish to use. Consult your spa dealer for the right decision with regards to your lifestyle and spa usage.

We recommend either **bromine** or **chlorine** as your sanitizer. Both work well when maintained regularly.

**DO NOT use trichlor. Trichlor is very acidic and the hot temperature of the spa causes it to dissolve too quickly. It will cause damage to your spa and will void your warranty.**



Whichever plan you decide on, follow it completely and don't take shortcuts. It will provide you with clean, safe, clear spa water with a minimum of effort. Spa owners with an ozonator still need to use a chemical sanitizer. See page 21 for a description of how the ozonator works.

### Using Chlorine as a Sanitizer

If you choose to use chlorine as a sanitizer, only use granulated chlorine, not liquid chlorine.

Once a week, check the chlorine level using either a test strip or a reagent kit. See the table on the following page for the ideal range.

Add one or two tablespoons granulated chlorine to the spa water weekly. Note that chlorine dissipation rate will be faster at higher water temperatures and slower at lower temperatures.

When you add chlorine, open all of the jets and run the spa at high speed with the cover open for at least 30 minutes.

Follow the maintenance schedule on page 22.

### Shocking the Water

In addition to using a chemical sanitizer, you will periodically need to shock the water. Shocking the water helps remove burned-out chemicals, bacteria, and other organic material from your spa's water and improves your sanitizer's effectiveness.

Do not use chlorinating shock, which will damage your spa's jets and pump seals. Only use an oxidizer shock. It can be used with either chlorine or bromine sanitizers.

Add two ounces of oxidizer shock per 500 gallons once a week, after heavy bather loads, or if water has a strong odor.

Spa must be running with all of the jets on high for 30 minutes with the cover open. If necessary, repeat oxidizer shock in 30 minute intervals.

### Using Bromine as a Sanitizer

Bromine is a very effective sanitizer that produces low chemical odors. Unlike chlorine, it can break down bacteria and other impurities to a safe level with a low burn-out rate.

Use granulated sodium bromide to establish your bromine base.

When you begin with fresh water, add 2 ounces of granulated bromide. Open all of the jets and run the spa at high speed with the cover open for at least 30 minutes.

Follow the maintenance schedule on page 22.

| Testing For:          | Ideal Range (ppm) |         |
|-----------------------|-------------------|---------|
|                       | Minimum           | Maximum |
| <b>Chlorine level</b> |                   |         |
| Without ozonator      | 3.0               | 5.0     |
| With ozonator         | 2.0               | 4.0     |
| <b>Bromine level</b>  |                   |         |
| Without ozonator      | 6.7               | 11.0    |
| With ozonator         | 5.7               | 10.0    |

## Bather Load

“Bather Load” is the term used to describe the number of people using a spa, combined with the length of usage, and the frequency of usage. All these factors have a great effect on the spa water. The higher the bather load, the more chemicals need to be added and a longer filtration time will be needed.

Recommendations are designed for spas with average bather load (3 to 4 people, 15 minutes of usage, three times a week at 100 degrees) If your bather load exceeds these guidelines, and you experience water quality problems, increase the amount of filtration first, (go to the next higher filtration number) then if water quality is still not adequate, consult the advice of your spa dealer for additional chemical or system recommendations. Be sure to give them your bather load information.

## Filter Cleaning

The filter is the part of your spa that removes the debris from the water and needs to be cleaned on a regular basis to maximize your spa’s filtering performance and heating efficiency.

In addition to spraying off the filter weekly to remove surface debris, your filter should be deep cleaned periodically to dissolve scale and particles that get lodged deep within the filter fibers and impede the filtration process. Even if the filter looks clean, scale and particles can clog the fibers and prevent water from flowing through the filter resulting in the most common spa problem—no heat, caused by a dirty filter.

We recommend you clean your filter once a month and replace it once a year or as necessary.

**It is extremely important that you never run the spa without a filter. There is a possibility that debris may be sucked into the plumbing through the filter well.**

### Cleaning the filter

1. Remove the filter by unscrewing it and pulling it up and out.
2. Place the dirty filter into a bucket of water deep enough to cover the filter. Add 8 oz of liquid filter cleaner to the bucket of water.

**Note:** It is a good idea to keep a spare filter to use in the spa while the dirty filter is being deep cleaned. This way, you can rotate the filters and both will last longer.

3. Soak the filter for a minimum of 24 hours.
4. Spray the filter with a water hose. Spray each pleat carefully.
5. Reinstall the filter. Do not overtighten.

## Ozonator

The ozone generator releases ozone into the spa water. You will still need to test for chlorine or bromine and occasionally replenish it to return the sanitizer level to the baseline.

For spas without a circulation pump, pump 1 will run at low speed and the ozonator will run during filtration.

For spas with a circulation pump, the ozonator will run with the circulation pump.

The spa’s control system is factory-programmed with one filter cycle that will run in the evening when energy rates are often lower. The time and duration of the filter cycle can be set according to your needs. In addition, a second filter cycle can be enabled. Filtration time may need to be increased with heavy bather load.

See instructions for setting filtration cycles on page 13.

## Maintenance Schedule

|                                     |   |
|-------------------------------------|---|
| <b>Each time you refill the spa</b> | Follow the section "Filling and Powering Up Your Portable Spa" on page 9.   |
| <b>Prior to each use</b>            | Test the spa water using either test strips a reagent test kit. Adjust chemical levels as necessary.  |
| <b>Once a week</b>                  | Test the spa water using either test strips a reagent test kit. Adjust chemical levels as necessary.<br>If your water source is high in calcium, add stain and scale preventer.   |
| <b>Once a month</b>                 | Deep clean your spa's filter. (Follow filter cleaning instruction at beginning of this section)   |
| <b>Every two to four months</b>     | Change the spa water. How often you change the water depends on how much you use the spa. When you change the water, you will need to: <ul style="list-style-type: none"> <li>• Clean and polish the acrylic surface (see page 28)</li> <li>• Clean and treat the spa cover and pillows (see page 28)</li> <li>• Deep clean the filter (see page 21)</li> <li>• Refill your spa (see page 9)</li> </ul> |
| <b>Once a year</b>                  | Replace filter cartridges if the pleats appear frayed.  |

## Troubleshooting Water Clarity Problems

| Problem                                | Probable Causes   | Possible Solutions   |
|--|---|--|
| Cloudy Water                           | <ul style="list-style-type: none"> <li>• Dirty filter</li> <li>• Excessive oils / organic matter</li> <li>• Improper sanitization</li> <li>• Suspended particles / organic matter</li> <li>• Overused or old water</li> </ul> | <ul style="list-style-type: none"> <li>• Clean filter</li> <li>• Shock spa with sanitizer</li> <li>• Add sanitizer</li> <li>• Adjust pH and/or alkalinity to recommended range</li> <li>• Run jet pump and clean filter</li> <li>• Drain and refill the spa</li> </ul> |
| Water Odor                             | <ul style="list-style-type: none"> <li>• Excessive organics in water</li> <li>• Improper sanitization</li> <li>• Low pH</li> </ul>  | <ul style="list-style-type: none"> <li>• Shock spa with sanitizer</li> <li>• Add sanitizer</li> <li>• Adjust pH to recommended range</li> </ul>  |
| Chlorine Odor                          | <ul style="list-style-type: none"> <li>• Chloramine level too high</li> <li>• Low pH</li> </ul>   | <ul style="list-style-type: none"> <li>• Shock spa with sanitizer</li> <li>• Adjust pH to recommended range</li> </ul>   |
| Musty Odor                             | <ul style="list-style-type: none"> <li>• Bacteria or algae growth</li> </ul>  | <ul style="list-style-type: none"> <li>• Shock spa with sanitizer – if problem is visible or persistent, drain, clean and refill the spa</li> </ul>  |
| Organic buildup / scum ring around spa | <ul style="list-style-type: none"> <li>• Buildup of oils and dirt</li> </ul>  | <ul style="list-style-type: none"> <li>• Wipe off scum with clean rag – if severe, drain the spa, use a spa surface and tile cleaner to remove the scum and refill the spa</li> </ul>  |
| Algae Growth                           | <ul style="list-style-type: none"> <li>• High pH</li> <li>• Low sanitizer level</li> </ul>  | <ul style="list-style-type: none"> <li>• Shock spa with sanitizer and adjust pH</li> <li>• Shock spa with sanitizer and maintain sanitizer level</li> </ul>  |
| Eye Irritation                         | <ul style="list-style-type: none"> <li>• Low pH</li> <li>• Low sanitizer level</li> </ul>   | <ul style="list-style-type: none"> <li>• Adjust pH</li> <li>• Shock spa with sanitizer and maintain sanitizer level</li> </ul>   |
| Skin Irritation / Rash                 | <ul style="list-style-type: none"> <li>• Unsanitary water</li> <li>• Free chlorine level above 5 ppm</li> </ul>   | <ul style="list-style-type: none"> <li>• Shock spa with sanitizer and maintain sanitizer level</li> <li>• Allow free chlorine level to drop below 5 ppm before spa use</li> </ul>  |
| Stains                                 | <ul style="list-style-type: none"> <li>• Total alkalinity and/or pH too low</li> <li>• High iron or copper in source water</li> </ul>   | <ul style="list-style-type: none"> <li>• Adjust total alkalinity and/or pH</li> <li>• Use a stain and scale inhibitor</li> </ul>   |
| Scale                                  | <ul style="list-style-type: none"> <li>• High calcium content in water – total alkalinity and pH too high</li> </ul>  | <ul style="list-style-type: none"> <li>• Adjust total alkalinity and pH – if scale requires removal, drain the spa, scrub off the scale, refill the spa and balance the water</li> <li>• Use a stain and scale inhibitor</li> </ul>                                    |



## Cleaning and Maintenance

### Removing and Reseating the Pillows

You can remove the pillows for cleaning and maintenance quickly and easily. This method works for all types of pillows.

Grab the lower edge of the pillow with both hands firmly and pull up. As you do this, the pillow inserts will pop out of the holes.

Reseat the pillows by aligning the pillow inserts with the holes and tapping the pillow hard enough to insert the pegs back into the holes.



# Spa Cover and Locking System

Important! Keep the spa covered when not in use!

- Covered spas will use less electricity in maintaining your set temperature.
- Covering your spa will protect your spa's finish from the sun's ultraviolet rays.
- You are required to keep the spa covered to maintain warranty coverage.

- Covering your spa helps prevent children from drowning in the spa.

In addition, while the spa cover is rigid, it is not designed to support any weight. Therefore, as a safety precaution and to preserve the life of your cover, you must not sit, stand, or lie on it, nor should you place objects of any kind on top of it.



## IMPORTANT! LOCKING HARDWARE ENCLOSED Parts Installation Instructions:

1.- Place cover on spa. Be sure it is correctly positioned.



2.- Position the tie-down hardware (attached to the straps of your cover) on the side of the spa so they are easily reached by the cover tie-downs straps.



3.- With the straps pulled taut (not overly tight) mark the location for screw placement.

4.- Attach hardware with the screws provided.



5.- Keep cover fastened down at all times when not in use. Locking hardware may be locked with a key (provided).



**UNLOCKED POSITION**

**LOCKED POSITION**

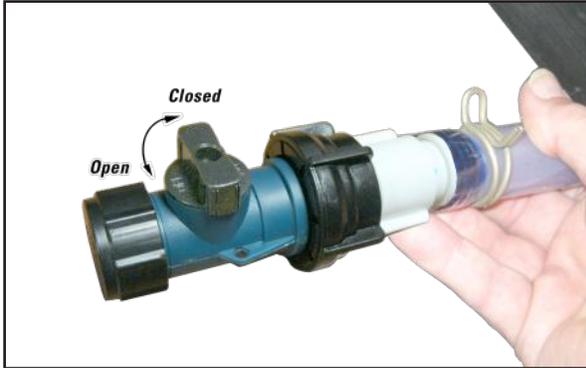


**WARNING**  
**AVOID**  
**DROWNING**  
**RISK**

FAILURE TO FOLLOW INSTRUCTIONS MAY RESULT IN INJURY OR DROWNING. NON-SECURED OR IMPROPERLY SECURED COVERS ARE A HAZARD. REMOVE COVER COMPLETELY BEFORE ENTRY OF BATHERS. ENTRAPMENT POSSIBLE. KEEP COVER ON SPA AND LOCKED WHEN NOT IN USE

## Draining Your Portable Spa

1. Turn off the power at the breaker.
2. Remove all filters.
3. Using a Phillips screwdriver, remove the screws to the access panel and open it.
4. Locate hose ending with the  $\frac{3}{4}$  inch hose-bib fixture.
5. Unscrew the cap.
6. Hook up the female end of a garden hose to the drain fitting.
7. Place the other end of the garden hose where you would like the water to drain to.
8. Turn the valve on the hose-bib fixture to open the drain.
9. Let spa drain completely, then remove garden hose.
10. Turn the valve on the hose-bib fixture to close the drain.
11. Replace the cap.



## Winterizing (Cold Climate Draining)

In many areas of the country, the temperature drops below 32°F (0°C). We recommend that you always have your spa full of water and running at normal spa temperatures (80°F to 100°F, 26.7°C to 37.8°C). This will help reduce the risk of freezing in your spa and your spa's equipment.

**Warning: If you find the need to drain your spa, be aware of the potential of freezing in your spas equipment and plumbing. Even if the directions below are followed perfectly, there is no guarantee that your spa will not suffer freeze damage. Freeze damage is not covered by your warranty.**

1. Open all filter covers.
2. Remove the filter baskets and filters.
3. Drain your spa completely as described in the instructions above.
4. Vacuum water from the spa's main drain fitting with a wet/dry vacuum.
5. Open the bleeder valves on the pumps.
6. For spas with the UV lamp chamber mounted flat on the equipment floor:  
Loosen the quartz tube nut at the top of the UV lamp chamber and pull up the quartz tube to let the water drain from the UV lamp chamber.
7. Disconnect the unions from both sides of the pump.
8. Blow any remaining water out of the jets and equipment area with the wet/dry vacuum.
9. When it has completely finished draining, replace the quartz tube in the UV lamp chamber and retighten the nut. Close the bleeder valves and re-connect the unions on the pumps. Replace the filter baskets and filters.
10. Cover your spa with a good spa cover and an all-weather tarp to ensure that neither rain nor snow enters the spa.

## Vacation Care

You can leave your spa unattended for up to two weeks if you follow these instructions.

**ALWAYS lock your cover using the cover locks if you plan to be away from home and the spa is filled with water.**

1. Set the spa to VACATION Mode. (See instructions on page 13 for changing modes.)
2. Following the water quality instructions starting on page 18, adjust the pH.
3. Shock the water (add either chlorine or bromine sanitizer).
4. When you return, check and adjust the pH and shock the water.

If you will not be using your spa for longer than 14 days and a spa maintenance service is not available, we strongly recommend you drain or winterize your spa.

## Jet Removal and Replacement

Jets can be easily removed for cleaning.

Grasp the outer rim of the jet and turn it counter-clockwise. The jet will unscrew from the fitting until it is free.

(Shown below in the sequence from left to right is the process for removing the jet. A quarter turn counter-clockwise will turn off the jet. Another quarter-turn will allow you to pull out the jet from the spa.)

To replace the jet, place it in the fitting and turn it clockwise until it is snug in place. Do not overtighten the jet.



## Cleaning the Hydrostreamers

The hydrostreamers can also be easily removed for cleaning.

Grasp the outer rim of the hydrostreamer and turn it counter-clockwise. The hydrostreamer will unscrew from the fitting until it is free.

(Shown below in the sequence from left to right is the process for removing the hydrostreamer. Once the inside filter is removed, tap the filter unit or blow out any debris covering the holes.)

To replace the hydrostreamer, place it in the fitting and turn it clockwise until it is snug in place. Do not overtighten it.



## Cleaning and Replacing the Filter

Filtration is one of the most important steps you can take to ensure clean, clear water. It is far less expensive to fix water clarity problems by filtering your spa than by using excessive amounts of chemicals, excessive filtration times, or by water replacement.

See the section "Clear Water Plan" for more information on cleaning your filter.

## Cleaning Your Spa

### Spa Cover and Pillows

Due to the constant punishment your spa cover and pillows receive, you should protect them by applying a vinyl and leather cleaner as part of your monthly maintenance plan. Use a product that is specifically designed to protect spa covers and pillows from chemical and ultraviolet light damage without leaving an oily residue behind that is normally associated with common automotive vinyl protectants.

**Warning: Do not** use automotive vinyl protectants on spa covers or pillows. These products are generally oil-based and will cause severe water clarity issues that are difficult to correct.

### Spa Shell

Each time you drain your spa, before you refill it you should clean your spa shell with an all-purpose cleaner and apply a coat of surface protectant.

Use a low detergent, non-abrasive cleaner specifically formulated to clean the spa without damaging its acrylic finish.

Use a non-oil based surface protectant that is specifically formulated to protect the spa's finish from the chemicals and minerals associated with normal spa use.

# Sound System and Perimeter Lighting

## Using the Freedom Sound System

The Freedom Sound System™ entertainment option contains a Bluetooth-enabled speaker system that is available for certain American Spa models. Any Bluetooth-enabled device can be used to play audio through your spa.



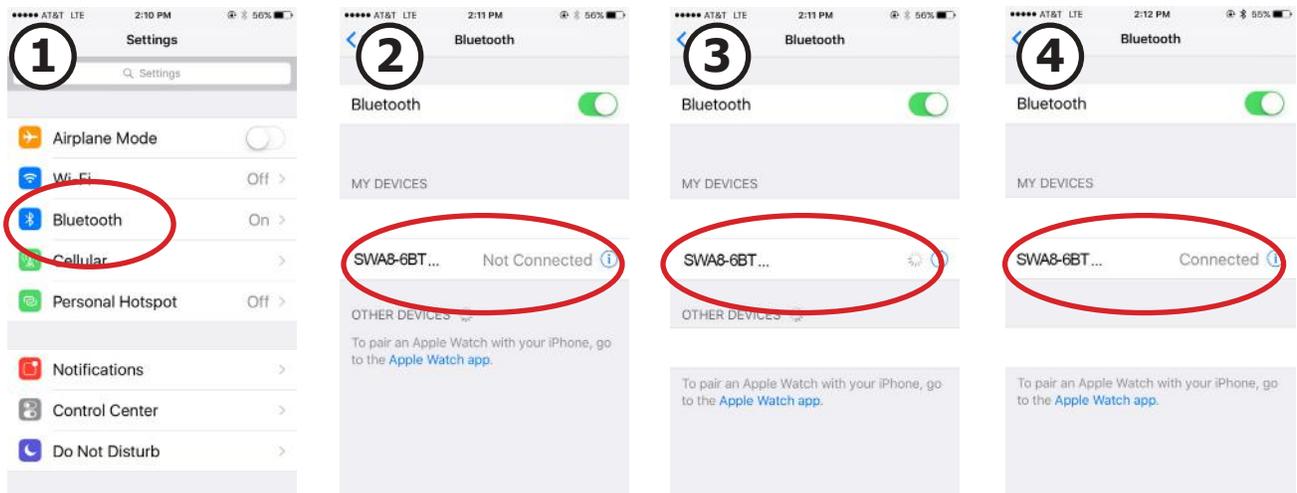
Before you can use the sound system, you need to pair the Bluetooth module with your device. The Bluetooth module is installed within the spa cabinet. Everything can be done with your device. The example shown below is from an iPhone device. Your device may appear differently. Before you begin, make sure Bluetooth is enabled on your device.

1. Select Bluetooth from your device's option list.
2. Select **SWA8-6BT...** from the list of available devices to pair.
3. Your iPhone device will ask for a code: the code is 0000.
4. Allow your device to pair with the spa's Bluetooth module.
5. When the devices have been connected, the device **SWA8-6BT...** will be highlighted.

Only one Bluetooth device can be paired with the Freedom Sound System™ at any time.

(For Android users, the systems will pair automatically - no code is needed.)

Once your device is paired and connected, all sounds from your device will be played through the sound system, including system sounds and telephone.



## LED Lighting

Press the LIGHT button on the topside control panel to turn the spa light on. If your spa has perimeter LED lights, they will also light up at the same time as the spa light.

The LEDs operate in three modes:

1. **Cycle:** When you continually press the LIGHT button, the LEDs will cycle through the three main LED colors (Red, Green, and Blue) or combinations of the three that produce the following colors: light green, purple, light blue, yellow, etc.

Each time you press the button, you immediately advance to the next color in sequence or eventually a different light pattern.

2. **Flashing:** When you are cycling through all the colors, the next time you push the LIGHT button, the LED lights may start flashing. This is another normal operational pattern option.

3. **Fading cycle:** The next phase of operation when you push the LIGHT button is a slow and/or fast fade random transition from one color to the next.

- If a spa is equipped with more than 100 points of light, the Slow Fading Cycle will flicker during a color change.
- Every air valve and water valve is equipped with 4 LED points.
- Every jet is equipped with 2 LED points.
- Perimeter LEDs take 9 points of light.
- The waterfall takes 4 points of light.

Spas with exterior corner LED lighting generally work in the same mode as described above. The variations in color and patterns provide you with multiple options to suit almost any lighting preference.



## Replacement Parts

| Snap-in SQR Jet Inserts   |  |
|---|--|
| <p><b>SQN halo, 2" directional neck jet, 100% shut-off</b></p> <p><b>Halo with gray eyeball</b></p> <p>PLU29923-114-000</p>  |  |
| <p><b>SQN halo, 2" neck jet, 100% shut-off</b></p> <p><b>Halo w/ graphite gray center</b></p> <p>PLU29520-611-500</p>        |  |
| <p><b>SQ2D, 2" euro jet directional</b></p> <p><b>Halo w/ graphite gray eyeball</b></p> <p>PLU29520-011-500</p>            |  |
| <p><b>SQ3D, 3" directional mini jet</b></p> <p><b>Halo w/ graphite eyeball</b></p> <p>PLU29530-111-500</p>                 |  |

| Snap-in SQR Jet Inserts  |  |
|--|--|
| <p><b>SQ3M halo, 3" mini massage jet</b></p> <p><b>Halo w/ graphite center</b></p> <p>PLU29530-141-500</p>             |  |
| <p><b>SQ4D, 4" directional maxi flow jet</b></p> <p><b>Halo w/ graphite gray eyeball</b></p> <p>PLU29540-111-500</p>  |  |
| <p><b>SQ5R, 5" rotational jet</b></p> <p><b>Halo w/ graphite gray eyeball</b></p> <p>PLU29550-081-500</p>            |  |

Please visit [www.quickspaparts.com](http://www.quickspaparts.com) to order your replacement parts.

| Snap-in SQR Jet Inserts  |  |
|--|--|
| <p><b>Hio, Roto, 3" pro-loc</b></p> <p>PLU29530-121-500</p>     |  |
| <p><b>Hio, Roto, 3.5" pro-loc</b></p> <p>PLU29530-031-500</p>  |  |
| <p><b>Euro Twist, 3"</b></p> <p>PLU29520-021-500</p>          |  |

| Water Diverter Valves  |   |
|--|---|
| <p><b>Diverter Valve 2" Star Fire, Textured Black</b></p> <p>PLU21300468</p> |  |
| <p><b>Diverter Valve 1" Star Fire, Textured Black</b></p> <p>PLU21300469</p> |  |
| Air Control Valve  |   |
| <p><b>Air Control Valve Star Fire Black</b></p> <p>PLU21300526</p>           |  |

Please visit [www.quickspaparts.com](http://www.quickspaparts.com) to order your replacement parts.

**Waterfalls**

**Cascade II Waterfall Curved Black Textured with Valve**



PLU21800826TEX

**Flush Mount Water Feature Assembly (Clear)**

PLU210-9288S



LIT UP AND SPOUTING WATER



**Aqua Rail 12½" LED (Blk/Clear)**

FIX25262-014-000



**Drain**

**Drain Hi Flo Suction 1½" Black (640-3251 VP)**



PLU21400148

**LED Lights**

**1-LED light string**

LIT16100330



**2-LED light string**

LIT16100331



**LED Lights**

**4-LED light string**

LIT16100332



**1 to 3 ext. cord**

LIT16100335



**1 to 1 port ext. cord**

LIT16100338



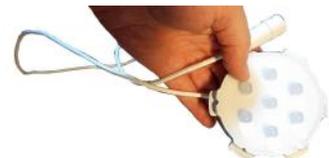
**Interior light with logic (7 LED)**

LIT16100333



**Interior light without logic (7 LED)**

LIT16100337



Please visit [www.quickspaparts.com](http://www.quickspaparts.com) to order your replacement parts.

| LED Lights  |   |
|---|---|
| <b>Main light housing, LED lens, fitting nut</b><br>LIT16100336 |  |

| Replacement Cabinet Panels  |
|---|
| The complete selection of replacement cabinets for all models is very extensive and too lengthy for this owner's manual. To order replacement panels for your spa, visit <a href="http://www.quickspaparts.com">www.quickspaparts.com</a> . |

## Covers

All spa covers are designed with a tapered height, angling downward from the center to the sides to drive off rain and prevent water from pooling.

### Basic

4" - 2.5"

1.0 Lb. foam



The covers listed below are filled with 1 lb. foam.

| Size               | Fits spa models                          | Type  | Part numbers             |
|--------------------|--|-------|--------------------------|
| 78" round          | AM-511RS, AM-510R, AM-511RM              | Basic | Slate COV78RDB42S-WN-2   |
| 72" x 72" triangle | AM-628TS, AM-628TM                       | Basic | Slate COV7272TRB42S-WN-2 |
| 78" x 84"          | AM-630LS, AM-R630L, AM-630LM             | Basic | Slate COV7484B42R-WW-2   |
| 84" x 84"          | AM-730LS, AM-730LM<br>AM-730BS, AM-730BM | Basic | Slate COV8484B42S-WN-2   |
|                    | AM-740LSI, AM-740BSI, AM-745LW           | Basic | Slate COV8484B42S-WN-2   |
|                    | AM-756BS, AM-756BP, AM-756BBD            | Basic | Slate COV8484B42S-WN-2   |
|                    | AM-756LS, AM-756LBD, AM-756LSD           | Basic | Slate COV8484B42S-WN-2   |
|                    | AM-L756BSD                               | Basic | Slate COV8484B42S-WN-2   |
|                    | AM-L756LSD                               | Basic | Slate COV8484B42S-WN-2   |
| 64" x 84"          | AM-534LS, AM-534LP                       | Basic | Gray COV6484B42G-CC-2    |
| 64" x 84"          | AM-L534SD, AM-534BD                      | Basic | Slate COV6484B42S-WN-2   |
| 74" x 84"          | AM-637LS, AM-637LP                       | Basic | Gray COV7484B42G-CC-2    |
| 74" x 84"          | AM-L637SD, AM-637BD                      | Basic | Slate COV7484B42S-WN-2   |
| 84" x 93"          | AM-885LG                                 | Basic | Gray COV8493B42G-CC-2    |
|                    | AM-885LS                                 | Basic | Slate COV8493B42S-WN-2   |
|                    | AM885L-2                                 | Basic | Gray COV8493B42G-CC-2    |



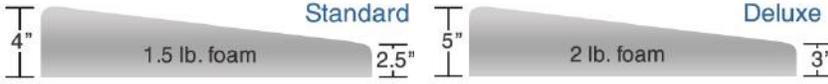
The Valentine model covers listed below are filled with either 1.5 lb or 2.0 lb foam.

**Standard**

4" - 2.5"  
1.5 Lb. foam

**Deluxe**

5" - 3"  
2.0 Lb. foam



|  | <b>Gray Standard</b> | <b>Slate Standard</b> |
|--|----------------------|-----------------------|
| <b>86" x 48"</b> Fits spa models: AM-418B, AM-418BW, AM-420B, AM-420BW | OPT86480B42G         | OPT86480B42S          |

**Cover Lock and Keys**

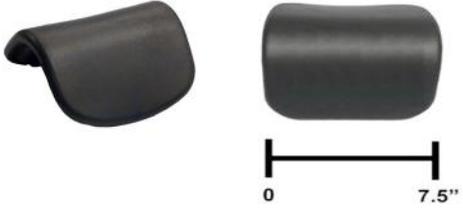


ACC01800026

**Pillows**

**Contour Lounge Pillow**

**TWO VIEWS OF SAME PILLOW**



ACC01401500NL

**Infinity Pillow**



ACC01401061



## Troubleshooting

| Symptom   | Possible Causes  | Possible Solutions  |
|---|--|---|
| <b>System / Power Problems</b>                      |  |   |
| <b>System does not work</b>                         | Power is turned off                                    | Reset spa   |
| <b>Control pad and spa equipment do not operate</b> | No electrical power to spa                             | Turn on or reset the GFCI circuit breaker. If this does not solve the problem, have a qualified electrician check the electrical service. |
|   | The 20 or 30A fuse, depending on the system, has blown | Contact your dealer   |
| <b>The spa does not turn off</b>                    | Spa is trying to heat up                               | Check the temperature setting is in Standard mode   |
|   | Spa is in filter cycle                                 | Normal. No adjustment necessary   |
|   | Spa is in Standard mode                                | Check setting   |
| <b>Control panel displays a message</b>             | An error may have occurred                             | See Diagnostic Messages for message code meanings   |
| <b>GFCI breaker trips repeatedly</b>                | Improper wiring to spa or GFCI breaker is defective    | Consult with a qualified electrician  |
|   | There is a defective component on the spa              | Contact your dealer   |
| <b>Heat Problems</b>                                |  |   |
| <b>Spa does not heat</b>                            | Heating mode not selected                              | See control panel instructions on page 13   |
|   | Water level is too low                                 | Add water to correct level  |
|   | No electrical power to spa                             | Turn on or reset the GFCI circuit breaker. If this does not solve the problem, have a qualified electrician check the electrical service. |
|   | Heater is defective                                    | Contact your dealer   |
|   | Gate valve is partially or fully closed                | Open gate valves. Note: Never operate your spa with the gate valves closed!   |
| <b>Spa gets warm but does not get hot</b>           | Thermostat has been turned down                        | Set control panel to a higher temperature   |
|   | Insufficient filtration time                           | Increase filtration time  |
|   | Water level is too low                                 | Add water to correct level  |
|   | No electrical power to spa                             | Turn on or reset the GFCI circuit breaker. If this does not solve the problem, have a qualified electrician check the electrical service. |
|   | Dirty filter cartridge                                 | Clean filter cartridge  |
|   | Gate valves closed                                     | Open gate valves  |
|   | Spa cover improperly positioned                        | Align spa cover   |
| <b>Spa gets too hot</b>                             | Filtration time is set too long                        | Reduce filtration cycles, especially during summer months   |

| Symptom  | Possible Causes                              | Possible Solutions   |
|--|--|--|
| <b>Water Problems</b>                                    |  |  |
| <b>Water is not clean</b>                                | For all water clarity problems, see page 18. |  |
| <b>High water consumption</b>                            | Very high evaporation or heavy splashing     | Use the cover and refill as necessary  |
| <b>Low water stream from the jets</b>                    | Running in FILTER mode - slow speed          | Select high speed jets   |
|  | Block wall suctions or skimmer               | Clean the wall suction/skimmer. Remove blockage  |
|  | Dirty filter                                 | Clean filter and replace   |
|  | Jets are closed                              | Open jets  |
|  | Valves closed                                | Open valves  |
| <b>No water stream from the jets</b>                     | Pump has airlock                             | Remove airlock by priming spa (page 11)  |
|  | Jets are closed                              | Open jets  |
|  | Power switched off, system off               | Reset power  |
|  | Pump is defective                            | Contact your dealer  |
|  | Pump fluctuations                            | Low water. Check level on skimmer flap   |
| <b>Water leakage from below the spa</b>                  | Check the connections and empty the hoses    | Close or turn off empty cycle if necessary   |
| <b>Water Pressure Problems</b>                           |  |  |
| <b>Jets surge on and off</b>                             | Water level is too low                       | Add water to normal level  |
| <b>Jets are weaker than normal or do not work at all</b> | Jet valves are partially or fully closed     | Open jet valves  |
|  | Filter cartridge is dirty                    | See Cleaning the Filter  |
|  | Air is trapped in the pump                   | Open the air bleed valve on each pump's housing and allow air to bleed out of the system. Be sure to tighten each air bleed valve as soon as water starts to flow. |
|  | The suction fittings are blocked             | Remove any debris that may be blocking the suction fittings  |
|  | Gate valve is closed                         | Open gate valves. Note: Never operate your spa with the gate valves closed!  |
| <b>Air and Jets Problems</b>                             |  |  |
| <b>No airstream from the jets</b>                        | Air control not open                         | Open the control   |
|  | Jet spout opening not fixed properly         | Check jet spout openings   |
|  | Jet spout opening missing                    | Check jets and replace as necessary  |
| <b>Light Problems</b>                                    |  |  |
| <b>Standard spa light does not work</b>                  | Light bulb has burned out                    | Replace light bulb   |
|  | Lighting system is defective                 | Contact your dealer  |



| Symptom   | Possible Causes  | Possible Solutions  |
|---|--|---|
| <b>Pump Problems</b>                            |  |   |
| <b>Pump runs constantly – will not shut off</b> | Problem with circuit board   | Contact your dealer   |
| <b>Noisy pump</b>                               | Water level is too low   | Add water to normal level   |
|   | Block wall suction or skimmer  | Clean the wall suction/skimmer  |
|   | Damaged or worn-out motor block  | Contact your dealer   |
|   | Clogged floor suction or skimmer   | Clean floor suction or skimmer  |
|   | Leakage of air into suction line   | Contact your dealer   |
|   | Debris is inside pump  | Contact your dealer   |
|   | Gate valves are closed   | Open gate valves. Note: Never operate your spa with the gate valves closed!       |
|   | Damaged or worn motor bearings   | Contact your dealer   |
|   | Improper or defective wiring   | Contact your dealer   |
| <b>Pump turns off during operation</b>          | Automatic timer has completed its cycle                                  | Start the cycle again   |
|   | Pump has overheated due to the vents on the equipment door being blocked | Clear items away from vents   |
|   | The pump motor is defective  | Contact your dealer   |
| <b>Pump has a burning smell while running</b>   | Damaged or worn motor bearings   | Contact your dealer   |
| <b>Pump does not work</b>                       | Power may be turned off  | Reset power   |
|   | Pump has over heated   | Let cool for one hour   |
|   | Incorrect or faulty wiring of electrical supply                          | Contact your dealer   |
|   | Switch is off  | Auto reset after the motor has cooled down  |
|   | House circuit breaker tripped or in OFF position                         | Reset circuit breaker   |
|   |  | Contact your dealer   |
|   | Motor overload condition   | Motor overload will reset automatically. If problem persists, contact your dealer |
|   | Damaged electrical cord  | Contact your dealer   |
|   | Pump cord not plugged in   | Plug pump cord into red receptacle  |
|   | GFCI tripped or in OFF position  | Reset GFCI  |

## “Thermal Creep”

American Spas are designed with energy-efficient components and systems that are meant to sustain heat generated by the equipment, which is then cycled back into the spa water. In hot weather or in situations where the spa is set to extended run times, Thermal Creep may occur. Thermal Creep is a condition where the measured water temperature can be higher than the set temperature. To manage Thermal Creep you may:

**Vent your cover.** This means placing a folded cloth about ¾” (2cm) thick under all four corners of the cover before you lock the cover down.

**Open your cover.** Opening the cover at night will also quickly cool the water down if desired.

**Open all air controls.** Set your filtration cycles to run during the cooler times of the day or night.

**Reduce the length of your filter cycles.**

**Visit your local dealer for additional guidance.**

Since Thermal Creep only occurs in well-insulated hot tubs, it is not indicative of something that is wrong with your spa or its equipment.



# LIMITED WARRANTY



This limited warranty is extended to the original purchaser of an American Spa™ manufactured after January 1, 2020 and installed for residential use. This limited warranty is only valid on portable spas delivered in the United States and Canada.



### 5 Years Shell Structural

American Spas are warranted against water loss due to defects in the spa shell.



### 2 Years Shell Finish

American Spas are warranted against blistering, cracking, or delaminating of the interior surface of the spa shell.



### 2 Years Equipment and Controls

American Spa electrical equipment components – specifically limited to the pumps and control system – are warranted against malfunctions due to defects in workmanship or materials.



### 1 Year Plumbing

American spas are warranted against leaks due to defects in workmanship or materials.



### 1 Year Cabinet - Synthetic or fiberglass

American spa cabinets have a lifetime guarantee against defects in workmanship or materials. Normal wear and weathering of the finish will occur naturally over time and are not defects.



### 1 Year Labor

American Spa warranty covers cost of service and repair while spa is under warranty.

## Warranties for Other Components

The fuses, headrests, cabinet finish, and filters are warranted to be free of defects in workmanship and material at the time of delivery. The factory installed water purification system is warranted against malfunction due to defects in workmanship or material for one year from the original date of delivery. All other factory-installed components not mentioned specifically, including, but not limited to the wood frame, jets, diverter valves, LED lighting systems, filter lids, and mechanical components, are warranted against malfunction due to defects in workmanship and material for two years from the original date of delivery. This Warranty provides coverage for the insulating spa cover to be free of defects in workmanship and material for 90 days.

## Genuine American Spas Parts & Accessories

This Limited Warranty is void if American Spas (the "Manufacturer") or its designated representative determines that the spa has been subjected to damage or failure due to installation of aftermarket parts that are not genuine American Spas branded parts and accessories. This disclaimer includes, but is not limited to filters, ozone systems, repair parts and other accessories. Genuine American Spas brand parts and accessories are built to our highest standards of quality, durability and performance, and they are designed to work with your Spa to ensure optimal performance and function.



## Performance

This warranty begins on the date of delivery of the spa, but in no event later than one year from the date of manufacture. To obtain service in the event of a defect covered by this Limited Warranty, notify American Spas (the "Manufacturer") as soon as possible and use all reasonable means to protect the spa from further damage. Upon proof of purchase, a designated service representative will correct the defect subject to the terms and conditions contained in this Limited Warranty. There will be no charge for labor to repair the defect for one year, although providing access to affect the repair is your responsibility as the spa owner. Freight charges for replacement parts is the responsibility of the spa owner. You may be assessed reasonable repairman travel mileage charges. In the event that the spa is removed to a repair facility for repair and reinstalled, the cost of removal and reinstallation will be your responsibility as the spa owner. If the Manufacturer determines that repair of the covered defect is not feasible, it reserves the right to provide a replacement spa instead. In such an event, reasonable costs for removal of the original spa, shipping costs from the factory for the replacement spa and delivery and installation of the replacement will be your responsibility as the spa owner. The replacement spa will carry the balance of the original spa's warranty. This warranty ends either by specified time frame, owner-transfer, relocation, or installation of any component other than by manufacturer.

## Warranty Limitations

This Limited Warranty is void if: American Spas (the "Manufacturer") or its designated representative determines that the spa has been subjected to alteration, neglect, misuse or abuse, or freight damage caused by the common carrier; any repairs have been attempted by anyone other than a designated representative; or if the failure is caused by accident, acts of God or other causes beyond the control of the Manufacturer. Neglect, misuse and abuse include any installation, operation or maintenance of the spa other than in accordance with the instructions contained in the owner's manual provided with the spa, including but not limited to the failure to maintain proper water chemistry and chemical balance and the use of abrasive or improper cleaners or non-genuine parts and accessories. This Limited Warranty does not provide coverage for any item attached to or installed on the spa after the date of manufacture, or for gaining access to any component for repair or replacement. Spa units in commercial use are excluded from any coverage whatsoever. The spa owner accepts liability for repair work performed by

anyone other than the Manufacturer or a designated American Spa representative. This Limited Warranty is void if damage occurs to the spa shell because of excessive heat buildup due to failure to cover a spa that is empty of water while exposed to direct sunlight.

## Proration of Warranty

Units determined by the Company to be non-repairable will be replaced on a prorated basis with the same or a comparable unit. The user will be charged one percent of the current retail cost for each full month of ownership from the date of purchase through the date failure is determined to be non-repairable. This charge will be waived during the first twelve months of ownership.

## Limitations

The Manufacturer disclaims all warranties, expressed or implied, in fact or in law, to the extent allowed by your State's Law, including the warranty of merchantability and fitness for use, except as stated specifically herein. All warranty service must be performed by the Manufacturer or its designated representative using authorized American Spa parts. No agent, dealer, distributor, service company or other party is authorized to change, modify or extend the terms of this limited warranty in any manner whatsoever. The Manufacturer will not be responsible for any statements or representations made in any form that go beyond, are broader than, or are inconsistent with any authorized literature or specifications furnished by American Spas.

## Disclaimers

The Manufacturer and its representatives shall not be liable for any injury, loss, cost or other damage, whether incidental or consequential, arising out of any defect covered by this limited warranty, including without limitation, loss of use of the spa and cost for removal of defective product even if the Manufacturer was advised of the possibility of damage. The liability of the Manufacturer under this limited warranty, if any, shall not exceed the original amount paid for the defective product. Coverage under this limited warranty shall commence as of the original date of delivery and the duration of such coverage shall not extend for any reason whatsoever beyond the stated time periods. These disclaimers shall be equally applicable to any service provided by the Manufacturer and its designated representatives.



**Legal Rights**

This Limited Warranty gives you specific legal rights. You may also have other rights that vary from state to state. Some states do not allow limitations on how long an implied warranty lasts, so this limitation may not apply to you.



## Locating the Product Serial Number

The serial number of your spa is located on a metal plate attached to the lower right front panel of the spa. You will need this number to properly register your spa and activate coverage. Write this information in the space provided below.

Spa Model: \_\_\_\_\_

Spa Serial Number: \_\_\_\_\_

Date Purchased: \_\_\_\_\_

Date Installed: \_\_\_\_\_

Dealer's Phone Number: \_\_\_\_\_

Dealer's Address: \_\_\_\_\_

## Removing the Support Block (Not Applicable to Valentine Models)

There is a 2" x 2" wooden support block attached to the frame of your hot tub. It is necessary during ship to keep the hot tub stable while it is on the pallet. When your hot tub is on the ground and placed on its foundation, the support may be removed. Use a ratchet and socket to remove the four bolts that attach the block to the frame.



**Enjoy your new American Spas hydrotherapy experience.  
American Spas would like to ask you to leave us a 5 star review.  
Thank you!**



email [info@american-spas.com](mailto:info@american-spas.com) and let us know you left a review!