ARUBA SPAS

OWNERS MANUAL

ARUBA SPAS
Box 2266 Station R
Kelowna, BC V1X 4K6
1-800-609-2227

TABLE OF CONTENTS

Introduction . . . 1
How Your Aruba Spa is Built . . . 1
Important Safety Instructions . . . 2
Getting Started . . . 3
Tools Required For Installation . . . 3
Items Required For The Installation Of Your Spa . . . 3
Positioning Your Spa . . . 3
Yard Installation . . . 3
Deck Installation . . . 4
Indoor Installation . . . 4
Electrical Connection . . . 4
Important Safety Instructions . . . 5
Start Up Preparations . . . 5
Initial Start-up . . . 5
Spa Operations Guide . . . 6
Topside Control Component Identification . . . 6
Hydrotherapy Jets . . . 7
Filter Cycles . . . 8
Ozonators . . . 8
Trouble Shooting . . . 9
Chemical Maintenance . . . 9
Initial Start-up Procedures . . . 9
Water Maintenance Schedule . . . 10
Conducting Proper Water Tests . . . 10
Chemical Table Of Equivalents Chart . . . 11
Problems Associated With Improper Water Balance . . . 11
Care For Your Spa . . . 11
Draining Your Spa . . . 11
Filter Cleaning . . . 11
Spa Surface . . . 12
Cabinet . . . 13
Cover . . . 13
Special Cold Weather Instructions . . . 13
Warranty Information . . . 14
Trouble Shooting Guide . . . 14
Circulating System . . . 16
Warranty . . . 17
Weekly Maintenance Schedule . . . 18

INTRODUCTION

Dear Aruba Customer,

Thank you for purchasing an Aruba Spa. At Aruba Spas our philosophy is simple, build the best spa and back it with an excellent warranty and with comprehensive customer service. The 2001 Aruba Spa includes many features, which are designed to ensure that your spa is dependable and simple to operate. This manual will guide you through the set-up, installation and start-up of your new spa. It will explain how to operate and care for your spa. We believe reading this entire owner's manual is the simplest way to ensure the full enjoyment of your new Aruba Spa. It is most important that you read and follow the safety instructions included in this manual. You should become familiar with all of the safety guidelines listed in this manual and make sure you follow them while using your spa.

HAZARD
Denotes risk of personal injury.

WARNING
Denotes a circumstance that could cause personal injury or a circumstance where damage to the spa's surface, structure or equipment could occur.

IMPORTANT
Denotes extremely important information.

At Aruba what we know how to do best is build spas. We have learned that quality through simplicity is the best way to build a spa. We believe that knowing how your spa is built will make installing and operating it easier, so the first part of this manual explains how your spa is built. Please take the time to read this section of your owner's manual.

It is important that you keep this manual for reference purposes. We have tried to make sure this manual includes all the information you will need about your spa. If you have any further questions or need additional information please call one of our customer service representatives at 1-800-609-2227. We are certain that you will find owning an Aruba Spa as relaxing as using it.

The highlighted terms are used throughout this manual to indicate facts that are particularly important for your safety, and for maintaining your spa in good working order.

HOW YOUR ARUBA SPA IS BUILT

At Aruba, building spas is our passion. We believe that quality through simplicity is the best way to build a spa. Over the years we have refined our spa construction process to achieve the best results. We are proud of the results that we have achieved using the methods described below and hope that knowing how your spa is made will make installing and operating it easier.

The building process starts with the shell of the spa. At Aruba Spas we use the thickest acrylic sheet available. Using a thicker acrylic sheet is important because the spa shell is formed by placing a heated acrylic sheet over a vacuum-former, which moulds it into the shape of the spa. As the acrylic sheet is formed it stretches and thins. Using a thicker acrylic sheet ensures a stronger and more durable surface.

Fiberglass backing is then applied to provide structural support for the acrylic shell. A triple bond system is used to ensure a complete bond is formed between the acrylic spa shell and the fiberglass structural support. A unique type of resin is applied as a skin coat to the outside surface of the spa shell. This skin coat is then backed by an additional layer of fiberglass reinforced resin. The skin coat forms a chemical bond between the acrylic spa shell and the fiberglass structural support. This triple bond system ensures the long lasting integrity of both the spa shell and spa surface.

After fiberglassing, the holes for the jets are precision drilled through the spa shell. The rough surface of the fiberglass backing around the holes is then machined and smoothed. We take this extra step in manufacturing to ensure the jets seat against a smooth surface for a tight fit and seal.

The plumbing system is then installed and lines are attached to each of the jets. A manifold is installed at each junction between the main

plumbing line and the lines leading to the jets. Running a short line from the manifold directly beneath the jets provides the best water pressure and allows the jets to operate at their full capability. Once the spa is plumbed it is water tested as part of our quality inspection process to ensure that there are no leaks.

The spa shell is then lowered into the framed cabinet or "spa skirt". At Aruba Spas we use this innovative process to ensure the structural integrity of our spas. Wooden supports are then custom fitted by hand to the areas underneath the seats and stairs to provide additional strength to these areas. This process recognizes that every spa is not identical and ensures individual inspection and custom fitting of each spa.

The spa shell is then insulated with 2 LB closed cell foam. As Aruba Spas are made in Canada we know Canadian weather conditions. With this in mind we use enough insulation to get the maximum obtainable R factor from our insulating foam. The use of closed cell foam ensures that water cannot be absorbed into the insulation. The insulation also locks all supports into place and secures the spa to the spa skirt.

The electronic operating system, which controls the heating, filtration and lighting systems is then installed and pre-tested in our factory. We have selected a well designed operating system that is easy to use and features a number of energy-saving options and safety options such as child lock-out.

IMPORTANT SAFETY INSTRUCTIONS

1) Children should not use spas or hot tubs without adult supervision.

2) Do not use spas or hot tubs unless all suction guards are installed to prevent body hair entrapment.

3) People using medications and/or who have an adverse medical history should consult a physician before using a spa or hot tub.

4) People with infectious diseases should not use a spa or hot tub.

5) To avoid injury, exercise care when entering or leaving a spa or hot tub.

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

7) Pregnant or possibly pregnant women should consult a physician before using a spa or hot tub.

8) Water temperature in excess of 40 degrees C (104 degrees F) may be injurious to your health.

9) Before entering a spa or hot tub, check the water temperature readout on the topside control.

10) Do not use a spa or hot tub immediately following strenuous exercise.

11) Prolonged immersion in a spa or hot tub may be injurious to you health.

12) Do not permit electric appliances (such as light, telephone, radio, or television) within 1.5 meters (5 feet) of a spa or hot tub.

13) Maintain water chemistry in accordance with manufacture's instructions.

WARNING

It is most important that you read these safety instructions before using your spa.

HAZARD

The use of alcohol or drugs greatly increases the risk of hyperthermia in spas.

HYPERTHERMIA

Hyperthermia occurs when the internal temperature of the body reaches a level several degrees above the normal temperature of 37 degrees C (98.6 degrees F). The symptoms of hyperthermia include drowsiness, lethargy due to an increase in the internal temperature of the body. The effects of hyperthermia include:

- **Unawareness of impending heat**
- **Failure to perceive heat**
- **Failure to recognize the need to leave the spa**
- **Fetal damage in pregnant women**
- **Unconsciousness and danger of drowning**

The final touch to the spa is the attractive spa skirt with strong, stable corners and removable side panels fitted into the frame to allow easy access to all plumbing. The spa skirt is made from solid tongue-in groove, red cedar and is designed to use shorter lengths of wood that may otherwise not have been utilized. We only use wood that has been harvested from select-cut forests using environmentally responsible techniques.

GETTING STARTED

Your spa comes complete with the following items:

- 3" tapered Grey Spa Cover with locks and Alpine Spa Cover Limited Warranty.
- Spa Builders LX-10 Owners Operation Guide Manual
- Aqua Flo Flow-Master Owners Manual
- Aruba Spas Limited Warranty Registration
- Allen Key

Please check to make sure you have received all these items. In addition, if you have ordered any extra accessories please check to make sure that they have been included with your spa.

TOOLS REQUIRED FOR INSTALLATION

- Voltmeter
- Ammeter
- Ohmmeter
- Screwdrivers (Phillips & flat head)
- 2 wire restrainers
- Wire cutters
- Wire strippers
- #8 AWG 3 wire (including ground wire) if spa is less than 40ft from the Main Breaker Box.

- OR -

- #6 AWG 3 wire (including ground wire) if spa is more than 40ft from the Main Breaker Box.

ITEMS REQUIRED FOR THE INSTALLATION OF YOUR SPA

- At least four people are required at time of delivery to place your spa into position.
- 220 Volt Electrical Service
- An Electrician to do the electrical connection.
- 40 Amp GFCI circuit breaker.
- An Allen Key to open and remove the access panel. (supplied by Aruba Spas)

POSITIONING YOUR SPA

Because your spa is self-contained you can locate it on a deck, patio, in your yard, or indoors. Proper site location is an important element of the overall enjoyment of your new spa, so make sure you take enough time to properly plan out the positioning of your spa. The following information is provided to help you determine where to place your spa. If you have any questions or concerns about where to locate your spa, please contact our customer service department.

IMPORTANT

Check with your local building codes with regards to fencing and gate requirements. Your spa measures 84"x84"x34" the dry weight is 650 lbs, with water 4000 lbs.

YARD INSTALLATION

Position your spa above ground in an area with good drainage, on a level surface that contacts the spa fully. The ideal base is a concrete pad, however compacted gravel, paving stones or railway ties may also be used. Locate the spa so the equipment door is readily accessible. The equipment has to be above grade and not subject to flooding.

DECK INSTALLATION

Before placing your spa on a deck or other raised platform, you must have the structure checked for its loading capacity by an Engineer or competent Contractor. Before placing the spa on the deck, you should place 1.5" high-density foam insulation under the spa. This helps insulate the spa and prevent the transmission of noise. At the same time providing the underside of the spa with extra insulation.

WARNING

One must support the entire base of the spa, from the outside edges to the centre, to support its weight. Improper placement of your spa may void the warranty.

WARNING

Do not permit electric appliances (such as light, telephone, radio, or television) within 1.5 meters (5 feet) of a spa or hot tub.

INDOOR INSTALLATION

Before attempting to place the spa indoors check the door openings to ensure that they are large enough for the spa to fit through. In addition, you must have the structure checked for its loading capacity by an Engineer or competent Contractor. The minimum loading capacity required is 100 lbs per square foot. The spa should be placed in a well-ventilated area so that excess condensation can be removed from the area where the spa is located. Locate the spa so the equipment door is readily accessible for maintenance and service needs, and ensure you have an area with proper drainage.

You may also wish to think about the following considerations before installing your spa:

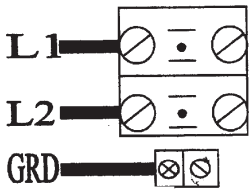
- location to facilitate adult supervision if children are using the spa
- location relative to trees (falling leaves and shade)
- exposure to sunlight
- landscaping and night-time lighting
- view from your house
- wind direction
- storage area for maintenance equipment and chemicals
- adjustment of sprinklers so they do not hit spa or spa cabinet

ELECTRICAL CONNECTION

A certified electrician in accordance with the general requirements of the "Canadian Electric Code" must perform all electrical connections to your spa. When applicable follow any municipal or regional electric codes. Electric connections to the spa must be via the spas own separate circuit protected by a 40 amp Ground Fault Circuit Interrupter (GFCI).

IMPORTANT

This spa requires a 3-wire electrical connection: no neutral wire is to be used when installing the spa. The spa pack is CSA approved: a neutral wire is not necessary for the electrical connection.



220 VOLT
40 AMP
50/60 HZ
1PHASE
3 WIRE

1. Unscrew the Allen head bolts holding the equipment access door in place at the front of the spa, set the panel aside. (An Allen key is included with your spa)

2. Loosen the four screws located in the spa pack metal cover to allow access to the electrical terminal block.

3. Connect the three wires to the equipment system.

   a. Connect the black wire to the block marked L1.

   b. Connect the red wire to the block marked L2

   c. Connect the green wire to the block marked GRD.

4. If you are using 4-wire to hook up the spa do not connect the white neutral wire. Bend the neutral wire back and cover it with electrical tape.

IMPORTANT SAFETY INSTRUCTIONS

1. Read and follow all instructions.

2. A green terminal or the international grounding symbol is located inside the supply terminal box. To reduce the risk of electric shock this terminal must be connected to the grounding means provided in the electric supply service panel with a continuous copper wire equivalent in size to the circuit conductors supplying this equipment.

3. At least two lugs marked "Bonding Lugs" are provided on the external surface or inside the supply terminal box. To reduce the risk of electric shock, connect the local common bonding grid in the area of the spa to these terminals with an insulated or bare copper conductor not smaller than no. 6 AWG.

4. All field installed metal components such as rails, ladders, drains or other similar hardware within 3 meters of the spa shall be bonded to the equipment grounding bus with copper conductors no smaller than no. 6 AWG.

5. Save these instructions.

START-UP PREPARATIONS

Before performing the operations in this section, make sure you have read and understood all of the previous instructions set forth in this manual. Make sure the spa has been installed correctly, including electrical wiring connections as specified in the previous sections. The following procedures must be done in the order they are listed.

WARNING

Do not run the pump until the spa is full of water. Running the spa pump without water could cause damage to the operating system and void the warranty.

Things to check before turning on the power to the spa:

1) Make sure the spa is clean, and that there is no foreign material in the spa.

WARNING

Unions must be hand tightened before filling the spa with water. Failure to do so may cause the unions to leak, which can damage the spa pack, and voids the warranty.

2) Check all four unions (or six if you have a circulating system) and ensure that they are hand tight. There are two white unions on the pump: one on the inlet side and one on the discharge side. There are also two black unions located on each end of the stainless steel heater barrel. The unions can come lose during shipping, and may need to be tightened. **Do not over tighten the unions.** If a union leaks after being hand tightened close the knife valves to stop the flow of water. Loosen the union that is leaking and inspect the O-ring for a possible crimp. Reinstall the O-ring and retighten the union.

3) To fill your spa, place garden hose directly in the filter. The spa holds 360 gallons (1620 litres) of water. You will notice that there is an indented wave in the spa. This is the water line. It is important that you maintain your water at this level.

INITIAL START-UP

HAZARD

This system should be set to maintain a water temperature NO GREATER THAN 40 DEGREES CELSIUS (104 degrees F).

Before proceeding with the initial start-up, make sure you have completed the start-up preparations from the previous section. The following procedures must be done in the order they are listed.

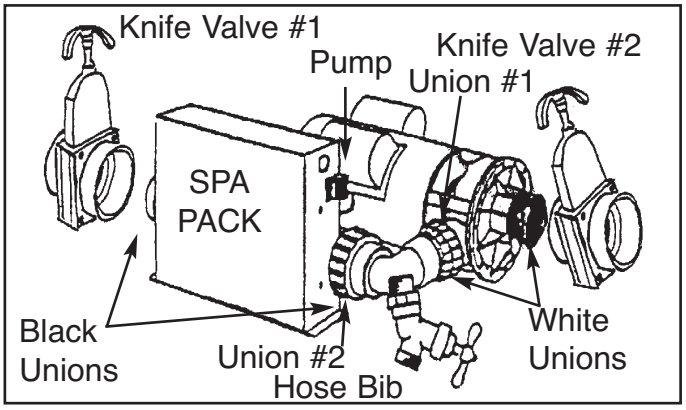
1) Make sure all of the jets are in the full open position, (refer to Hydrotherapy Jets, page 7).

2) The Electronic Operating System spa control has automatic functions that operate upon start-up and normal operation to protect the system. Upon power up, the read-out will display a three

digit software release. This number will then change to "888" while the system is booting up. Also during the boot up, all of the indicator LED's will be lit up.

WARNING

Only turn union one turn counter clockwise.



3) Turn the breaker to the "On" position and then check to see if water is circulating. If not then you must prime the pump. To prime the pump turn union #1 slowly 1/2 to 1 turn to release air, being careful not to open too far. After you hear the water begin circulating, retighten the union. The pump must be primed every time the water is changed. Check to see if water is coming from all the jets.

4) At the end of the boot up, the water temperature will be displayed. If the temperature is below 38 degrees C (100 degrees F), the low speed pump and the heater will turn on until the temperature rises to the preset 38 degrees C (100 degrees F). Approximately two minutes after the system has been initially powered up, the first filtration cycle will begin to operate. Any time after the boot up, you will be able to change the filter cycle and reset your temperatures set point. *Note: ICE will be displayed until spa reaches 13 degrees C or 55 degrees F.*

5) Press the pump button on the control panel to test if the pump is changing from low to high-speed, (refer to Topside Control Component Identification, this page). You will be able to tell the difference between low and high-speed by the sound of the water moving through the spa's plumbing system. Press the pump button again to return the pump to low speed.

6) Once the water has reached the set temperature add chemicals to adjust the water balance (see Chemical Maintenance, page 9).

7) The spa pack is thoroughly tested before shipping. The most common cause of immediate pack failure is dry firing (this occurs if the pump is running and the water is not circulating) and this type of failure is not covered by warranty. In particular, dry firing causes burnt out sensors and fuses.

8) If you experience any problems with the procedures above contact an Aruba customer service representative.

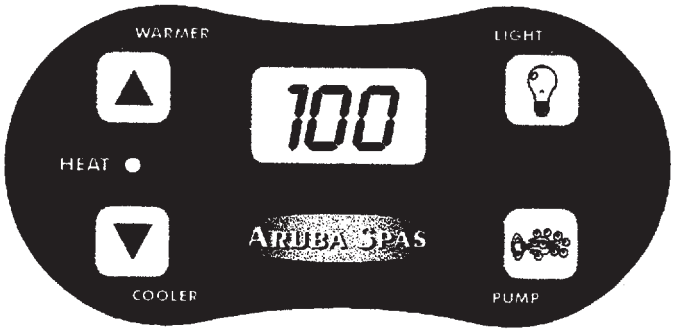
9) After your spa is operational you must install the Spa Cover latches. The locks will already be attached to the end of the straps. Position the tie strap so it is fully extended, *without stretching.* Locate the 2 holes on the locking mechanism, marking them with a pen. Remove the locking mechanism from the strap and fasten to the spa.

HAZARD

Never leave an uncovered spa unattended, and never leave a covered spa unlatched.

SPA OPERATIONS GUIDE

TOPSIDE CONTROL COMPONENT IDENTIFICATION



Warmer and cooler buttons

The spa's thermostat is to provide you with optimum control of the spa water temperature. This temperature set point can be adjusted from 18 degrees C (65 degrees F) to 40 degrees C (104 degrees F). In conjunction with setting the temperature, these two buttons are used in changing the filter cycles (see Filter Cycles section pg. 8).

Pump button

The control panel button designated "PUMP" activates the pump when pressed. The pump sequence is low speed, high speed, off. The pump, when the "PUMP" button is manually pressed, turns off after twenty minutes (a twenty-minute default).

NOTE: You will not be able to turn off your pump if your spa is in a filter cycle, heating, or an ice condition.

Light

The control panel button designated "LIGHT" activates the spa light when pressed. The light turns off after one hour (a one-hour default).

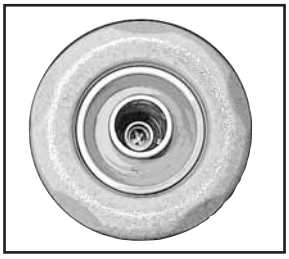
Air controls

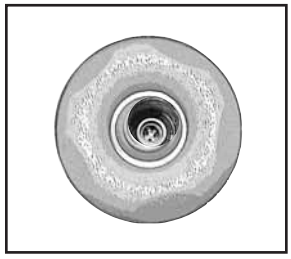
There are two air controls beside the topside control panel. By turning these controls you may adjust the amount of air going to the jets. When fully open you are getting the maximum amount of air for full hydrotherapy action. To reduce the amount of air coming out of the jets simply close the air controls.

HYDROTHERAPY JETS

Your spa is equipped with the following jets:

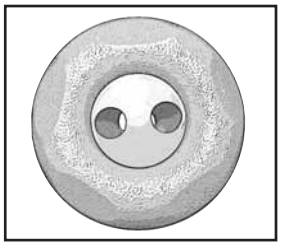
Adjustable jets. **Adjustable midi jets.**

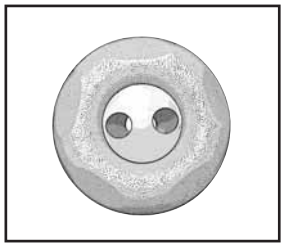




You can adjust the volume of water from these jets by turning the face plate clock wise to decrease the volume of water and counter clock wise to increase it. You can also change the direction of the water flow by pushing on the side of the small orifice in the centre of the trim kit.

Pulsator jets **Pulsator midi jets**

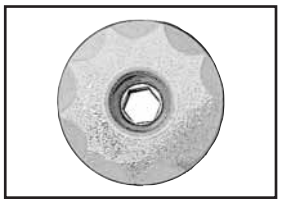




You can adjust the volume of water from the pulsator jets by turning the face plate clockwise to decrease the volume of water and counter clock wise to increase it.

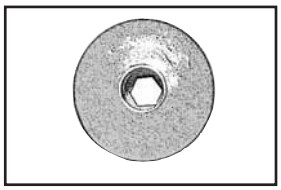
The pulsator and midi jets on your spa are interchangeable. To remove either trim kit you must place a screwdriver between the face plate and the acrylic spa surface then push with a gentle upwards motion and the trim kit will pop out of the jet body. To replace just place the trim kit into the jet body and gently push it into place. Be careful not to scratch the spa surface with the screwdriver and do not force the trim kit into or out of the jet body. To remove adjustable jets, pop them out an inch then unscrew them (left).

Cluster Jets



The cluster jets are small single orifice jets that are not adjustable and cannot be removed.

Ozone Jet.



The purpose of this jet is to inject ozone into your spa. It is not to be used for hydrotherapy. If you do not have an ozonator water will still flow into the spa from this jet.

WARNING

Do not block Ozone Jet at anytime. Blocking the Ozone Jet may result in damaging the ozonator and voiding the warranty.

FILTER CYCLES

Proper filtration is an important key to maintaining the clarity of your spa's water. The filter system is designed for unsurpassed effectiveness at removing debris and suspensions from the water while the water is circulating.

There are six pre-programmed filtration cycles (F1-F6) and two LOCKOUT modes (L1-L2). Of the six filter cycles, three cycles are in the standard mode and three cycles are in the economy mode.

To change the filter cycles, press and hold the **WARMER** and **COOLER** buttons together for 3 seconds. The display will show a filter cycle number (F1 - F6…) use the **WARMER** and **COOLER** buttons to scroll between F1 and F6. This alpha numeric value coincides with a specific filter cycle that is to be used for filtration.

Standard Mode:

Heating is automatically controlled by the loss of water temperature. If the spa water drops 2 degrees C (3 degrees F) below the set temperature, the low speed pump and the heater will automatically turn on. They will both remain on until the water temperature reaches the temperature set point.

Note: If the water temperature does not drop the internal timer still operates the filter cycle in this mode to ensure proper filtration.

F1 2 hours of filtration every 12 hours
F2 2 hours of filtration every 8 hours
F3 2 hours of filtration every 6 hours

Economy Mode:

In this mode, the timer determines when the filtering and heating take place. However, if the water temperature drops 11 degrees C (20 degrees F) below the set temperature, the low speed pump and heater will activate to bring the temperature within 8 degrees C (15 degrees F) of the set temperature.

WARNING
In very cold temperatures spa must be in filtering mode F03

F4 2 hours of filtration every 12 hours
F5 2 hours of filtration every 8 hours
F6 2 hours of filtration every 6 hours

Special Features:

L1 LOCKOUT-This special feature is used when cleaning or changing the filter cartridge or when performing any type of non-electrical servicing that requires the spa's pump operation be suspended until the work is completed. The temperature readout flashes in this function.

Note: If the control is heating when the system is put into the lockout mode, the heater will immediately turn off and the pump will cycle water for thirty seconds, cooling the heater element, then turn off.

L2 CHILD LOCKOUT- This special feature is used to prevent unauthorized use of the spa. This system incorporates a unique panel locking system which disables the controls on the panel. The temperature readout flashes in this function.

Note: In this mode the system will operate with filter cycle F1 described above.

IMPORTANT
It is necessary to use Chlorine or Bromine chemical treatment with an ozonator.

WARNING
This system only accepts a 220v Ozonator.

Note: to exit L1 or L2 you must press the warmer and cooler buttons at the same time.

OZONATORS-OPTIONAL (Standard on the Custom Aruba)

Ozone is injected into the spa's water during the filtration cycle. The ozone is injected into the water to supplement chemical sanitizers, kill bacteria, oxidize organics and control minerals. If during a filter cycle the pump is manually turned on, the ozonator will turn off. The ozonator will remain off until the start of the next filter cycle.

WARNING
Do not block Ozone Jet at anytime. Blocking the Ozone Jet may result in damaging the Ozonator and voiding the warranty.

TROUBLE SHOOTING

This is a self-diagnostic control system. The system will automatically display an alphanumeric symbol if a problem is detected.

Sn1 Nonfunctional high temperature sensor

Open or a short in high temperature sensor. This causes the heater to be deactivated. This must be repaired by a dealer or a qualified service technician.

Sn2 Nonfunctional temperature sensor

Open or a short in temperature sensor. This causes the heater to be deactivated. This must be repaired by a dealer or a qualified service technician.

Note at the factory the pins of the temperature sensor are coated with a mould retardant shellac so you may need to scrape them with fine sand paper in order to insure a good connection.

FL1 Water flow problem

If you get a FL1 reading and have ruled out an air lock, a soiled filter and the water level is high enough you may have to adjust the pressure switch. Take off the front access panel and the black cover off the spa pack. In the bottom left hand corner you will locate the pressure switch. It's a round grey unit that screws into the heater barrel. Located at the top of the pressure switch is a threaded grey nipple. Hold the bottom of the pressure switch with a pair of vice grips (you do not want the bottom of the pressure switch to turn) and turn the nipple 1/2 a turn counter-clockwise. Listen for a clicking sound and look to see if the reading has disappeared. If it has not, you can repeat this up to two more times.

FL2 Pressure switch problem

If the reading you are getting is an FL2 you follow the same procedure as above but turn the nipple clockwise.

COL Cool condition

If the water temperature drops 11 degrees C (20 degrees F) below the set temperature, the low speed pump and the heater will activate to bring the temperature within 8 degrees C (15 degrees F) of the set temperature. No corrective action is required.

ICE Freeze condition

A potential freeze condition has been detected 13 degrees C(55 degrees F). No action is required. The low speed of the pump will be activated along with the heater. The spa will automatically bring the water temperature up, until the spa is out of danger.

OH High temperature condition

Spa water is above acceptable limits, do not enter spa water. Water temperature has reached 43 degrees C (110 degrees F). The low speed pump is activated to assist in lowering water temperature.

- - - Watchdog

Water temperature has reached 48 degrees C (118 degrees F). The entire system is disabled. Contact a dealer or a qualified service technician.

CHEMICAL MAINTENANCE

Your spa comes with a cartridge filter system. Filtering of the water helps to maintain water cleanliness and clarity. While the filter traps most solid materials, it is still necessary to add a sanitizer such as bromine or chlorine to the water to control bacteria, algae and to oxidize any organic materials in the water. This section will explain how to use bromine to maintain clean, clear and odor-free water. Chlorine is also available through your local Pool and/or Spa retail outlet. When purchasing from your local retailer, it is recommended that you bring a sample of your water for analysis and guidance on which chemicals you may require.

The chemicals and test strips listed below can be purchased directly from Aruba Spas by calling us at 1-800-609-2227.

IMPORTANT

You must use either chlorine or bromine based chemicals. You may change from chlorine to bromine without emptying the tub. If you are changing from bromine to chlorine you then must empty the tub and start with fresh water. Never mix chlorine with bromine out of the water.

INITIAL START UP PROCEDURES

(dosages are for 360 gallons (1620 litres) of water)

1. Use your test strips or test kit to test your fill water for pH, total alkalinity, and calcium hardness to determine any water balance adjustments necessary.

2. Calcium levels should be between 175 - 275 parts ppm. If the level is above this you have excessive amounts of calcium and magnesium in your water and must add PROTECT PLUS (stain & scale remover) to prevent scaling on your heater. If the level is below normal you have soft water that can lead to excessive foaming and you should add a calcium hardness increaser.

WARNING

Make sure you dilute all chemicals with spa water before adding them to the spa. Adding full strength chemicals to the spa may damage the spa surface and will void the warranty.

3. When filling your spa with water, add 90ml (6 TBS) of PROTECT PLUS to protect your spa against staining and scale formation on the spa walls and on the heater element.

4. You must balance your water so that it is neither alkaline (scale forming) nor acidic (corrosive). Balanced spa water should be between 7.4 - 7.6 on the pH scale, with total alkalinity in the range of 100 - 120 ppm. Use SPA INCREASE (pH up) or SPA DECREASE (pH down) as needed to adjust the pH. Add SPA INCREASE (alkalinity increaser) to raise total alkalinity and SPA DECREASE (pH down) to lower total alkalinity. The same chemical is used to lower both pH and alkalinity.

WARNING

Improper chemical maintenance can damage the spa surface and/or equipment, and will void the warranty.

5. Once your water has reached the set temperature fill the floating dispenser with bromine tabs and add it to the spa water. The dispenser may require periodic adjustment to properly regulate the dispensing of bromine. The importance of maintaining an adequate level of sanitizer in your spa can not be overemphasized. Warm water presents a fertile environment for the growth of bacteria and viruses. This growth is prevented when adequate sanitizer levels are continuously maintained.

WATER MAINTENANCE SCHEDULE

Weekly

1. Bromine Tablets - check the dispenser to ensure there are still tablets in it. If necessary add more tablets.

2. Add 45 ml (3 TBS) of PROTECT PLUS to prevent scaling and staining.

3. Add 45 ml of SPA CLARIFIER (flocculent) to spa water. SPA CLARIFIER will quickly clean and brighten hazy, cloudy water caused by microcontaminants in the water that are too small for the filter to remove.

4. Add 45 ml of NATURAL CLEAR to eliminate scum lines. NATURAL CLEAR is an enzyme action scum remover, which actually digests oils, and lotions in the water to prevent filter clogging, scum lines and cloudiness.

WARNING

Sanitizers such as Sodium Tri-chlor type chlorine (tablets/sticks), calcium hypochlorite, sodium hypochlorite, or any chemical that may remain undissolved on the spa surface will damage your spa and will void the warranty completely.

5. You should give the water a shock treatment every week. By shocking on a regular basis, the contaminants leave the spa water, leaving you with clean, clear and virtually odorless water. Begin by adding Bromine concentrate on a fresh fill and weekly thereafter. If the spa has had high use during the week, an additional shock treatment would be required.

**NOTE: When adding a shock treatment, please insure the spa cover is left off the spa at least 30 minutes, to allow the "gassing off" process. It also saves wear and tear on your spa cover.*

6. You may occasionally need to use a small amount of FOAM-OUT to reduce foaming and sudsing should it occur. Soap residue will cause foaming - rinse out bathing suits well.

CONDUCTING PROPER WATER TESTS

1. Total alkalinity is the key to water balance. Always adjust total alkalinity first, and then pH.

2. Water should be circulating before you take your sample. If the pump has been off, turn it on for a few minutes. If you are using a test kit rinse the sample vial 2 or 3 times with the spa water before you take your sample. Sample the water from 46 cm (18") below the water surface. If you are using test strips they should be immersed to a depth of 46 cm (18") and then swirled three times. Follow the manufacturers directions carefully when performing your water test with either the test strips or the test kit.

3. The ideal range for proper water maintenance is as follows:

BROMINE	3.0 - 5.0 ppm
CHLORINE	3.0 - 5.0 ppm
pH	7.4 - 7.6 ppm
ALKALINITY	7.2 - 7.6 ppm
CALCIUM HARDNESS	175 - 275 ppm

4. Bromine (or Chlorine) levels need to be tested daily.

5. pH levels need to tested daily.

IMPORTANT

If your bromine (or chlorine) reading is above 6.0 you may obtain a false result when testing for pH. In this case, lower the chlorine or bromine before performing any other tests.

6. Alkalinity levels need to be tested weekly.

7. Calcium hardness levels need to be tested bi-weekly.

8. Water testing should be done at home using test strips or an accurate test kit, or by taking your water to a spa or pool retail outlet and having them test your water sample (you should expect to pay a nominal fee for this service).

CHEMICAL TABLE OF EQUIVALENTS CHART

15 ml = 1 TBS

4 TBS = 1/4 cup

15 g = 1 TBS

PROBLEMS ASSOCIATED WITH IMPROPER WATER BALANCE

Low pH:

- causes rapid sanitizer loss.
- causes eye irritation and itchy skin.
- corrodes equipment

Solution: add pH increaser (pH up) to raise the pH levels. (Refer to Chemical Maintenance Initial Start Up Procedures, page 10 #4)

High pH:

- forms scale.
- causes short filter runs.
- clouds water.
- reduces sanitizer efficiency.

Solution: add pH decreaser (pH down) to lower the pH levels. (Refer to Chemical Maintenance, Initial Start Up Procedures, page 10 #4)

Low Sanitizer Levels:

- allows growth of bacteria and viruses in spa water.

Solution: refer to Chemical Maintenance, Initial Start Up Procedures, page 10 #5.

Causes of pH change:

- adding water.
- rain.
- bather load.

- adding chemicals.
- dust.
- algae.

CARE FOR YOUR SPA

DRAINING YOUR SPA

Drain and re-fill the spa as indicated below:

Average Use: Every 60 days

Heavy Use: Every 30 days

After Parties: Drain

Before draining your spa you may add WHIRL-O-CLEAN to the warm water and start the pump for about 30 minutes. This will help in eliminating grease and oils in the plumbing and jets.

WARNING

Do not leave your spa exposed to direct sunlight when there is no water in the spa. Exposure to direct sunlight could damage the spa shell and void your warranty.

To drain the spa:

1. Turn off all power to your spa.

2. Attach a hose to the hose bib at the bottom of the spa and gravity drain by the siphon method.

3. Clean the surface (see "Spa Surface" later in this section).

4. Refill the spa. Turn on the high speed jets for a moment to re-prime the system. Follow the initial start-up procedures to re-heat the spa.

WARNING

In the dishwasher use the clean and rinse cycles. If using filter cleaner make sure the filter has been well rinsed before re-inserting it in the spa.

WARNING

Make sure you replace your filter cartridges at least once every six months.

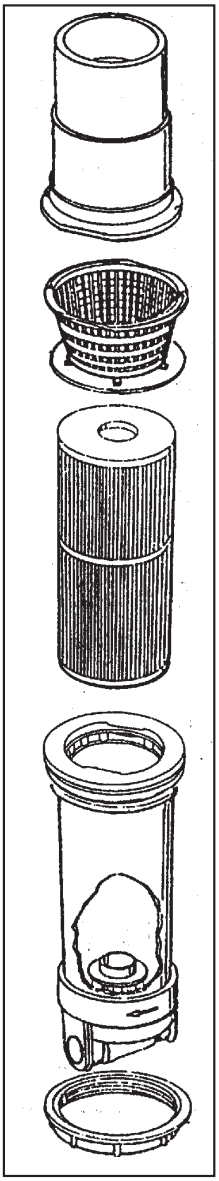
FILTER CLEANING

1. Refer to pg #8 Special Features L1 Lockout. WARNING: Do not use hot tub without filter in place.

2. Your spa is equipped with a top access filter. To access the filter cartridge, remove the skimmer basket and filter cartridge.

3. Clean filter cartridge in your dishwasher. The filter may also be cleaned in a filter solution (follow instructions with cleaner product). Be sure to soak filter in filter solution 2 - 4 hours.

4. Once cleaned, re-install filter cartridge and skimmer basket.



5. How often the cartridge filter needs to be cleaned depends largely upon how many bathers are using the hot tub. With average use we recommend cleaning the cartridge filters approximately every 3-4 weeks. However, more frequent or greater numbers of people may require more frequent cleaning.

IMPORTANT

Be sure to thoroughly rinse the filter cartridge to thoroughly remove any cleaning agents. If this is not accomplished, foaming of the water may occur during the filter cycle of the hot tub.

SPA SURFACE

Your spa has a very high quality acrylic surface. Stains and dirt will generally not adhere to the surface. Do not use household products for cleaning the spa surface. Be careful of detergents

as they may contain phosphates that may contaminate the water and will cause foam build-up. Also, many cleaning agents contain abrasives which will scratch the surface, and therefore must not be used. After cleaning, be sure to rinse the surface with water to assure all excess cleaning solution is properly diluted and properly removed. This will avoid unnecessary reaction of skin irritations from chemical contact to the body. Follow product recommendations. You may also wish to periodically polish the acrylic surface with spa polish (Gel Gloss).

CABINET

When properly cared for the Cedar cabinet of your spa will maintain its good looks for many years. All woods react to the elements differently by expanding and contracting, so make sure you re-stain the wood every 10 to 12 months with an oil based stain to thoroughly protect the wood. Clear wood finish can be used as a good wood sealing agent. The wood must be properly maintained.

WARNING

When cleaning the surface use only acrylic cleaners.

WARNING

Do not use caustic solutions as they may damage the spa shell surface and void the warranty.

COVER

With safety and convenience in mind the spa cover has been designed with child safety latches and a slope designed to create a natural run-off for rain water. Please ensure the use of spa straps and latches to secure the cover when not in use. This will help to discourage unsupervised children from entering the spa and keep the spa cover secure in high-wind conditions.

DO NOT allow snow to build up on the cover as it is not intended to bear weight. Weight on the cover may cause the edges of the cover to curl, or progressively warp and bow the cover, or in extreme cases cause the foam inserts to break. To avoid this keep all weightbearing objects off of the cover. Water and snow must be swept off to keep them from accumulating or puddling on the cover. Should puddling occur, unzip the vinyl, remove the foam insert, turn it over and re-insert it.

WARNING

The cover is not a safety cover. Do not stand, sit or lie on it or permit any heavy weight to rest on it. This will damage the cover and void the warranty.

The thermal cover should be cleaned regularly. As often as is necessary wash the cover with a mild soap and rinse with clean water. All vinyls contain plasticizers which must be maintained to prevent drying out, cracking, flaking and deterioration. These plasticizers migrate out and escape naturally through time. Sun and cold speed up this process. Application of a vinyl cleaner and conditioner at least once a month will retard this deterioration. We recommend the use of 303 Protectant.

IMPORTANT

Fading and discolouration of the spa cover will occur naturally with extended exposure to the sun.

The vinyls used in your spa cover are marine treated, but will deteriorate faster when exposed to high levels of chlorine, bromine, ozone or other active chemicals. Each time Chemicals are added, remove the cover completely and place it far enough away so that splashing will not reach the cover.

The cover handles and tie downs are double reinforced with thick vinyl coated rip-stop PVC material. However, mistreatment by sudden jarring motions can damage them. To prevent damage any handling of the cover must be done in a gentle manner.

WARNING

Do not use solvents, petroleum based products, abrasive cleaners or strong detergents. Do not use products that contain silicone or alcohol. Use of these products will damage the cover and void the warranty.

SPECIAL COLD WEATHER INSTRUCTIONS

Your spa is designed for year round use and winter operation. Winter is also perhaps the most enjoyable season for spa use. We also recommend continuous operation throughout the winter months because it is very difficult to get water out of all of the plumbing lines. If for some reason you must close down your spa in the winter we recommend you winterize it as follows:

1. Drain your spa completely. You may tip your spa on edge and use a wet vacuum or blower to evacuate as much water as possible from the spa. The idea is to get all the water out of the plumbing lines and equipment.

WARNING

Any damage caused to the spa by freezing, once it has been drained for the winter, is not covered by warranty.

2. Once the spa is completely drained, open the hose bib and loosen the unions to allow the water to expend freely within the system. Also, remove the drain plug on the bottom of the pump. This should prevent any ice from expanding and damaging drainpipes and fittings. The key is to eliminate any sealed areas in the system that may contain water. Your local pool and spa retailer may provide this service at a nominal fee.

3. If you receive a heavy snowfall during the winter, you may want to build a temporary cover over the top of your spa. This can be done with 1/2" sheets of plywood supported by 2' x 4' cross members.

WARNING

In very cold temperature spa must be in filtering mode F3.

WARRANTY INFORMATION

We are pleased to announce that Aruba Spas has partnered with Cornerstone in order to offer the customer an excellent and secure warranty program. This program offers the best protection because it is backed by "full reimbursement contractual liability insurance" which protects the customer for the full length of the term of the warranty. Make sure you return the **Warranty Registration Card** that comes with your spa.

If you encounter a problem with your spa please take the following steps.

IMPORTANT

Aruba Spas Cornerstone Warranty certificate is on page 17. Please make sure you read this document carefully. It is important to understand this warranty and its exclusions.

For warranty service contact a Cornerstone Customer service agent at

1-800-774-9992.

1. Refer to the Trouble Shooting guides on page 9 and 14. Use these guides to determine what may be wrong with your spa. This is important information to give the service technician. In addition, checking the guides will help you to determine if you need to call for warranty assistance.

2. If you need assistance in trouble shooting call Spa Builders 1-800-772-7257 or Aruba Spas 1-800-609-2227. If you need warranty service, call Cornerstone 1-800-774-9992. If it is within 50 days of receiving your spa, call Aruba Spas.

TROUBLE SHOOTING GUIDE

PROBLEM • DIAGNOSIS • ACTION

P: Spa won't turn on
D: No power in spa
A1: Check Breaker
A2: Check Fuses

P: Spa comes on by itself
D: Normal function of heating and filtering
A: No action required

P: Pump shuts down unexpectedly while in use

D: Default timer of 20 minutes in LX-10 electronic operating system
A: Reactivate by touching desired button

P: Spa does not heat
D: Temperature setting is too low
A: Turn up thermostat

P: Poor jet action
D: Dirty filter
A: Clean filter
D: Air lock in pump
A: Loosen end pump union to release air
D: Water level too low
A: Fill spa

P: Spa light is out
D: Burned out bulb
A: Replace bulb
(The Light housing is located behind the spa pack, and there is no need to drain the spa to change the light bulb.)

P: Motor shuts down while in use
D: Protective device has shut down motor to protect from overheating
A: The automatic device will reset the the motor when it cools down

P: GFCI shuts down frequently
D: Faulty GFCI

A: Call electrician

D: Heater element has failed
A: Call Cornerstone
D: Ozonator has failed
A: Replace Ozonator

P: Abnormal water usage
D: Excessive evaporation
A: Use spa cover when not in use, lower thermostat setting

D: Leak in plumbing
A1: Tighten unions (see #2, START-UP PREPARATIONS)
A2: Call Cornerstone

P: Water not clean
D: Filter dirty or clogged
A: Clean or replace filter
D: Clogged/blocked safety suction
A: Clean safety or suction or skimmer
D: Poor water chemistry
A: Test and correct
D: High content of solids in water
A: Drain and refill spa

P: Eye or skin irritation
D: pH is too high
A: Test and correct

P: pH is too low
A: Test and correct
P: Formation of chloramines
The formation of chloramines is chlorine combining with nitrogen from body wastes, oils etc. - causes familiar chlorine odour
A: Correct by shock

P: Foaming of water
D: High concentration of oils and organics being agitated by jets

A: Squirt defoamer on foam, add descummer
D: Soft water
A: Test and correct

P: Scale deposits
D: High calcium level, high pH, high alkalinity
A: Test and correct

P: Water leaks or drips in equipment
D: "O" ring or seals drying out
A: Lubricate "O" rings or replace

P: Filter often has air in it
D: Water level is too low
A: Add water to appropriate level

D: Leak in top of filter
A: Check for cracks, replace "O" rings

CIRCULATION PUMP OPERATIONS:

(Optional Purchase)

When you start up your spa ensure that both knife valves on either side of your circulation pump are in the open position (up). Loosen the union to release any air then re-tighten.

You cannot operate the circulation pump from the topside control, it is pre-programmed to run 24 hours a day with the exception of summer logic and purges.

SUMMER LOGIC: After the circulation pump has been running for an extended period of time you may notice that the water temperature is greater than the temperature setting. This scenario can happen in a well-insulated spa. Even though the heater has turned off as intended, the transference of heat from the pump circulating will continue to add warmth to the water. If the water temperature is above 95 degrees F. (35 degrees C.) and two degrees above the temperature setting, the circulation pump (and ozonator if equipped) will turn off until the water temperature cools to equal the set temperature.

PURGES: Depending on what mode your spa is set in the low speed pump will come on and purge the lines for 10 minutes.

PURGE CYCLES

Filter Cycle	Mode	# of Cycles/Day	Duration
1	Standard	2	10 min/cycle
2	Standard	3	10 min/cycle
3	Standard	4	10 min/cycle
4	Economy	2	10 min/cycle
5	Economy	3	10 min/cycle
6	Economy	4	10 min/cycle

OZONATOR: (Optional Purchase)

If you purchased an ozonator (standard equipment in the custom spa) it will be mounted on the inside wall to the right of the front panel. When the ozonator is operating you will notice that a blue light shines from it. The ozonator operates when the spa is in a filter cycle as well as when it is heating in the standard mode. If your spa is equipped with a circulating pump then the ozonator will run continuously as well, with the exception of summer logic. (see above). The ozonator has a life of approximately 17,000 hours (approx. 5 years) and does not need any maintenance unless the bulb burns out. Please do not block the ozone jet inside your spa as this can damage the ozonator. Your ozonator has a one year warranty.

ARUBA SPAS CORNERSTONE

L I M I T E D

WARRANTY

RIDGEWOOD ENTERPRISES LTD., the manufacturers of ARUBA SPAS extends this limited warranty solely to the original purchaser of any ARUBA brand spa manufactured after February 1, 1999.

FIVE YEAR LIMITED SHELL STRUCTURE and SURFACE

ARUBA SPAS warrants the spa against water loss due to defects in the spa shell for a period of five years from the original date of purchase.
ARUBA SPAS warrants the interior surface of the spa against blistering, cracking, or delaminating for a period of five years from the original date of purchase.

FIVE YEAR LIMITED NO LEAK

ARUBA SPAS warrants the spa against loss of water due to defects in the fittings and plumbing lines for a period of five years from the original date of purchase.

ONE YEAR LIMITED SKIRT

ARUBA SPAS warrants the wood cabinet against defects in workmanship and materials (excluding skirt finish) for one year from the original date of purchase.

TWO YEAR LIMITED SPA PACK AND PUMP

ARUBA SPAS warrants the spa pack and pump against mechanical or electrical breakdown: parts and labour, for a period of two years from the original date of purchase.

THREE YEAR LIMITED HEATER ELEMENT

ARUBA SPAS warrants the heater element against failure: labour coverage for a period of two years and parts coverage for a period of three years, from the original date of purchase.

REGISTRATION: To validate this warranty, the original purchaser must complete the warranty registration card and mail it to ARUBA SPAS within 30 days of delivery of the spa.
PERFORMANCE: In the event of any defect covered by this Limited Warranty, ARUBA SPAS or its authorized agent will correct such defect subject to the terms and conditions contained in this Limited Warranty. There will be no charge for parts or labor to repair the spa, although you may be assessed reasonable repairman travel mileage charges if the spa is located outside your service agent's area. If ARUBA SPAS determines that repair of the covered defect is not feasible, we reserve the right to instead provide a replacement spa equal in value to the original purchase price of the defective spa and delivery and installation of the replacement spa will be the responsibility of the spa owner. To obtain service for any defect covered by this Limited Warranty, notify CORNERSTONE within 30 days of its occurrence and use all reasonable means to protect the spa from further damage.
EXCLUSIONS: This Limited Warranty is void if the ARUBA SPA has been subjected to alteration, neglect, misuse or abuse; If any repairs have been attempted by anyone other than ARUBA SPAS or its authorized agent; or if the failure is caused by accident, acts of God, or other causes beyond the control of ARUBA SPAS, Neglect, misuse and abuse include any installation, operation, improper water balance or maintenance of the spa other than in accordance with the owner's manual. This Limited Warranty does not provide coverage for demonstrator, used, repurchased or reconditioned spas, spa kits, unplumbed spas, or factory seconds and/or any ARUBA SPA used for commercial use. This Limited Warranty does not provide coverage for filter cartridges, jet trim kits, fuses, pump seals, O-rings, gaskets, and light bulbs, or any item attached to, or installed on, the spa after the date of manufacture. OZONATORS AND SPA INSULATED COVERS ARE EXCLUDED FROM THIS LIMITED WARRANTY, ALTHOUGH THEY ARE COVERED BY SEPARATE WARRANTIES BY THEIR MANUFACTURES.

SERVICE CHARGES: All service calls will be subject to an $80.00 (eighty dollars) charge. If the service work performed is covered by this Limited Warranty, the charges will be refunded. If the service work performed is not covered by this Limited Warranty, the service charges will apply. Service or warranty work performed outside the city limits from where the spa was purchased will be subjected to mileage charges and related expenses.
LIMITATIONS: This Limited Warranty takes the place of all other warranties, express or implied, in fact or at law, including implied warranties of merchantability and fitness for a particular purpose. All warranty service must be performed by ARUBA SPAS or its authorized agents, No agent, dealer, distributor, service company or other party is authorized to change, modify or extend the terms of the Limited Warranty in any manner whatsoever.
DISCLAIMERS: ARUBA SPAS and its authorized agents shall not be liable for any injury, loss, or other damage, whether incidental or consequential, airing out of any defect covered by this Limited Warranty, including without limitation, loss of use of the spa and cost of removal of defective product, even if ARUBA SPAS has been advised of the possibilities of such damage. The liability of ARUBA SPAS 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 purchase 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 ARUBA SPAS or its authorized agents.
LEGAL RIGHTS: This Limited Warranty gives you specific legal rights. Some states or provinces do not allow the exclusion or limitation of incidental or consequential damages, therefore the above limitations may not apply to you.

ARUBA SPAS CORNERSTONE
362 Oxford Street East, Suite 202
London, Ontario N6A 1V7
1-800-774-9992

WEEKLY MAINTENANCE SCHEDULE

DATE	Clean Filter	Shock Treatment	Water Clarifier	Check Chemical Balance	General Maintenance

DATE	Clean Filter	Shock Treatment	Water Clarifier	Check Chemical Balance	General Maintenance

MADE IN CANADA
FABRIQUÉ AU CANADA

ARUBA SPAS
A Division Of
Ridgewood Enterprises Ltd.
920 Leathead Road,
Kelowna, BC V1X 2J8

Aruba Spas reserves the right to make changes in specifications without notice

MEMBER
NATIONAL SPA & POOL INSTITUTE
OF CANADA