SPA OWNER’S MANUAL

IMPORTANT SAFETY INSTRUCTIONS

PART A – GENERAL MANUAL
(APPLIES TO ALL SPAS)

INSTALLATION AND ELECTRICAL CONNECTION

START UP AND OPERATION

MAINTENANCE

O1M-A-16

Read in conjunction with Part B – brand specific manual to form a complete Owner’s Manual
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CONGRATULATIONS ON THE PURCHASE OF YOUR NEW SPA

We have tried to compile a complete, easy to understand manual all about your spa and its' maintenance. Years of research and development have gone into producing the superior quality product you have purchased. Your spa is made from the highest quality material and latest technology available today. Pride and meticulous attention to detail have resulted in the spa you have chosen. With proper care, your spa will provide many years of comfort and pleasure.

Please take a few minutes now to read all of the instructions before you install your spa. This owner's manual will help you understand your spa, so you will get the most from your investment. For service and advice, do not hesitate to call your authorized dealer. Your questions will be welcomed by friendly and knowledgeable staff.

May you have as much pleasure and enjoyment using your new spa, as we had making it for you.

*We understand there are many choices in the marketplace when you are considering adding a spa to your home, so thank you for choosing a spa by Leisure Manufacturing Inc. Enjoy!*

SAFETY SIGN

IMPORTANT NOTICE: SAFETY SIGN
Enclosed with this Owner's Manual is a Safety Sign. This sign must be permanently installed in a location that is visible to all spa users. It is the spa owner’s responsibility to remind all users about safe spa use, particularly occasional users of the spa, who may not be aware of the various health and safety issues.

To obtain additional or replacement copies of the safety sign, contact your dealer.

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**WARNING**

**DURING PREGNANCY**
Soaking in hot water may cause damage to the fetus.

**LIMIT USE TO 10 MINUTES AT A TIME**

**PREVENT DROWNING**
Spa heat speeds up effects of alcohol, drugs or medicine and can cause unconsciousness. Immediately leave spa if feeling uncomfortable or sleepy.

**PREVENT CHILD DROWNING**
Water attracts children. Keep children always within sight. Always attach a spa cover after each use.

Spa Safety Sign - To be permanently installed in a location visible to all spa users.
ATTENTION: SPA OWNER
In the immediate vicinity of the spa, a sign must be posted stating the following:

1) The spa’s address
2) Location of the nearest telephone with posted emergency numbers
3) Nearest available police department, fire department and ambulance/rescue unit

CONDITIONS OF WARRANTY AND CONSUMER OBLIGATIONS

As a new spa owner, you have specific obligations in regards to the installation and safe use of this spa. Failure to do so may result in a loss of warranty coverage not to mention personal injury to those using this spa.

Inspect the spa upon its arrival for damage. If you are being made aware of this for the first time, your spa may not have been delivered in its original factory packaging. If this is the case, please take time to inspect your spa and report any damage or missing items to your dealer.

1) Install the spa both physically and electrically, in accordance with any local codes.

2) Provide suitable access to all sides of the spa. Any custom built enclosure, either above or below a deck surface, must be able to be removed with relative ease.

3) Provide sufficient work area around the spa’s perimeter especially the side the spa’s equipment is located on.

4) Regularly check operation of the spa in regard to filtration, jet pump operation and the heating system.

5) Report any concern to the dealer. Any problem that arises towards the end of particular warranty coverage should be documented and reported to the dealer.

6) Maintain the water’s chemical balance and clean/replace the system’s cartridge filter(s) as instructed by the dealer and/or Leisure Manufacturing Inc.

7) Drain and refill the spa on a regular basis as instructed by the dealer and/or Leisure Manufacturing Inc.

8) Winterize and store the spa and its’ components in accordance with the manufacturer’s printed instructions.

9) Care for and maintain the spa cabinet, hard cover and acrylic surface as outlined in these instructions.

10) Ask your dealer to record the spa’s serial number on your bill of sale.

11) Provide a copy of your bill of sale, if requested by the dealer or Leisure Manufacturing Inc.
## YOUR PERSONAL SPA DATA

Before you begin the installation of your new spa please take a few minutes to fill out the details of your spa. This information will become invaluable later should you have a question for your dealer or should you need to make a warranty claim. Ask your dealer to assist you in recording this information.

<table>
<thead>
<tr>
<th>Information</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model Year</td>
<td></td>
</tr>
<tr>
<td>Model Name/Number</td>
<td></td>
</tr>
<tr>
<td>Spa Serial#</td>
<td></td>
</tr>
<tr>
<td>Jet Pump(s) Size (HP, SPL, Watts etc.)</td>
<td></td>
</tr>
<tr>
<td>Heater size (kw)</td>
<td></td>
</tr>
<tr>
<td>Filter Cartridge (Model Number/Size)</td>
<td></td>
</tr>
<tr>
<td>Topside Control/Keypad</td>
<td></td>
</tr>
<tr>
<td>Spa Pack Model #</td>
<td></td>
</tr>
<tr>
<td>Spa Pack Serial #</td>
<td></td>
</tr>
<tr>
<td>Dealer Name</td>
<td></td>
</tr>
<tr>
<td>Date of Purchase</td>
<td></td>
</tr>
</tbody>
</table>

We strongly recommend that you attach your bill of sale to this manual after installation is complete. Keep it in a safe place for future reference. You may also wish to attach any notes you have made about the dealer delivery, dealer start up demo or any other notes that may be of benefit in the future.
IMPORTANT SAFETY INSTRUCTIONS

WARNINGS

DANGER: Risk of Accidental Drowning. Extreme caution must be exercised to prevent unauthorized access by children. To avoid accidents, ensure that children cannot use this spa unless they are supervised at all times.

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

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

DANGER: Risk of Electric Shock. Install at least 5 feet (1.5m) from all metal surfaces. As an alternative, a spa may be installed within 5 feet of metal surfaces if each metal surface is permanently connected by a minimum 8 AWG (8.4mm²) solid copper conductor to the wire connector on the terminal box that is provided for this purpose.

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

WARNING: To reduce the risk of injury:

a) The water in a spa should never exceed 40°C (104°F). Water temperatures between 38°C (100°F) and 40°C are considered safe for a healthy adult. Lower water temperatures are recommended for young children and when spa use exceeds 10 minutes.

b) Since excessive water temperatures have a high potential for causing fetal damage during the early months of pregnancy, pregnant or possibly pregnant women should limit spa water temperatures to 38°C (100°F).

c) Before entering a spa, the user should measure the water temperature since the tolerance of water temperature-regulating devices varies.

d) The use of alcohol, drugs, or medication before or during spa use may lead to unconsciousness with the possibility of drowning.

e) Obese persons and persons with a history of heart disease, low or high blood pressure, circulatory system problems or diabetes should consult a physician before using a spa.

f) Persons using medication should consult a physician before using a spa since some medication may induce drowsiness while other medication may affect heart rate, blood pressure, and circulation.

CAUTION: Maintain water chemistry in accordance with the manufacturer's instructions.
READ AND FOLLOW ALL INSTRUCTIONS

When using this equipment, basic safety precautions should always be followed. Including the following:

a) A green coloured terminal or a terminal marked G, GR, Ground, Grounding or the international grounding symbol is located inside the supply terminal box or compartment. 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.

b) At least two lugs marked "BONDING LUGS" are provided on the external surface or on the inside of the supply terminal box or compartment. To reduce the risk of electric shock, connect the local common bonding grid in area of the hot tub or spa to these terminals with an insulated or bare copper conductor not smaller than No.6 AWG.

c) All field-installed metal components such as rails, ladders, drains or other similar hardware within 3m (10ft) of the spa or hot tub shall be bonded to the equipment grounding bus with copper conductors not smaller than No.6 AWG.

DO NOT connect your spa to an extension cord.

SAVE THESE INSTRUCTIONS

IMPORTANT SAFETY INSTRUCTIONS

HYPERTHERMIA

Prolonged immersion in hot water may induce hyperthermia. Hyperthermia occurs when the internal temperature of the body reaches a level several degrees above the normal body temperature of 37°C (98°F). The symptoms of hyperthermia include drowsiness, lethargy, and an increase in the internal temperature of the body. The effects of hyperthermia include:

- Unawareness of impending hazard
- Failure to perceive heat
- Failure to recognize the need to exit spa
- Physical inability to exit spa
- Fetal damage in pregnant women
- Unconsciousness and danger of drowning

WARNING:

The use of alcohol, drugs or medication can significantly increase the risk of fetal hyperthermia.
IMPORTANT SAFETY INSTRUCTIONS FOR SPAS WITH AUDIO SYSTEMS


CAUTION: Risk of Electric Shock. Replace components only with identical components.

Do not operate the audio/video controls while inside the spa.

WARNING: Prevent Electrocution. Do not connect any auxiliary components to the system (example: cable, additional speakers, headphones, additional audio/video components etc).

These units are not provided with an outdoor antenna. When provided, it should be installed in accordance with article 810 of the National Electrical Code, ANSI/NFPA 70.

Do not service this product yourself as opening or removing covers may expose you to dangerous voltage or other risk of injury. Refer all servicing to qualified service personnel.

If the power supply connections or power supply cord(s) are damaged; if water is entering the audio/video compartment or any electrical equipment compartment area; if the protective shields or barriers are showing signs of deterioration; or if there are signs of other potential damage to the unit, turn off the unit and refer servicing to a qualified service personnel.

This unit should be subjected to periodic routine maintenance (example: once every 3 months) to make sure that the unit is operating properly.
INSTALLATION INSTRUCTIONS

Remember, your new spa is a powerful piece of electrical and plumbing equipment. You owe it to yourself, your family and your friends to install it correctly and safely. Before attempting to hook-up or use your spa, please read the following instructions.

POSITIONING OF YOUR SPA - CONSIDERATIONS

Your spa is completely self-contained. Therefore, you can situate it just about anywhere; on a patio, in or on a deck, in a basement or sunroom. It comes completely pre-plumbed and water tested from the factory. Never lift or carry the spa by the plumbing. Damage could occur which would not be covered under warranty.

You should take into account the following when selecting prospective spa sites in order to maximize enjoyment.

To avoid any personal injury or damage to your spa, have 4-5 people ready to assist you to move the spa to its' final location. Use a moving dolly and/or straps to more evenly distribute the spa's weight. Never lift or carry the spa by its' plumbing.

SITE CONSIDERATIONS

<table>
<thead>
<tr>
<th>Local codes</th>
<th>Local building, property and electrical codes may affect your installation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivery access to location</td>
<td>Gates, overhangs, fences, gas meters, and AC units may become obstructions. You may need to access from a neighbour’s yard or employ a crane.</td>
</tr>
<tr>
<td>Vegetation in spa area</td>
<td>Trees, bushes, flowers etc. can all add to spa maintenance.</td>
</tr>
<tr>
<td>Spa location relative to buildings</td>
<td>The location could add to your spa maintenance (removing snow from cover) and increase operating costs.</td>
</tr>
<tr>
<td>Fences, tree lines</td>
<td>More privacy during use and serves as a wind break but may also add more maintenance.</td>
</tr>
<tr>
<td>Spa step out location</td>
<td>Any surface that is slippery when wet could be dangerous for bathers both entering and exiting the spa.</td>
</tr>
<tr>
<td>Spa Direction</td>
<td>View when using a lounger &amp; ease of access for servicing.</td>
</tr>
<tr>
<td>Downspouts and natural drainage of land</td>
<td>These may flood the spa area, damage spa or create a safety hazard to bathers.</td>
</tr>
<tr>
<td>Outside water supply and draining location</td>
<td>You will need a place to safely drain the spa and a way to refill it easily.</td>
</tr>
<tr>
<td>Optional accessories</td>
<td>These may take up added space that you must plan for (cover remover/holder).</td>
</tr>
</tbody>
</table>

SPA SUPPORT

Whatever the support is, it must be:

a) A continuous, level surface, above grade, capable of handling 80 lbs. per sq. ft. that will not be compromised by changes in the water table or water sitting in the area.

b) Such that the weight of the spa, water and bathers is not supported by the spa lip.

c) In full contact with the bottom of the spa.
**ACCEPTABLE SPA SUPPORT BASES**

<table>
<thead>
<tr>
<th>Support Base</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concrete Pad</td>
<td>4” to 6” thick with provision for run off</td>
</tr>
<tr>
<td>Patio Stones, Pavers etc.</td>
<td>Levelled with proper preparation of the earth</td>
</tr>
<tr>
<td>Wooden Deck Floor</td>
<td>Incl. centre support uprights in concrete and joists spaced 12” on centre</td>
</tr>
<tr>
<td>Engineered Plastic Spa Pad</td>
<td>Following pad manufacturer’s instructions</td>
</tr>
</tbody>
</table>

Unacceptable Spa support bases include crushed gravel, stone dust, bare earth, platform built directly onto earth. **Damage caused by improper spa installation will void factory warranty.**

**Do NOT locate your spa in a low run-off area since melting snow or rain can cause pump and equipment damage. WATER SHOULD ALWAYS DRAIN AWAY FROM THE SPA.**

See “Part B – Your Specific Spa’ for dimensions that can be used to determine the proper location of submerged conduits in concrete slab installations. All dimensions are made from the outside of the spa's frame with the access panels removed.
WHAT’S INSIDE YOUR SPA

HYDROTHERAPY JETS

A variety of jet sizes and internal styles are used in unique seating patterns to achieve superior hydrotherapy in individual spa models. Therefore, not every jet described or pictured below is in every model. Not all jet internal styles are available in all jet sizes.

To adjust the water volume, simply turn the jet face clockwise to the off position or counter clockwise to the maximum position. If you move too hard to maximum you will release the internal from the jet body.

<table>
<thead>
<tr>
<th>Jet Type</th>
<th>Size</th>
<th>Adjustable Flow</th>
<th>Where it is most often used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ozone</td>
<td>1 ½” (38mm)</td>
<td>No</td>
<td>Seat backs, neck &amp; shoulders, palm jets</td>
</tr>
<tr>
<td>Air-X</td>
<td>2” (51mm)</td>
<td>No</td>
<td>Specialty seat backs</td>
</tr>
<tr>
<td>Cluster</td>
<td>2 ¾” (56mm)</td>
<td>Yes</td>
<td>Palm jets, loungers, seat backs, calves, neck collars</td>
</tr>
<tr>
<td>Mini</td>
<td>3 5/16” (84mm)</td>
<td>Yes</td>
<td>Seat backs, footwells, loungers</td>
</tr>
<tr>
<td>Poly</td>
<td>3 ⅜” (92mm)</td>
<td>Yes</td>
<td>Seat backs, footwells, loungers</td>
</tr>
<tr>
<td>Poly Monster</td>
<td>3 ½” (89mm)</td>
<td>No</td>
<td>Domes</td>
</tr>
<tr>
<td>Master Massage</td>
<td>7 ½” (191mm)</td>
<td>Yes</td>
<td>Footwells</td>
</tr>
</tbody>
</table>

Foot Domes

Many of our larger models have unique foot domes that provide soothing therapy for your tired and aching feet. The dome gives us the chance to provide foot massage to several seating areas at the same time.
<table>
<thead>
<tr>
<th>Nozzle Type</th>
<th>Hydrotherapy Effect</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed Stream</td>
<td></td>
<td>A steady, non-adjustable stream of water.</td>
</tr>
<tr>
<td>Air-X</td>
<td></td>
<td>A soft tissue therapy jet. Draws up to 3x the air of a standard jet.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Double, triple or multiple streams of air &amp; water mixed for soothing comfort.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Non volume adjustable.</td>
</tr>
<tr>
<td>Neck Jets</td>
<td></td>
<td>100% shut off by using the stepped down/up movement of the face to move volume nozzle in/out</td>
</tr>
<tr>
<td>Directional</td>
<td></td>
<td>A steady volume adjustable stream of water with adjustable nozzle direction</td>
</tr>
<tr>
<td>Rifled</td>
<td></td>
<td>A volume adjustable stream of water that gives the feel of a rotating stream of water without moving parts.</td>
</tr>
<tr>
<td>Twin Roto</td>
<td></td>
<td>A volume adjustable jet with a fixed split nozzle that uses the water flow to deliver dual streams of water in a rotating pattern.</td>
</tr>
<tr>
<td>Massage</td>
<td></td>
<td>A volume adjustable stream of water that rotates. The combination of the moving inner mechanism and front face gives an ever changing pattern to the massage.</td>
</tr>
</tbody>
</table>
Most often powered by itself from a single pump via a diverter valve. This jet produces a tidal wave sensation in the footwell and upwards to the water surface.

This high volume jet nozzle produces a volcano like sensation so it is used in some foot domes to provide intense therapy.

**OTHER INTERNAL FITTINGS**

**Return Fitting (Models with Circ Pump only)**
The return fitting is simply a wall fitting through which filtered and heated water return to the spa. *Never block this fitting with any part of your body.*

**Suctions**
These multi-holed, anti-vortex fittings in the footwell provide the intake water for the pump(s). A powerful suction is produced here when the jet pumps are turned on. On systems with a circulation pump, the bypass suction fitting (smaller than regular suction), may have little to no suction on it, since the circulation pump has a lower flow than the jet pump and the suction is only active as the filter(s) become clogged. *All suctions in our spas are VBG compliant for your safety.*

**Bottom Drain (Most models)**
This grated fitting, connected to the drain valve, allows for uninterrupted draining of the spa to the lowest level possible in each model.

**Perimeter LED Lighting**
These round or hex shaped, multi-faceted fittings, located on the vertical spa wall and deck of the spa, are the lenses for the LED light outputs.

**Air Injectors (Models with Air Blower option)**
These gently domed fittings are located in the bottom of the seats and are designed to diffuse the air, provided by the air blower, into tiny bubbles to enhance the spa experience.
Air Blower system with Aromatherapy Canister (Models with Air Blower option)
The Aromatherapy system works automatically whenever the air blower is activated. A wonderful fragrance will fill the spa area adding to the overall spa experience.

To add beads to the canister:
Locate the canister on the deck of the spa. Make sure the air blower is off before removing the cap. Place beads inside the canister. Replace cap. Turn on air blower and enjoy!

A random trial package is included with the original Owner’s Manual. Ask your dealer forrefills of aromatherapy beads.

Skimmer/Filter
This is the housing for your cartridge filter(s) and provides skimming action to remove surface debris. Some models have a removable basket from which debris can be dumped.

DECK CONTROLS

Diverter Valves
These wave handle valves are used to direct water flow between 2 groups of jets. You can choose 1 group independently or mix between the 2 groups. We recommend you shut off the jet pump before changing the valve setting.

Air Controls
Located on the deck of the spa, these valves control the amount of air being mixed with the water stream at each jet. The minimum to maximum movement is approximately ¼ turn or on/off for toggle type. More air will increase the massage effect from the jet. Proper air draw is achieved when the jet pump is operating on high speed, particularly if the pump is a 2-speed pump.

On/off Water Valve
This positive seal valve is used to turn the water feature on/off. Adjust it as needed to achieve the best effect from the water feature.
WATER FEATURES

LED Waterfall
The LED waterfall located on a flat along the inside of the spa creates a relaxing sheet of water when turned on and adjusted using the on/off valve. When the Light key is pressed LEDs light up the waterfall body as well as the water sheet coming out of the waterfall.

LED Pop Up Waterfall
This unique water feature uses the flow of water to lift the top cover when the waterfall valve is opened. The cover’s underside design causes the water to form a fan shaped sheet which provides a waterfall effect. When the waterfall valve is closed the cover drops back to its' rest position slowly. The pop up waterfall is also LED ready so when the LED lights are turned on the water sheet formed will take on the colour of the LED system.

WATER FOUNTAINS
Located along the deck of the spa, these water features create a water rope effect into the spa when turned on.

MISCELLANEOUS

LED Spa Light
This clear or slightly bluish fitting is usually in the vertical surface of the spa steps. It is controlled by a designated switch on the keypad. It serves as a safety feature; lighting the spa's contours for those entering or exiting the spa.

Head Cushions
The many head cushions you will find in our spas are designed to add comfort to your spa experience. Whether it is just to rest you head as you sit back and enjoy the hydrotherapy or if it is to support your neck as you let our neck collar jets soothe your aching neck and shoulders, you'll find all our head cushions functional and comfortable.
WHAT’S UNDER YOUR SPA (THE EQUIPMENT)

The spa's control pack, circulation pump, heater, drain connection and ozonator may be accessed by removing the cabinet panel along the control side of the spa. Removing the panel(s) to the right or left of the spa's main access panel will allow access to the jet pumps, blower and any other optional equipment. On some models, all equipment is accessible from the main access panel.

The **free standing spa pack** houses the receptacles and switching apparatus (circuit board) for the pump(s) blower, light, keypad etc., as well as the heat regulating system. The spa pack is also where the electrical supply connections are made. The **horizontal heater** is attached to the bottom of the spa pack.

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**2-Speed Jet Pump**
A high performance 2-speed jet pump provides the power to operate the various hydrotherapy jets in the spa, at the optimum level. On models without a circulation pump, the low speed of the pump is used to circulate the water so it can be filtered and heated. Some models may have a 2nd jet pump to properly power the jets. Gate valves in the plumbing lines allow easy servicing of the circ pump and heater. Safety clips on the valve shafts keep the valves open during use.

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**Circulation Pump**
The high efficiency, space saving circulation pump slowly moves water through the filter system, across the heater element and then back to the spa via the return fitting.

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**Air Blower Pump**
The quiet air blower pumps air to the air manifold creating a "champagne" bubbling effect from the air injectors inside the spa. The air passes through an aromatherapy canister first, eroding the scented beads that are inside the canister.

---

**Ozonator**
An ozonator is used to assist in water treatment. The corona discharge (CD) model produces ozone which is drawn into the spa water via the return plumbing.

---

**UV Sanitizer**
A UV sanitizer is used to reduce chemical use by passing the spa water over a UV bulb. The specific wavelength disrupts the DNA in the bacteria so it cannot reproduce. This results in better overall water quality with fewer chemicals.
**Varimax Pump**
This optional variable speed jet pump is controlled by a separate keypad on the deck of the spa. The speed of the pump can be lowered, raised or set to alternate between 2 speeds allowing you to customize the therapy even more. See the separate Varimax instruction sheet, in your Spa Owner’s Packet, for complete details on how to operate this pump.

**Microsilk Pump**
This optional high pressure jet pump in conjunction with a patented plumbing system creates a “cloud” of small, micro bubbles in the spa. These micro bubbles help open your pores to invigorate both your body and senses. Microsilk runs independently from the rest of your spa. See the separate Microsilk instruction sheet, in your Spa Owner’s Packet, for complete details on how to operate this unique pump.

*Other items under your spa may include an audio power supply, audio receiver and LED control system.*
START-UP

HOW YOUR SPA WORKS

Circulating, Heating and Filtering
Dedicated 24/7 circulation pump or low speed of a 2 speed pump (depending on model).
Immersion heating element within a stainless steel heater barrel.

Filter System
Single or two-cartridge system that is accessible from inside the spa.

Your spa may be equipped with a split filter system. One cartridge on jet pump 1 and the other on the circ pump. The clean-up cycle of the spa pack turns pump 1 on 30 minutes after you have shut it off or it times out. It will run for 30 minutes to help clean up the spa. This clean-up cycle is adjustable in 30 minute increments up to 4 hours.

Some topside controls, such as TP600, will not show a clean-up cycle adjustment, unless the set up number used is the one being used within the standard menu feature as opposed to the simplified menu. Contact your dealer to get the setup number changed. See also Clean-up Cycle, within the TP600 User Guide with Standard Menu feature, located in the Part B manual. See page 40-41 on how to change the clean-up cycle.

Hydrotherapy
A combination of up to three (3) single or 2-speed jet pumps provides a gentle, low-speed therapy or intense, high-speed therapy. The jets have directional nozzles, multiple directional nozzles, fixed nozzles or rotating nozzles. Most of the jets have the ability to have the water volume adjusted to your therapy needs.

Deck Controls
Air controls mix air with the water stream coming out of the jet. A diverter valve is used on some models to dedicate pump flow to specific groups of jets or share it amongst several jets. Models with the waterfall feature have a control valve to turn the waterfall on/off.

A digital topside control panel allows you to activate the pumps, blower and light plus set the temperature that you want the water to be. The topside display also shows error messages and tells you if any special spa pack features are operating, including protection against overheating and freeze-up.

Champagne Air Bubbler
The blower feature uses a high output air pump to send air through the water via shower head injectors.
**Lighting**

Your spa is equipped with a multi-LED spa light allowing you to enjoy the effects of a colour changing LED light system. LED lights around the perimeter of the spa create a special effect of colour changing lights.

**LED Light Operation**

Your spa may be equipped with an LED light system consisting of perimeter lights, lighted water feature(s), lighted jets and a thru wall underwater spa light, depending on the spa model and options. The system is controlled using the LIGHT key on the topside control panel. The spa pack is factory set/programmed for simple on/off spa light operation. Note that not all colours are available on all LED systems.

Operation: To move from setting to setting simply turn the LIGHT key on/off. If the light is turned OFF for more than 5 seconds, the sequence automatically restarts at the last colour shown.

**Light Sequence (Ultrabrite System)**

<table>
<thead>
<tr>
<th>Slow Cycle</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>(Blue, Green and Red mix)</td>
</tr>
<tr>
<td>Aqua</td>
<td>(Blue and Green mix)</td>
</tr>
<tr>
<td>Magenta</td>
<td>(Blue and Red mix)</td>
</tr>
<tr>
<td>Blue</td>
<td></td>
</tr>
<tr>
<td>Gold</td>
<td>(Red and Green mix)</td>
</tr>
<tr>
<td>Green</td>
<td></td>
</tr>
<tr>
<td>Red</td>
<td></td>
</tr>
<tr>
<td>Flash</td>
<td></td>
</tr>
<tr>
<td>Strobe</td>
<td></td>
</tr>
</tbody>
</table>

**Light Sequence (Sunlite or Glo LED Jets Feature/Option Where Available – Lighted Jets)**

The Sunlite System uses a special MZ controller that has a unique colour sequence.

<table>
<thead>
<tr>
<th>Colour Wheel (Slow fade from colour to colour)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green</td>
</tr>
<tr>
<td>Aqua</td>
</tr>
<tr>
<td>Magenta</td>
</tr>
<tr>
<td>Blue</td>
</tr>
<tr>
<td>Red</td>
</tr>
<tr>
<td>Colour Jump (A fast change from colour to colour)</td>
</tr>
</tbody>
</table>
FILLING YOUR SPA

Okay, your new spa has been connected to the power and you have a basic understanding of how the equipment works and what the jets can do for you. We know you are anxious to fill the spa and get it started, but please read this section carefully before you fill your spa.

1) Make certain that the breaker or fuse(s) that supplies your spa equipment is off.

2) Wash the spa surface thoroughly with warm water and a soft cloth only to remove any construction or transportation debris.

3) Check that the drain connection is closed.

4) Check that the unions on the spa pack and pump(s) are tight. They can loosen during transportation.

5) Remove the filter cartridges.

6) Begin filling the spa with a standard garden hose. Do not fill your spa with soft water (consult dealer). If possible, your source fill water temperature should not be less than 70°F (21°C). Do Not operate the spa with low water levels. A level 4” over the bottom of the skimmer mouth is recommended. Maximum initial water level should be 6” below the spa lip. Adjust as needed based on number of bathers using the spa. Consider adding an overflow to your spa if you are regularly having enough bathers in the spa to significantly raise the water level such that damage to equipment may occur.

7) Increase the fill pressure slowly to prevent surface damage by a jerking hose.

8) Visually check all lines for leaks and correct immediately. If you cannot stop the leak simply by tightening a union or resetting an "O" ring or gasket, contact your dealer immediately.

9) Turn on the main power at your electrical panel.

10) The topside control panel will initialize and begin its’ start-up procedure. Then the system will start the circulation pump(or low speed pump) and the heater.

11) Re-install the filter cartridges.

IMPORTANT: Now, read about the keypad operation, user settings, system defaults, automatic functions and display messages included in this manual (see User Guide in the Index). Take a few minutes to try the various keys and features on your new spa. For your convenience the User Guide is located at the end of Part B of this Owner’s Manual.

Once you feel comfortable with the operation of your spa's controls, set the temperature to the desired level (100°F/38°C is an excellent starting point). Close the air controls and cover the spa with your hard cover. Heat up times will vary based on volume of water in the spa, but you can generally expect 6-8 hours to reach maximum temperature. Spas running on 120VAC will have a longer initial heat-up time.

Always view the temperature display before entering the water. For your own personal safety, do not enter when the temperature exceeds the maximum set point of 40°C (104°F).
MP3/BLUETOOTH READY SYSTEM OPERATION

The MP3/Bluetooth ready system will work with any digital audio player or any audio source whose output (usually headphone jack) can be adapted to the 3.5mm stereo cable.

**MP3 Operation:**

1. Plug one end of the 3.5mm stereo gold plated cable (provided in the Owner’s manual packet) into your MP3 player or other portable media.
2. Turn on the power switch (upper switch) in the dock. The red indicator light will be on.
3. **Note: If the “BT” switch is on, you will not be able to play music via the 3.5mm connection.**
4. If MP3 player or other audio source has bass/treble settings or equalizer settings or music genre EQ settings adjust these to desired levels.
5. Depending on the size of your MP3 player you may be able to put it inside the dock and close the door.

The quality of the MP3 player being used and the downloaded audio files on the MP3 player may effect the overall sound quality of the MP3 system on the spa.

**Bluetooth Operation:**

If your audio player has Bluetooth capabilities, you may find it easier to stream audio to the subwoofer/amp system, especially if the audio player is larger than the dock.

1. Turn on the power switch (upper switch) in the dock. The red indicator light will be on.
2. Turn your audio device on.
3. Turn the “BT” switch below the power switch to “ON”. You will hear a beep tone indicating the Bluetooth system is ready to be activated.
4. Go to “settings” on your audio player and select “Bluetooth”.
5. The audio player should start searching for Bluetooth devices.
6. Once it locates this Bluetooth system, it should show “Blue Audio” and begin to connect to it.
7. If your audio player requires a code to connect to the Bluetooth subwoofer/amp, enter “0000”.
8. Bluetooth should complete its’ connection and show you that Blue Audio is now connected.
9. Now when you go to your audio files or other audio programs such as an Internet radio player, the sound will be streamed to the subwoofer/amp.
10. In some cases you may need to direct the audio player to play the sound to the device or to Blue Audio.
bba™ - Balboa Bluetooth Audio (AMP)
User Guide
NEW Bluetooth Integration

CONNECT YOUR SMART DEVICE TO YOUR HOT TUB
With Bluetooth connection you can now play all your favorite songs directly from your phone or tablet.

Control Panel TP800 is also Bluetooth compatible.

For more information please visit www.balboawater.com/bwa.
INTRODUCTION:
The bba™ is a four channel, 120 Watts RMS Bluetooth wireless audio amplifier, capable of delivering up to 30W RMS per channel. It has a compact, water resistant design that allows for flexible mounting possibilities. It is integrated into the BP systems and can be controlled via your smart device or a TP800 / TP900 / spaTouch™ panel.

The unit accepts either audio streamed via Bluetooth connection or hard wired input via RCA input.

Uses:
- To add up to four loudspeakers or two pop-up speakers and a subwoofer to a portable spa
- As a stand-alone system amplifier for any audio source (Mp3 player or standard audio system)

Features:
- Powers up to (8) 4ohm speakers
- Internal distortion limiting circuits
- Rear channels switchable from full range to powered sub out.
- Water resistant design
BLUETOOTH CONNECTION:

1) Turn on the amplifier,

2) Turn on Bluetooth function of your mobile or music device

3) On your music device, click search for Bluetooth device. Make sure you are close enough to the amplifier.

4) Select “PPGME60” from the pairing list.

5) Enter “6000” as the password (if required). On some older units the passcode is “60BT”

6) Click “Connect”

7) Once connected, you can now start playing your favorite music from your music device.

8) Operating Range is up to 30’ (will vary, dependent on installation)

LINE INPUT CONNECTION:

This unit can be connected to any portable music devices such as MP3 Player, TV and DVD through the LINE INPUT. Press LINE INPUT button to change the mode to LINE INPUT (Line In or Direct light indicator should be on and red).

Please note: In this mode, all controls and functions must be controlled from your music device. Line Input cannot be used in standalone mode.
BP SYSTEM & TP800/TP900/SPA TOUCH™ SOFTWARE VERSION REQUIREMENTS

BP system at version 20.0 or later and one of the following:
TP800 at version 1.13 or later
TP900 at version 1.13 or later
spaTouch at version 1.4 or later
The system and panel version numbers can be found using any of these panels by going to Settings -> Information.

bba™ Specifications:
Speaker Impedance .................. 2 – 8 ohms
Output Power (2 ohm load) .......... 30 W RMS per channel
(4 ohm load) .................. 20 W RMS per channel
Frequency Response .................. 20 Hz – 40,000 Hz
Low Pass Crossover .................. 18 Hz – 245 Hz
Operating Voltage .................. 13.8V (10V – 16V) DC
Maximum current draw (full power) .... 8 – 10 amps
Dimensions (approx. w/h/d) ........................................ 224mm X 106mm X 39mm
8.82 X 4.17 X 1.54 inches
Weight ........................................ 1.91 lbs
Installation Clearance (recommended) .... 10 inches free space top

Intellectual Property Advisement
All Intellectual property, as defined below, owned by or which is otherwise the property of Balboa Water Group or its respective suppliers relating to the Balboa Water Group including but not limited to, accessories, parts, or software relating thereto bba™ - Balboa Bluetooth Audio (AMP) (the “System”), is proprietary to Balboa Water Group and protected under federal laws, state laws, and international treaty provisions. Intellectual Property includes, but is not limited to, inventions (patentable or un-patentable), patents, trade secrets, copyrights, software, computer programs, and related documentation, and other works of authorship. You may not infringe or otherwise violate the rights secured by the Intellectual Property. Moreover, you agree that you will not (and will not attempt to) modify, prepare derivative works of, reverse engineer, decompile, disassemble, or otherwise attempt to create source code from the software. No title to or ownership in the Intellectual Property is transferred to you. All applicable rights of the Intellectual Property shall remain with Balboa Water Group and its suppliers.
MAINTENANCE

To protect the equipment and the bathers using your spa, regular maintenance must be performed.

CARING FOR THE ACRYLIC SURFACE

This beautiful acrylic surface is among the glossiest, high quality surface materials available. It’s hard, non-porous surface prevents dirt from accumulating and resists stains better than other plastic materials. With normal use, it is so durable it will retain its beauty with only a minimum of care. So to maintain the high gloss and elegant look, just follow these simple steps:

- Use common household, non-abrasive cleaners for most cleaning jobs. (For example: LYSOL BASIN, TUB & TILE CLEANER, GLASS PLUS, MR.CLEAN and TOP JOB, or a mild dishwashing detergent such as IVORY LIQUID) Rinse well and dry with a clean cloth.
- Never use abrasive cleaners.
- Do not allow your acrylic surface to come into contact with products such as acetone (nail polish remover), nail polish, dry cleaning solution, lacquer thinners, gasoline, pine oil, etc.
- Remove dust and dry dirt with a soft, damp cloth.
- Clean grease, oil, paint and ink stains with isopropyl (rubbing) alcohol.
- Avoid using razor blades or other sharp instruments that might scratch the surface. Small scratches can be removed by applying a thin coat of automotive paste wax and buffing lightly with a clean cloth. For deeper scratches, sand the surface lightly with 600 grit "wet" sandpaper (never dry) and buff with fine-grit buffing compound.

If you don’t rinse off any surface cleaner thoroughly, you will experience excessive foaming on refilling and start-up. Periodic application of a good wax adds lustre to the appearance and protects the finish.

CLEANING THE SPA’S CABINET

Cleaning the cabinet is easy and fast with many common household cleaners. The cleaning solution should be applied and immediately wiped dry. The cleaning solution should not be left to stand on the material for an extended period of time.

Recommended Cleaners:

Windex, Glass Plus, 409 Glass & Surface Cleaner, Spic and Span Cinch, Fantastik All-Purpose, Regency (Glass & Surface), Clorox Clean-Up and Fantastik Orange Action

Cleaners to avoid:

Harsh cleaners with glycol ethers or ethanol type solvents and/or isopropyl alcohol soften the coating if left on for several minutes.

Cleaners such as Goof Off, Great Value All Purpose Cleaner (Wal-Mart), 409 General Purpose, Greased Lightning, citrus cleaners, abrasive cleaners and solvents such as acetone, paint remover and lacquer thinner are NOT recommended for cleaning the cabinet.
**SPA HARD COVER**

In an uncovered spa, over 90% of the heat loss is from the spa surface. The evaporation also affects the chemical balance and could create humidity problems indoors.

Hard covers are engineered for maximum thermal efficiency and appearance. They are hinged in the middle for easier handling, and the zippers allow the tapered styrofoam inserts to be changed if damaged.

The skirt on the cover hugs the lip of the spa for a tight fit. The handles are placed so even a large cover can be easily opened by 1 person.

The locks, with one part fastened to the deck or skirt, prevent small children or animals from entering the spa.

- Do not drag the cover across the spa or decking. Fold cover first, and then remove with assistance.
- Do not place the spa where snow loads are excessive on the cover. If snow accumulates on the cover, carefully remove the snow.
- Do not shovel the snow as the cover will tear.
- Do not stand on the hard cover. The cover is not warranted against the foam breaking or the vinyl cover tearing.
- Do not use abrasive cleaners or leather restoration-type cleaners. Use only water and a mild detergent.

**JET MAINTENANCE**

Several of the jets in your spa are volume adjustable. The volume adjustment of the jet internals in these jets can be effected by debris in the spa water. If you feel the volume adjustment getting stiff, you should consider removing and washing the internal at the next scheduled fill and drain of the spa.

**To remove an adjustable jet internal:**

1) Turn the jet face to the maximum volume position (fully counter clockwise).

2) The jet face will feel as if it has stopped but if you continue to turn the face, the jet internal will thread out of the body.

3) Check the inside of the jet body and the internal for any debris and calcium build up.

4) Wipe out the inside of the jet body, if necessary.

5) Wash the internal in your service sink. Scrub, gently, if necessary.

6) To re-install a jet internal simply thread the internal in until it stops. Now continue turning until the internal locks into its volume adjustment range.

*If you find high levels of calcium build up or any discolouration of the jet internal when removed, you should take a spa water sample to your dealer for testing.*
DIVERTER VALVE MAINTENANCE

If your spa has a water diverter valve, it is important that you conduct regular maintenance on it to ensure that it continues to move freely and does not begin to leak. The best time to do this maintenance is when you are doing a drain and refill.

1) If you unthread the cap (2), you can remove a number of parts that make up the moving assembly. These include the diverter (7), O ring (6), cap (2) and handle (1). The moving handle is only a hand press fit, so you can take it apart easily.

2) Examine the surface of the diverter (7). If it has any scratches or score marks on it, there is debris, likely dirt or sand getting into your spa. If you do not stop this from happening, eventually the valve will seize and you will break off the handle or worse. This type of damage is not covered under warranty.

3) Sand the diverter (7) lightly to remove the scratches. Clean out any debris inside the body (9). From inside the spa you will only be able to see the inside of the body (9), the top threads and the body O ring (8).

4) Examine the body O ring (8). This O ring seals the cap (2) to the body (9). Remove any debris that could hinder it from sealing properly when reinstalled. Check for areas that are cut or pinched. Pinched areas may be fixed by placing the O ring in hot water for a few minutes and then allowing it to cool down. Cut or broken O rings should be replaced.

5) If you remove the handle (1) and cap (2) from the moving assembly you took out, you will be able to see the O rings (6). Make sure these parts are there. They seal the shaft as it passes through the cap (2). Do the same inspection/replacement as you did for the body O ring (8).

6) If any of the O rings are dry or hard, you can use a small amount of silicone based lubricant to make them pliable again. DO NOT use Vaseline or any other petroleum based product on the O rings.

7) Reassemble the moving assembly and insert it back into the body (10). As you tighten the cap (2) move the handle (1) slightly to ensure that the cut-out on the bottom of the diverter (7) is lined up to the sidewall tab that is in the bottom of the body (9). You may want to look at these (2) areas for reference before you re-install the moving assembly.

8) Tighten the cap (2) hand tight only. On spa start up check the outer cap edge and inner handle for leaks. Reminder: Never adjust the diverter valve setting while the pump is running. This puts stress on the internal parts of the valve and could cause breakage or leaking to occur.
FILTER SYSTEM

GENERAL INFORMATION
You will need to regularly inspect your filter cartridges to ensure they are clean. As your cartridges get dirtier they could effect:

- **Heating of the spa water:** restricted water flow from a clogged filter can cause error codes to display on the control pad and prevent the spa from heating properly
- **Water quality:** a change in function of the ozone injection system can result in a drop, or complete stop, of ozone draw into the spa water

Keeping a second set of cartridges and rotating out dirty ones for clean ones can help keep your water clean and sparkling, reduce chemical consumption and down time due to cartridge cleaning.

**SPECIAL NOTE:** Several replacement cartridges look similar. Using the wrong cartridge may cause problems. Ask your dealer for the code that identifies your cartridge and record it.

CLEANING FILTER CARTRIDGES

1) Remove large debris by separating cartridge folds and spraying with a stream of water. Your kitchen or laundry sink is useful for this.

2) Contaminants that cause the cartridge to become brownish or greyish in colour require soaking overnight in specially formulated cartridge cleaner (available from your dealer).

3) Use a large plastic pail and follow the package directions. For safety reasons, you should locate your soaking pail out of reach of children.

4) Rinse the cartridge thoroughly to remove all the cleaner.

5) Allow cleaned cartridge to dry completely before re-using.

6) Spread pleats and run a soft brush through each one individually to complete the cleaning process.

ACCESSING FILTER CARTRIDGES

See Part B –Your Specific Spa for information on accessing your filter cartridge.
DRAINING YOUR SPA

KNOWING WHEN TO DRAIN
Dissolved solids from bather load and ongoing chemical treatment accumulate in your spa water. The early sign of a high level of dissolved solids is unmanageable cloudy water.

*When in doubt, remember that the best chemical for your spa is fresh water!*

HOW TO DRAIN YOUR SPA

1) Turn down the set point on your spa and allow adequate time for the water to cool down. Uncover and run high speed pump to speed up cooling.

2) Turn power off to your spa.

3) Attach the appropriate size hose to the drain connection (see below).

4) Route the hose to an appropriate drain location.

5) When the drain is opened the spa will gravity drain, even unattended.

6) As draining proceeds, move water from contours of seats, into the footwell. Draining will stop due to drain height.

7) Remove any remaining water with a shop vac, sponge and pail or simply dilute in your fresh fill.

8) Before refilling, clean spa surface as necessary.

9) Don’t forget to close the drain before refilling.

*If you want to speed up the draining process, simply use a submersible sump pump available through most hardware stores.*

DRAIN CONNECTIONS

Hose Drain (Most Models)
Located in the equipment area, the flexible hose drain easily connects to a standard garden hose. After routing the garden hose to a suitable drain location, turn off the spa, then turn the valve handle to open the valve and start draining.
Magic Drain (Paragon Models)

WHEN VACUUMING SPA LINES:

1) Vacuum at all suctions in the foot well. This could be 2-6 suction depending on the model.

2) Vacuum at the heater input (union and gate valve), usually on the left of the equipment side of the spa.

Make sure to vacuum until you feel no more water coming out, then block the 2 cartridge mounts or block the Elite or Teleweir opening.

Remove the cartridge(s). Thread plugs into the threaded cartridge mounts in the filter box. For Elite or Teleweir filter system, remove the trim ring and weir. Cover the filter opening with rigid plastic and use something with weight to hold it down and vacuum again at the heater input.

This will help draw water out of any lines connected to the spa pack, especially for spas that do not have a circ pump.

WINTERIZING YOUR SPA

Cold climates, where danger of freezing exists, require special care on your part in order to prevent damage to the spa shell and equipment. If you plan to use your spa during the cold months, be sure your pump is running frequently enough to keep the water moving so that the heater will operate. It may be best to set your controls to keep the pump on low speed at all times. This will keep the water from freezing and the heater will come on as the temperatures drop.
**WARNING:**
If you have a power outage, and cold temperatures are possible, your spa and equipment could freeze, especially if it is mounted in a deck without a cabinet. Ice in the spa and equipment will cause damage. You should consider the need to have your spa professionally winterized if it is to be dormant for a period. This is especially true if you are taking an extended winter vacation.

Follow the procedure below to help prevent damage to your spa and related equipment:

1) Drain the spa of all water, as outlined in owner's manual. Shut off the spa's power supply.

2) Remove any remaining water with sponge. If you have a shop vac, try vacuuming as much water as possible out of the jets and spa shell. If you cannot remove all of the water (especially from the air injectors) RV style or plumbing system anti-freeze should be added to the injectors.

3) Remove spa equipment system and pump for storage inside. If this is not practical, use the shop vac again to draw any water from the pump(s) casings. Remove lower casing drain plugs. Add anti-freeze to all pump housings. (see note below)

4) The filter should be drained and cartridge removed and cleaned. Remove the filter cartridge and pour anti-freeze as mentioned earlier into the filter canister. Store the filter element in a room with above freezing temperatures.

5) Support the hard cover along the hinge with 2 by 4's across the spa. Lock your hard cover over the spa and cover entire spa with a tarpaulin. Block the tarp in place or staple to your cabinetry.

6) When you refill in the spring, remember to re-install any plugs that were removed. Follow the directions for start-up, as if this were a new spa.

**Note:** Any RV style or plumbing system anti-freeze used may leave behind a residue that could cause a white "fizz" in the first refill of water, especially when the jet pump(s) are turned on. You may need to drain and refill the spa to clear away the residue. During colder months of the year, plumbing anti-freeze is added to all pump housings as part of our production procedures. This fact is noted on the outer spa packaging.

**TROUBLESHOOTING YOUR SPA**

**COMMON PROBLEMS AND HOW TO SOLVE THEM**

**NOTICE:**
A large number of problems on start up can be attributed to mis-wiring and a poor understanding of how the spa operates and its' features. Take the time to read and understand this manual. If you have any questions contact your dealer.
## GROUND FAULT CIRCUIT INTERRUPTER (GFCI) OR RESIDUAL CURRENT DETECTOR (RCD) SHUTS OFF ON INITIAL START UP

<table>
<thead>
<tr>
<th>Probable cause</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mis-wiring of GFCI/RCD.</td>
<td>Contact electrician and/or dealer.</td>
</tr>
</tbody>
</table>

## GROUND FAULT CIRCUIT INTERRUPTER (GFCI) or RESIDUAL CURRENT DETECTOR (RCD) SHUTS OFF (NOT ON INITIAL START UP)

<table>
<thead>
<tr>
<th>Probable cause</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>One or more pieces of equipment is shorting to ground or total current draw exceeds GFCI/RCD rating.</td>
<td>Contact dealer: DO NOT use spa. Take measures to ensure others do not use spa.</td>
</tr>
</tbody>
</table>

## SPA IS COMPLETELY "DEAD" (NO CIRCULATION AND NO DISPLAY ON TOPSIDE CONTROL PANEL)

<table>
<thead>
<tr>
<th>Probable cause #1</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>GFCI/RCD has tripped (shut off).</td>
<td>Reset GFCI/RCD and monitor for futures trips. Alert dealer if problem persists.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Probable cause #2</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breaker or fuse before GFCI/RCD is tripped or blown.</td>
<td>Shut off GFCI/RCD, reset breaker or replace fuse, reset GFCI/RCD and test. Contact electrician or dealer if problem persists.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Probable cause #3</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transformer fuse blown in spa pack.</td>
<td>Locate fuse in spa pack, test and/or replace. Or contact dealer for service.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Probable cause #4</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insufficient line voltage to power up spa pack processor.</td>
<td>Contact electrician to measure line voltages and inspect supply connections.</td>
</tr>
</tbody>
</table>

## NO HEAT OR HEAT TOO LOW

<table>
<thead>
<tr>
<th>Probable cause #1</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set point is not at desired level.</td>
<td>Review set point and change if necessary.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Probable cause</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Circ pump is not running or pumping.</td>
<td></td>
</tr>
</tbody>
</table>
### Probable cause #2:
Jet pump is not plugged into spa pack.

**Action:** Plug pump in and test.

### Probable cause #3:
Jet pump fuse blown in spa pack.

**Action:** Locate & test/replace pump fuse in spa pack. Contact dealer if problem persists.

### Probable cause #4:
Jet pump is not primed.

**Action:** Shut off spa and allow trapped air to escape. Restart spa & check jet pump operation. If problem persists bleed air at pump directly by opening union on pump until all entrapped air is released. Retest.
<table>
<thead>
<tr>
<th>Probable cause #4:</th>
<th>Individually adjustable volume jets are adjusted to low volume.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action:</td>
<td>Turn face of specific jet to increase water volume.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Probable cause #5:</th>
<th>Air control is closed. No visible air/water mix.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action:</td>
<td>Open air control to increase air/water mix.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Probable cause #6:</th>
<th>Pump has overheated and tripped internal thermal overload.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action:</td>
<td>Wait for pump to cool &amp; listen for &quot;snap&quot; sound as overload resets. Pump should restart. Contact dealer if problem persists.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Probable cause #7:</th>
<th>Pump is not pumping due to broken part inside (motor works, pump is primed but there is no water movement from pump).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action:</td>
<td>Contact dealer for service.</td>
</tr>
</tbody>
</table>

### AIR INJECTORS DO NOT BUBBLE WHEN BLOWER KEY IS Pressed

<table>
<thead>
<tr>
<th>Probable cause #1:</th>
<th>Air blower is not plugged in to spa pack.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action:</td>
<td>Plug blower in and test.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Probable cause #2:</th>
<th>Blower fuse blown in spa pack.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Probable cause #3:</th>
<th>Air blower disconnected from blower plumbing.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action:</td>
<td>View blower plumbing and reconnect if disconnected. Test.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Probable cause #4:</th>
<th>Air blower has overheated and thermal overload has tripped.</th>
</tr>
</thead>
</table>

### LED LIGHT(S) DO NOT COME ON WHEN LIGHT KEY IS Pressed

<table>
<thead>
<tr>
<th>Probable cause #1:</th>
<th>Light fuse blown in spa pack</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Probable Cause #2:** In-line or on board fuse blown in LED controller

**Action:** Locate and test/replace light fuse in LED control box.

---

**NO AIR/WATER MIXTURE COMING FROM A JET**

<table>
<thead>
<tr>
<th>Probable Cause #1:</th>
<th>Air control is closed</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Action:</strong></td>
<td>Open air control</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Probable Cause #2:</th>
<th>Water volume through jet is too low to draw air</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Action:</strong></td>
<td>Increase water volume by turning jet face</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Probable Cause #3:</th>
<th>Adjustable jet internal is loose.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Action:</strong></td>
<td>Tighten jet internal</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Probable Cause #4:</th>
<th>Jet internal is broken or damaged</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Action:</strong></td>
<td>Replace jet internal with another one from the spa or with a new one.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Probable Cause #5:</th>
<th>Debris inside the jet internal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Action:</strong></td>
<td>Remove the internal, inspect for debris, remove debris and re-install. Test</td>
</tr>
</tbody>
</table>
HOW TO CHECK A FUSE

Note: You should only remove/check a fuse if you feel comfortable doing so. **Do not risk personal injury. If in doubt, contact your service technician.**

Fuses are located within the wiring compartment. Always replace fuses with the same style and amp value as shown on the label inside the wiring compartment!

**Small Glass Fuses**

1) Shut off power to the spa.
2) Use a small screwdriver or pliers to gently remove the fuse from its fuse holder.
3) View the filament inside the fuse and replace if broken.
4) Use an ohmmeter to check the fuse. Ohms reading should be towards 0 ohms. A reading of infinity means the fuse is open and must be replaced.

**Cartridge Fuses & Small Cartridge Fuses**

1) Shut off power to the spa.
2) Use pliers to remove the fuse from its fuse holder.
3) Replace fuse and test system.

These types of fuses are available from your local dealer and may be available from local electronic stores and home centres. Each fuse has a voltage and amp rating listed on it and should be used to obtain a replacement fuse.

Note: A single fuse may protect more than 1 component in your spa.

**WARRANTY SERVICE**

In the event that you require warranty service, please call the authorized dealer where you purchased the spa. Your dealer has trained service personnel and an obligation to provide you with excellent after-sales service. We conduct yearly training classes to update and refresh technicians.

**BEFORE CONFIRMING A SERVICE APPOINTMENT**

Have ready the serial number and model number/name of your spa, your date of purchase and store receipt. The spa model and serial number information can be found on the silver and black data plate attached to the lower right corner on the equipment side of the spa. It is also located on the Spa Identification Sheet that is within a plastic bag stapled to the backside of the equipment panel.
BP501/601 Series Spa Packs
Includes: SR1BP501, SR2BP501, SR2BP501X, SR2BP601E

“Typical Board Layout”

<table>
<thead>
<tr>
<th>Fuse</th>
<th>Size</th>
<th>Protects</th>
</tr>
</thead>
<tbody>
<tr>
<td>F2</td>
<td>3A, 250V</td>
<td>Ozonator</td>
</tr>
<tr>
<td>F3</td>
<td>10A, 250V</td>
<td>Blower (when connected to J14)</td>
</tr>
<tr>
<td>F4</td>
<td>3A, 250V</td>
<td>Spa Light</td>
</tr>
<tr>
<td>F5</td>
<td>30A</td>
<td>Pump 1, Circ Pump, Audio, pump 2 (when connected to J14)</td>
</tr>
<tr>
<td>F6</td>
<td>0.3A, 250V</td>
<td>Transformer</td>
</tr>
</tbody>
</table>
BP2000/2100 Series Spa Packs
Includes: SRBP20, SRBP20X, SRBP20MS, SRBP21, SRBP21X, SRBP21MS

“Typical Board Layout”

<table>
<thead>
<tr>
<th>Fuse</th>
<th>Size</th>
<th>Protects</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td>30A</td>
<td>Component(s) plugged into J1 on expander board</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Typically Pump 2, Pump 3, Microsilk</td>
</tr>
<tr>
<td>F2</td>
<td>10A, 250VAC</td>
<td>Ozonator, Circ Pump</td>
</tr>
<tr>
<td>F3</td>
<td>0.3A, S10-B10</td>
<td>Transformer</td>
</tr>
<tr>
<td>F4</td>
<td>3A,S10-B10</td>
<td>Spa light</td>
</tr>
<tr>
<td>F6</td>
<td>30A</td>
<td>Pump 1, Audio</td>
</tr>
<tr>
<td>F7</td>
<td>10A, 250V</td>
<td>Blower (J14)</td>
</tr>
<tr>
<td>F8</td>
<td>30A</td>
<td>Pump 2, Blower (J14)</td>
</tr>
</tbody>
</table>

Note: When system software set-up is such that blower is connected to Expander X-P332, the inline fuse in the AMP adapter is 10A, 250V.
WATER TREATMENT GUIDE

HEALTH HAZARD:
THE WATER IN YOUR SPA MUST BE CHEMICALLY TREATED AND MAINTAINED AT REGULAR INTERVALS.

Bacteria can enter your spa water through the fill source, the bathers, and the environment. It is the responsibility of the spa owner to chemically treat the spa water in accordance with the local standards. Cross contamination between bathers can occur.

Your dealer or local pool and spa professional can provide expert testing along with all the products you will need for clear, clean, healthy spa water. Follow their instructions.

Untreated water is not only uncomfortable to relax in; it poses a health hazard to all bathers and a safety hazard to the equipment.

Equipment and surface damage caused by poor water treatment and/or unbalanced spa water is not covered under warranty.

SANITIZING YOUR SPA

IMPORTANT: * Your dealer may be promoting a water treatment system that does not employ part of all of the general water care instructions below. This guide is designed to give the spa owner a basic understanding of spa water treatment.* When in doubt, follow the recommendations of your dealer. It is recommended that you have your source water tested by your dealer or local testing agency before the first fill. Knowing the characteristics of your source water can help you maintain clean and clear spa water on a regular basis.

Do not allow any floating chemical dispenser to get drawn in and held in the skimming area. Large amounts of chemical can become concentrated in one area and damage the acrylic surface. This type of damage is not covered under the warranty.

INITIAL START-UP
(Review chemical manual - if applicable)

Your spa has_______litres,_______gallons of water (please fill in).

1) When the spa is full, add a scale preventative to inhibit staining and scale formation.

2) Test and adjust alkalinity to level recommended by manufacturer, this stabilizes pH.

3) Circulate water for 24 hours.

4) Test the pH. The ideal range is 7.2 to 7.6. Adjust if necessary with pH Booster or pH Reducer.

5) Circulate the water for 30 minutes.

6) If you are using Organic Bromine (Bromine Tablets), adjust your dispenser so the bromine residual is 3 to 5 ppm. Lower bromine level may be possible with ozonator.
7) Whenever adjusting spa chemicals, less is better. Add chemicals in small amounts over several days.

**Does your spa have a Fresh Water Ozone system on it?**

1) The Fresh Water Ozone System is very simple to monitor. Follow the procedures listed below to ensure continued clean, healthy water.

2) Using chlorine and a DPD test kit, measure Free Available Chlorine (FAC) and Total Chlorine (TC). As long as the difference is less than 0.5 ppm, the powerful oxidizer from the Fresh Water Ozone system is entering your spa and cleaning your water. You will only need to add small amounts of chlorine to maintain a sanitizer.

3) Check your pH, total alkalinity and calcium hardness as recommended by your Sunrise Spa dealer, and adjust if required. Please note: With the Sunrise Fresh Water Ozone system, maintain a pH between 7.6 and 7.8.

4) Check the bubble mist entering the spa, via the dedicated ozone/return jet, for consistency. An irregular bubble mist could indicate a blockage in the pump or pipes, a dirty cartridge(s), low water level or pump operation problems.

5) On an ultraviolet ozonator, check the glow fitting on the ozonator for a blue colour to ensure that the bulb is on. On a CD ozonator check that the ‘power on’ indicator light is on.

6) Disconnect the tubing from the glow fitting and place your finger over the end of the tubing to feel for suction. This will ensure that the bubble mist entering your spa is coming through the Sunrise Fresh Water Ozone system.

**REMEMBER:** Your spa water cannot be treated if the circulation system is not operating. The longer the spa’s circulation system runs, the cleaner your water will be. This is not a problem on spa with a dedicated circulation pump. However, on models that use the low speed of a 2-speed pump to circulate the water, the filter cycle should be no less than 4 to 6 hours per day.
DAILY MAINTENANCE
To keep your spa water sparkling clear and odour free, follow these steps:

1) Spas with adjustable filter cycles should be operated a minimum of 8 hours a day to remove suspended particles that may exist. (4 hours per a 12 hour period)

2) Test pH to maintain a level of 7.2 to 7.6. If an ozonator is being used, pH should be 7.8 while ozonator is working.

3) If you are using Organic Bromine (Bromine Tablets) adjust your feeder so the bromine residual is 3 to 5 ppm.

WEEKLY MAINTENANCE
When the spa is not in use:

1) Add 1 cap (30 mL) of a Scale Preventative per 250 gal (1000 Litres) to inhibit scaling and staining. Circulate water for 30 minutes.

2) Add a Brightener 24 hours after adding the Scale Preventative. Circulate the water for 30 minutes.

3) With the bromine sanitizing system, contaminants may build up during the week. The spa should be shocked with a Spa Shock. This will eliminate any odour and restore clarity to the water.

PERIODIC MAINTENANCE

1) Greases, oils and organic waste can accumulate on the filter cartridge reducing their efficiency and limiting the effectiveness of the disinfectant. Clean the filter with CARTRIDGE CLEANER as directed. Physically clean the filter basket daily (if applicable).

   NOTE: It is not recommended to use muriatic acid on filter cartridges as this is a raw chemical which does not rinse out well, ending up back in the water causing low pH levels.

2) The use of the scum ball will cut down on grease, foam and suspended particles in the spa. The scum ball acts as a filter before the filter and will increase the life of the cartridge.

3) The use of a thermal insulated hard cover will reduce evaporation and heat loss. Keep cover on and level at all times when spa is not in use.

4) Once you have established a comfortable water temperature to soak at, leave the thermostat at that temperature. Rapid changes in water temperature consume more energy.

5) Take a sample of water to your dealer to test for alkalinity, calcium and total dissolved solids.

6) WHEN TO DRAIN SPA WATER. Due to the warm water temperature and high evaporation rate, the total dissolved solids tend to build up. For this reason we recommend draining and refilling the spa every 2 to 4 months - depending on usage.

7) Clean your filter(s) at least once every two weeks or after heavy bather loads, by soaking your filter(s) in cartridge cleaner. Dirty filters cause the heater to shut off or the spa temperature to drift lower than desired.

   NOTE: Remove any objects floating on the water before removing skimmer basket and filter or they may be sucked into the pump.

   NOTE: Spas should not be left running unattended without filters. Remove filters for cleaning. Always turn off the spa before removing the cartridge(s) Debris can enter plumbing and cause damage.
CHEMICAL SAFETY TIPS

READ THE DIRECTIONS CAREFULLY

1) Always add chemicals to water, never add water to chemicals.
2) Do not mix chemicals.
3) Store chemicals in a cool dry place - out of reach of children.
4) In case of contact or if chemical is swallowed, follow emergency advice on product label.
5) Do not smoke near chemicals. Keep the container closed when not in use.

WATER BALANCE

Water balance is important to the overall performance of your spa. No 2 spa's water conditions are exactly alike. The water source, location of the spa and frequency of use all effect the water balance. Unbalanced water can damage the equipment, especially the heater element, make the water uncomfortable for the user, and decrease the effectiveness of the disinfectant. Total alkalinity, pH, and calcium hardness must be within the correct range to balance the water. Damage to equipment caused by improper water chemistry is not covered by warranty.

pH
Simply pH is a scale indicating whether spa water is basic, neutral or acidic. Spa water should be slightly basic 7.2 to 7.6; 7.8 with an ozonator in operation. A low pH below 7.2 leads to corrosion of spa equipment and will irritate the skin of the bathers. The sanitizer will dissipate more rapidly. A low pH can be corrected by adding a pH Increaser.

ALKALINITY
Total alkalinity is a measure of the alkaline in the water. They act as a pH buffer or a pH stabilizer preventing large changes in the pH. The total alkalinity should be between 80 to 150 ppm; ideally 120 ppm. Tablet chlorine and bromine tend to gradually lower the alkalinity level.

Low total alkalinity causes:
- the pH to wander
- corrosive water
- disinfectants to be ineffective
To raise the total alkalinity, add ALKA RISE.

High total alkalinity causes:
- cloudy water
- scale formation
To lower the total alkalinity, add a pH Reducer.

CALCIUM HARDNESS
Calcium hardness is the hardness present due to dissolved calcium. The desired range is 150 ppm to 280 ppm.

Low calcium hardness causes:
- corrosive water
- staining of spa
To correct this problem, add a Scale Preventative. (Do not fill the spa with soft water!)
## COMMON SPA WATER PROBLEMS

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>POSSIBLE CAUSE</th>
<th>SOLUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLOUDY WATER</td>
<td>a) Organic contaminants build up</td>
<td>a) Shock treatment with a Spa Shock</td>
</tr>
<tr>
<td></td>
<td>b) Suspended particles</td>
<td>b) Add a Brightener, use scum ball</td>
</tr>
<tr>
<td></td>
<td>c) pH high</td>
<td>c) Add pH reducer, until pH level reads 7.2 - 7.6</td>
</tr>
<tr>
<td></td>
<td>d) Total Alkalinity too high</td>
<td>d) Add pH reducer, adjust total alkalinity to 80-150ppm</td>
</tr>
<tr>
<td></td>
<td>e) Hardness too high</td>
<td>e) Add a Scale Preventative, circulate through a water softener until hardness is 150-280ppm.</td>
</tr>
<tr>
<td></td>
<td>f) Poor filtration</td>
<td>f) Dirty filter, clean with Cartridge Cleaner</td>
</tr>
<tr>
<td></td>
<td>g) High dissolved solids</td>
<td>g) Empty spa and refill</td>
</tr>
<tr>
<td>COLOURED WATER</td>
<td>a) Dissolved copper, iron and other metals from source water or equipment</td>
<td>a) Use Scale Preventative, have your dealer check water balance</td>
</tr>
<tr>
<td></td>
<td>b) Algae</td>
<td>b) Add an Algaecide</td>
</tr>
<tr>
<td></td>
<td>c) Fragrance</td>
<td>c) Stop the use of fragrance</td>
</tr>
<tr>
<td>FOAMING</td>
<td>a) High concentration of oils and organic contaminants being agitated by jets</td>
<td>a) Squirt Defoamer on foam; use the scum ball or spa ball</td>
</tr>
<tr>
<td></td>
<td>b) Soft water</td>
<td>b) Add a Calcium Increaser until hardness is 150-280ppm.</td>
</tr>
<tr>
<td>SCALE DEPOSITS</td>
<td>High calcium level, high pH, high alkalinity</td>
<td>Drain partially, add a Scale Preventative to correct pH level to 7.2 - 7.6 and alkalinity to 80-150ppm.</td>
</tr>
<tr>
<td>ODOUR</td>
<td>High level or organic contaminants, combined bromine</td>
<td>Shock with a Spa Shock</td>
</tr>
<tr>
<td>EYE/SKIN IRRITATION</td>
<td>pH too low</td>
<td>Add a pH Booster until level is 7.2 - 7.6</td>
</tr>
<tr>
<td>NO BROMINE READING</td>
<td>High concentration of organic contaminants using up sanitizers</td>
<td>Add sanitizers (bromine) until levels are up to recommended range</td>
</tr>
</tbody>
</table>