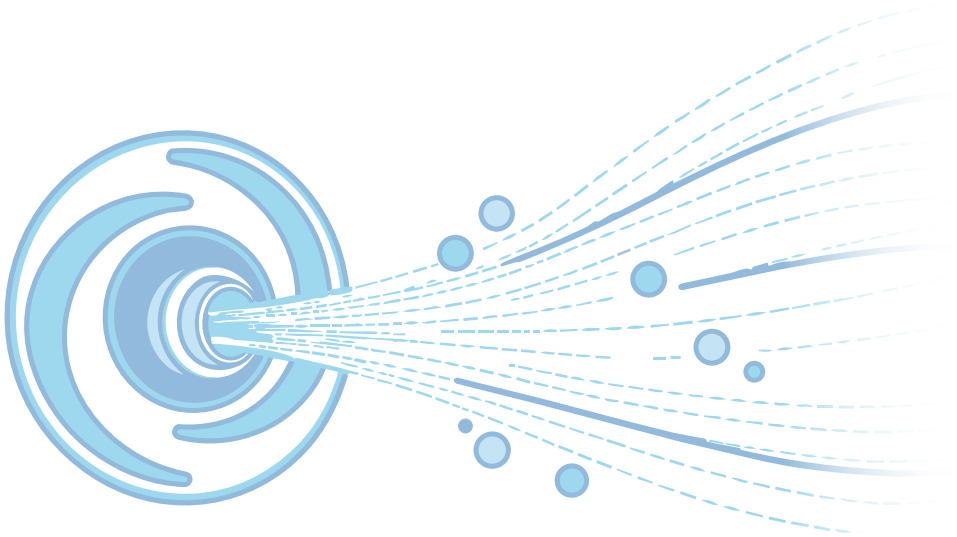
Spa Owner's Manual

ENGLISH



PLEASE READ AND FOLLOW ALL INSTRUCTIONS

For Customer Service and Technical Support, please contact us at:

strongspasupport.com

or **1-800-787-6649**

Intertek
Unit is IPX5 Compliant

California Proposition 65 Warning

WARNING: This product contains chemicals known to the State of California to cause cancer, and birth defects or other reproductive harm.

For more information: www.P65Warnings.ca.gov

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CONTACT INFORMATION

For customer service, please call 1-800-787-6649 and have spa serial number ready when calling.

strongspasupport.com

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Manual Version Control Policy: This manual uses a standardized naming format for global version control.
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The date identifies the revision date of the master North American English document (en-NA), not the translation or publication date. All translated versions must use the same date code as their English source, ensuring they correspond to the same content revision.

The manufacturer reserves the right to make product modifications and enhancements without notice.
Specifications and dimensions are approximate and for reference only. Photos may vary from your particular spa model.

Congratulations on your purchase!

Your new spa will bring you years of enjoyment and relaxation.

Please take the time to familiarize yourself with the safety precautions, operational procedures, routine water maintenance and cleaning so that your spa will provide a healthy environment for all your bathers.

Enjoy!

Having issues with your spa?

For Customer Service and Technical Support, please contact us at:
strongspasupport.com *or* **1-800-787-6649**

Need parts and accessories?

Browse our inventory at:
shop.strongspas.com

Product Registration

Register your spa online!

Go to strongspas.com, click on "Current Owners"

and then "Register Your Strong Spa,"

or use your smart phone to scan the QR Code to the right.

It is important that you register your product as soon as possible.

IMPORTANT:

Warranty is void if the spa is moved to any location that is not the original consumer ship-to address and/or if the spa changes ownership.

Locating the product serial number:

The serial number of your spa is located on a metal plate attached to exterior of the spa (see page 5).

You will need this number to properly register your spa and activate coverage.

Write this information in the space provided below.

Please have the following information ready when registering your spa:

Customer name: _____

Customer phone number: _____

Customer email: _____

Physical Delivery address: _____

Spa Serial Number: _____

Date Delivered: _____

Dealer/Vendor Name: _____

Copy of receipt: _____

Keep this page for your records!

READ AND FOLLOW ALL INSTRUCTIONS

The warnings and instructions below pertain to Hot Tubs, Hot Spas, and Cold Spas. Where it says "spa" it pertains to both hot and cold.

This product shall be installed in accordance with local codes. The spa shall be secured to protect against unauthorized access per local codes.

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

⚠ WARNING Children should not use spas or hot tubs without adult supervision.

⚠ AVERTISSEMENT Ne pas laisser les enfants utiliser une cuve de relaxation sans usrveillance.

⚠ WARNING Do not use spas or hot tubs unless all suction guards are installed to prevent body and hair entrapment.

⚠ AVERTISSEMENT Pour éviter que les cheveux ou une partie du corps puissent étre aspirés, ne pas utiliser une cuve de relaxation si les grilles de prise d'aspiration ne sont pas poutes en place.

⚠ WARNING People using medications and/or having an adverse medical history should consult a physician before using a spa or hot tub.

⚠ AVERTISSEMENT Les personnes qui prennent des medicaments ou ont des problemes de sante devraient consulter un medicin avant d'utiliser une cuve de relaxation.

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

⚠ AVERTISSEMENT Les personnes atteintes de maladies infectieuses ne devraient pas utiliser une cuve de relaxation.

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

⚠ AVERTISSEMENT Pour éviter des blessures, user de prudence en entrant dans une cuve de relaxation en sortant.

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

⚠ AVERTISSEMENT Pour éviter l'évanouissement et la noyade éventuelle, ne prendre ni drogue ni alcool avant d'utiliser une cuve de relaxation ni quand on s'y trouve.

⚠ WARNING Pregnant or possibly pregnant women should consult a physician before using a spa or a hot tub.

⚠ AVERTISSEMENT Les femmes enceintes, que leur grossesse soit confirmée ou non, devraient consulter un médecin avant d'utiliser une.

⚠ WARNING Water temperature in excess of 38°C (100°F) may be injurious to your health. Less than 5°C (41°F) can cause hypothermia.

⚠ AVERTISSEMENT Il peut etre dangereux pour la sante de se plonger dans de l' eeau a plus de 38°C (100°F). Moins de 5°C (41°F) peut provoquer une hypothermie.

⚠ WARNING Before entering the spa or hot tub, measure the water temperature with an accurate thermometer.

⚠ AVERTISSEMENT Avant d'utiliser une cuve de relaxation mesurer la température de l'eau á l'aide d'un thermométre précis.

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

⚠ AVERTISSEMENT Ne pas utiliser une cuve de relaxation immédiatement aprés un exercise fatigant.

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

⚠ AVERTISSEMENT L' utilisation prolongee d' une cuve de relaxation peut etre dangereuse pour la sante.

⚠ WARNING The appliance is not to be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction.

⚠ CAUTION Maintain water chemistry in accordance with the manufacturer's instructions.

⚠ ATTENTION La teneur de l'eau en matiéres dissoutes doit étre conforme aux directives du fabricant.

For Cold Spas:

⚠ WARNING Prolonged submersion or exposure in cold water can cause hypothermia or could otherwise be injurious to your health.

⚠ AVERTISSEMENT Une submersion prolongée ou une exposition à l'eau froide prolongée peut provoquer une hypothermie ou être nuisible à votre santé.

SAVE THESE INSTRUCTIONS

READ AND FOLLOW ALL INSTRUCTIONS

⚠ CAUTION In order to avoid a hazard due to inadvertent resetting of the thermal cut-out, this appliance must not be supplied through an external switching device, such as a timer, or connected to a circuit that is regularly switched on and off by the utility.

⚠ WARNING The use of alcohol, drugs or medication can significantly increase the risk of fatal hypothermia or hyperthermia.

⚠ AVERTISSEMENT La consommation d'alcool ou de drogue augmente considérablement les risquesd'hypothermie ou hyperthermie mortelle dans une cuve de relaxation.

⚠ WARNING Do not add any substances to the tub that may lower the freezing point of the water/liquid, below 0°C

⚠ AVERTISSEMENT N'ajouter aucune substance dans la cuve qui pourrait abaisser le point de congélation de l'eau/liquide, en dessous de 0°C

⚠ WARNING Do not permit or use electric appliances (such as light, telephone, radio or television) within 1.5 M of this spa or hot tub.

⚠ AVERTISSEMENT Ne pas placer d'appareil électrique (luminaire, téléphone, radio, téléviseur etc.) Á moins de 1.5 M de cette cuve de relaxation.

⚠ DANGER Risk of accidental drowning. Extreme caution must be exercised to prevent unauthorized access by children. To avoid accidents, ensure that children can't use this spa unless they are supervised at all times.

⚠ AVERTISSEMENT Risque de noyade. Prendre toutes les précautions nécessaires pour interdire l'accès aux personnes non autorisées. S'assurer que les enfants ne puissent pas utiliser ce produit sans surveillance constante.

Note: Not applicable to cold tubs.

⚠ WARNING Use only as described in this manual. Use only external accessories, such as heating and cooling systems, recommended by the manufacturer and approved for the application. The use of other accessories may cause fire, electric shock, or injury to persons.

⚠ AVERTISSEMENT Utiliser seulement comme décrit dans ce manuel. Utiliser seulement des accessoires externes, tels que des systèmes de chauffage et de refroidissement, recommandés par le fabricant et approuvés pour l'application. L'utilisation d'autres accessoires peut provoquer un incendie, un choc électrique ou des blessures.

HYPOTHERMIA

The causes, symptoms, and effects of hypothermia may be described as follows:

Hypothermia occurs when the internal temperature of the body reaches a level several degrees below the normal body temperature of 98.6 °F (37 °C).

The symptoms of hypothermia include, but not limited to, shivering, slurred speech or mumbling, slow, shallow breathing, weak pulse, clumsiness, drowsiness, confusion, unconsciousness, and bright red, cold skin (in infants).

The effects of hypothermia include failure of the nervous system, respiratory system, and heart; failure to recognize the need to exit spa or cold tub; unawareness of impending hazard; fetal damage in pregnant women; physical inability to exit the spa or cold tub; and unconsciousness resulting in the danger of drowning.

WARNING – The use of alcohol, drugs, or medication can greatly increase the risk of fatal hypothermia.

HYPERTHERMIA

The causes, symptoms, and effects of hyperthermia may be described as follows:

Hyperthermia occurs when the body's internal temperature reaches a level several degrees above the normal body temperature of 37°C/98.6°F.

The symptoms of hyperthermia include: unawareness of impending hazard; failure to perceive heat; failure to recognize the need to exit the spa or hot tub; physical inability to exit the spa or hot tub; fetal damage in pregnant women; and unconsciousness and resulting in the danger of drowning.

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

The units are provided with a water temperature-regulating control that has a maximum adjustment corresponding to a water temperature of 40 °C in the tub when used as a spa or hot tub, or minimum of 0 °C when used as a cold tub.

SAVE THESE INSTRUCTIONS

Prepare for Your New Spa

Most cities and counties require permits for exterior construction and electrical circuits. Some communities have noise ordinances, such as "quiet hours" or sound decibel level limits, or regulations requiring residential barriers such as fencing or self-closing gates on property to prevent unsupervised access to the property. See certifications, page 5. Your local code enforcement officer can provide information on which permits may be required and how to obtain them prior to the delivery of your spa.

Spas that include gas-burning heating components shall be installed in accordance with NFPA 54 or other local codes.

Prepare a Good Foundation

Damage caused by an inadequate or improper foundation is not covered by the warranty. The spa owner is responsible for providing a proper foundation.

The spa can't be placed on grass, loose dirt, gravel, or rocks alone. Place the spa on a solid, level, stable surface such as concrete, stone, or pavers. A base of finely crushed stone or landscaping gravel is viable if a retaining wall (such as stone masonry or pressure-treated lumber) is built to prevent the stones from shifting. Landscaping fabric at the base of the stones can prevent weeds from growing around the spa.

If you are installing the spa indoors (not recommended), pay close attention to the flooring beneath it. Choose flooring that will not be damaged or stained if water was to accumulate. If you are installing your spa on an elevated wood deck or other structure, consult a structural engineer or a contractor to ensure the structure will support the weight of 150 pounds per square foot.

An adequate drainage system has to be provided to deal with overflow water.

Plan the Best Location

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

We do not recommend installing the spa indoors or in an enclosed space. Indoor spas require proper ventilation to remove moisture from the air and draw odors from sanitation chemicals out of the room. Improper ventilation increases the risk of contracting a waterborne illness (for example, an infection, bacteria, or virus) or respiratory ailment due to mold build-up. Consult with a licensed architect or building contractor to ensure sufficient ventilation if you install your spa indoors.

For spa/hot tubs installed indoors, care should be taken to ensure adequate ventilation for the indoor space, to avoid undesired build of humidity due to spa water. For additional information on ventilation/humidity guidelines see the ASHRAE Handbook, HVAC Applications, I-P Edition, 4.5, 4.6, and 4.7.

If your spa needs to be lifted, it is the responsibility of the customer to arrange for heavy lifting equipment (e.g., a crane) to lift the spa. The customer and the machine operator would be responsible for the safety and any damage that may occur to the spa or the property if the spa needs to be lifted with special equipment.



Consider Spa Use

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

Both hot and cold spas enable the user to determine the temperature and duration for which they are immersed in the spa. Before using a hot or cold spa, you should always ask a qualified professional if use of this spa is safe and appropriate for you.

Climate, Privacy, and View

Place the spa near a house entry if you live in a snowy or rainy environment so you have a place to comfortably change clothes. Consider seasonal changes, too. Bare trees don't provide much privacy. And don't forget to think of your neighbors' view of you, and your view of your neighbors.

Keep Your Spa Clean

In planning your spa's location, consider a location where there is a clear path to and from the house. Choose an area that is free of trees that lose leaves and shed needles. Use a mat at the spa's entrance to encourage bathers to clean their feet before entering your spa.

Allow for Service Access

If you are installing your spa near a wall or with any type of structure on the outside, such as a gazebo, remember to ***allow a minimum of 18" access for service***. We do not recommend installing the spa recessed into a deck or other structure. Should your spa need to be serviced, clear access to the spa's components must be provided.

Spa Pack Information





A metal tag marked "Service Access Side" is placed on the side with the spa pack. Remove the exterior spa panel (see *Panel Removal Guide*, page 39). Attached to the spa pack's lid is a packet containing critical information for Electricians and Service Technicians and a spare transformer fuse. Inside the lid is the pack's circuit diagram.

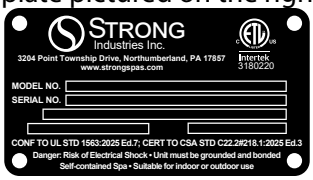


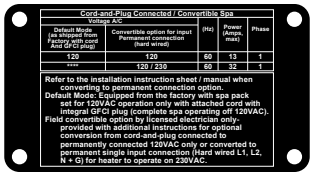
Locate the sticker on top of the spa pack to identify the exact model that was installed in your spa. Knowing the spa pack's model number and part number is valuable information if you have issues with your spa.

Spa Electrical Information *(North American)*

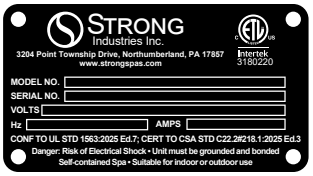
See page 15 for European Spas

For **120V Plug & Play / Convertible Spas**, two metal plates are mounted side-by-side on the outside of the spa. **Locate the Model Number** on the plate pictured on the left. The plate pictured on the right contains electrical information.





For **230/240V Hardwired Spas, locate the Model Number** on the metal plate mounted on the outside of the spa.



In Canada, spas shall be connected: a) permanently to an electrical circuit of 250 V or less (i.e., a maximum of 150 volts to-ground); or b) by a factory-provided supply cord, terminating in a moulded attachment plug, to an electrical supply rated at not more than 125 V single phase and not more than 15 A.

***Voltage Compatibility Note:** Marketing materials may use 240V terminology for standard household service recognition. Throughout this manual, 230V/240V may be used interchangeably. References to 230V also apply to North American 240V installations unless otherwise noted.*

Spa Model No.	Usage Description and Settings	Rated Amps	Recommended GFCI Size*	Wire(s) Required**
Model No. S6-0000, S6-0001, S6-0002, S6-0010, S6-0011, S6-0012 *(cord-and-plug connected convertible spa)*	1 pump spa (Pump on hi, heater off)	13A	120V 15A *(existing)* or 20A *(new install)* dedicated GFCI Outlet	#14 AWG Copper 90C Rating
Model No. S6-0000, S6-0001, S6-0002, S6-0010, S6-0011, S6-0012 *(converted spa 120V permanent wiring)*	1 pump spa (Pump on hi, heater off)	13A	120V 20A Class A GFCI Breaker	#14 AWG Copper 90C Rating
Model No. S6-0000, S6-0001, S6-0002, S6-0010, S6-0011, S6-0012 *(converted spa with 230V/240V permanent wiring)*	1 pump spa (Pump on hi + 230V/240V heater)	32A	230V/240V 40A Class A GFCI Breaker	#8 AWG Copper 90C Rating
Model No. S6-1000, S6-1001, S6-1002, S6-1010, S6-1011, S6-1012	1 pump spa (Pump on hi + heat)	29A	230V/240V 40A Class A GFCI Breaker	#8 AWG Copper 90C Rating
Model No. S6-1100, S6-1101, S6-1102, S6-1110, S6-1111, S6-1112	1-pump spa + blower/circ (Pump on hi + heat)	33A	230V/240V 50A Class A GFCI Breaker	#6 AWG Copper 90C Rating
Model No. S6-2000, S6-2001, S6-2002, S6-2010, S6-2011, S6-2012	2 pump spa	41A	230V/240V 60A Class A GFCI Breaker	#6 AWG Copper 90C Rating
Model No. S6-2100, S6-2101, S6-2102, S6-2110, S6-2111, S6-2112	2 pump spa + blower/circ	43A	230V/240V 60A Class A GFCI Breaker	#6 AWG Copper 90C Rating
Model No. S6-3000, S6-3001, S6-3002, S6-3010, S6-3011, S6-3012, S6-3100, S6-3101, S6-3102, S6-3110, S6-3111, S6-3112	3 pump spa, *or* 3 pump spa + blower/circ	48A	230V/240V 60A Class A GFCI Breaker	#6 AWG Copper 90C Rating

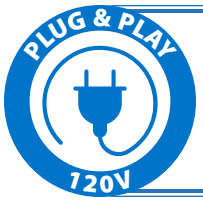
Certifications:
Spas, US:
ETL #101138129TOR-001B

Compliant:
Spa Covers:
ASTM #F1346

** Note: GFCI is required. Recommended size will ensure proper operation. Exact Rating will appear on unit's metal ID Tag. The National Electrical Code (NEC) recommends that circuit breakers not be loaded to over 80% of their rated capacity. Circuit breakers loaded to full capacity for extended periods are at risk of tripping, overheating, and failure. For example, a 60A breaker should not be loaded to more than 48A.*

*** All wire is to be coded by 60 C ampacity and Rated 90 C. Wire runs over 85 feet must increase the wire gauge to the next lower number. If wire larger than #6 AWG is required, install a junction box near the spa and use #6 AWG wire between the junction box and the spa.*

PLEASE CHECK YOUR LOCAL BUILDING CODES AND ONLY USE A CERTIFIED ELECTRICIAN TO INSTALL ANY ELECTRICAL COMPONENTS TO YOUR SPA.



If you purchased a cord-and-plug connected / convertible spa, commonly referred to as a "Plug and Play" spa, continue with the instructions on this page for the available wiring options.

If you purchased a hardwired spa, skip ahead to page 13.



Cord-and-Plug Connected / Convertible Spa: Wiring Options

Cord-Connected Convertible Spa

Spa Heats on Low Speed Only

(How the Spa is supplied from the factory, Default Configuration)

S6-0000, S6-0001, S6-0002, S6-0010, S6-0011 or **S6-0012** product is supplied with a 14 AWG, Class A, 15A GFCI cord for **directly plugging into a grounded 120 V 15A or 20A dedicated outlet with no other appliances/accessories attached to that circuit.** This cord is factory-installed. **The outlet is not to contain a GFCI breaker anywhere in the circuit other than the one provided on the cord.**

Converted Spa with 120V Permanent Wiring (Conversion Option 1)

Spa Heats on Low Speed Only

*(Where the **customer hires a certified registered electrician** to remove the factory-installed GFCI cord and **permanently wire the spa to a disconnect that contains a 120V, Class A, 15A, GFCI circuit breaker.** The disconnect must be located a **minimum of 5 feet from the inside of the spa.**)*

S6-0000, S6-0001, S6-0002, S6-0010, S6-0011 or **S6-0012** product is supplied with a 14 AWG GFCI cord for directly plugging into a grounded 120 V 15A or 20A dedicated outlet with no other appliances/accessories attached to that circuit. This cord is factory-installed. **This spa may be converted to a 120V permanently wired spa** by following the conversion procedure in this manual. **The electrician will install using 14 AWG, 3 conductor wire with a Class A, 15A GFCI breaker permanently wired into the disconnect circuit**. The strain relief can be achieved by feeding the wire through the grommet in the cabinet wall that was provided for the factory-installed GFCI cord after it is removed, and installing the wire into the pack through the 05110B UL-approved 1" Romex connector, UL-listed 58ST, through which the 14 AWG 3 conductor wire is passed and clamped into place.

Converted Spa with 230V/240V Permanent Wiring (Conversion Option 2)

Spa Heats on Both High and Low Speeds

*(Where the customer hires a certified registered electrician to remove the factory-installed GFCI cord and **permanently wire the spa to a disconnect that contains a 230V/240V, Class A, 40A, GFCI circuit breaker. The disconnect must be located a minimum of 5 feet from the inside of the spa**.)*

S6-0000, S6-0001, S6-0002, S6-0010, S6-0011 or **S6-0012** product is supplied with a 14 AWG GFCI cord for directly plugging into a grounded 120 V 15A or 20A dedicated outlet with no other appliances/accessories attached to that circuit. This cord is factory-installed. **This spa may be converted to a 120/230/240V permanently wired spa** (to allow the heater to operate on 230V/240V) by following the conversion procedure in this manual. The electrician will install using 8 AWG, 4 conductor wire with a Class A, 40A GFCI breaker permanently wired into the disconnect circuit. The strain relief for the larger wire can be achieved by drilling a 1.312" (1-5/16") hole through the cabinet and inserting a larger grommet. Suggested grommets could include a Kable Kontrol rubber grommet GR-2572, 1" ID x 1-3/4" OD x 1-3/8" Groove Diameter x 1/4" Groove Width, made of butadiene, available at many vendors, or they could use an AK Industries, Inc., neoprene or PVC Adaptaflex 1" Part Number AKP 100308. The strain relief at the pack can use the factory-supplied 1" UL-approved Romex connector, 00150B UL-listed 58ST. If the wire run to the spa is too long to use 8 AWG, then follow the procedure for heavier wire outlined in the procedure or local codes per the registered electrician. It is up to the customer to obtain the permanent wiring.

These spas are provided with a pump, a pack controller, a heater, a topside control module, and an ozonator (if applicable).

Cord-Connected Convertible Spa

Spa Heats on Low Speed Only *(Factory Default Configuration)*

Spa as shipped from the factory for operating on 120Vac cord-and-plug connected only (no conversion). This spa is set up from the factory containing a 14 AWG cord with a Class A, 15A GFCI plug.

(Factory Default). The plug is to be inserted into a grounded 120V, 15A or 20A dedicated receptacle with no other appliances/accessories attached to the circuit. The spa must be the only thing attached to this circuit. The circuit should NOT contain a GFCI device OTHER than the GFCI on the factory-supplied cord. **DO NOT BURY THE GFCI CORD.**

After filling the tub with water per the set-up instructions in the manual (see page 16), plug the cord into the specified receptacle and read and implement the spa setup procedures. Make sure you abide by all safety warnings.

These instructions use the wiring diagram for spa pack *VS300FL4 PN#54626-XX.*

Refer to page 4 for instructions on how to identify the spa pack that came installed with your spa.

If your cord-and-plug connected / convertible spa came from the factory with a spa pack other than *VS300FL4 PN#54626-XX* installed, contact customer service.

Wiring Diagram for the Pack as Received from Factory - *VS300FL4 PN#54626-XX*

FACTORY DEFAULT 120V with GFCI Cord

"XX" in the spa pack part number refers to the system revision and can vary.

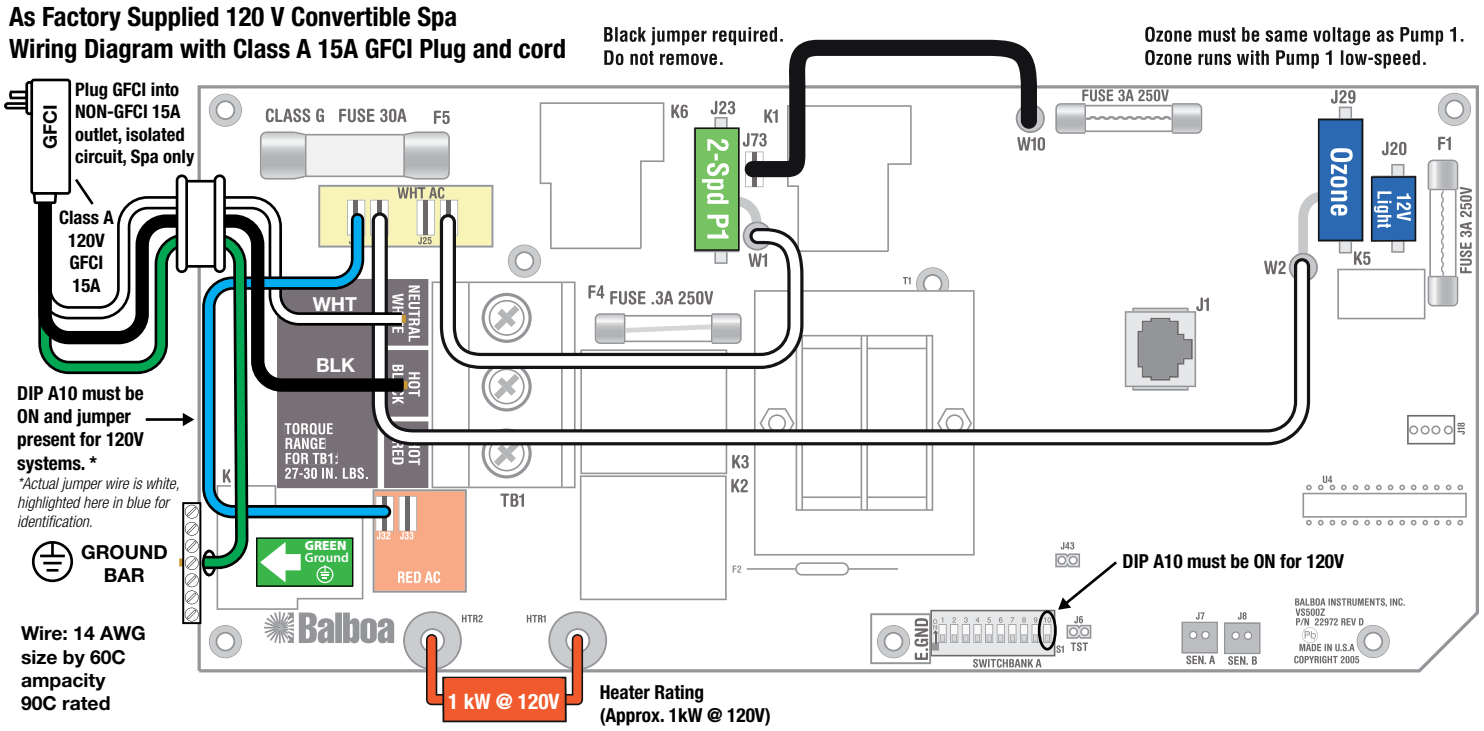


Figure 1. As Factory Supplied (Factory Default) Wiring Diagram With GFCI Cord.

Use of Spa in this mode requires no Wiring Changes to the spa, but does require an isolated, grounded, NON-GFCI 120V, 15A or 20A Receptacle circuit.

Options for Conversion from Cord-and-Plug Connected to Permanently Connected

WIRING CHANGES NEED TO BE PERFORMED BY A LICENSED, CERTIFIED, REGISTERED ELECTRICIAN.

NOT to be done by the homeowner.

NOTE: DISCONNECT ANY POWER TO THE SPA BEFORE PROCEEDING WITH WIRE CHANGE

There are two options. **Option 1** is to remove the factory-supplied cord with integral GFCI and permanently wire the spa for 120V operation only.

Option 2 is to remove the supplied cord with integral GFCI and permanently wire the spa for 120/230/240V operation from a single branch circuit (for spa heater to operate on 230V/240V only).

Step 1. Locate cord exit point from the spa and remove the side panel from the spa:





Step 2. Locate Pack and remove front cover:





Step 3. Locate Neutral (White), Hot (Black), and Ground (Green) wires and remove them from their respective terminal blocks. Then loosen Romex Connector and remove the Cord from the Pack.





Step 4. Remove GFCI Cord from the spa by pulling the cord out through the grommet and discard.



Note: Steps 1 – 4 are the same for Option 1 and Option 2

Converted Spa with 120V Permanent Wiring

Spa Heats on Low Speed Only *(Conversion Option 1)*

Step 5. For Option 1: Conversion **from 120V cord-and-plug connected to 120V permanent connection only.** Refer to steps 3 to 4 for removing the supply cord and GFCI.

TO BE PERFORMED BY A LICENSED, CERTIFIED, REGISTERED ELECTRICIAN.
NOT to be done by the homeowner.

NOTE: DISCONNECT ANY POWER TO THE SPA BEFORE PROCEEDING WITH WIRE CHANGE

Feed 14 AWG, 3 conductor wire, 90 C rated back through the grommet, through the Romex connector, and into the Pack. Use copper wire with THHN insulation. ***Do not use aluminum wire.*** Strip the wires approximately 0.625 inches to fit into the original connectors that the cord was disconnected from and tighten the terminal block screws to fasten in place. Then tighten the screws on the Romex connector and proceed to wire the 14AWG wire to the 120 V, Class A, 15A GFCI breaker that is installed by the electrician in a disconnect box that is mounted at least 5 feet from the inside of the spa.

Enable Mode Change (VS300FL4 PN#54626-XX) 120V plug-and-play models come from the factory with the modes locked out. Set **DIP A7 to the OFF** position to enable mode changes.

These instructions use the wiring diagram for spa pack *VS300FL4 PN#54626-XX.*

Refer to page 4 for instructions on how to identify the spa pack that came installed with your spa.

If your cord-and-plug connected / convertible spa came from the factory with a spa pack other than *VS300FL4 PN#54626-XX* installed, contact customer service.

Wiring Diagram for the Pack as Wired for 120V Permanent Connection - *VS300FL4 PN#54626-XX*
120V with Mounted Disconnect Containing Class A 15A GFCI Breaker

"XX" in the spa pack part number refers to the system revision and can vary.

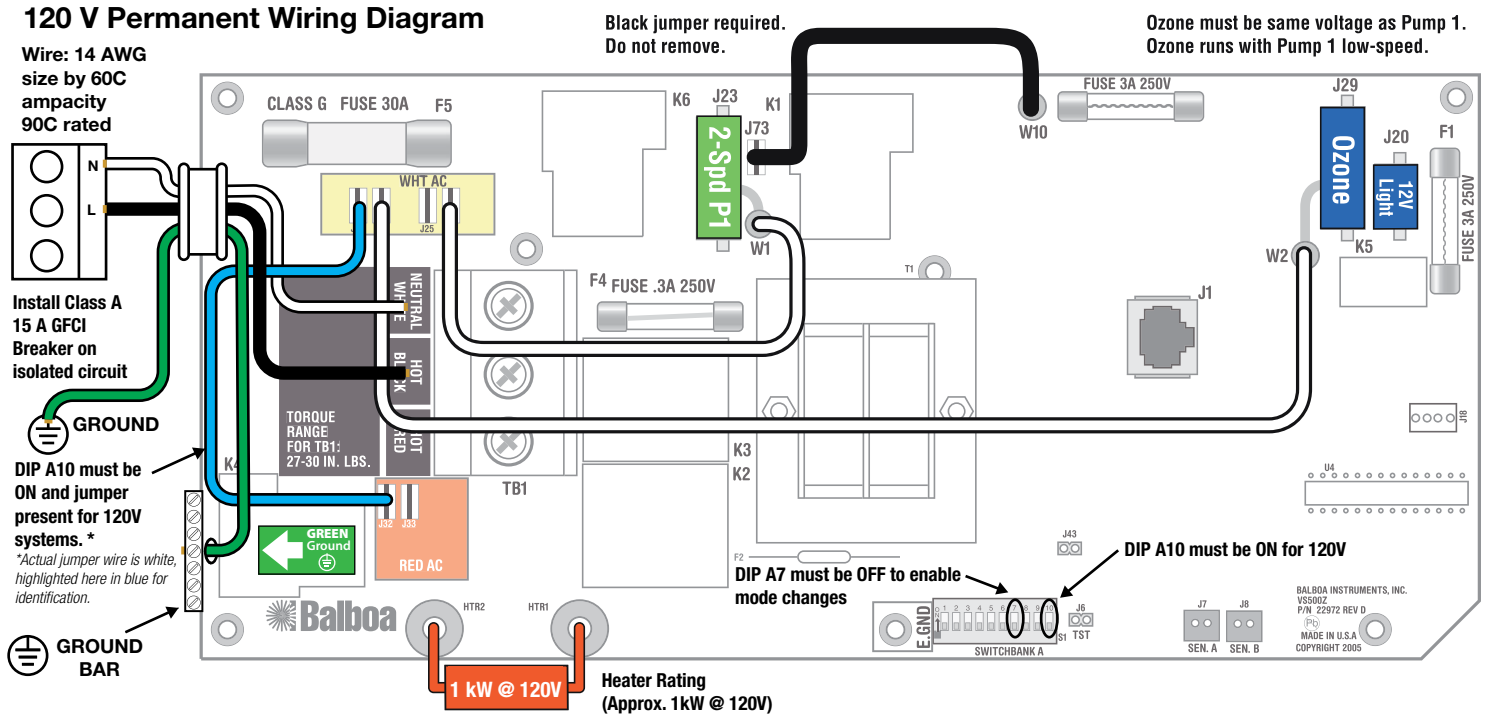


Figure 2. Wiring Diagram for 120V Permanent Wired Option 1.

Requires a Mounted Disconnect, mounted at least 5 feet from the inside of the spa and an isolated circuit that contains a single Class A, 15A GFCI Breaker, for wiring to the spa

Converted Spa with 230V/240V Permanent Wiring

Spa Heats on Both High and Low Speeds *(Conversion Option 2)*

Step 5. For Option 2 (120V/230V/240V permanent connection single supply, with Heater only operating on 230V/240V) Refer to steps 3 to 4 for removing the supply cord and GFCI.

TO BE PERFORMED BY A LICENSED, CERTIFIED, REGISTERED ELECTRICIAN.

NOT to be done by the homeowner.

NOTE: DISCONNECT ANY POWER TO THE SPA BEFORE PROCEEDING WITH WIRE CHANGE

Remove the small grommet from the wire feed thru-hole in the side of the spa. Enlarge the spa feed thru-hole to a 1.312-inch diameter (1-5/16”). Insert a larger grommet with a 1-inch internal diameter. (For example: Kable Kontrol rubber grommet GR-2572, 1" ID x 1-3/4" OD x 1-3/8" Groove Diameter x 1/4" Groove Width, made of butadiene, available at many vendors, or they could use an AK Industries, Inc., neoprene or PVC Adaptaflex 1” Part Number AKP 100308 or equivalent).

Strip the 4 conductor 8 AWG wires approximately 0.625 inches. Use copper wire with THHN insulation. ***Do not use aluminum wire.*** The newly stripped wires should be similar to the length of the stripped wires that were on the 14 AWG cord that was removed. Feed the 8 AWG, 4 conductor wire, 90 C rated, through the larger grommet, through the Romex connector, and into the Pack. Connect the 4 wires to the terminal blocks and screw to fasten them in place. Make sure Neutral (white), L1 (black), L2 (red), and Ground (green) are connected to the proper terminal blocks, as shown in Figure 3 below. Then tighten the screws on the Romex connector and proceed to wire the 8 AWG wire to the 230V/240V, Class A, 40A GFCI breaker that is installed by the electrician in a disconnect box that is mounted at least 5 feet from the inside of the spa. **ALL WIRING MUST BE DONE BY A LICENSED, CERTIFIED, REGISTERED ELECTRICIAN.**

These instructions use the wiring diagram for spa pack *VS300FL4 PN#54626-XX*.

Refer to page 4 for instructions on how to identify the spa pack that came installed with your spa.

If your cord-and-plug connected / convertible spa came from the factory with a spa pack other than *VS300FL4 PN#54626-XX* installed, contact customer service.

Make sure **DIP A10 is set to the OFF** position for **230V/240V operation** and that the **Jumper** (J11 to J33) marked below as “to be removed for 230V/240V systems” **IS removed.**

Enable Mode Change (VS300FL4 PN#54626-XX) 120V plug-and-play models come from the factory with the modes locked out. Set **DIP A7 to the OFF** position to enable mode changes.

Wiring Diagram for the Pack as Wired for 120V/230V/240V Permanent Connection - *VS300FL4 PN#54626-XX*

"XX" in the spa pack part number refers to the system revision and can vary.

120V/230V/240V with Mounted Disconnect Containing Class A 40A GFCI Breaker

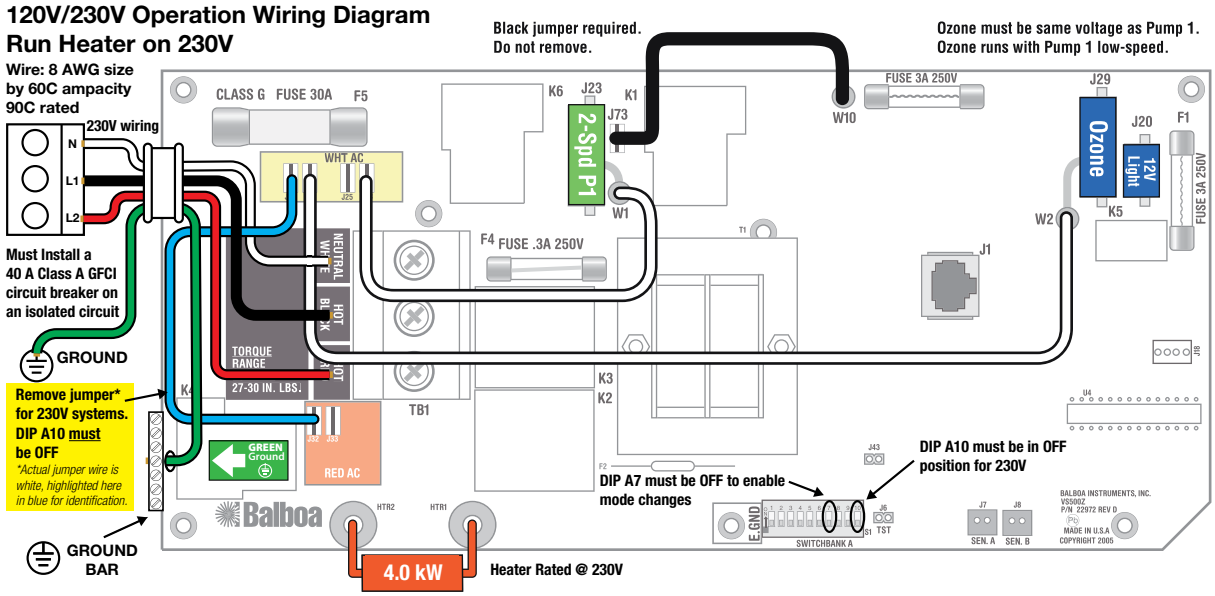


Figure 3. Wiring Diagram for 120V/230V/240V Permanent Wired Option 2.

Requires a Mounted Disconnect, mounted at least 5 feet from the inside of the spa and an isolated circuit that contains a single 230V/240V, Class A, 40A GFCI Breaker for wiring to the spa.

Prepare for Your New Spa

120V Electrical Installation

(Cord-and-Plug Connected)

(North America 60 Hz)

Improper installation or failure to comply with all applicable local, state, and federal electrical codes may result in personal injury or property damage. The spa owner is responsible for ensuring all requirements are met, and any wiring changes must be performed by a licensed, certified, and registered electrician.

Electrical and Outlet Requirements

Cord-and-plug connected ("plug-and-play") spas must be operated on a **single, dedicated circuit** with no other appliances or accessories on that line, as additional loads may trip the breaker. The circuit must be protected by a **15A or 20A breaker.** A 15A breaker is sufficient for existing installations, but a **20A dedicated circuit is recommended for new installations.**

All 120V spas include a **factory-installed 14 AWG, Class A, 15A GFCI power cord.** GFCI-protected cord-and-plug connections must not exceed **15 feet (4.6 m)** and must plug directly into a **dedicated 15A or 20A receptacle** (NEC 680.42(A)). ***Do not use extension cords under any circumstances.***

The outlet must be located **at least 5 feet (1.5 m)** and no more than **10 feet (3.0 m)** from the inside wall of the spa (NEC 680.43(A)). For outdoor installations, a **weatherproof (in-use) outlet cover is recommended.**

GFCI Testing Instructions

Test the GFCI **before first use and every 3 months.**

1. With the spa plugged in and powered on, press the **TEST** button on the GFCI. The GFCI should trip and the spa should shut off.
2. Press the **RESET** button. The GFCI should reset and the spa should power back on.

If the GFCI trips during use:

- Press the **RESET** button
- If the GFCI does not reset, ***unplug the spa immediately*** and contact customer service
- ***Do not use the spa if the GFCI will not reset.***

Installation & Electrical Safety Checklist

- ❑ Use a single, dedicated 15A or 20A circuit
- ❑ Ensure only one GFCI device is on the circuit
- ❑ Place the outlet 5–10 ft from the spa's inside wall
- ❑ Use a weatherproof outlet cover for outdoor installations
- ❑ Inspect the power cord before use and replace it if damaged
- ❑ Test the GFCI before first use and every 3 months
- ❑ Contact customer service if electrical issues persist
- ❑ Do not use extension cords
- ❑ Do not bury the power cord
- ❑ Do not connect other devices to the spa's circuit
- ❑ Do not operate the spa if the GFCI will not reset



THE USE OF A GFCI OUTLET WITH A GFCI CORD IS *NOT RECOMMENDED*

Nuisance Tripping and GFCI Compatibility

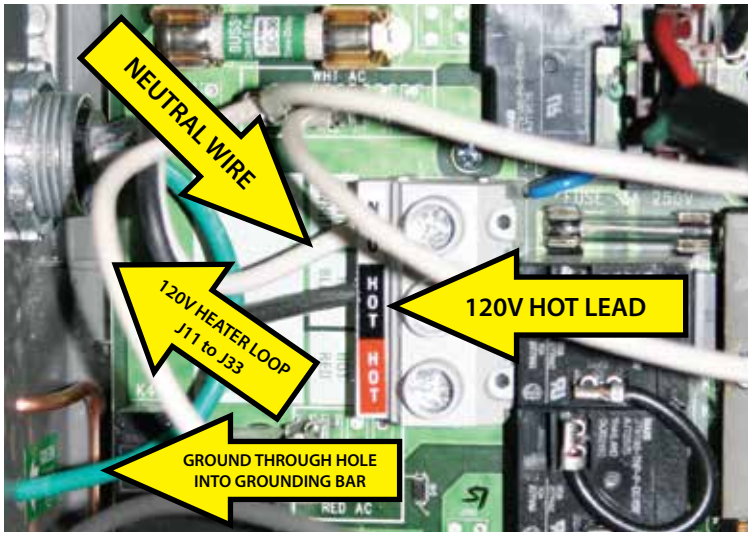
GFCI devices are intentionally sensitive. ***Nuisance tripping*** occurs when a GFCI cuts off power without a hazardous condition present. Common causes include dual GFCI protection (GFCI outlet used with a GFCI power cord), shared circuits, moisture, worn outlets, and voltage fluctuations. ***Using a GFCI outlet with a GFCI power cord may lead to repeated nuisance tripping and is not recommended.***

Nuisance tripping can also complicate troubleshooting by masking issues such as wiring faults, moisture intrusion, or improper grounding. ***Repeatedly resetting a GFCI without correcting the cause is not advised*** and may indicate a more serious problem. Frequent unplugging and re-plugging of the spa power cord can wear outlets or create poor connections, increasing tripping frequency and potential safety concerns.

If allowed by local code, replace the GFCI outlet with a standard (non-GFCI) outlet, as the spa's GFCI cord provides the required protection. If local code requires a GFCI outlet, have an electrician replace the factory-installed GFCI with a non-GFCI 120V, 15A power cord not exceeding 15 ft (4.6 m) (available at local hardware stores).

If the spa continues to trip after confirming a dedicated circuit and proper GFCI configuration:

- Stop using the spa
- Inspect the outlet for moisture or corrosion
- Ensure no other devices share the circuit
- Contact customer service before resuming operation



230V/240V Electrical Installation

(North America 60 Hz)

WARNING:

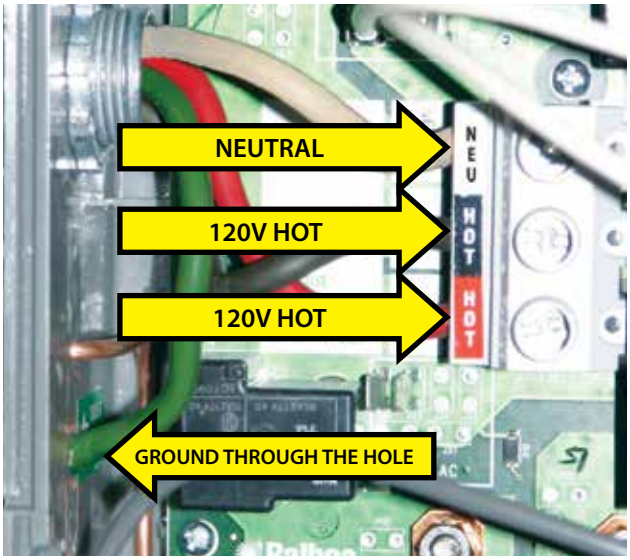
The electrical circuit must be installed by an electrical contractor and approved by a local building or electrical inspector. The customer must provide a safety disconnect in the fixed wiring.

Failure to comply with state and local codes may result in fire or personal injury and will be the sole responsibility of the spa owner.

Improper installations present hazards which can result in personal injury or property damage and void the warranty on the spa.

Spa jumpers and dip switches are preconfigured for a 230V/240V installation (for Non Plug-and-Play models).

- All 230V/240V spas must be permanently hardwired to the power supply. See the US wiring diagram on the next page. The European wiring diagram can be found on page 15.
- Spas must be wired using this procedure. Any variance from these instructions will void your warranty and may result in serious injury.
- When installed in the United States, the electrical wiring of this spa must meet the requirements of National Electric Code, ANSI/NFPA 70-2008 and any applicable local, state, and federal codes.



***Voltage Compatibility Note:** Marketing materials may use 240V terminology for standard household service recognition. Throughout this manual, 230V/240V may be used interchangeably. References to 230V also apply to North American 240V installations unless otherwise noted.*

GFCI and Wiring Requirements

- The power supplied to the spa must be on a dedicated GFCI protected circuit as required by ANSI/NFPA 70 with no other appliances or lights sharing the power.
- Use copper wire with THHN insulation. ***Do not use aluminum wire.***
- When NEC requires the use of wires larger than #6 AWG, install a junction box near the spa and use #6 AWG wire between the junction box and the spa.
- Wire runs over 85 feet must increase the wire gauge to the next lower number.
- Means for disconnection must be incorporated in the fixed wiring in accordance with the wiring rules.

Testing the GFCI Breaker

Test the GFCI breaker prior to first use and every three months when the spa is powered. To test the GFCI breaker, follow these instructions:

1. With spa the operating, press the TEST button on the GFCI. The GFCI will trip and the spa will shut off.
2. Reset the GFCI breaker by switching the breaker to the full OFF position, waiting a moment, and then turning the breaker back on. The spa should have power again.

Point of Entry for Electric Service

Installations can vary greatly from spa to spa. Therefore, the manufacturer does not have any pre-determined entry points for electrical service. The installer will need to determine the best point of entry and create an entry point. Any of the four walls or the spa base can be drilled through to make this access point. Prior to drilling, be sure that there are no components on the interior of the cabinet that will possibly be damaged or in the way while making the hole. The manufacturer recommends that some form of moisture barrier is used at the hole to prevent water from entering the spa. ***If all the above criteria are met, in no way will the warranty that is included with the spa be void due to electrical requirements.***

PLEASE CHECK YOUR LOCAL BUILDING CODES AND ONLY USE A CERTIFIED ELECTRICIAN TO INSTALL ANY ELECTRICAL COMPONENTS TO YOUR SPA.

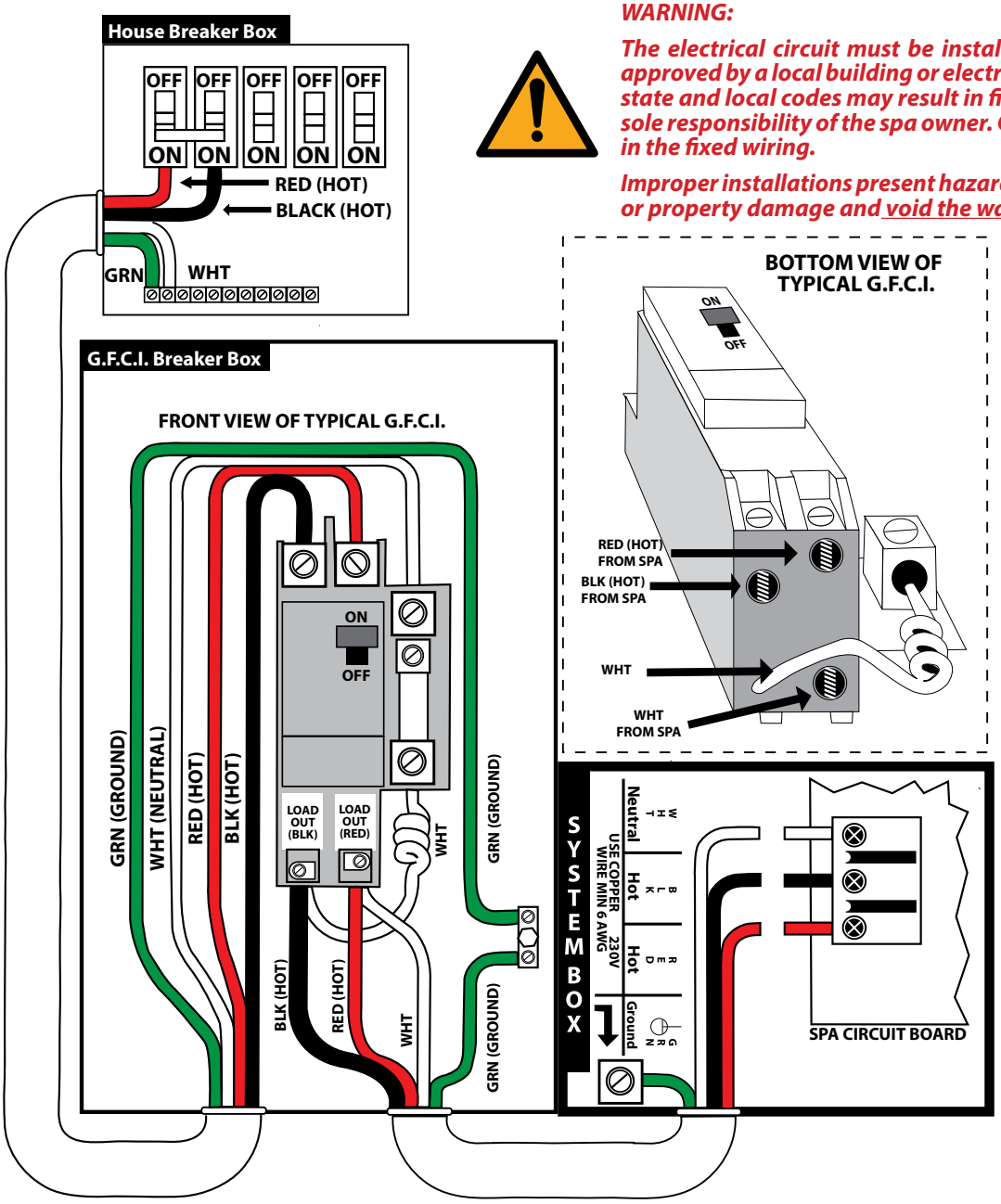
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GFCI Wiring Diagram (North American 230V/240V 60Hz)

While this diagram represents a typical layout, ***yours may differ.***
Always *consult with the manufacturer of your electrical panel/breaker and a licensed electrician.*

PLEASE CHECK YOUR LOCAL BUILDING CODES AND ONLY USE A CERTIFIED ELECTRICIAN TO INSTALL ANY ELECTRICAL COMPONENTS TO YOUR SPA.

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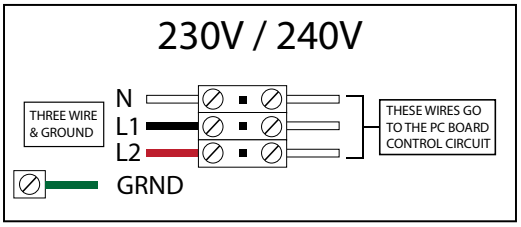
WARNING:

The electrical circuit must be installed by an electrical contractor and approved by a local building or electrical inspector. Failure to comply with state and local codes may result in fire or personal injury and will be the sole responsibility of the spa owner. Customer must provide a disconnect in the fixed wiring.

Improper installations present hazards which can result in personal injury or property damage and void the warranty on the spa.

Permanently connected spas, hot tubs, or cold tubs shall include a statement on the wiring diagram indicating the need for a disconnecting means to be installed and located as per the local codes and regulations.

IF THE NEUTRAL WIRE FROM THE SPA IS NOT CONNECTED DIRECTLY INTO THE LOAD NEUTRAL LUG ON THE GFCI BREAKER, THE BREAKER WILL TRIP IMMEDIATELY. IF YOUR GFCI BREAKER DOES NOT HAVE A LOAD NEUTRAL LUG AND PIGTAIL WIRE, IT CANNOT BE USED WITH THE SPA.



Wiring Diagram (European 230V 50Hz)

Systems with PCB Rev B Only

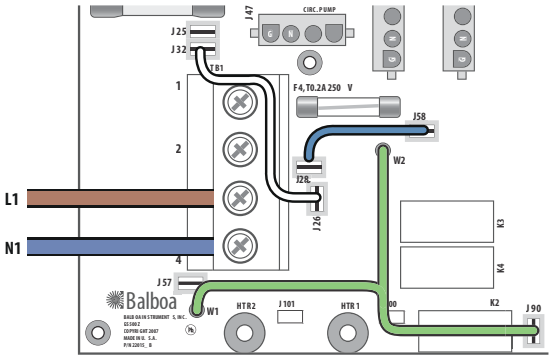
PLEASE CHECK YOUR LOCAL BUILDING CODES AND ONLY USE A CERTIFIED ELECTRICIAN TO INSTALL ANY ELECTRICAL COMPONENTS TO YOUR SPA.

USE COPPER CONDUCTORS ONLY / EMPLOYER UNIQUEMENT DES CONDUCTEURS DE CUIVRE

For Certified Electrical Personnel reference ONLY!

Note: A residual current device with a tripping current rated not more than 30 mA has to be installed in addition to local requirements. Customer must provide a disconnect in the fixed wiring. Protective device for power connection must be on all phase conductors based on local requirements.

As Manufactured



Single Service, TN and TT Electrical Systems
3 Wires (1 Line + 1 Neutral + 1 Protective Earth)

Protective Earth wire 6mm² minimum (Green/Yellow) must be connected to system ground terminal as marked.

This option is configured and shipped as the default.

All equipment (pumps, blower, and heater) runs on service line L1.

Systems using only 1 DIP switch (A10) for heat disable:

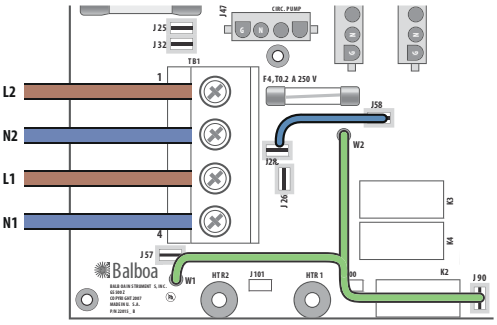
- Refer to DIP Switch settings on inside of spa pack lid.
- For 1 x 16 Amp Service:
  DIP Switch A10 must be ON.
- For 1 x 32 Amp Service:
  Set DIP Switch A10 such that total system amperage draw never exceeds rated service input.

Systems using multiple DIP switches for heat disable:

- Refer to DIP Switch settings on inside of spa pack lid.

Note: A residual current device with a tripping current rated not more than 30 mA has to be installed in addition to local requirement. Customer must provide a disconnect in the fixed wiring. Protective device for power connection must be on all phase conductors based on local requirements.

Optional



Dual Service, TN and TT Electrical Systems
5 Wires (2 Lines + 2 Neutrals + 1 Protective Earth)

Protective Earth wire 6mm² minimum (Green/Yellow) must be connected to system ground terminal as marked.

The heater runs on service line L1, while all other equipment, such as pumps and blowers, run on service line L2.

Completely remove the white wire from J26 and J32.

Note: J32 and J25 are electrically identical. The white wire may be attached to either terminal before removal.

Systems using only 1 DIP switch (A10) for heat disable:

- Refer to DIP Switch settings on inside of spa pack lid.
- DIP Switch A10 must be OFF.

Systems using multiple DIP switches for heat disable:

- Refer to DIP Switch settings on inside of spa pack lid.

Spa Model No.	Usage Description and Settings	Suggested GFCI Size	Wire(s) Required
Model No. 5-100, 5-1000, 5-101, 5-1001	**European Spa** 1 pump spa	***(Single Service L1, N1)***	
		230V 20 AMP	#10 AWG Copper 90C Rating
Model No. 5-100, 5-1000, 5-1010, 5-1100, 5-1110 5-101, 5-1001, 5-1011, 5-1101, 5-1111, 5-2001, 5-2003, 5-2011, 5-2013, 5-2101, 5-2103, 5-2111, 5-2113 5-3001, 5-3003, 5-3011, 5-3013, 5-3101, 5-3103, 5-3111, 5-3113	**European Spa** 1 pump spa, *or* 1 pump spa + blower/circulator 2 pump spa, *or* 2 pump spa + blower/circulator 3 pump spa, *or* 3 pump spa + blower/circulator	***(Single Service L1, N1)***	
		230V 40 AMP	#6 AWG Copper 90C Rating
		(Dual Service L1, N1, L2, N2)	
		230V 40 AMP total (2x 20 AMP)	2x #10 AWG Copper 90C Rating

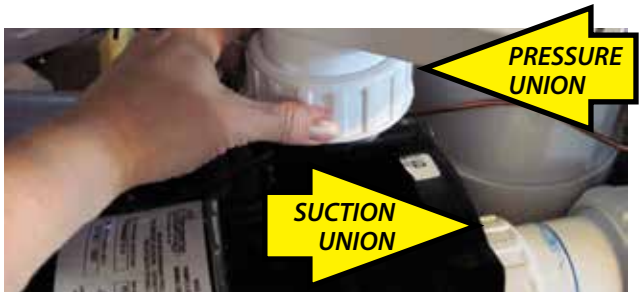
Certifications: *Spas, Europe:* CE #3180220

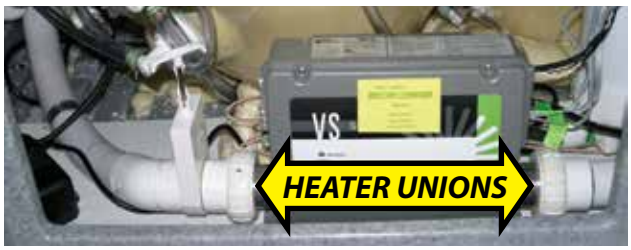
Initial Filling and Starting

1. Place spa on an approved surface (*refer to Prepare a Good Foundation, page 4*) and have it properly wired by a licensed electrician.
2. Before filling the spa, test the spa's electrical. Do not allow electrical to remain on longer than 30 seconds. When PR is displayed, turn off the spa and fill.



3. Remove exterior spa panel near Service Access side (*refer to Panel Removal Guide, page 39*). Locate drain hose before filling.
4. Make sure plumbing unions are secure and did not loosen during shipping. There will be 4 unions on a 1-pump spa; 6 unions on a 2-pump spa; and 8 unions on a 3-pump spa. Hand-tighten any loose unions.





5. Verify all gate valves in the equipment area are open. Before operating, these valves must be in the UP/OPEN position and have plastic clips inserted. Never run the spa with the gate valves closed or without water circulating for any period of time.





Filter with handle.



Filter and floating weir assembly.

6. **Remove the filter if it came pre-installed.** *(The filter may have shipped uninstalled.)* For a filter with a handle: Remove the filter by twisting the handle counter-clockwise. For a filter with a floating weir assembly (weir and basket): Using both hands, turn the weir a quarter turn counter-clockwise. Remove the weir, the basket, and then the filter. Set them off to the side. *Photos may vary from your particular spa model.*
7. **Flush out the spa before its initial use and during de-winterization.** Use a garden hose to rinse your spa with regular tap water. Run water into the jets and filter canister to push out any residual water and antifreeze from the lines. Fill the footwell with water and drain using the guidelines stated in *Draining Your Spa* on the next page. Keep running water over the jets and filter canister until the water draining from the spa runs clear and is free of any antifreeze or possible contaminants.
8. Ensure the drain valve is shut off and the drain cap is in place.
9. **Install the filter.** For a filter with a top handle and bottom thread: Center the filter's thread in the filter fitting inside the filter chamber and tighten by turning the filter clockwise. For a filter with a floating weir assembly: Insert the filter into the filter chamber. The short tube in the chamber should slide into the middle of the filter. Insert the basket. The short tube on the bottom of the basket should slide into the top of the filter. Insert the weir and turn it clockwise a quarter turn. You should feel it snap into place.



Do not remove any support bands (if present) from your filter.



10. Place a garden hose in the filter chamber and fill your spa with regular tap water to 2″ higher than the highest jet (excluding neck/shoulder jets). If the water is too high, it will overflow when people enter the bathing area. If the water is too low, air will enter through the filter and possibly cause airlock or even damage to the unit over time.
11. Once the water is at the correct level, turn off the garden hose, then turn on the power at the GFCI breaker.

    Note: The controls will perform a diagnostic check for a few minutes when the power is turned on. When complete, the spa will automatically operate at filter speed and continue heating until the water reaches 100ºF or the last set temperature.



12. If water does not flow from jets when the pump is running, there could be an air pocket. See *Priming the Pump* (page 18) for methods of removing air pockets from the pump(s).

Draining Your Spa

Your spa should be drained every 3-4 months and refilled with fresh tap water. The following is the recommended method for draining your spa.

1. Turn off the power at the breaker.
2. Remove filter.
3. Your drain valve is located inside the spa cabinet on the Service Access Side (generally in front of the spa pack.) *See Panel Removal Guide, page 39.*
4. Locate the hose ending with the 3/4 inch hose shut-off valve. Remove the drain cap.





5. If a longer hose is necessary, hook up a garden hose's female (socket) end to the drain fitting. Place the other end of the garden hose where you would like the water to drain.
6. Twist the hose shut-off valve to open the drain.
7. Let the spa drain completely. If you attached a garden hose, remove it.
8. Twist the hose shut-off valve to close it, ensure the seal is in the drain cap, and replace the cap.

Alternative methods of draining water from your spa include using:

- a shaker siphon hose or siphon pump
- a submersible pump *(Pay attention to the water level. If the pump runs dry, it will burn up the motor. Protect the spa shell to prevent scratching.)*
- a wet/dry vacuum to either start a siphon or remove excess water from the seats and the footwell after draining the spa.

Water drained from your spa is safe to dispose of in your yard, septic system, or in a drain. Follow all local/municipal codes and regulations for disposal.

Priming the Pump

Sometimes air can become trapped in the pump while filling the spa. You will know this has happened when after you have filled and started the spa, the pump does not function. You will hear the pump operating, but no or little water will be moving. The pump will not work properly while air is trapped in it. Continuing to operate the pump in this way will cause damage.

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

To remove a small air lock in a pump:

1. Turn the spa on and wait for PR (Priming Mode) to appear on the topside display.
2. Press the button for the affected jet (JETS, JETS1, JETS2, etc.) to turn on the pump and let it run for 10 seconds. If the pump is two-speed, the pump should be running on low speed. If the pump is one-speed, skip to Step 4.
3. Press the jet button again and let the pump run on high speed for 10 seconds.
4. Press the jet button again to turn off the pump. The pump should be left in the off position for 10 to 15 seconds.
5. Repeat steps 1 through 4 for each affected jet until water is flowing through all the jets and all air is removed from the plumbing. If this method is unsuccessful, see procedure below.

To remove a large air lock within the pump:

1. ***Turn off power at the breaker.***
2. Remove the spa panel closest to the pump (*refer to Panel Removal Guide, page 39*).
3. Loosen the Pressure Union on top of the pump by hand or with a strap wrench. You may hear a hissing sound or see bubbles. Eventually you will be left with a solid stream of water. When air is bled out, tighten the union, turn breaker on and set the pump on high speed. ***This may need to be repeated several times.***



Lights

Press the **"LIGHTS"** button on the topside control panel to turn the spa lights on.

Depending on your spa model, the perimeter LED lights may operate with either the standard lighting system or the Chromazon3™ lighting system. *If your spa is equipped with Chromazon3, refer to page 27 for operating instructions.*

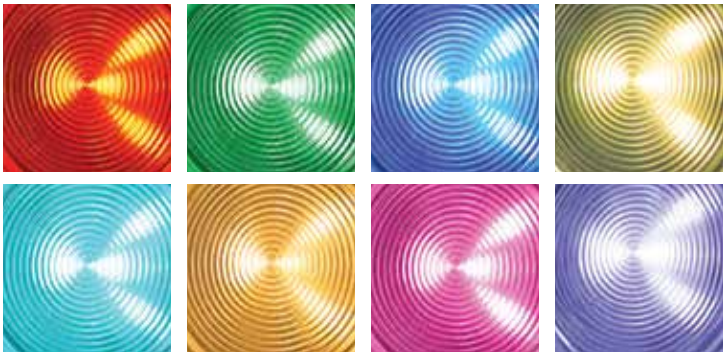
On models where the perimeter LED lights are connected to the standard lighting system, they will light up at the same time as the interior LED lights.

Changing Lighting Modes

The current lighting mode is changed by turning the light off and then immediately back on.

- **Solid Color Steady** – The lights will be locked on the current color. Turn the lights off and immediately back on to advance to the next color.
- **Solid Color Cycling** – The lights will change from one color to the next without fading.
- **Color Fade** – The lights will fade from one color to the next.
- **Flashing Color Cycling** – The lights will flash on and off from one color to next.

Note: If the lights are turned off for at least five seconds, the lights will turn back on in the same mode.



Sound System *(if equipped)*

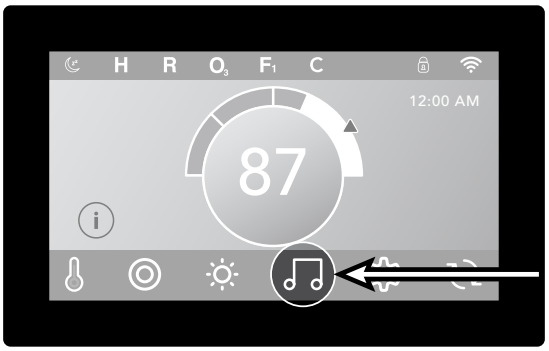
Marine-grade stereo options are available. Spas equipped with an audio system are delivered with the manufacturer's operating instructions. Also:

- Make sure that hands are dry before use.
- Water damage is not covered by the spa manufacturer or the sound system manufacturer's warranties.
- The system is water-resistant but NOT waterproof.
- Take every precaution to keep this system dry.

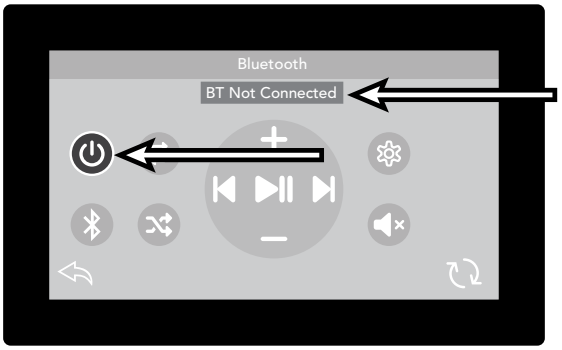
Bluetooth Stereo Pairing Instructions

Premium Sound System with Four Transducers and Two Shell Speakers (bba™3 amplifier)

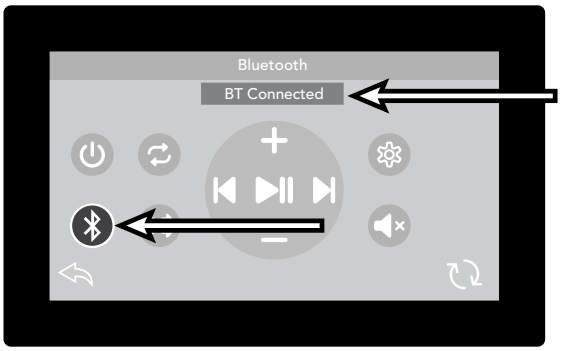
1. Power up the spa.
2. On the main screen, press the music button to enter the Bluetooth screen. The music button may not appear if the system does not detect the bba3 amplifier. *If the system is not detecting the bba3 amplifier, first confirm that your spa has one equipped. If the bba3 amplifier is present and the system still doesn't detect it, contact Technical Support.*



3. On the Bluetooth screen, press the power button to turn on the bba3 amplifier. The message "BT (Bluetooth) Not Connected" will appear when your smart device is not connected or paired with the bba3 amplifier.



4. On your smart device, turn on Bluetooth functionality.
5. On your smart device, search for Bluetooth devices. Make sure the smart device is close enough to the spa to pair with the bba3 amplifier. NOTE: bba3 operates up to 100 feet in the open air. The actual range can vary dependent on the installation and environmental factors.
6. On your smart device, select "BBA Spa Music" from the pairing list. If "BBA Spa Music" does not appear, repeat steps 1 – 5.
7. Some smart devices will connect automatically, but for others you will need to select "Connect." Once connected, a white ring appears around the Bluetooth button and "BT Connected" appears at the top of the screen. Play music on your smart device. The connection is complete if the music plays from the speakers in the spa.



IMPORTANT: *When your spa loses power, all paired devices are erased from the bba3 amplifier's memory. An error message may appear if your smart device still remembers the bba3 amplifier when trying to reconnect in this situation. You may need to force your smart device to "forget" the bba3 amplifier, then connect to the bba3 amplifier again to avoid the error messages.*

Stereo with Two Shell Speakers (Bass Tube Subwoofer)

1. Press the silver button on the cabinet exterior (or inside the step door on some models) to activate Bluetooth pairing mode.



2. Scan for devices and select your system name:
   - **SC12345** (newer) – Code: 8-8-8-8
   - **SC012345** (older) – No code (or try 0-0-0-0 / 1-2-3-4)
   - **BlueAudio** (legacy) – Code: 0-0-0-0

   Tip: If the device does not appear within 30 seconds, press the silver button again to toggle the power.



3. A confirmation tone will sound when successfully paired.

Note: Only one device can connect at a time. Disconnect to allow another device to pair.

AUDIO EQUIPMENT RISK OF ELECTRIC SHOCK

a) CAUTION – Risk of Electric Shock. Do not leave compartment door open.
b) CAUTION – Risk of Electric Shock. Replace components only with identical components
c) Do not operate the audio/video controls while inside the spa.
d) WARNING – Prevent Electrocution. Do not connect any auxiliary components (for example: cable, additional speakers, headphones, additional audio/visual components, etc.) to the system.
e) 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.
f) When the power supply connections or power supply cord(s) are damaged: if water is entering the audio/visual compartment or any electrical equipment compartment area; if the protective shields or barriers are showing signs or 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.
g) This unit should be subjected to periodic routine maintenance (for example, once every 3 months) to make sure that the unit is operating properly.

Topside Control Panels

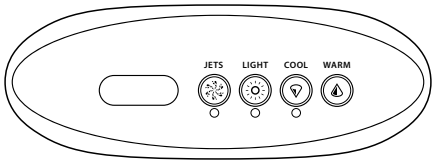
Your spa arrives from the factory with one of several different topsides installed. The topside controls the various features of your spa and can be broken down into three main categories: touch screen, color display with buttons, and LED ("calculator") display with buttons.

This manual will cover basic controls and functions. For more information about your particular topside, or if your topside is not pictured below, scan the QR code to the right (or enter the URL into your browser) to view the available manuals for current and legacy topsides on our website.

NOTE: Your topside may have buttons labeled "PUMPS / PUMP 1 / PUMP 2 / PUMP 3." These have identical functions to where this manual references "JETS / JETS 1 / JETS 2 / JETS 3."

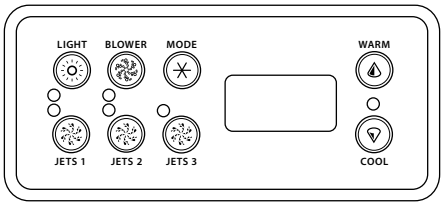
Current & Legacy Topside Manuals

https://strongspas.com/current-owners/brochures-and-owners-manuals/



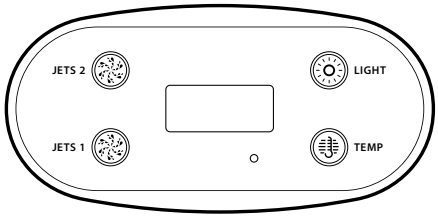
MVP 240 (LED Display)

See page 22



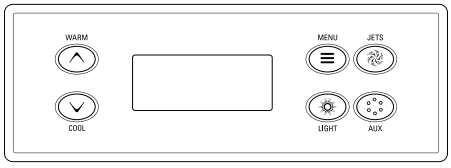
551 (LED Display)

See page 23



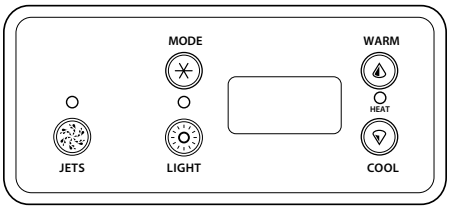
406U (LED Display)

See page 22



TP500 (LED Display)

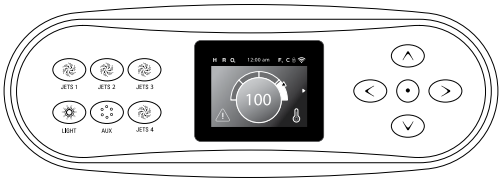
See pages 24-25



VL701S (LED Display)

See page 25

Reference page 21 for information and common functions of the topsides pictured above.



TP700 (Color Display)

See pages 26 - 27



SpaTouch3 (Touch Screen)

See pages 28 - 29

Digital Display Topsides

This section will cover the common functions of the digital display ("calculator") screen topsides. A list of display codes for these topsides can be found in the back of this manual, beginning at page 48.

System Settings

When your spa is first actuated, it will display its programming codes (a series of three numbers), followed by the system voltage (12 for 120V or 24 for 230V/240V), then Pr (indicating it has gone into Priming mode). The Priming mode will last for less than 5 minutes (press a Temperature button to skip Priming Mode), and then the spa will begin to take temperature readings, followed by the heater test cycle. After completing, the heater will turn on, heat the spa, and maintain the water temperature in the Standard mode.

The start-up temperature is set at 100°F/37°C. The last measured temperature is constantly displayed on the display. Note that the last measured spa temperature displayed is current only when the pump has been running for at least 2 minutes.

Maximum Temperature is set at 104°F/40°C as required by UL/CSA.

Minimum Temperature is 80°F/26°C.

***Unless Sleep Mode or Rest Mode is activated.**

Note: For spa models without a circulation pump, if the spa is currently in a heating or filtration cycle, the primary pump will only switch between high and low. It cannot be turned off until the heating or filtration cycle is completed.



Preset Filter Cycles

The first filter cycle begins 6 minutes after the spa is energized. The second filter cycle begins 12 hours later. The default filter time is 2 hours. The recommended setting is F2.

Example: In a 12 hour period (1 cycle), a setting of F2 means 2 hours of filtration on, 10 hours of filtration off. You may choose F2, F4, F6, F8, or c (continuous).

To program, press the "WARM / TEMP" button, followed by "JETS / JETS 1." Press "WARM / TEMP" button to adjust. Press "JETS / JETS 1" to lock in selection.

(551 topside only): After locking in, a d (12-hour "day" cycle), n (12-hour "night" cycle), or dn (both "day" and "night" cycles) will appear. Press the "WARM / TEMP" button to cycle through these options and press "JETS / JETS 1" to lock in the desired selection.

TP500: See detailed instructions on page 25 for setting filter cycles.

Spa Modes Common to Digital Display Topsides

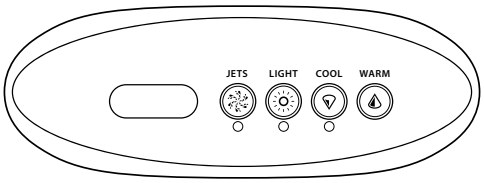
Standard Mode is programmed to maintain the desired temperature. Note that the last measured spa temperature displayed is current only when the pump has been running for at least 2 minutes. St or Std will be displayed momentarily when you switch into Standard Mode. The temperature is constantly displayed when in Standard Mode. This is the best mode to use during COLD weather. ***Standard Mode is the only mode available by default on 120V plug-and-play models. Refer to the permanent wiring conversion instructions to enable mode changes on page 10 or 11.***

Sleep Mode heats the spa to 20 degrees below the set temperature, only during filtration cycles. SL or SLP displays solid when the temperature is not current, and alternates with the temperature when the temperature is current, but only within 20 degrees of your set temperature.

Economy Mode heats the spa to the set temperature only during filter cycles or if the temperature falls to 20 degrees below the set temperature. Ec or Ecn displays solid when the temperature is not current, and alternates with the temperature when the temperature is current. This is the best mode to use during WARM weather.

If the temperature sensors detect a drop to below 44°F/6.7°C within the heater, the pumps will automatically activate to provide **Freeze Protection**. The equipment stays on until 4 minutes after the sensors detect that the spa temperature has risen to 45°F/7.2°C or higher. *Note: Auxiliary freeze protection is not utilized on current spa models. The dip switch for this setting must remain in the DOWN/OFF position.*

One-Pump Spas (MVP 240 Topsides)

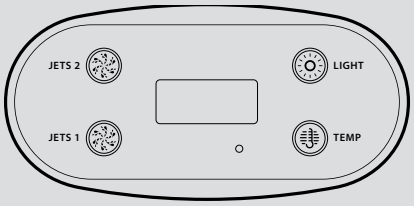


JETS
Press the "JETS" button once to turn the main 2-speed pump on or off, and to shift between low and high speeds. If left running, the low-speed setting will automatically turn off after 2 hours (unless running a filter or heating cycle), and the high-speed setting will automatically turn off after 15 minutes.

WARM / COOL
To display the Set Temperature, press either the "WARM" or "COOL" button once. The LCD will begin to flash the set temperature. If you want to increase or decrease the desired temperature, press the "WARM" or "COOL" button accordingly. Once at the desired temperature, allow a few seconds for the flashing to cease. Your Set Temperature has now been successfully set.

MODE CHANGE
To change the mode on the spa, press "WARM" followed by "LIGHT." *(120V plug-and-play models come from the factory with the modes locked out. Refer to the permanent wiring conversion instructions to enable mode changes on page 10 or 11.)*

One-Pump + Blower Spas *or* Two-Pump Spas (2-speed + 1-speed) (406 Topsides)



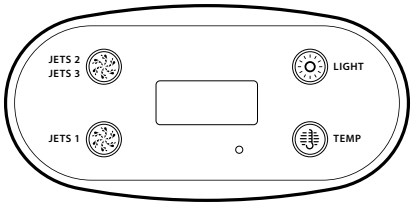
JETS / JETS 1
Press the "JETS" or "JETS 1" button to turn the main 2-speed pump on or off, and to shift between low and high speeds. If left running, the low speed of the pump will automatically turn off after 2 hours (unless running a filter or heating cycle), and the high speed will automatically turn off after 15 minutes.

JETS 2 / BLOWER / OPTION / BOOST
This button will operate the blower pump, if equipped, or the 1-speed pump.

MODE CHANGE
To change the mode on the spa, press "TEMP" followed by "LIGHT."

"TEMP" Button
To display the Set Temperature, press the "TEMP" button once. The LCD will begin to flash the set temperature. To change the set temperature, press the "TEMP" button again prior to the flashing timing out. The temperature will go either up or down. To change the temperature in the opposite direction, wait for the LCD to stop flashing. Press the "TEMP" button again to resume the LCD flashing screen, and then press the "TEMP" button. Once at the desired temperature, allow a few seconds for the flashing to cease. Your Set Temperature has now been set.

Two-Pump + Blower Spas *or* Three-Pump Spas (4 button topside) (406 Topsides)



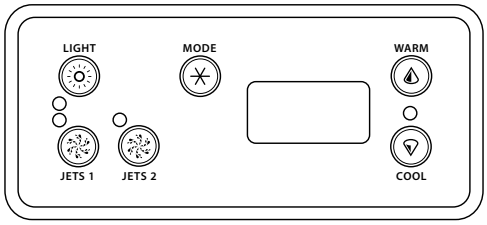
JETS 1
Press the "JETS 1" button to turn the main 2-speed pump on or off, and to shift between low and high speeds. If left running, the low-speed setting will automatically turn off after 2 hours (unless running a filter or heating cycle), and the high-speed setting will automatically turn off after 15 minutes.

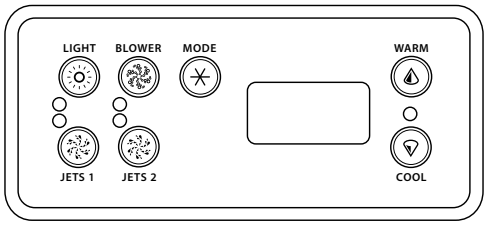
JETS 2 / JETS 3
Press the "JETS 2 / JETS 3" button:
1. Once to turn Pump 2 On / Pump 3 Off
2. Again to turn Pump 2 On / Pump 3 On
3. Again to turn Pump 3 On / Pump 2 Off
4. Again to turn Pumps 2 & 3 Off

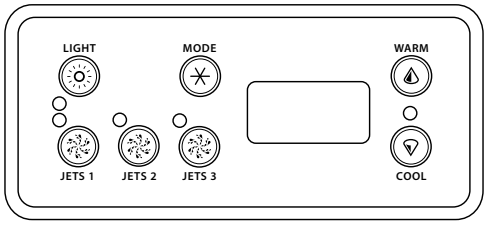
MODE CHANGE
To change the mode on the spa, press "TEMP" followed by "LIGHT."

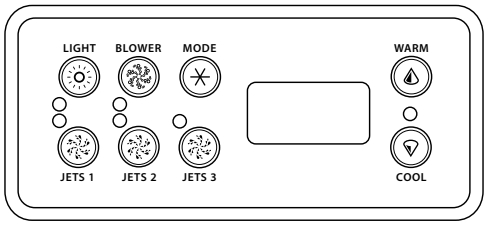
"TEMP" Button
To display the Set Temperature, press the "TEMP" button once. The LCD will begin to flash the set temperature. To change the set temperature, press the "TEMP" button again prior to the flashing timing out. The temperature will go either up or down. To change the temperature in the opposite direction, wait for the LCD to stop flashing. Press the "TEMP" button again to resume the LCD flashing screen, and then press the "TEMP" button. Once at the desired temperature, allow a few seconds for the flashing to cease. Your Set Temperature has now been set.

Two-Pump Spas, Two-Pump + Blower Spas, Three-Pump Spas, and Three-Pump + Blower Spas (6-8 button rectangle topside) (551 Topsides)









JETS 1

Press the "JETS 1" button once to turn pump 1 on or off, and to shift between low and high speeds, if equipped. If left running, the pump will turn off after a timeout period. The pump 1 low-speed timeout on some systems may be as long as two hours.

On non-circulation pump systems, the low speed of pump 1 runs when the blower or any other pump is on. It may also activate for at least 1 minute every 30 minutes to detect the spa temperature (polling) and then to heat to the set temperature if needed, depending upon mode. When the low speed turns on automatically, it cannot be deactivated from the panel; however, the high speed may be started.

JETS 2

Press the "JETS 2" button once to turn pump 2 on or off. If left running, the pump will turn off after a timeout period.

JETS 3 ***(optional on some systems)***

Press the "JETS 3" button once to turn pump 3 on or off. If left running, the pump will turn off after a timeout period.

BLOWER / BOOST ***(optional on some systems)***

1-speed operation: on/off; If left on, the blower will automatically turn off after a timeout period.

WARM / COOL

To display the Set Temperature, press either the "WARM" or "COOL" button once. The LCD will begin to flash the set temperature. If you want to increase or decrease the desired temperature, press the "WARM" or "COOL" button accordingly.

Once at the desired temperature, allow a few seconds for the flashing to cease. Your Set Temperature has now been successfully set.

MODE CHANGE

To change the mode on the spa, first press "MODE" to enter mode programming. Press "COOL" to cycle through to desired mode (LCD flashes until confirmed), then press "MODE" again to confirm the selection.

Modes exclusive to this topside are described below. For all other modes, refer to *Spas Modes Common to Digital Display Topsides* on page 21.

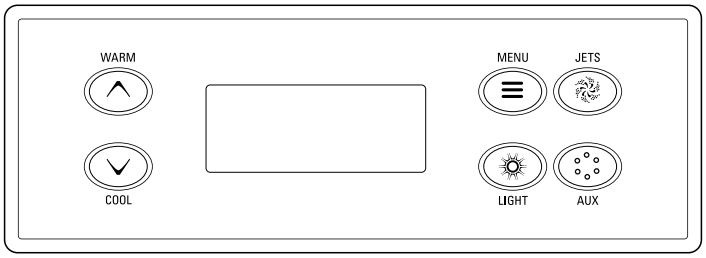
Standard-In-Economy mode

Pressing "JETS 1" while in Economy mode puts the spa in Standard-In-Economy mode, ("SE") which operates the same as Standard Mode, then reverts to Economy Mode automatically after 1 hour. During this time, pressing "COOL" or "WARM" followed by "LIGHT" will revert the mode to Economy immediately.

Standby Mode

Pressing "WARM" or "COOL" followed by "JETS 2" will turn off all spa functions temporarily. This is helpful when changing a filter. Pressing any button exits Standby mode. On some systems, the "JETS 1" button will control the pump in Standby Mode ("Drain Mode"). In this case, press any other button to exit. The system will revert to the previous mode after 1 hour.

One-Pump Spas or One-Pump + Circ Pump Spas or Two-Pump Spas (2-speed + 1-speed) (TP500 Topsides)

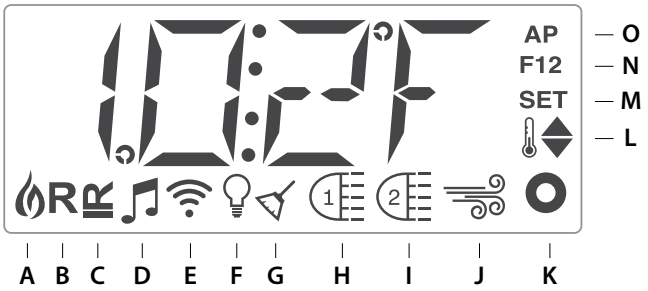


JETS / JETS 1
Press the "JETS" button to turn Pump 1 on or off and to shift between low and high speeds, if equipped. The pump will turn off automatically after a timeout period.
On non-circulation pump systems, Pump 1 runs at low speed when another pump is on. In Ready Mode, Pump 1 may activate periodically to detect the spa temperature (polling) and heat as needed. Automatic low speed operation cannot be deactivated from the panel; however, high speed may be started.

AUX / JETS 2
Operates the 1-speed pump.

WARM / COOL
On the main screen, press WARM or COOL once to display the Set Temperature. While the set temperature is flashing, press WARM/COOL to adjust the temperature accordingly. Once the desired temperature is displayed, wait a few seconds for the flashing to stop and the new setting will be saved.

SETTING THE TIME-OF-DAY
Time-of-Day is used for filtration cycles and other automatic features. From the main screen, press MENU/SELECT until "TIME" appears. If the clock has not been set, the display alternates between "SET" and "TIME." If the clock has been set, it alternates between "TIME" and the current time.
Press WARM/COOL to adjust the time. The hour flashes first. Use WARM/COOL to adjust the hour, then press MENU/SELECT to advance to the minutes. Adjust the minutes with WARM/COOL, then press MENU/SELECT to save and return to the main screen.
Note: In12-hour mode, "A" and "P" indicate AM and PM. To change between AM and PM, continue adjusting the hour through the 12-to-1 rollover.
The clock can be displayed in either 12- or 24-hour format. From the main screen, press MENU/SELECT until "PREF" appears, then press WARM/COOL to enter the Preferences menu. Press MENU/SELECT until "24-12" appears, use WARM/COOL to select 24 or 12, then press MENU/SELECT to save.
Note: Some spa systems may not retain the Time-of-Day during a power interruption. After power is restored, the clock may reset to 12:00 PM (Noon). Other settings remain stored. Reset the clock to maintain correct filter schedules.



A – Heat
B – Ready Mode
C – Rest Mode
D – bba™2 On
E – WiFi *(Cloud Connection)*
F – Light
G – Cleanup Cycle
H – Jets 1
I – Jets 2
J – Blower
K – Auxiliary *(Jets 3)*
L – Temperature Range *(High / Low)*
M – Set *(Programming)*
N – Filter Cycle *(1 or 2 or Both)*
O – AM or PM *(Time)*

FLIP/INVERT DISPLAY
Inverting the display makes the panel easier to read while sitting in the spa. From the main screen, press MENU/SELECT until "FLIP" appears. Press WARM/COOL to toggle the display orientation. Press MENU/SELECT to save, or wait a few seconds to return to the main screen. Repeat to restore the default display orientation.

TEMPERATURE RANGES
Two Temperature Ranges are available: High and Low.
In **High Range**, the set temperature can be adjusted between 80° - 104° F (26.5° - 40.0° C).
In **Low Range**, the set temperature can be adjusted between 50° - 99° F (10.0° - 37.0° C).
Each range maintains its own set temperature as programmed by the user. This allows the spa to heat to the set temperature associated with the selected range.
To change the Temperature Range, from the main screen, press MENU/SELECT until "TEMP" appears on the LCD. The thermometer icon will flash. Press WARM/COOL to toggle the icon between high and low range. Press MENU/SELECT to save the setting or wait a few seconds and the system will revert to its original setting.

HEAT MODES
Three Heat Modes are available: Ready, Rest, and Ready-in-Rest.
Ready Mode R maintains the water temperature near the Set Temperature and is recommended for frequent use.
Rest Mode R heats the water only during filter cycles, helping conserve energy during extended non-use. The main screen will display "RUN PUMP FOR TEMP" if the primary pump has not run for more than an hour.
Ready-in-Rest is an automatic sub-mode of Rest Mode. When the JETS button is pressed while in Rest Mode, the spa enters Ready-in-Rest Mode (denoted by R R) for one hour and attempts to maintain the water temperature near the Set Temperature. After one hour, the system reverts to Rest Mode. This mode may also be reset through the Mode Menu.
To change the Heat Mode, from the main screen, press MENU/SELECT repeatedly until "MODE" appears on the LCD. Press WARM/COOL to toggle between R and R. Press MENU/SELECT to set the mode, or wait for a few seconds and the system will revert to its original setting.

LOCK TEMPERATURE/PANEL

Locking the Temperature allows Jets and other features to be used while preventing changes to the Set Temperature and other programmed settings.

Locking the Panel disables controller operation, although all automatic functions continue to operate normally.

To Lock the Temperature, from the main screen, press MENU/SELECT repeatedly until "LOCK" appears on the LCD. Press WARM/COOL to display "TEMP." Press WARM/COOL again, and "OFF" will flash. Press WARM/COOL again, and "ON" will flash. Press MENU/SELECT to set Temperature Lock to ON, or wait a few seconds for the system to revert to its original settings. Either option returns the display to the main screen.

When Temperature Lock is active, pressing a temperature button will still display the Set Temperature. LOCK will appear if changes are attempted. Adjustable settings are also locked, while automatic functions continue to operate normally.

To Lock the Panel, from the main screen, press MENU/SELECT repeatedly until "LOCK" appears on the LCD. Press WARM/COOL to display "TEMP", then press MENU/SELECT to display "PANEL." Press WARM/COOL again, and "OFF" will flash. Press WARM/COOL again, and "ON" will flash. Press MENU/SELECT to set Panel Lock to ON, or wait a few seconds for the system to revert to its original settings. Either option returns the display to the main screen.

When the Panel is locked, "LOCK" will appear when any button is pressed.

The unlock sequence may be used from any screen that may be displayed on a restricted panel. Press and hold WARM/UP, then slowly press and release MENU/SELECT twice. "UNLOCK" will flash. After a few seconds the display will return to the main screen.

NOTE: The temperature will not Unlock if the Unlock sequence is performed while the panel is displaying "LOCK".

FILTER CYCLES

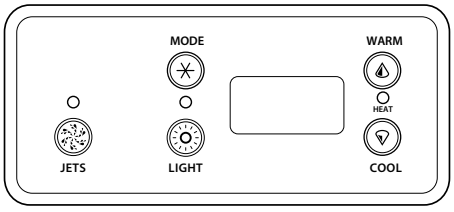
Filter Cycles are programmed using a start time and a duration. Start time is indicated by an "A" (AM) or "P" (PM) on the right side of the display. Duration settings do not display an "A" or "P" indicator. Each setting can be adjusted in 15-minute increments. The panel automatically calculates and displays the filter cycle end time.

To adjust filter cycle times, from the main screen, press MENU/SELECT repeatedly until "FILTER" with a small 1 appears to adjust Filter Cycle 1. Press WARM/COOL to display "BEGIN." Press WARM/COOL again to show the start time with the hour flashing. Press WARM/COOL to adjust the start hour, then press MENU/SELECT to set the hour. The minutes will begin flashing. Press WARM/COOL to change in 15-minute increments, then press MENU/SELECT to confirm. Now "RUN HRS" will appear. Press WARM/COOL to show the cycle length with the hour flashing. Press WARM/COOL to change the hour, then press MENU/SELECT to set the hour. Then the minutes will flash. Press WARM/COOL to adjust in 15-minute increments, then press MENU/SELECT to confirm. "F1 ENDS" and the calculated end time will be displayed. Press WARM/COOL to save the settings. The Panel will return to the main screen.

Waiting a few seconds at any point within the Filter cycle menu will return the display to the main screen. Any unsaved changes to the Filter Cycle Start Time or duration will be discarded.

To adjust Filter Cycle 2, while Filter 1 is displayed, press MENU/SELECT again to display "FILTER" with a small 2. Press WARM/COOL to display the current status ("OFF" or "ON"). Press WARM/COOL to toggle between OFF and ON. Press MENU/SELECT to save the setting. If set to ON, follow the same procedure used for Filter Cycle 1 to set the start time and direction. Filter Cycle 2 is OFF by default. It is possible to overlap Filter Cycle 1 and Filter Cycle 2, which will reduce the overall filtration by the overlap amount.

One-Pump Spas (VL701S Topsides)



JETS

Press the "JETS" button once to turn the main 2-speed pump on or off, and to shift between low and high speeds. If left running, the low-speed setting will automatically turn off after 2 hours (unless running a filter or heating cycle), and the high-speed setting will automatically turn off after 15 minutes.

WARM / COOL

To display the Set Temperature, press either the "WARM" or "COOL" button once. The LCD will begin to flash the set temperature. If you want to increase or decrease the desired temperature, press the "WARM" or "COOL" button accordingly. Once at the desired temperature, allow a few seconds for the flashing to cease. Your Set Temperature has now been successfully set.

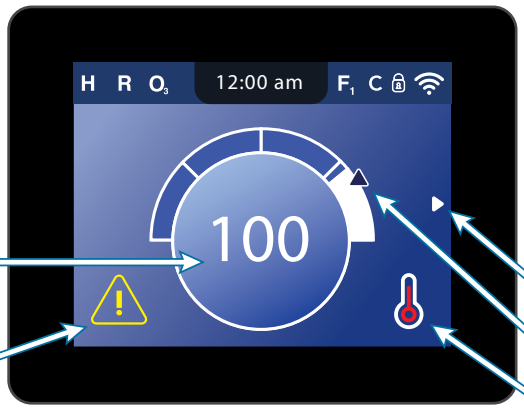
MODE CHANGE

To change the mode on the spa, press "WARM" or "COOL" followed by "LIGHT."

TP700 (Color Screen Topside)



Main Screen



TEMPERATURE RANGE
- H HIGH
- L LOW

HEAT MODE
- R READY
- IR REST
- RR READY-IN-REST
- O_3 OZONE RUNNING
- WATER TEMPERATURE

MESSAGE *(MAY APPEAR)*
- INFORMATION
- REMINDER
- ERROR - *NORMAL ERROR OR WARNING*
- ERROR - *SPA WILL NOT FUNCTION UNTIL FIXED*

FILTER CYCLES
- F_1 FILTER CYCLE 1
- F_2 FILTER CYCLE 2 *(OPTIONAL)*
- F_+ FILTER CYCLES 1 & 2 RUNNING TOGETHER
- C CLEANUP CYCLE *(OPTIONAL)*
- PANEL AND / OR SETTINGS LOCKED
- WIFI *(OPTIONAL)*
- NAVIGATION ARROW
- SET TEMPERATURE ARROW

HEATER STATUS
- HEATER ON
- HEATER OFF

**ICON FLASHES DURING HEATER START-UP*

Start Up

After power-up, the startup screen appears, and the spa enters Priming Mode. During Priming Mode, only pump icons are shown, and the heater is disabled. Refer to page 18 for more information on Priming the Pump.

Priming Mode lasts about 4 minutes and ends automatically or can be exited manually by selecting the back arrow ↩ and pressing SELECT.

Once Priming Mode ends, the display will show four dashes (- - - -), indicating the current water temperature is unknown. After the pumps run for a few minutes, the current water temperature will display. The dashes may reappear after the pump has not run for one hour.

Set Temperature

On the main screen, press SELECT to bring up the temperature menu. Press LEFT or RIGHT to adjust the Set Temperature. Once the desired Set Temperature is in the center box, either wait a few seconds or press SELECT to confirm. The spa will now heat to the new Set Temperature.

Run Spa Devices

Spa devices can be operated using the dedicated buttons or from the "Spa" screen. From the Main Screen, press the RIGHT button to enter the main menu. "Spa" is the first item in the main menu. Press SELECT to view the "Spa" screen. Use the navigation buttons to highlight a device and press SELECT to run it.

Depending on your spa configuration, some devices may only turn on and off or have multiple speeds. Up to six device icons are displayed at a time. If your spa has more than six, a menu arrow will appear. Press RIGHT to view more devices.

If the spa does not have a circulation pump, Jets 1 is a 2-speed pump and may run automatically for filtering and heating. In this situation, pressing the Jets 1 button changes the speed, but will not turn off the pump.

Settings

Fine-tune your spa with a variety of Settings. From the Main Screen, press RIGHT to enter the main menu. Navigate to "Settings" ⚙ and press SELECT to enter the "Settings" menu. Press DOWN to scroll through available Settings and press SELECT to open a Setting.

The following sections cover the most commonly used settings. Additional options may be available depending on your system configuration. Consult the full User Guide for complete details.

Setting the Time-of-Day
Time-of-Day is important for filtration cycles and other automatic features. If Time-of-Day has not been set, an Information icon will appear on the main screen. To set the Time-of-Day, in the "Settings" menu, select "Time" and the Time screen will appear. Use the navigation buttons to adjust the settings. Navigate to the Save icon ☑ and press SELECT to set the time-of-day. If you do not wish to make any changes, navigate to the Cancel icon ☒ and press SELECT.

Heat Settings
Heat Settings include Heat Modes and Temperature Ranges. There are three Heat Modes: Ready, Rest, and Ready-in-Rest. **Ready Mode** always maintains the water temperature close to the Set Temperature and is recommended for frequent spa use. **Rest Mode** only heats the water during filter cycles and can help conserve energy during extended periods of non-use. **Ready-in-Rest** is an automatic sub-mode of Rest Mode. When your spa is in Rest Mode, and you press the JETS 1 button, the spa enters Ready-in-Rest Mode for one hour and attempts to keep the water temperature near the Set Temperature.
Two Temperature Ranges are available: High and Low. In **High Range**, the set temperature can be adjusted between 80° - 104° F (26.5° - 40.0° C). In **Low Range**, the set temperature can be adjusted between 50° - 99° F (10.0° - 37.0° C).
To view or change the Heat Mode or Temperature Range, in the Settings menu, select "Heat" to enter the "Heat" screen. The current Heat Mode and Temp Range are displayed here, as well as icons on the main screen.
With Heat Mode highlighted, press SELECT to switch between Ready and Rest. Changes take effect immediately. Ready-in-Rest is a sub-feature of Rest Mode and is not selectable. If Ready-in-Rest is active and you want to cancel it, just go to view the current Heat Mode (where it will say Rest Mode) and exit. That will put the spa in Rest Mode.
With Temp Range highlighted, press SELECT to switch between High and Low. Changes take effect immediately.

Filter Cycles
In the Settings menu, select "Filter" to enter the "Filter" screen. Select a filter cycle start time or end time and press SELECT to view the time controls. Use the navigation buttons to adjust the time, then select the Save icon ☑ to save your changes or the Cancel icon ☒ to discard them.
Once start and end times are set, the cycle length is displayed under "Duration." Filter Cycle 1 is always enabled. Filter Cycle 2 can be enabled or disabled by navigating to the ② icon and pressing SELECT. A white ring around the cycle number indicates that the cycle is enabled. Filter Cycles 1 and 2 may overlap, reducing the overall filtration time. A duration of 2 hours is recommended to conserve energy. Increase or decrease the time as needed.

Lock Settings/Panel
A lock icon is displayed when the Panel, Settings, or both are locked. Locking the Panel disables controller operation, but all automatic functions will continue to operate normally. Locking the Settings allows Jets and other features to be used but prevents changes to the Set Temperature and other programmed settings.
In the Settings menu, select "Locks" to enter the "Lock" screen. The current lock states of "Settings" and "Panel" are indicated by the toggle switches. A grey toggle positioned to the left indicates unlocked, while a blue toggle positioned to the right indicates locked. To lock or unlock either option, highlight "Settings" or "Panel," then press-and-hold SELECT for five seconds. The toggle will change to indicate the new lock state.

Invert Display
From the Main Screen, press RIGHT to enter the main menu and navigate to the "Invert" icon. Press SELECT to invert the display orientation. This feature makes the panel easier to read while sitting in the spa. Repeat these steps to restore the default display orientation.

Chromazon3™ Lighting System

Some spas may be equipped with the Balboa Chromazon3 lighting system, which allows you to customize your spa's lighting using a touchscreen topside or TP-series topside with a full-color display.

Navigate to the Chromazon3 screen from the main menu. Press/Select the Power button/icon to turn the lighting system On or Off. You can then select the desired lighting zone to control.

Depending on your spa configuration, up to three independent zones may be available, labeled Zone A, Zone B, and Zone C by default. You can customize each zone with its own colors, brightness setting, and light pattern. *(NOTE: Some spa lights may not be connected to the Chromazon3 system and are instead controlled using the standard LIGHT button, see page 18.)*

Brightness Control: adjusts the light intensity.

Speed Control: adjusts how quickly lighting pattern colors transition.

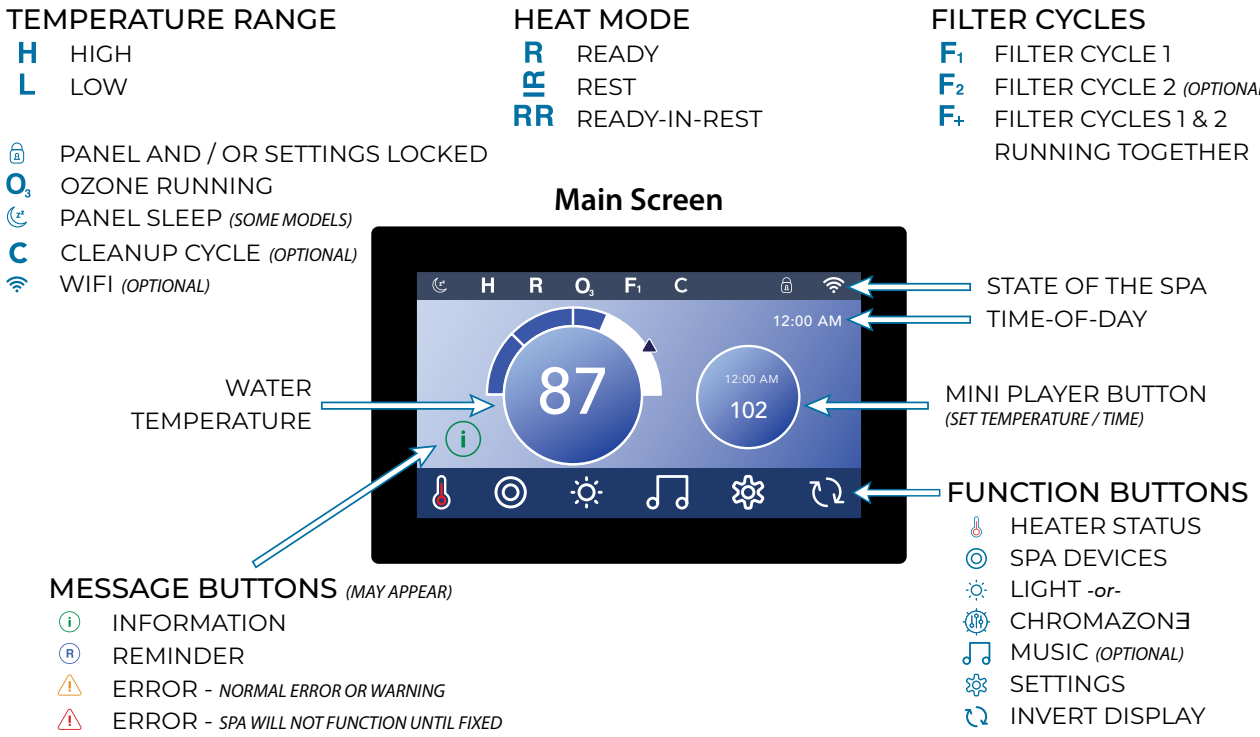
Color Wheel Pattern: cycles through the full color spectrum.

Party Pattern: cycles through a festive pattern (warm colors).

Lounge Pattern: cycles through a soothing pattern (cool colors).

Press a button once to turn on a pattern.
Press a button a second time to pause a pattern.
There are eight factory-default solid colors to choose from, which can be replaced with a custom color.
For more advanced settings, such as zone functions and groups, consult the full Chromazon3 User Guide.

SpaTouch3 (Touch Screen Topside)



Setting the Time-of-Day

To set the Time-of-Day, on the main screen, press the Settings button. On the Settings screen, press the Time button. On the Time-of-Day screen, press the Time button. Setting dials will appear. Swipe these dials to set the time. If your desired time value appears, but is not aligned with the arrow, tap the desired time value to make it align with the arrow. Press the Save button ☑ to save your settings, or press the Cancel button ☒ to cancel your settings.

Setting the time-of-day is important for determining filtration times and other background features.

Temperature

When the spa is powered on, four dashes (- - - -) are displayed, indicating that the water temperature is unknown. After the pump(s) run for a few minutes, the current water temperature will display. If the pump(s) are idle for one hour, the dashes may reappear.

Press the current water temperature to bring up the set temperature menu. Swipe the temperature options until the desired temperature appears. Touch the desired temperature to center it on the screen. Press the current temperature display again to exit the menu.

The Heater Status icon will turn red when the heater is on and flashes while the heater starts up.

Heat Settings

Navigate to the Heat Settings screen from the main screen by pressing the Settings button, then the Heat button. The Heat Settings screens do not have Save or Cancel buttons, so changes take effect immediately.

Press the Heat Mode button to switch between Ready and Rest Mode. **Ready Mode** keeps the water temperature within 1° F (0.5° C) of the Set temperature. **Rest Mode** functions the same as Ready Mode, except Rest Mode only heats the water during filter cycles.

Ready-in-Rest Mode is the same as Rest Mode, except Ready-in-Rest Mode heats the water, if necessary, for one hour when you turn on Jets 1. If the spa is in Ready-in-Rest mode and you go to the Heat Settings screen, Ready-in-Rest Mode will be canceled, and the spa will go back into Rest Mode, even if you press no buttons while on the Heat Settings screen.

There are two Temp Range settings: High and Low. Press the Temp Range button to switch between High and Low Range. The water temperature can be set between 80° - 104° F (26.6° - 40.0 C) when the Temp Range is set to **High**, and between 50° - 99° F (10.0° - 37.2° C) when the Temp Range is set to **Low**.

SpaTouch3 (Touch Screen Topside) *(continued)*

Filter Cycles

To set the Filter Cycles, press the Settings button on the main screen. On the Settings screen, press the Filter button. The Filter Cycles screen will display the start time, end time, and duration for Filter Cycles 1 and 2. Press the time under "Start" to set the Start Time for the respective Filter Cycle. Set the time using the dials. Press the Save button ☑ to save your settings, or press the Cancel button ☒ to cancel your settings. Follow the same steps to set the End Time. Once the Start and End Times are set, press the Save button on the Filter Cycles screen, and the length of each cycle will appear under "Duration." A white ring around the cycle number indicates that the Filter Cycle is enabled. Filter Cycle 1 is always enabled. To enable/disable Filter Cycle 2, press the ② button. Filter Cycle 2 will only run when it is enabled. It is possible to overlap Filter Cycle 1 and Filter Cycle 2, shortening the overall filtration by the overlap amount. Set the filter cycle to the recommended setting of 2 hours to conserve electricity. Increase or decrease the time as needed.

Device Controls

On the main screen, press the spa devices button to display the device controls. Some devices will only turn on or off, while others may have multiple speeds or states. Your particular spa configuration will determine the number of buttons and functions, with up to six buttons displayed on the screen at a time. Jets will turn off after a time-out period if left running.

If the spa has a circulation pump, an icon will appear on the main screen to indicate its activity. Pressing the "Circ" button during Priming Mode will turn the circulation pump on and off.

If the spa does not have a circulation pump, then Jets 1 is a 2-speed pump and may turn on automatically at times for filtering and heating. In this situation, pressing the Jets 1 button will change the speed but will not turn off Jets 1.

Mini Player Button (Set Temperature/Time)

The Mini Player button gives fast access to the Set Temperature and Time. Show or hide the Mini Player button by pressing the Heater Status button once.

Lock Settings/Panel

A lock icon is visible if the Panel or Settings are locked. Both the settings and the panel can be locked to prevent unwanted adjustments.

To lock the panel, on the main screen, press the settings button. The screen will display the locks for both the Settings and the Panel and their respective locked/unlocked status.

Press the Panel button to make the words "Lock Panel" appear at the top of the screen. Press and hold the area where "Lock Panel" is displayed for five seconds to lock the panel. To unlock, press the Panel button again. Unlock Panel will appear at the top of the screen. Press and hold the area where "Unlock Panel" is displayed for five seconds to unlock the panel. Locking the panel prevents the controller from being used, but all automatic functions are still active.

Follow the same steps to lock and unlock Settings. Locking the Settings allows Jets and other features to be used, but the Set Temperature and other programmed settings cannot be adjusted. Settings Lock allows access to a reduced selection of menu items. Specific settings can be seen but not changed or edited while locked.

Screen Sleep Mode

If the power to the spa is ON, but the screen is blank, the screen may be in sleep mode. After you touch the screen, one of three screens will appear depending on your current settings and the exact version of your topside:

1. The Main Screen will appear. The panel is awake.
2. A ① icon will appear. Wake up the panel by pressing the ① icon and then the ② icon.
3. A hand icon and arrows will appear. To wake up the panel, press the hand icon and swipe in the direction of the arrows.

By default, the panel automatically goes to sleep after one minute of inactivity. While the duration may be adjusted, the shortest time (1 minute) is recommended because it decreases the chance of water activating buttons.

Put the panel to sleep by pressing the Sleep button . Some panels may not have a sleep button.

Operational and Energy Tips

1. Control Valves – air and water controls on the top of the spa

a. Average to Cold Climate – When not in the spa, make sure the valves are turned off. All these valves will inject a certain amount of air into the water, which causes a cooling effect. Therefore your spa will have to heat more often and cost more money to operate.

b. Hot Climate – Hot tubs are only designed to heat up and maintain temperature. Therefore a hot climate can actually make a spa overheat. In these areas, the control valves can be left open all the time to promote evaporative cooling (this will cause some water loss).

2. Filter Settings – Time and Duration

- **For topsides without a built-in clock** *(models MVP240, 406, 551, and VL700)*: To set your filter time, power your spa on at desired filter start time. If you power the spa up at 8:00 am, it will filter at 8:00 am and 8:00 pm daily until the power is turned off and on again.
- **For topsides with a built-in clock** *(models TP700, 800, 801, 900, ST3)*: use Settings to set the exact time filtration will operate. (Confirm that the clock is set correctly).
- If your electric provider offers a different rate per KWH (peak/off-peak), you will want your filter time to take place during off-peak time.
- If you are experiencing overheating with your spa, have the spa filter run during cooler times of the day, and leave the control valves opened like mentioned prior.
- The factory setting is F2, which means the spa will filter 2 hours for every 12 hour period, 4 hours total per day. Most spa models use a large primary pump that moves a lot of water quickly (though some spas are equipped with smaller circulation pumps). Therefore, we recommend keeping your filtration cycle at a minimum setting. For topsides without a built-in clock *(models MVP240, 406, 551, and VL700),* keep the setting at no more than F4. For topsides with a built-in clock *(models TP700, 800, 801, 900, ST3)*, go into Settings and lower the filtration times to a minimum. Anything longer will waste electricity, and the spa may overheat in warm climates.

3. Heating Modes – Standard, Economy, and Sleep

(topside models MVP240, 406, 551 and VL700)

- These options are not always unlocked from the factory and may require a settings change. 230V/240V spas have all of the modes unlocked. 120V plug-and-play models come from the factory with the modes locked out. If the mode will not change after several attempts, a dip switch may need to be changed. Contact Customer Service for further information.

Standard / Ready is the default setting, and you are in standard/ready mode if none of the other setting codes show up.

- The temperature will be at or near the desired temperature constantly.
- Pumps turn on at regular intervals to check and maintain temperature.
- Best to use at startup of the spa, it will heat until the desired temperature is reached.
- Best to use in cold climates.
- Most costly to operate.

Economy / Rest is the power-saving alternative for regular heating. You will know that you are in economy/rest mode by the code displayed (Ec / Ecn / ***ECONOMY*** / IR). If the pump is running, the current temperature and code will alternate on the display.

- The spa will only heat during the filter period.
- The temperature will remain close to the desired temperature, but it will drop between filter periods.
- If users can get in a routine, the filter period should overlap the usage time by a half-hour. This will have the spa temperature closest to the desired temperature.
- For example, if using the spa at 8:00, have the spa filter from 6:30 – 8:30.
- Best used in mild to warm climates.
- Tests show a 20% reduction in energy consumption when compared to standard mode.

Sleep is considered a vacation heater setting and will maintain your spa water at the most affordable price. You will know that you are in sleep mode by the code displayed (SL or SLP).

- The spa will only heat during your filter period.
- The water temperature may drop up to 20 degrees below your desired temperature.
- It will work in all climates and will not allow the spa to freeze.
- Tests show a 50%+ reduction in energy consumption when compared to standard mode.
- Some topside models (800/900 and ST3) have a **Low Temp Range** mode where the water temperature can be set between 50°-99°F (10.0°-37.2°C). Setting your spa to a lower temperature can reduce your energy consumption.

4. Steam Loss/Venting Around Spa Cover

- It is normal to see an occasional burst of steam from around the cover due to pressure releasing from a high to low area. However, heat loss can be significantly impacted by the use of the spa.
- Control valves should be turned off when getting out of the spa in a cool climate.
- Air injects from the cabinet and enters the water area. That air will cool the water and cabinet area and increase the pressure under the cover, which will cause more steam to release.
- Surfaces are different for all spas, and covers may provide a better seal if spun differently.
- If the folding seam goes over the controller area, often more steam will be able to escape. Try to position the cover so that the fold seam goes over the wider top surface areas on the adjacent sides.

Proper Spa Cover Use

<u>Important! Keep the spa covered when not in use!</u>

- *Covered spas will use less electricity in maintaining your set temperature.*
- *Covering your spa will protect your spa's finish from the sun's ultraviolet rays.*
- *You are required to keep the spa covered to maintain warranty coverage.*
- *Covering your spa helps prevent children from drowning in the spa. Install cover latches and lock the straps down when not in use. Locks help prevent unwanted entry and keep the cover secure in windy conditions.*
- *In addition, while a soft spa cover is rigid, it is not designed to support any weight. Therefore, as a safety precaution and to preserve the life of your cover, you must not sit, stand, or lie on it, or place objects of any kind on top of it.*

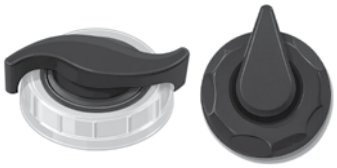
Personal Settings



Jets

Most jets in acrylic spas are adjustable. Rotating the face of an **adjustable jet** to the left (counter-clockwise) will increase the jet's amount of water flow. Rotating the face of an adjustable jet to the right (clockwise) will decrease the water flow.

Neck jets *(if equipped)* can be turned on and off using the nearby **water on/off knob**.





Blower jets are not adjustable, but can be turned on and off using the **Aux, Blower, Option,** or **Jets 3 / Pump 3** button on your Control Panel.

Fixed jets are primarily seen on roto-molded spas and are not adjustable. The jet face is tight to the surface of the spa.



Ozone and Ice Bucket Drain *(if equipped)*

If your spa is equipped with an **ozone** generator, a jet (typically located in the spa footwell) will expel ozone bubbles. The low flow is normal and this jet cannot be closed.

If your spa is equipped with an **ice bucket,** it will drain from the bottom of the bucket and out of a jet (usually located in the footwell). This jet will bubble if there is no water in the ice bucket.





Air Controls

Air controls are the **2" knobs** located around the top of your spa. Each one will let you add a mixture of air with the jet pressure. This is accomplished by rotating the air control knob to the left (counterclockwise) to increase the amount of airflow through the jets. To decrease the amount of airflow through the jets, rotate the handle to the right (clockwise).

Diverter Knobs *(if equipped)*



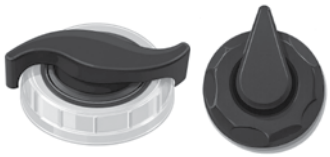
Diverter knobs are 4" knobs located around the top of your spa. They allow you to divert water through jets from one side of the spa to the other, or in most cases, from floor jets to wall jets. This is accomplished by rotating the diverter knob to the left (counterclockwise), decreasing the amount of water flow through a section of jets. To increase the amount of water flow through the other section of jets, rotate the handle to the right (clockwise).



It is best to turn the control while the pump is off or on low speed *(if equipped)*. While the pump is running on high speed, the pressure created makes it difficult to turn the knob.

Water Feature Controls *(if equipped)*

Some spas include waterfalls and/or water columns. Increase or decrease the waterfall flow using the **2" water on/off knob** nearest the water feature.



IMPORTANT! When your spa session is over, and before closing the spa cover, **these water features MUST be turned off by using the water control knob nearest to the feature.** If not turned off, water will continue to run through them, hitting the spa cover, and potentially cause draining of your spa, depending on how long they are left running.



⚠ WARNING Chemical Safety ⚠ WARNING

Read and follow all printed instructions listed on bottles and packages. Failure to follow chemical directions may result in serious injury, sickness, or even death. Add chemicals to the center of the spa with the pump running. Make sure the water is heated. ***Never add chemicals to cold water***, as this will affect chemical action. Also, never add chemicals directly into the skimmer.

Never add chemicals to your spa while bathers are in the spa!

Inhaling or ingesting chemicals will cause serious injury, sickness, or even death.

Do not exceed chemical dosages as recommended on chemical bottles and packages.

Never change chemical brands or types without completely draining, flushing, and thoroughly cleaning the spa and cover first.

Never mix chemicals together.

Do not allow chemicals to come in contact with skin, eyes, or clothing. Remove and wash clothing that may have been exposed to chemical contact before wearing them again.

Store chemicals completely out of the reach of children in an area that is well vented, cool, and dry. Failure to provide a proper chemical storage area may result in serious injury, sickness, fire, explosion, and even death. Do not store your chemicals inside the equipment area of your spa.

Testing and Adjusting Water Chemistry

Water shall be tested and treated in accordance with local codes.

NOTE: For Pool and Hot Tub Water Sanitation, see Uniform Swimming Pool, Spa and Hot Tub Code (USPSHTC), Chapter 5 - Water Quality.

- As the owner of a spa, it is important to maintain your spa water and keep your spa equipment in excellent condition. To do so, you must first balance your spa water.
- You will need to test and adjust the chemical balance of your spa water. Although this is not difficult, it needs to be done regularly.

There are two types of testing methods:

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

Balancing the Total Alkalinity

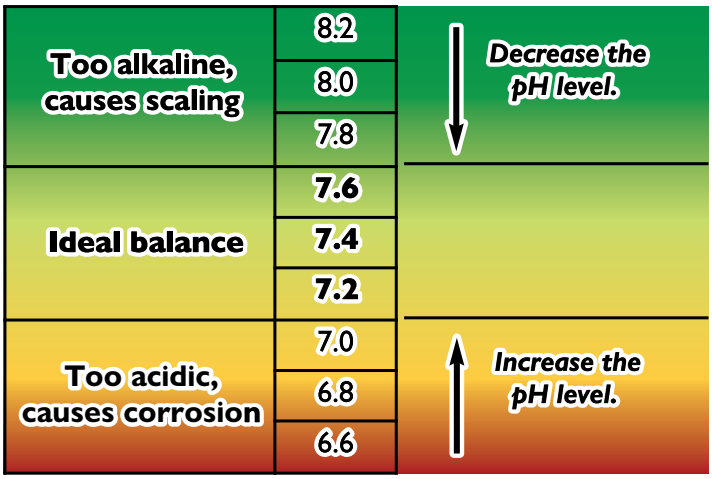
- Total alkalinity (TA) measures the total levels of carbonates, bicarbonates, hydroxides, and other alkaline substances in the water. TA can be considered a pH buffer. It is the measure of the ability of the water to resist changes in pH level.
- **The recommended total alkalinity is 80 - 120 ppm.**
- If the TA is too low, the pH level will fluctuate widely from high to low. Low TA can be corrected by adding an alkalinity increaser.
- If the TA is too high, the pH level will tend to be too high and may be difficult to bring down. High TA can be corrected by adding a pH decreaser.
- When the TA is balanced, it normally remains stable, although adding water with high or low alkalinity will raise or lower the TA level.

Balancing the Calcium Hardness

- Calcium hardness (CH) measures the total amount of dissolved calcium in the water. Calcium helps control the corrosive nature of the spa's water and is why soft water is not recommended. The low calcium content of soft water is very corrosive to the equipment and can cause the spa shell to stain.
- **The recommended calcium hardness is 150 - 200 ppm.**
- If the CH is too low, add liquid hardness increaser.
- If the CH is too high, dilute the spa water with soft water or, if this is not available, add stain and scale defense.
- When the CH is balanced, it normally remains stable, although adding soft water or very hard water will raise or lower the CH level.

For water quality issues, reference the* Troubleshooting Water Quality Problems *guide on page 40.

Testing and Adjusting Water Chemistry *(continued)*



Balancing the pH

- The pH level is the measure of the balance between acidity and alkalinity.
- The recommended pH is 7.2 - 7.6.
- If the pH is too low, it can cause corrosion of metal fixtures and the heating element.
- If the pH is too high, it can cause scaling by allowing metals or minerals to form deposits and stain spa surfaces.

Ozone

Ozone is a natural purifier. Chemically known as O_3, it is produced from simple oxygen molecules in our atmosphere. Ozone is produced in nature from lightning during electrical storms and from ultraviolet rays from the sun. It forms our protective ozone layer. Your spa's ozone generator is designed to duplicate this natural sanitizer. Ozone breaks down and oxidizes oils, suntan lotions, sweat, urea, etc. from spa water more effectively than commercial oxidizers. Ozone works with chlorine or bromine systems in your spa to destroy bacteria and viruses and will do so more effectively. Ozone only leaves simple oxygen in the water as a by-product.

If your spa is equipped with an ozone generator, it will automatically produce ozone, but it cannot be used as the sole means of maintaining safe spa water. You must select and use a spa chemical sanitizer in addition to your ozone generator. The ozone generator is a non-warranty item that will depreciate over time, and it needs to be replaced approximately every two years.

The spa or swim spa manufacturer shall provide instructions that the spa or swim spa water shall be tested and treated in accordance with local codes.

NOTE: For Pool and Hot Tub Water Sanitation, see Uniform Swimming Pool, Spa and Hot Tub Code (USPSHTC), Chapter 5 - Water Quality.

UV Sanitizers *(if equipped)*

UV sanitizers utilize ultraviolet (UV) light to deactivate or destroy harmful microorganisms in the water, such as bacteria and viruses. UV sanitizers should be used with other sanitation methods, not as the sole method. UV light can help reduce the amount of chemicals needed to treat the water, leading to less chemical odor and irritation for users. ***NOTE: UV sanitizers do not directly remove particles or debris from the water.***

Sanitation

You will need to decide which chemical sanitizer you wish to use, regardless of the presence of an ozonator or UV sanitizer. Spa owners still need to use a chemical sanitizer. Sanitizers kill bacteria and viruses and keep the water clean. A low sanitizer level will allow microbes to grow quickly in the spa water. Use either bromine or chlorine as your sanitizer or a non-chlorine/non-bromine sanitizer. All work well when maintained regularly. Consult your spa dealer for the right decision with regard to your lifestyle and spa usage. ***NOTE: Sanitizers will not work correctly to kill microbes if the pH is outside of the ideal range of 7.2 to 7.6.***

NOTE: This manual will cover general chlorine sanitation only.

If Using Chlorine as a Sanitizer

- ***Do NOT use Trichlor tablets or liquid chlorine.*** These harsh chemicals are very corrosive and can degrade the spa shell's appearance and damage spa components.
- ***Sodium dichlor*** is the only type of chlorine we recommend for spa use. Sodium dichlor is granular, fast-dissolving, and pH-neutral.
- At least once a week, check the chlorine level using either a test strip or a reagent kit. Refer to the product for the ideal range.
- Monitor chlorine levels of the spa water once weekly at a minimum, checking more frequently depending on the water conditions. Note that the chlorine dissipation rate will be faster at higher water temperatures and slower at lower temperatures.
- **Make sure no bathers are in the spa when you add chlorine.** After adding chlorine, open all jets and run the spa at high speed with the cover open for at least 30 minutes.

Testing and Adjusting Water Chemistry *(continued)*

If Using Bromine as a Sanitizer

Bromine is a very effective sanitizer that produces low chemical odors. Unlike chlorine, it can break down bacteria and other impurities to a safe level with a low burn-out rate. As bromine is a slow-dissolving chemical, it may take a few days to get an accurate reading.

Shocking the Water

- In addition to using a chemical sanitizer, you may need to shock the water. Shocking the water helps remove burned-out chemicals, bacteria, and other organic material from your spa's water and improves your sanitizer's effectiveness.
- Do not use chlorinating shock, which will damage your spa's jets and pump seals. Only use an oxidizer shock. It is an easy way to maintain chemical plans.
- For best results, use the directions below:
  Add oxidizer shock:
  - If sanitizer level temporarily reads low
  - After heavy bather loads
  - If water has a strong, foul odor. ***Do not get in the spa if the water has a foul odor.***

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

The manufacturer hereby claims no responsibility or liability for the use of and the quantities of the chemicals used. Read and follow all label instructions.

Do not use third-party salt-based systems in your spa! Damage caused by salt-based systems that have not been factory-installed will not be covered under your warranty.



Filtration

Regular cleaning of your filter is the easiest and most effective method to keep your water clear. A clogged or dirty filter will decrease water flow to the heater and cause the pump to work harder than necessary, possibly causing them to fail. The spa's heating system will only function with the proper amount of water flow through the system

Filter Cleaning



The filter is the part of your spa that removes the debris from the water and needs to be cleaned regularly to maximize your spa's filtering performance and heating efficiency.

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

We recommend you clean your filter once a month and replace it once every six months or as necessary. (For filter removal and installation instructions, refer to steps 6 and 9 of the *Initial Filling and Starting* procedure on page 16.)

- Remove the filter with the spa off.
- Place the dirty filter into a bucket of water deep enough to cover the filter. Add 8 oz of liquid filter cleaner to the bucket of water.
- Soak the filter for a minimum of 24 hours.
- Spray pleats of the filter with a water hose.
- Reinstall the filter.

Tip: Keep a spare filter to use in the spa while the dirty filter is being deep cleaned. ***Do not run the spa without a filter installed.*** Objects can easily get drawn into the pump and become lodged in its impeller, causing water flow and heating issues.

Vacation Care

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

- ALWAYS lock your cover using the cover locks if you plan to be away from home and the spa is filled with water.
- Follow the water quality instructions starting on page 33.
- Shock the water.
- Add either chlorine or bromine sanitizer.
- When you return, check water chemistry and adjust accordingly.
- **If you will not be using your spa for longer than 14 days and a spa maintenance service is not available, we strongly recommend you drain and winterize your spa. See page 38 for Winterization Procedure.**

Maintenance Schedule

Each time you refill the spa

- Follow sections 8-10 of the *Initial Filling and Starting* procedure on pages 16-17.

Before each use

- Test the spa water using either test strips or a reagent test kit. Adjust chemical levels as necessary.

Once a week (at minimum)

- Test the spa water using either test strips or a reagent test kit. Adjust chemical levels as necessary.

Once a month

- Deep clean your spa's filter.
- Apply spa vinyl cleaner/protectant to vinyl spa soft cover and pillows.

Every three-four months

- Drain and clean your spa with a non-abrasive cleaner. See *Draining Your Spa* on page 17.
- Polish shell with acrylic surface cleaner.
- Follow sections 8-10 of the *Initial Filling and Starting* procedure on pages 16-17.

*Every six months**

- Replace filter cartridge(s) if the pleats appear frayed or damaged.
  May require more frequent replacement, depending on use.

Every two years

- Replace your ozonator/UV bulb. ***(if applicable)***

Cleaning Your Spa

Acrylic Spa Shell

Each time you drain your spa, before you refill it, you should clean your spa shell with a low-detergent, non-abrasive cleaner specifically formulated to clean the spa without damaging its acrylic finish.

1. Spray cleaner directly to the spa's finish.
2. Wipe clean with a soft cloth.
3. Repeat on heavily calcified areas.
4. Wipe spa thoroughly with a wet sponge, rinsing often in a bucket of clean water.
5. Allow the spa to dry completely.

IMPORTANT: Do not use any of these products on spas full of water. Only apply to clean, cool, dry surfaces. Incorrect product usage may cause water issues.

Resin Spa Surface

For normal care and cleaning, use a soft cloth or sponge with soap and water. Rinse well and dry with a soft, clean cloth.

- Clean grease, oil, paint, and ink stains with isopropyl (rubbing) alcohol. Rinse well and dry with a soft, clean cloth.
- Never use abrasive cleaners.
- Do not allow your surface to come into contact with nail polish, nail polish remover, wintergreen oil (methyl salicylate), dry cleaning solution, lacquer thinners, gasoline, pine oil, etc.
- Avoid placing razor blades or other sharp instruments on this surface as they may scratch it. Small scratches can be removed by buffing lightly with a clean cloth and using either an automotive polishing liquid or a toothpaste containing a fine polishing ingredient, or using 1000-grit wet or dry sandpaper. For deeper scratches, contact customer service.

Spa Cover and Pillows

Protect the spa cover and pillows by applying a spa vinyl cleaner as part of your monthly maintenance plan. It is specifically designed to protect spa covers and pillows from chemical and ultraviolet light damage without leaving an oily residue behind.

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

If you won't be using your spa for an extended period (over 14 days) and don't plan to drain and winterize the spa, removing the pillows may help prevent premature breakdown due to chemical imbalance. Allow pillows to dry completely before they are stored.

Removing and Reattaching Spa Pillows





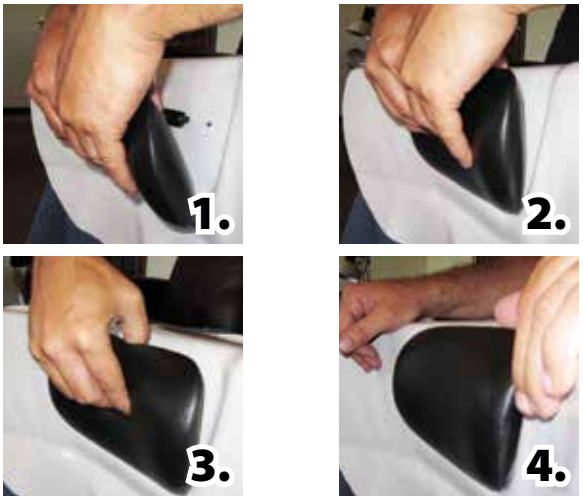
Spa pillows may be removed for cleaning, maintenance, or replacement. The removal and attachment procedure depends on the pillow's attachment method. Identify the pillow type and follow the corresponding instructions. Our spa pillows use one of two attachment methods: bar mount or socket mount.

The following pillow styles use a **bar mount**: diamond-pattern (criss-cross) pillows and rectangular lounge pillows.



To attach a bar-mount pillow:

1. Hold the pillow LOWER than the final pillow position.
2. Drag the pillow UPWARD, allowing the BOTTOM of the bracket to enter the slot in the pillow first.
3. As the pillow begins to attach to the bracket, press inward on the center of the pillow with your fingers.
4. The pillow will snap into place.



To remove a bar-mount pillow:

1. Pull the bottom of the pillow outward to release it from the bracket.
2. Lift the pillow upward and away from the pillow bar.

The following pillow styles use a **socket mount:** corner neck ('U'-shaped) pillows and SoftTouch Insignia pillows.



To attach a socket-mount pillow:

1. Align the pillow pegs with the sockets.
2. Press the pegs gently into the sockets until fully seated.



To remove a socket-mount pillow:

- Pull gently upward on the pillow to disengage the pegs from the sockets.

Winterization Procedure

1. **Turn off power at the GFCI circuit breaker before draining or servicing your spa.**
2. Remove exterior panels. See the *Panel Removal Guide* on the next page.
3. Locate the drain valve inside the cabinet and remove the cap. Attach a garden hose to the drain and open the ball valve (Figure 1). Water will start to drain. You may have some water left in the spa shell that did not drain. Remove the remaining water with a wet-vac or by hand with a small cup.

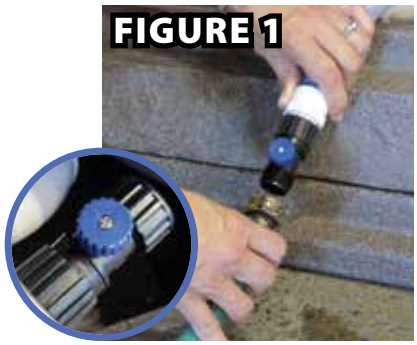
Water drained from your spa is safe to dispose of in your yard, septic system, or in a drain. Follow all local/municipal codes and regulations for disposal.

4. Loosen all large unions from heater and pump(s) to let the excess water drain from the lines (Figure 2). ***Your spa may have more than one pump. Be sure to follow winterization procedures for each pump and all unions. A one-pump spa has 4 unions; a two-pump spa has 6.***
5. After the spa has drained, you MUST also use a wet-vac to remove the water from the lines by vacuum/suction. Water left in the lines and jets will freeze and damage them. To adequately clean out the lines, place the wet-vac for 10-15 seconds or until dry, over the drain (Figure 3); each union (Figures 4 and 5); each jet face (Figure 6); each suction (Figure 7); and the filter cavity after removing the filter (Figure 8). *The filter can remain un-installed until the spa gets de-winterized.*
6. Once all components are vacuumed, close the drain valve, and reinstall all unions with gaskets, except for the top of the pumps.
7. Pour a gallon of spa antifreeze into the top of each pump (Figure 9) and a gallon into the filter cavity (Figure 10).
8. Tighten all remaining unions with gaskets and make sure all gate valves are open with clips installed (Figure 2). Reinstall the drain cap.
9. Replace all exterior panels.
10. Close your spa cover.

Important: Damage caused by improper winterization is not covered under the manufacturer's warranty.

***If you have any questions, please call Technical Support at 1-800-787-6649 or visit* strongspasupport.com**

You may also wish to contact a professional to perform these services for you.


FIGURE 1

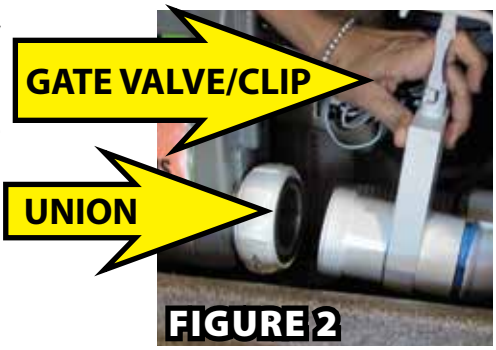


FIGURE 2


FIGURE 3


FIGURE 4


FIGURE 5


FIGURE 6


FIGURE 7


FIGURE 8



FIGURE 9

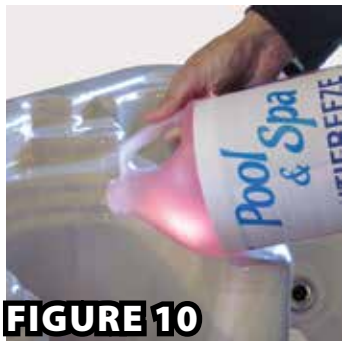


FIGURE 10

Panel Removal Guide

WARNING: Always turn off power at the GFCI circuit breaker before draining or servicing your spa.

At times it will be necessary to remove the side panels from your spa for winterization, troubleshooting, or other servicing. The method of gaining access to the spa components depends on your particular spa model:

- If your spa has a key lock, unlock and open the access door (Figure 1).
- For panels without screws, remove the exterior panels by inserting a flathead screwdriver at the bottom of the panel and prying outward (Figure 2). The panel will pop out. Lift the panel out of the cabinet. To re-insert, tilt the top of the panel into the cabinet opening so that the clip is engaged into the lip. Then push the bottom of the panel upward and then inward until it snaps into place.
- Some panels have decorative screw caps. Remove the caps with a flathead screwdriver (Figure 3), then remove the screws that hold the panels in place (Figure 4, Figure 5).
- Some spa models have a sheet of foam insulation behind the panel (Figure 6). Depending on when the spa was manufactured, it may be necessary to unfasten the screws on the corner panels to remove the foam sheet. It is unnecessary to remove the entire corner panel; unfasten the screws on the same side of the sheet you want to remove.
- Other models have T-trim on both ends of the center panel. First, unfasten the screws from the T-trim (Figure 7) and remove them. Next, unfasten the screws from the bottom of the panel (Figure 8). Remove the panel.
- Some models have two removable panels on each side. Removing both panels may be necessary to access some spa components, such as the spa pack (Figure 9).


FIGURE 1


FIGURE 2

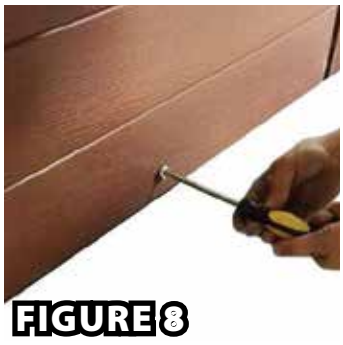

FIGURE 3


FIGURE 4


FIGURE 5


FIGURE 6


FIGURE 7


FIGURE 8

De-Winterization Procedure

1. Use a garden hose to rinse your spa with regular tap water. Run water into the jets and filter canister to push out any remaining antifreeze from the lines.
2. Fill the footwell with water and drain using the guidelines stated in *Draining Your Spa*, page 17. Keep running water over the jets and filter canister until the water draining from the spa runs clear and is free of antifreeze.

Water drained from your spa is safe to dispose of in your yard, septic system or in a drain. Follow all local/municipal codes and regulations for disposal.


FIGURE 9

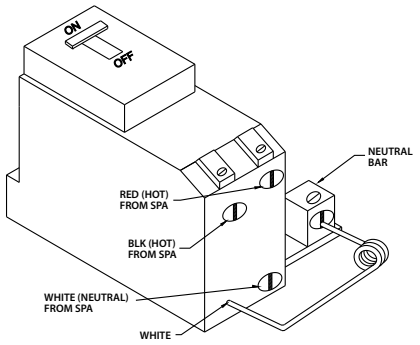
Troubleshooting Water Quality Problems

Problem	Probable Causes	Possible Solutions
Water is cloudy	• Dirty/Misaligned filter • Inadequate or improper sanitizing • Oils, lotions, organic matter, Bio-Film, scaling • Old water • Improper pH, alkalinity, calcium hardness levels • Metals present within water • Recent high bather load	• Clean/Adjust or Replace the filter • Flush/Purge spa system • Drain, clean and refill spa • Test/Adjust pH, alkalinity, calcium hardness levels • Test/Adjust sanitizer levels • Use a Metal Sequestrant • Shock the spa
Algae	• Leaving spa uncovered • Sanitizer too low • pH too high • Bad filtration	• Keep Spa covered when not in use • Test/Adjust pH levels • Test/Adjust sanitizer levels • Clean/Adjust or Replace the filter • Shock the spa • To prevent algae use an algaecide
Organic buildup or scum ring around spa	• Dirty/Misaligned filter • Oils, lotions, organic matter • Metals present within water • Improper pH calcium hardness levels	• Clean/Adjust or Replace the filter • Flush/Purge spa system • Use a Metal Sequestrant • Test/Adjust pH, calcium hardness levels • Wipe off scum ring using a clean rag. You may need to drain, clean and refill your spa.
Chlorine odor	• Chlorine level too high • pH too low	• Test/Adjust pH • Test/Adjust sanitizer levels
Musty odor	• Algae or bacteria • Inadequate or improper sanitizing • Oils, lotions, organic matter, Bio-Film • Improper pH levels • Recent high bather load	• Shock the spa • Test/Adjust pH • Test/Adjust sanitizer levels • Flush/Purge spa system • Drain, clean and refill spa
Eye irritation	• Improper pH levels • Inadequate or improper sanitizing	• Adjust pH to balance • Test/Adjust sanitizer levels
Skin irritation or rash	• Inadequate or improper sanitizing • Sanitizer level too high • Bacterial contamination	• Test/Adjust pH • Test/Adjust sanitizer levels • Shock spa • Allow sanitizer level to drop naturally to below 5 ppm before using spa • Flush/Purge spa system, replace the filter, drain, clean and refill spa
Stains	• Typical dirt and grime • Improper pH, alkalinity, calcium hardness levels • Calcium build-up • Rust/Corrosion	• Drain, clean and refill spa • Test/Adjust pH, alkalinity, calcium hardness levels • Use stain and scale inhibitor • Use a Metal Sequestrant
Scale	• Improper pH, alkalinity, calcium hardness levels • Metals present within water • Oils, lotions, Other contaminants	• Test/Adjust pH, alkalinity, calcium hardness levels • Use a Metal Sequestrant • Flush/Purge spa system • Drain, clean and refill spa • Use stain and scale inhibitor

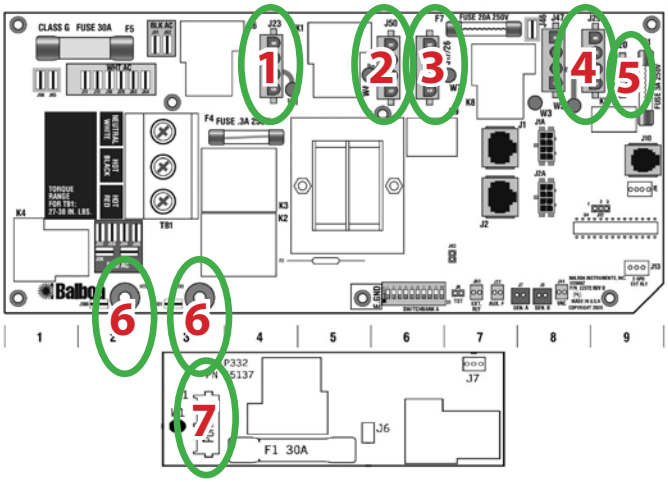
No Power (Breaker Tripping Constantly)

WARNING: Always turn off power to the spa at the breaker or cord when troubleshooting electrical issues.

1. ***Verify the wiring of the GFCI breaker. (New Installs Only)***
   a. The neutral wire to the spa must be connected to the GFCI breaker, not a neutral bus bar.
   b. If the neutral wire is not connected directly into the GFCI breaker, the GFCI breaker will not turn on.
2. ***Look for leaks.***
   a. Inspect the inside of the cabinet, looking for any sign of a leak.
   b. If water is leaking onto an electric component, it may cause the breaker to trip.
3. ***Test each individual component. (pump/s (1/7), constant on (2), blower (3), ozone (4), lights(5), heater (6))***
   a. To test each component, disconnect one plug at a time and try the breaker.
   b. When the breaker holds, the disconnected component is likely the cause of the issue.
   c. Replace component.
4. ***Test the spa GFCI breaker.***
   a. To test the GFCI breaker, remove the incoming electrical wires from the spa pack.
   b. Once all wires are removed, turn on the breaker.
   c. If the breaker continues to trip without the spa connected, verify that all of the wiring is correct. If the wiring is correct, replace the breaker.
5. ***Replace the spa pack.***
   - If the spa is wired properly, each component has been disconnected from the circuit board, and the breaker trips when the spa power is applied, replace the spa pack.



TYPICAL GFCI ISOMETRIC VIEW



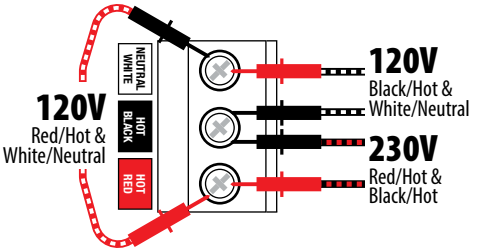
Example spa pack circuit board layout, yours may vary. Consult diagram on the inside of the spa pack lid.

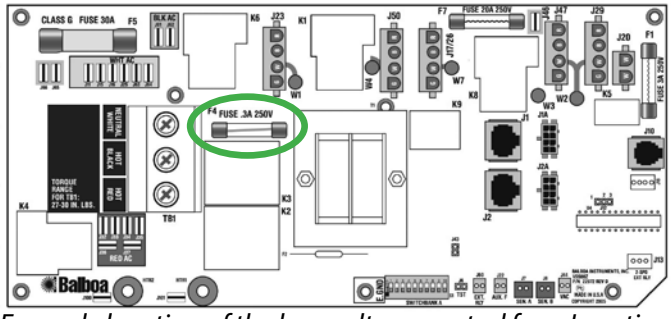
No Power (Breaker Holding - No Display / Response)

1. ***Check voltage to the spa.***
   - Check to make sure the spa has the proper voltage at the terminal block within the spa pack (see diagram).

2. Inspect the low-voltage control fuse. (Amperage varies by spa pack model, such as 0.1A, 0.16A, 0.2A, 0.3A, or 0.5A. Consult the exact amperage printed directly on the circuit board or the wiring diagram on the inside of the spa pack lid.)

   a. Turn the power off at the breaker/cord.
   b. Remove the fuse from the circuit board of the spa.
   c. Test the fuse for continuity.
   d. If the fuse is blown, replace it with an identical, appropriately rated and sized slow-blow fuse. A spare fuse may be located in the information package on the front of the spa pack lid.

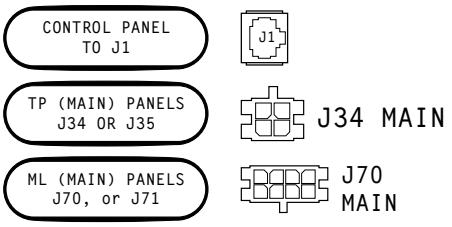




Example location of the low-voltage control fuse. Location and amperage ratings vary by model. Consult the exact amperage printed directly on the circuit board or the wiring diagram on the inside of the spa pack lid.

No Power (Breaker Holding - No Display/Response) *(continued)*

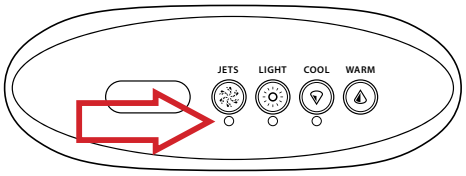
3. ***Test topside control.***
   a. Turn off power at breaker/cord.
   b. Unplug topside control from the circuit board.
   c. Turn on the breaker/cord.
   d. Wait up to 10 minutes.
   e. If spa pumps turn on, replace topside control.
4. **Replace the spa pack.**
   - If the spa has the proper voltage, the low-voltage control fuse is good, and if after 10 minutes the spa fails to turn anything on, replace the spa pack.

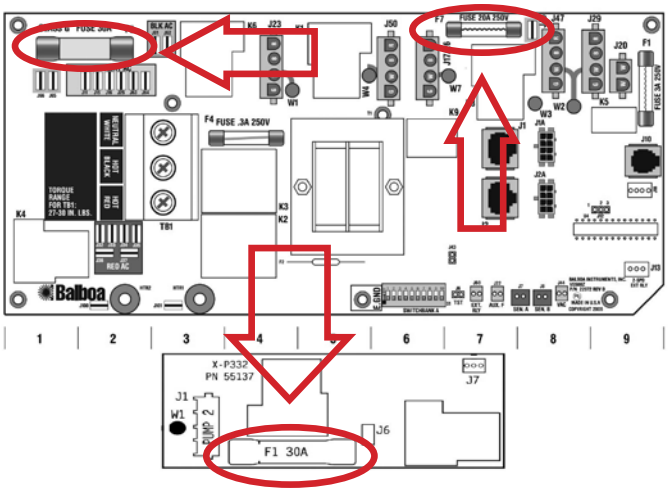


Consult the diagram inside the spa pack lid and locate the oval callout for the topside connector location on the circuit board. Examples shown above, yours may vary.

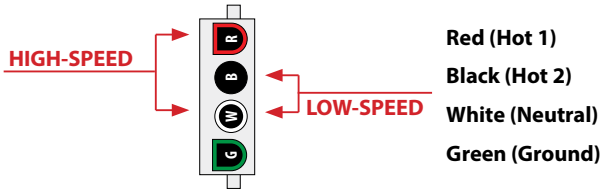
Pump/Blower Not Operating

1. ***Verify the topside button is functioning.***
   a. When the topside button is pressed, inspect the button LED for illumination.
   b. When the topside button is pressed, it should cause a relay in the electrical pack to activate and make a "clicking sound."
   c. If the button fails to illuminate and the relay is not activating, the topside may need to be replaced.
2. ***Inspect 30 amp/20 amp fuse.***
   a. Each pump/blower will have its own fuse. (when a spa has three water pumps, pumps 2 and 3 share a 30 amp fuse).
   b. Turn the power off at the breaker/cord.
   c. Remove the fuse from the circuit board of the spa.
   d. Test fuse for continuity.
   e. If the fuse is blown, replace it with an identical replacement.
3. ***Test voltage to pump.***
   a. Test voltage from pump plug in port, when the pump should be running.
   b. Check voltage between Red/Hot 1 and White/Neutral for high-speed voltage.
   c. Check voltage between Black/Hot 2 and the White/Neutral for low speed.
   d. If the voltage provided to the pump is proper, replace the pump.
   e. If the voltage is incorrect, check the jumper wire at the component location and set it to the correct location for the proper voltage.
4. ***Test a working component.***
   a. If unable to test the voltage or double-check your findings, you can use another pump or blower that is currently functioning and plug it into the port the non-working pump is plugged into to test it.
   b. You can also plug the non-working pump into a port known to be functional and press the corresponding button to test the non-working pump.
5. ***Check voltage to the spa.***
   a. Check to make sure the spa has the proper voltage at the terminal block within the spa pack.
   b. Alternatively, check the voltage at the topside panel. You can verify it in one of two ways:
      i. For advanced topsides (such as TP700 or ST3), it can be verified in the system's diagnostics menu.
      ii. For basic topsides, turn the spa off and then back on. As the spa powers up, watch during the start codes for 12 (for 120V) or 24 (for 240V).
6. ***Replace the spa pack.***
   - If the topside button is illuminating, the fuse is good, the spa has the proper voltage, but the pump plug port is providing incorrect or no voltage to the pump, or if the spa pack is providing voltage to both high and low speed at the same time, replace the spa pack.





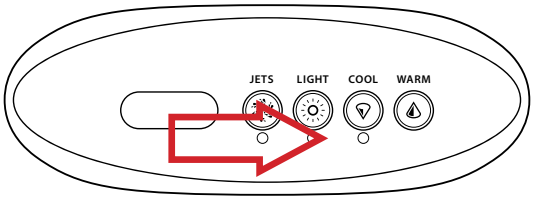
Example spa pack circuit board layout, yours may vary. Consult diagram on the inside of the spa pack lid.



Note the flat sides in connector. The orientation of the connectors varies between spa pack models.

Spa failing to heat

1. ***Any codes?***
   a. On the display of the spa, there may be codes that may indicate as to why the spa is failing to heat, such as (hh, oh, ic, sa, sb, sn, hl, lf, dr, dy, ec, sl, ohh, ohs, sna, snb, sns, hfl, dry, ice, ecn, slp, se).
   b. Hh, oh, hl, lf, dr, dy, ohh, ohs, hfl, dry are flow codes indicating an inadequate amount of water flow through the heater tube. See flow issues.
   c. Ic, ice are potential ice condition codes. This indicates that the temperature of the water is approaching freezing conditions. This will not allow the heater to turn on until the temperature of the spa exceeds 45 degrees. Add warm water to the filter area until the temperature of the spa increases above 45 degrees or until the heater engages.
   d. Sa, sb, sn, sna, snb, sns are sensor codes indicating an issue with one or both sensors. Sa and sna indicate sensor A is having an issue. Sb and snb indicate sensor B is having an issue. Sn and sns indicate the sensors are out of balance. Swap where the sensors plug into the circuit board. If the code changes, the issue is with the individual sensor. If the same code persists, replace the pack.
   e. Ec, sl, ecn, rest, slp, se indicate the spa's current mode. If the spa is not in standard mode, it may not maintain the desired temperature. Change the heating mode to standard mode.
2. ***Is the spa calling for heat?***
   - On the topside control, there is either an LED by the warm, cool, or temperature button or an indicator on the display. If the respective light or indicator is on, the spa is calling for heat. If it is not, the spa is not trying to heat.
3. ***Check voltage to the spa.***
   - Check to make sure the spa has the proper voltage at the terminal block within the spa pack.
4. ***Test voltage to the heater.***
   - Test the voltage being provided to the heater by testing between the two copper straps connecting the heater to the circuit board. The heater should have the exact same voltage the spa is receiving.
5. ***Replace heater/pack.***
   a. If there are no codes on the display, the spa is set to standard mode, the heater LED light is illuminated, the spa pack is receiving the proper voltage, but the heater is not, replace the pack.
   b. If the heater is receiving the proper voltage, replace the heater.





Close-up of the two copper straps that connect the heater to the spa pack circuit board.

Spa Overheating

1. ***Why a spa overheats***
   a. Spas are designed to get hot and do not contain a cooling system.
   b. A spa can overheat if the outside temperature is hot, the spa is in direct sunlight, the filtration cycle is set too high, or a possible stuck relay on the circuit board.
2. ***Outside temperature/direct sunlight.***
   a. If the outside temperature is too high, it will heat the spa in addition to the heater within the spa.
   b. To cool the spa down, the mode can be changed to economy/rest or sleep, the air valves can be opened, or the cover may be left off for a short period of time to allow the excess heat to escape.
3. ***Filtration cycle settings.***
   a. If the filtration cycle setting is set too high, the pump will run more, building up excess heat within the spa cabinet.
   b. This heat is then transferred into the water and overheats the spa.
   c. Adjust the filtration cycle settings to f2 or fil2, or to night time on capable topsides.
4. ***Stuck relay.***
   a. When a relay becomes stuck on the heater's circuit board, it will not allow the heater to turn off.
   b. If this is the issue, the heater will continue running and overheat within its tube when the pump turns off.
   c. When this occurs, the spa shuts down and stops heating, displaying a flow code. This is rare, but it can happen.
   d. If a relay is determined to be the cause of the issue, replace the pack.

Troubleshooting Operations

Flow issues

1. ***Determine the extent of the flow issue.***
   - First, determine if the flow issue is with one individual jet, multiple random jets, or an entire section of the spa.
2. ***Individual jet/multiple random jets.***
   a. Note: the ozone/ice bucket jet always has low flow and cannot be closed. The jet internals are intentionally cut to allow for proper flow to the venturi valve (*see* Ozone and Ice Bucket Drain*, page 32*).
   b. If one single jet is failing to flow properly, first make sure the jet is open by rotating it counterclockwise.
   c. If this fails to work, there is either something stuck in it preventing flow or a kinked hose.
   d. Remove jet insert.
   e. Inspect for kinked hose.
   f. Once insert is removed, any obstruction should flow out into the spa or be stuck in the nozzle.
   g. Return jet insert to spa.
3. ***Entire section of spa.***
   a. For each pump within the spa there are two gate valves. Make sure these are fully open with retainer clip installed.
   b. If spa is equipped with a water divertor valve, make sure the valve is in the correct direction allowing water flow to the designated area.
   c. If the spa has more than one jet/boost button, make sure all pumps have been activated.
   d. Check to see if the spa has a hidden jet/boost button. If so, replace overlay.
   e. If section of spa in question is connected to pump 1, inspect filter for cleanliness and make sure it is free of debris.
   f. If the filter appears to be expanding, cracking the top or bottom of the filter plastic, or the filter is needing to be replaced more frequently than normal; inspect filter canister for proper direction of flow.
   g. The pump may have an air lock (*see page 18*).
   h. If the pump is failing to turn on at all, see *Pump/Blower Not Operating*, page 42.

Unresponsive controls

1. ***Determine the extent of the issue***
   - First determine if one button is failing to operate, all buttons fail to operate, the display is blank, any codes are present, buttons do not operate proper components, or the screen is constantly cycling.
2. ***One component button.***
   a. If one component button (such as jets/pumps, blower, or lights) is failing to operate, first unplug and plug in topside.
   b. Inspect fuse and component port for power.
   c. If no power and fuse is good, replace topside.
3. ***One non-component button.***
   - If the button that fails to work is a non-component button (such as warm, cool, temp, or mode), replace the topside after unplugging and plugging back in fails to resolve the issue.
4. ***All buttons.***
   a. If all buttons are failing to operate, first unplug and plug in topside.
   b. If this fails to resolve the issue, but the spa is continuing to run on its own, replace topside.
5. ***Blank display.***
   a. If the display is blank, first unplug and plug in topside.
   b. If this fails to resolve the issue but the spa is still continuing to run on its own, replace topside.
6. ***Codes on display.***
   - If there are any codes on the display, see the list of codes beginning on page 48.
7. ***Buttons operate incorrectly.***
   a. If the buttons on the topside all work but operate the incorrect components, first make sure the topside overlay is not installed upside down.
   b. Inspect dip switches for proper settings.
8. ***Display constantly cycling.***
   a. If the screen is constantly cycling between the filtration cycles, the heating modes, the temperature is constantly going to 104 or 80 and blinking, or if a component light is constantly flashing on/off, there is most likely a stuck button on the topside. If so, replace topside.
   b. Note: this does not include when the spa is in sleep or economy mode and the topside will flash between the current temperature and either ec or sl for the mode it is in.

Stuck valve

1. ***Do not open valves while the spa is on!!!***
   - All valves in the spa may be under pressure and should not be opened while the spa is in operation. To prevent damage to the spa and to avoid injury, the spa must be powered off completely.
2. ***Glued valve?***
   a. On a new install, it is possible that the valve may have been glued and then allowed to sit upside down, allowing the glue to flow into the valve, causing it to stick fast.
   b. If the valve is glued and the glue cannot be removed, the valve must be replaced.
3. ***Calcium levels.***
   a. If the spa's calcium levels get too high, scaling may occur within sections of the spa. The internal of the valve has very little room to function. If scaling occurs within the valve, it may no longer rotate.
   b. Turn off spa
   c. Remove valve internal from the valve housing.
   d. Clean internal and valve housing using a spa-safe decalcifier.
   e. Water in the spa may need to be changed or treated.
4. ***Obstruction within the valve.***
   a. If anything were able to get past the filter or suctions within the spa, it could end up inside a valve.
   b. Turn off the spa.
   c. Remove the handle and internals of the valve and inspect for any obstructions.
   d. Return valve parts to the spa.
5. ***Sediment within the water.***
   a. Sediments from sand, dirt, and some of the spa's chemicals can settle in different areas, such as the valves.
   b. When enough builds up, it will affect the ability of the valve to rotate.
   c. Turn off the spa.
   d. Remove the valve's handle and internals and inspect for any build-up of sediments on the valve internals.
   e. If found, clean internals and drain/refill spa.

Noise issues

1. ***Determine the type of sound.***
   a. Grinding – is a good indication that the bearings are failing.
      - If bearings are failing pump will need to be rebuilt or replaced.
   b. Vibrating – typically a loose connection, pump or grounding wire on pump.
      - Inspect for loose connection and tighten.
   c. Rattling – can be debris in the pump or other plumbing that is bouncing around.
      - Inspect the location of the sound by removing unions and removing any debris found.
   d. Buzzing – usually occurs when the pump is seized or receiving improper power.
      i. Inspect voltage the pump is receiving.
      ii. If the pump is 2-speed, verify that both high and low speed are not both energized simultaneously.
      iii. If voltage is correct, replace pump.
   e. Surging – occurs when air is entering the pump through the filter.
      i. Make sure water level in spa is high enough.
      ii. Verify that the zip tie on the weir has been removed.
   f. Clicking – occurs within the spa pack. This would be the relays activating.
2. ***Determine the location of sound.***
   a. The most common sound location would be from the pumps as they contain the only constantly moving parts.
   b. Electrical packs can also make sounds other than the clicking of the relays but these are less likely.

Leaks

1. **Visible leak.**
   a. First, determine if the leak is visible.
   b. Visible leaks are the easiest to repair as they are usually accessible and properly diagnosed.
2. **Non-visible leak.**
   a. Water must first collect in the base of the spa prior to being able to run outside of the spa.
   b. The general area should be able to be determined by where the water is pooling within the spa cabinet.
   c. Once the general area has been determined, start from the top and work your way down, inspecting for any signs of chemical residue or moisture.

Leaks *(continued)*

3. Simple leaks.

a. Pump or pack unions.
   i. Verify union is snug.
   ii. Verify union gasket is in good shape.
   iii. Verify the union is not cross-threaded.

b. Jets and other wall fittings
   i. Some jets are fitted with an SQR gasket, which creates a radial seal:
      • If the gasket is in good condition, check that gasket is seated correctly and for chips in the acrylic around the hole.
      • Measure the diameter of the hole. The proper hole diameter for the gasket is printed on the gasket (with a tolerance of +/- 1/32").
   ii. For standard fittings with a nut and gasket:
      • Make sure nut on wall fitting/jet is snug allowing the gasket to seal.
      • If tightening fails to resolve issue, inspect gasket.
      • If gasket is in good shape, inspect the hole for defects.

c. Drain hose valve
   • Inspect drain hose valve to ensure it is properly attached and the gaskets are not failing

d. Overfilling spa
   • Make sure to properly fill the spa without overfilling.

4. Questionable leaks.

a. Water on the outside of the spa but none within the cabinet could be condensation or a water feature left on
   i. Ensure cover is sealing to the best of its abilities.
   ii. Sometimes rotating the cover may allow it to seal better.
   iii. Make sure air valves are being closed when not in use.
   iv. Make sure all water features such as waterfalls, water shooters, and neck jets are turned off when not in use.

b. If the water level dropping is the only sign of a leak and the spa is only losing about 1-2 inches per week, this is most likely due to evaporation. This is normal.
   • Larger amounts than this without heavy use usually indicate a leak.

c. If water is found around the spa or even within the cabinet of the spa, but the water level is not dropping at all, it may be possible water is settling around the spa or within the cabinet from being overfilled or from rain.
   • Monitor the issue.

Light issues

1. Determine the extent of the issue.

• Determine if the issue involves a single light, random lights, a section of lights, or all the lights within the spa.

2. One light failing to operate or multiple random lights not in the same area.

a. Most likely light has fallen out of its grommet (usually during shipping).
b. Inspect inside of cabinet to ensure light is in its grommet.
c. If light is in grommet and one individual LED fails to operate on a strand, replace strand.
d. Note: If one LED light is showing a different color as compared to every other light in the spa, replace the strand the light is attached to.

3. Section of lights failing to operate.

a. If an entire section of lights is failing to operate, first inspect that the light strand/s is properly connected to the daisy chain.
b. If lights are properly connected, but no light is being emitted, replace the light strand.

4. No lights working on the spa.

a. If no lights operate on the spa, but the topside control LED for the light button is illuminating when pressed, the topside is functioning properly.
b. In the spa pack, there is a 3 amp fuse for the lights.
c. Turn the power off to the spa, remove the fuse, and test it for continuity.
d. If the fuse is good, test the voltage coming from the light port on the circuit board. It should be 12V A/C.
e. The spa can have either a light control box or a master light.

Light issues *(continued)*

f. If using a master light:
   i. Unplug the daisy chain from the master light.
   ii. If the master light turns on, there is a short on the buss wire created by a light strand clip not being properly installed.
   iii. Plug in the buss wire.
   iv. Unplug one light strand at a time until all the other lights turn on. This means the short has been removed.
   v. Plug other light strands back in until all lights function properly.

g. If using a light control box:
   i. Unplug the daisy chain from the control box.
   ii. There is a short on the daisy chain created by a light strand clip not being properly installed.
   iii. Plug in daisy chain.
   iv. Unplug one light strand at a time until all the other lights turn on. This means the short has been removed.
   v. Plug other light strands back in until all lights function properly.



Master Light



Light Control Box

Bluetooth stereo

1. No connectivity

a. If the Bluetooth is not broadcasting a signal:
   i. Check for a tone when a button or switch is pressed.
   ii. If no tone, check the air hose connection to the air switch/button. (if equipped)
   iii. Check wire connection from switch to subwoofer/power supply.
   iv. Verify Bluetooth loop wire is installed on the subwoofer.
   v. Inspect power coming from spa pack. If no/incorrect power, replace the pack
   vi. Inspect power coming out of the power supply. If no/incorrect power, replace the power supply.
   vii. Inspect power coming from the switch into the subwoofer. If no/incorrect power, replace the switch.
   viii. If power is going into subwoofer, but it is failing to operate, replace the subwoofer.

b. If Bluetooth is broadcasting a signal, but fails to connect:
   i. Try moving the Bluetooth device closer to the spa.
   ii. Try using a different Bluetooth device.
   iii. If within close proximity to the subwoofer with the side panel removed and using multiple devices and none will connect to the subwoofer, replace the subwoofer.

2. Bad connectivity

- If able to connect to the subwoofer, but the connection fails:
   i. Try connecting and leaving the Bluetooth device in the same location without being moved.
   ii. Try moving the Bluetooth device closer to the spa.
   iii. Try using a different Bluetooth device.
   iv. If the connection continues to fail on multiple devices regardless of the distance to the Bluetooth subwoofer, replace the subwoofer.
   v. If the subwoofer is replaced, but the issue persists, the customer may have interference local to their location.

3. No sound

- If able to connect to the subwoofer, but there is no sound coming from the speakers:
   i. Make sure the Bluetooth device's volume is turned on.
   ii. Inspect wire connections to the speakers and subwoofer.
   iii. Inspect subwoofer volume control
   iv. If the subwoofer volume control is turned up and the subwoofer puts out volume, but the speakers do not, replace the speakers.
   v. If the subwoofer volume control is turned up and the subwoofer does not emit any sound, replace the subwoofer.

4. Bad sound

- If able to connect to the subwoofer and sound is coming from both the speakers and subwoofer, but the sound contains static or other sound quality issues:
   i. Inspect wire connections to the speakers and subwoofer.
   ii. If connections are secure, replace speakers that present the sound quality issue.

Control Pack Codes

Code	Description	Action Required
- - - - - -	Indicates the temperature of the spa is not current. This can be displayed immediately after the spa is powered on or in between filter cycles while the spa is in economy or sleep / rest mode.	No action required.
888	Error code indicating a communication issue between the pack and topside. This may appear for a short period of time and go away. If so, no action required.	Unplug and plug back in topside control. If issue persists, contact customer service.
9FI	Error code indicating that the spa could not trip the GFCI breaker. Continued use of the spa may be hazardous.	Remove power from the spa, contact electrician.
CFE	Error code indicating there is a configuration error within either the programing of the spa pack or the dip switches are not set properly. Spa will not start. *This is an issue on spas using the STREL15B spa packs.*	Contact dealer, service technician, or customer service.
CrC	Error code indicating that the firmware of the spa pack was not installed properly.	Contact dealer, service technician, or customer service.
dr	Error code indicating there is an inadequate amount of water, a flow issue, or air bubbles within the heater tube. Spa is shut down for 15 minutes.	If water level is normal, prime all pumps, press any button to reset, will automatically reset in 15 minutes.
drn	Code indicating the pump is operating during standby mode to assist in draining the spa.	Press jets 1 to turn off pump after water has been drained.
dY drY	Error code indicating there is an inadequate amount of water, a flow issue, or air bubbles within the heater tube. This is displayed on the third occurrence of "dr". Spa is shut down until manually reset. To reset, press any button.	Refer to the flow issue section of the troubleshooting guide.
Ec Ecn	Indicates the spa is in economy mode.	Refer to the topside control section of manual to change modes.
FI	Indicates the spa is set to filter 1 out of every 12 hours	Change setting to F2, F3, or F4
F2 FIL2	Indicates the spa is set to filter 2 out of every 12 hours	This is the recommended setting, no action required.
F3	Indicates the spa is set to filter 3 out of every 12 hours	No action required.
F4 FIL4	Indicates the spa is set to filter 4 out of every 12 hours	No action required.
F5	Indicates the spa is set to filter 5 out of every 12 hours	Change setting to F2, F3, or F4
F6 FIL6	Indicates the spa is set to filter 6 out of every 12 hours	Change setting to F2, F3, or F4
F7	Indicates the spa is set to filter 7 out of every 12 hours	Change setting to F2, F3, or F4
F8 FIL8	Indicates the spa is set to filter 8 out of every 12 hours	Change setting to F2, F3, or F4
F9	Indicates the spa is set to filter 9 out of every 12 hours	Change setting to F2, F3, or F4
F10	Indicates the spa is set to filter 10 out of every 12 hours	Change setting to F2, F3, or F4
F11	Indicates the spa is set to filter 11 out of every 12 hours	Change setting to F2, F3, or F4
FC F12 FILC	Indicates the spa is set to filter 12 out of every 12 hours or filter constantly.	Change setting to F2, F3, or F4. After changing setting, spa power must be turned off and then back on for the setting to take effect.
HH OHH	Error code indicating one of the temperature sensors has detected a temperature of 118 degrees Fahrenheit. After temperature lowers spa will reset.	**DO NOT ENTER WATER!!** Remove cover and allow spa to cool. If water is not hot, refer to the flow issue section of the troubleshooting guide.
HL HFL	Error code indicating there is a substantial difference between the temperature sensors. This could indicate an inadequate amount of water, a flow issue, or air bubbles within the heater tube.	If water level is normal, prime all pumps, press any button to reset.
HOt	Error code indicating that a pump appears to have been stuck on the last time the spa was under power.	**DO NOT ENTER WATER!!** Remove cover and allow spa to cool. If issue persists contact dealer, service technician, or customer service.

Code	Description	Action Required
IC ICE	Error code indicating the spa has detected potential freezing conditions. Spa heater is shut down, but pumps will run continuously until temperature of spa water increases above 45 degrees Fahrenheit.	**DO NOT ENTER WATER!!** Allow water to heat up or add warm water to the spa until heater engages and code goes away. Do not overfill spa.
LF	Error code indicating a persistent low flow issue. Message appears on 5th occurrence of "hl" or "hfl". Heater is shut down.	Refer to the flow issue section of the troubleshooting guide. To reset, press any button.
OH OHS	Error code indicating one of the temperature sensors has detected a temperature of 110 degrees Fahrenheit. After temperature lowers spa will reset.	Remove cover and allow spa to cool. If water is not hot, refer to the flow issue section of the troubleshooting guide.
Pr	Indicates the spa is running its prime cycle. This will last for about 3-5 minutes after the spa is powered up.	No action required.
PSt	Error code indicating a hardware failure.	Contact dealer, service technician, or customer service.
rCA	Reminder code to install new mineral cartridge (as needed)	Install new mineral cartridge (if needed)
rCH	Reminder code to remove and install new filter (every 365 days)	Install new filter
rCL	Reminder code to clean and reinstall filter (every 30 days)	Clean and reinstall filter
rCO	Reminder code to clean and condition spa cover (every 30 days)	Clean and condition spa cover
rdr	Reminder code to drain and refill spa (every 90 days)	Drain and refill spa
rPH	Reminder code to test and adjust pH levels (every 7 days)	Test/adjust pH balance
rSA	Reminder code to test and adjust sanitizer levels (every 7 days)	Test/adjust sanitizer levels
rt9	Reminder code to test and reset GFCI (every 30 days)	Test and reset GFCI
rtr	Reminder code to clean and condition wood (every 180 days)	Clean and condition wood
rtC	Error code indicating a hardware failure.	Contact dealer, service technician, or customer service.
SA SnA	Error code indicating that sensor A is experiencing an issue. Spa is shut down. May appear temporarily in an overheat situation and disappear once heater cools.	Refer to the spa failing to heat section of the troubleshooting guide.
Sb Snb	Error code indicating that sensor B is experiencing an issue. Spa is shut down. May appear temporarily in an overheat situation and disappear once heater cools.	Refer to the spa failing to heat section of the troubleshooting guide.
Sn SnS	Error code indicating the temperature sensors are out of balance. If code is flashing intermittently with the temperature of the spa it may be a temporary issue. If the code is displayed solid and by itself, the spa is shut down.	Refer to the spa failing to heat section of the troubleshooting guide.
SAH	Error code indicating the sanitizer of the spa is too high.	Test/adjust sanitizer levels
SAL	Error code indicating the sanitizer of the spa is too low.	Test/adjust sanitizer levels
Sby	Indicates standby mode has been activated.	Press any button other than jets 1 to resume normal operation.
SE	Indicates the spa is in "standard in economy mode". During this time the spa acts as if it is in standard mode. After one hour the spa will revert to economy mode.	After one hour the spa will revert to economy mode.
SL SLP	Indicates the spa is in sleep mode.	Refer to the topside control section of manual to change modes.
St Std	Indicates the spa is in standard mode.	Refer to the topside control section of manual to change modes.
StU	Error code indicating that there appears to be a pump that is stuck on. This may cause the temperature of the spa to rise to unsafe conditions.	**DO NOT ENTER WATER!!** Remove cover and allow spa to cool. If issue persists contact dealer, service technician, or customer service.

READ AND FOLLOW ALL INSTRUCTIONS

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

WARNING: RISK OF ACCIDENTAL DROWNING DUE TO HYPERTHERMIA AND HYPOTHERMIA. CONSULT THE INSTRUCTIONS PROVIDED WITH THIS UNIT FOR A DESCRIPTION OF THE CAUSES, SYMPTOMS, AND EFFECTS OF HYPERTHERMIA AND HYPOTHERMIA

AVERTISSEMENT : RISQUE DE NOYADE PAR SUITE D'HYPERTHERMIE ET D'HYPOTHERMIE. LIRE LA NOTICE QUI ACCOMPAGNE CET APPAREIL; ELLE DÉCRIT LES CAUSES, LES SYMPTÔMES ET LES EFFETS DE L'HYPERTHERMIE ET L'HYPOTHERMIE

SAVE THESE INSTRUCTIONS

For Customer Service and Technical Support, please contact us at:
strongspasupport.com *or* **1-800-787-6649**

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