

Sundance® Spas

PRE-DELIVERY GUIDE



Important Pre-Delivery Information

Please read this booklet before your scheduled delivery day.

Record your spa information below and then store this booklet in a place you can easily find it. If service is required, your dealer will ask for these details.

Spa Model	_____
Spa Serial Number	_____
Date Purchased	_____
Date Installed	_____
Spa Dealer's Name	_____
Spa Dealer's Phone #	_____
Spa Dealer's Address	_____

To Keep Warranty Valid: Consult your local state or city building ordinances to ensure installation is in accordance with local codes. The spa's warranty becomes void if these guidelines are not followed.

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

NOTE: The specifications published in the Spa Dimensions and Specifications section of this book are approximate. Always measure your spa before making critical design or delivery decisions.

Congratulations!

You've purchased a Sundance® spa. With a little preparation and care, your spa will give you many years of enjoyment. This booklet has been designed to provide you with all of the information you'll need to ensure a safe, speedy, and trouble-free spa delivery and installation.

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Proposition 65 (FOR CALIFORNIA RESIDENTS ONLY)



WARNING: Cancer and Reproductive Harm
www.p65Warnings.ca.gov

Planning the Best Location for Your Spa

Now that you have purchased your hot tub, you need to decide where to install it. Do you want to install it outside or inside? There are many factors to take into consideration when making these location decisions. Answering the questions in this section can help you make the right choices.

Suggestions for Outdoor Spa Installation

Where should I install the spa?

When deciding where to place your spa, it should be:

- Moved away from overhead power lines because of the risk of severe injury from electric shock or death from electrocution. A minimum of 10 feet (3 meters) is suggested. See additional safety instructions listed in the owners manual.
- Placed to face a view you enjoy. Do you have a special landscaped area in your yard that you find pleasant?
- Located in an area that gives you the best privacy options. Think of the spa's surroundings during all seasons when making your choice. During cold, winter weather, bare trees won't provide much privacy.
- Locate your spa in a sheltered location to protect yourself from the wind and harsh weather while bathing in your spa. This reduces the cost of spa operation and maintenance.
- Consider locating your spa away from any reflective surface or glass. The heat deflected from such a surface may cause damage to the synthetic cabinet panels.

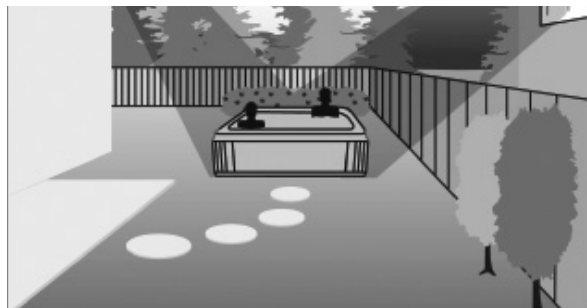


Figure 1 Plan for privacy before the spa is delivered

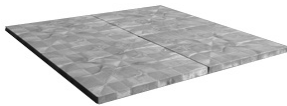
Planning the Best Location for Your Spa, Continued

What kind of foundation is available?

- Because of the combined weight of the spa, water, and bathers, it is extremely important that the base upon which the spa rests can uniformly support this weight without shifting or settling for the entire time the spa is in place. The base should be smooth, flat, and level.

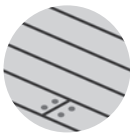
Which is best?

- We suggest the following pads:



Good

Synthetic spa pads can be purchased from your Sundance dealer. These pads can be placed on a smooth, flat, and level surface.




Better

Wood decking with a concrete foundation.



Recommended

Concrete pad (4 in. [10 cm] or thicker). We recommend a poured, reinforced concrete slab with a minimum thickness of 4 in. (10 cm).

- **CAUTION:** When you install the foundation, be sure that water drains away from it. Placing the spa in a depression without provisions for proper drainage could cause rain or any water overflow to flood the equipment and create a wet condition in which the spa would sit.
- **CAUTION:** For spas that are to rest on balconies, roofs or other platforms not specifically tied into the main structural support, you should consult a professional Structural Engineer with experience in this type of application.
- **CAUTION:** If the spa is placed on a surface which does not meet these requirements, damage to the cabinet and/or the spa shell may result. Damage caused by an improper foundation is not covered under warranty. It is your responsibility to assure the integrity of the support at all times. Do not shim the spa. For proper support, the spa must sit flat on the intended foundation.
-  **WARNING:** Proper ventilation should be discussed with an Engineer or authority competent enough to understand the necessary provisions needed to vent moist or heated air and air associated with chemical odors outdoors. When the spa is in use considerable amounts of moisture will escape potentially causing mold and mildew, over time this can damage certain surfaces and or surroundings.

Planning the Best Location for Your Spa, Continued

How will I use the spa? Consider how you intend to use your spa.

If using the spa for ...	Then ...
Family recreation	Leave plenty of room around the spa for activities and yard furniture.
Relaxation and therapy	Create a quiet and relaxing environment around the spa.

Does the climate I live in make any difference to where I install my spa?

When deciding the best place to install the spa, consider

If your climate is ...	Then consider installing ...
Cold and snowy in winter and warm in summer	The spa close to the back door or near the pool house for fast access to a warm room
Warm in winter and hot in summer	A patio cover or perhaps a gazebo to provide shade

What about spa servicing?

At some time, a service technician may need to access the spa's equipment bay or plumbing components by removing one or all of the side cabinet panels.

To make access easy, create an installation plan that includes the details for removing the side cabinet panels to easily reach the spa's equipment bay and control panel. Depending upon your type of installation, keep in mind that the spa might sometime need to be moved or lifted from the ground. Make sure you provide access to the CLEARRAY® Water Purification System behind the front cabinet panel for yearly bulb replacement.

What other issues should I consider?

When selecting the ideal outdoor location for your spa, consider these suggestions:

- Keep the pathway to your spa free of debris to prevent dirt and leaves from being tracked into the spa.
- Prevent leaves and bits of plants from dropping in the spa by keeping trees and shrubbery away from the spa.
- For 780/880 Models: We recommend installing the front of your spa facing a window on your home with the Status Indicator in a direct line-of-sight. This orientation allows you to visually check the Status Indicator in all weather conditions from the comfort of your home. The indicator glows white when all systems are normal, turns red if an error condition exists, or turns off when the spa has no power.

Suggestions for Indoor Spa Installation

If you are installing your spa indoors, take into consideration your answers to the questions below.

What are the issues I need to think about when installing a spa indoors?

When installing a spa indoors, it is extremely important to build into your plan a method of handling any excess water. Consider:

- How should water spills be handled?
- How many drains should be installed?
- What is the best flooring to install near the spa?
- If a leak occurs, can the floor handle the entire contents of the spa?
- Will the furniture and walls around my spa withstand and resist water and moisture?
- What provisions should I make for the ceiling and structures that may be below the spa.

What do I need to know about installing a spa on the second floor.

If the spa is being installed on a second story or higher, consult a structural engineer to discuss the best way to support the spa. Special attention is needed to plan for a spa installed on a balcony or roof.

What about spa servicing?

Most spa servicing is performed on the spa equipment that is located behind the side cabinet panels of the spa. It is important to install the spa to allow easy access to the spa equipment. Make sure you provide access to the CLEARARRAY® Water Purification System behind the front cabinet panel for yearly bulb replacement.

How can I ventilate the spa area?

When the spa is in use, considerable amounts of moisture/water are present. **Over time, this moisture may cause mold and mildew and damage to certain surfaces and/or surroundings. Proper ventilation should be discussed with an engineer who understands the necessity of venting moist and heated air that is associated with chemical emissions.**

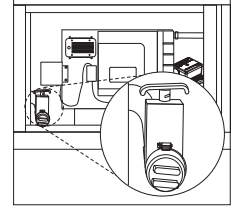
What warranty considerations are important?

Consult your local state or city building ordinances to ensure installation is in accordance with local codes. Any damage caused if you do not follow these guidelines voids the spa's warranty.

Planning the Best Location for Your Spa, Continued

What other issues should I consider?

We recommend installing the spa to permit easy access to the quick-drain port located behind the front/center cabinet panel on the control panel side of the hot tub.



An included drain hose assembly attaches to this port to provide rapid water removal during scheduled water changes. When draining your spa, always route drain water away from the spa and the foundation of your house into an area capable of absorbing large amounts of water without causing damage to your property. Remember, your spa holds several hundred gallons of water. For this reason, we recommend choosing a location that drains directly to the street curb whenever possible.

Planning to Move the Spa Into Your Yard

Use the information below, in Figure 2, and in the Spa Dimensions and Specifications chart to plan the delivery of your spa into your yard. The Spa Dimensions and Specifications chart list your spa model and its dimensions.

Check your spa's dimensions Check the width of gates, doors, and sidewalks to make sure your spa will pass through unobstructed.

During delivery, the spa must remain on the delivery cart at all times. You may have to remove a gate or part of a fence to allow an unobstructed passageway to the installation location.

Note: To prevent damage to the panels and acrylic, if possible, leave the packaging on until the spa is in place.

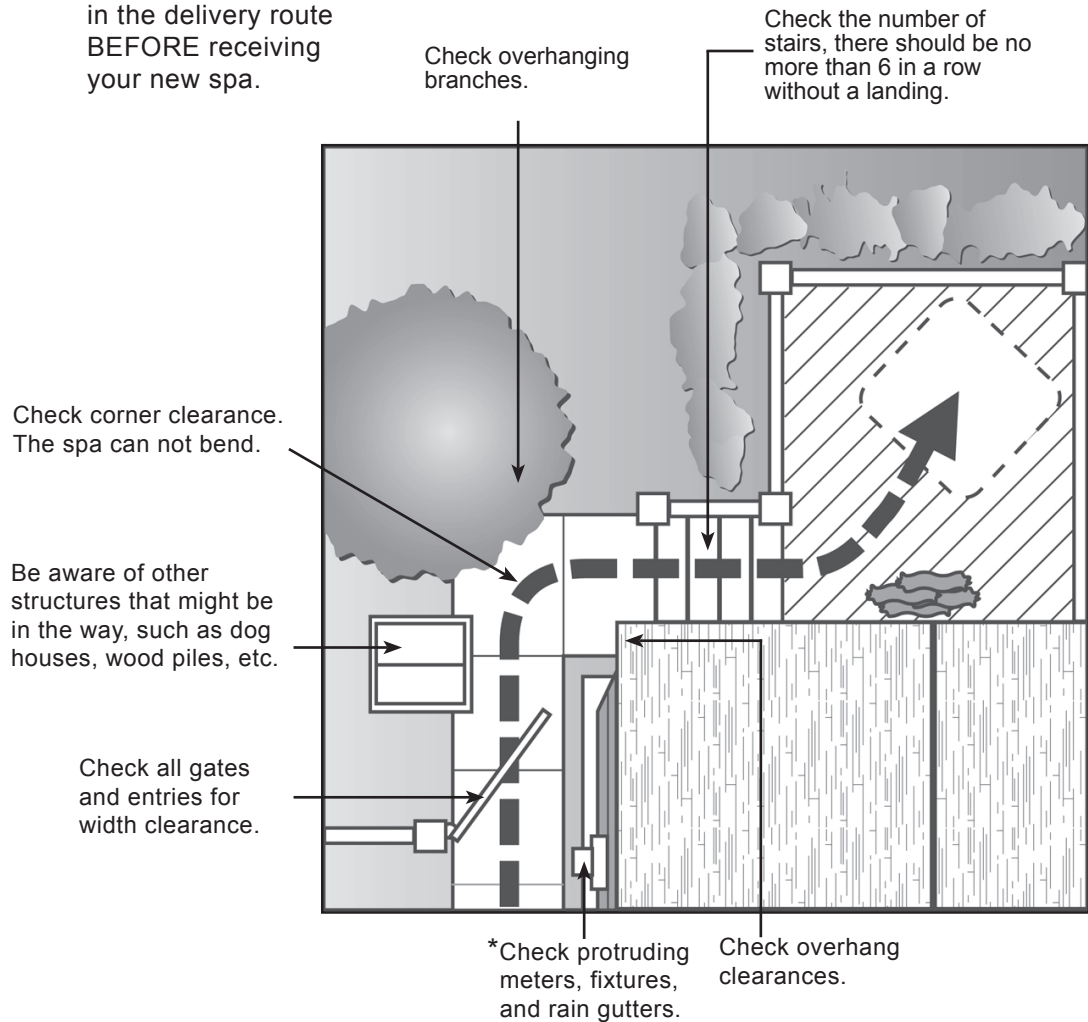
Plan the delivery route After referring to Figure 2, plan your spa's delivery route into your yard. Check off each item on the checklist below to verify your plans.

- If the delivery route requires a 90° turn, check the measurements at the turn to ensure the spa will fit.
- Are there protruding gas or water meters, or A/C units obstructing the delivery path to your yard? You must make sure that the spa has a clear unobstructed route and will not strike any objects on the path, therefore creating a detectable or non-detectable leak or damage.
- Are there low roof eaves, overhanging branches, or rain gutters that could be an obstruction to overhead clearance?
- Are there more than 6 consecutive stairs without a landing in your delivery route? If so, you must consult your Sundance dealer prior to delivery to make adequate preparations.

Use a crane The use of a crane for delivery and installation is sometimes necessary. It is used primarily to avoid damage to your spa, your property, or to delivery personnel. Your authorized Sundance dealer may be able to assist you with the arrangements. If your spa delivery requires the use of a crane, the cost of a crane is not included in standard delivery service.

Planning to Move the Spa Into Your Yard, Continued

Figure 2 Check for obstacles in the delivery route BEFORE receiving your new spa.



***CAUTION:** You must make sure that the spa has a clear unobstructed route and will not strike any objects on the path, therefore creating a detectable or non-detectable leak or damage.

Electrical Tasks Before Spa Delivery

General Electrical System Considerations




Before the installation of your spa begins, check with the local building department to ensure this installation conforms to local building codes.

Important



When installed in the United States, the electrical wiring of this spa must meet the requirements of the National Electric Code (NEC) and any applicable state or local codes. The electrical circuit must be installed by an electrical contractor AND approved by a local building/electrical inspector.

⚠ DANGER



Electric Shock
and/or
Electrocution
hazard.

⚠ DANGER: TO DECREASE THE RISK OF SHOCK, PRODUCT DAMAGE OR ELECTRICAL FIRE. Never use an extension cord of any kind. Using an extension cord can damage the spa equipment and void your warranty.

The Sundance® Dover™, Prado™, Alicia™, Paisley™, Berkeley™ 30 Jet, and Brook™ 30 Jet North American models include a 10 foot GFCI cord for plug-in 120V operation. Connect this cord directly to a dedicated/grounded wall outlet. When a power cord over 10 ft. is required, the spas must be hard wired in accordance with state and local codes.

Before the scheduled arrival of your spa, it is necessary to set up the electrical components. Use the checklist below to prepare for the spa's installation.

- ◇ Prepare the electrical connection for your spa based on one of the configurations listed below. If necessary, refer to the Power Configuration tables for additional information by model.

If installing a spa that is ...	Then it must be...
240V (North America)	Hard wired to the power supply.
120V (North America)	Plugged into a dedicated grounded outlet using the 10' GFCI cord supplied with the spa. Hard wire for over 10' run or 4-wire 120V/240V application.

Electrical Tasks Before Spa Delivery, Continued

To Keep Warranty Valid : The manufacturer's warranty becomes void if the spa's electrical connections do not meet the specifications as stated in this document.

- ◇ Verify the power supplied to the spa is on a dedicated circuit with no other appliances or lights sharing the power.
- ◇ Verify the electrician has completed the tasks listed below before the spa is delivered. If necessary, find the information requested by looking in the Power Configuration tables.

Task Complete?	Tasks for the electrician	
◇	Select the wire size based on NEC and/or local codes.	
	Note	If you use wire larger than #6 (10 mm ²), add a junction box near the spa, and reduce the wire to short lengths of #6 (10 mm ²) wire between the junction box and the spa.
◇	Determine the length of wire that is needed between the breaker box and the spa based on the wire size and the maximum current draw.	
◇	Acquire enough copper wire with THHN insulation to ensure adequate connections.	

- ◇ To comply with Section 422-20 of the National Electric Code, ANSI/NFPA 70, the electrical supply for the spa must include a suitably rated switch or circuit breaker to open all ungrounded supply conductors. The means to disconnect the electricity must be readily accessible to the spa's occupant, but installed at least 5 ft. (1.5m) from the spa water. Check with local municipalities for additional code requirements.
- ◇ As required by NEC Article 680-42, the electrical circuit for the spa must include a suitable ground fault circuit interrupter (GFCI). We recommend Square-D GFCI breakers. The appropriate wiring configuration for your spa appear elsewhere in this document.
- ◇ This spa is not intended nor designed to be used in a commercial or public application. The spa buyer shall determine whether there are any code restrictions on the use or installation of this spa since local code requirements vary from one locality to another.

Check the tables on the next few pages to match your hot tub model with one of the power configuration options.

Electrical Tasks After Spa Delivery

DANGER



Electric Shock
and/or
Electrocution
hazard.

Important safety information for all spa models

Proper grounding is extremely important. This spa is equipped with a Current Collector system. A pressure securing wire connector is provided on the outside of the load box to permit connection of a bonding wire between the spa and any metal within 5 ft. (1.5m) of the spa. Bonding wire must be at least #8 AWG (8.4 mm²) solid copper wire.

After the spa is placed in the specified location, the electrician must perform the tasks listed below to complete the electrical installation. Give this information to the electrician when he begins to install your spa.

Task	Action
1	To gain access to the spa's power terminal strip, remove the spa cabinet panel on the side of the spa under the control panel. After removing the spa cabinet panel, remove the control box cover screws and control box cover.
2	Locate the power supply inlet (front of the spa near the base). Select the inlet you want to use, then feed the power cable through to the control box.
3	Insert the power cable through the large opening provided on the left-side of the control box.
4	Connect the wires, color to color, on the terminal strips and tighten securely. Set the circuit board S1 DIP Switch to match the selected power configuration.
5	To complete the electrical installation, secure the control box door by replacing its screws, then re-install the spa cabinet panel under the control panel.



Important: When installed in the United States, the electrical wiring of this spa must meet the requirements of the National Electric Code (NEC) and any applicable state or local codes. The electrical circuit must be installed by an electrical contractor AND approved by a local building/electrical inspector.

Power Configurations for 980 Kingston™ and Claremont™ Models (North America 60Hz)

This section describes the power configuration choices (Standard 60 Amp or Alternate 50 Amp) for Kingston™ and Claremont™ hot tub models.

Note

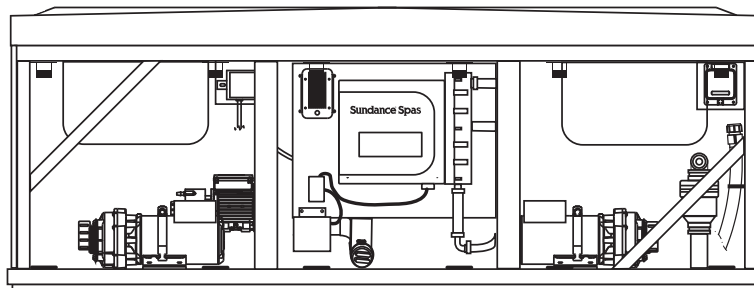
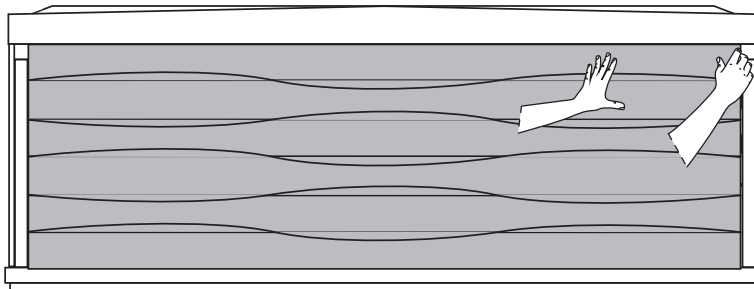
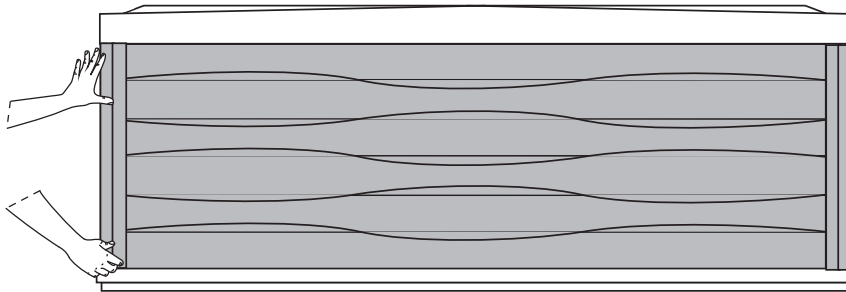
Wire size must meet NEC recommendations and is determined by maximum current draw and length of run.

Important: All of the alternative electrical configurations require a qualified technician to perform minor circuit board modifications. Do not activate power to the spa until these modifications have been made. We recommend Square-D circuit breakers.

Config. #1	Standard 60A Configuration (factory setting) <ul style="list-style-type: none">• 240 VAC/60A 3-wire configuration (2 hots and ground)• 60A dual-pole GFCI breaker (hard wired only)• Maximum electrical current draw of 48A	In the Standard 60A configuration, the heater operates while any two jets pumps, or one jet pump and the blower are running. However, the heater does not operate when all three jets pumps, or two jets pumps and the blower are running.
Config. #2	Alternate 50A Configuration <ul style="list-style-type: none">• 240 VAC/50A 3-wire configuration (2 hots and ground)• 50A dual-pole GFCI breaker (hard wired only)• Maximum electrical current draw of 39A	If your home does not have 240V/60A power available, connect the spa to a 240V/50A power source. Then, have a qualified technician modify the circuit board to match the power source. In this configuration, the heater yields the same rapid temperature rise as in the 60A configuration. However, the heater does not operate while any two jets pumps, or any one jets pump and the blower are running.

Equipment Access Consideration for 980 Kingston™ and Claremont™ Models

Grab either the top left or top right side of the front center panel. Gently pull the cabinet forward to unsnap it from the holding clips. Make sure to support the cabinet as you work your way down the side to completely unclip it from the hot tub frame. Once completely unclipped, tilt slightly forward and lift up to remove it from the hot tub frame.



Installing a 3-Wire 240 VAC Connection for 980 Kingston™ and Claremont™ Models

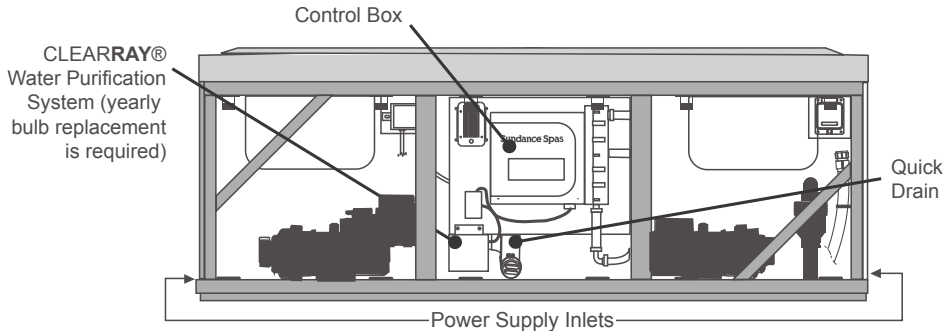


Figure 3: Spa equipment compartment (Spa features subject to change without notice. Component locations vary by model.)

Figure 4:

The Control Box for 3-wire, 240 VAC connection (The location of the TB1 terminal may vary between models.)

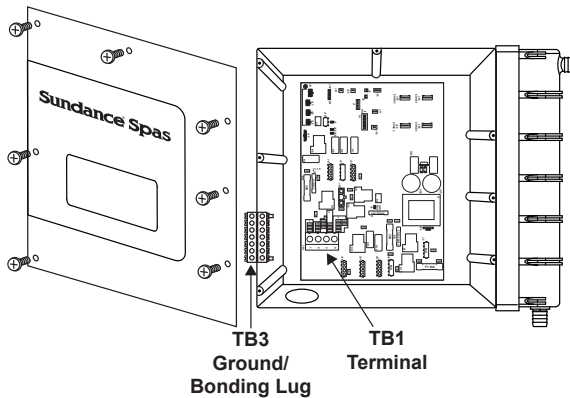
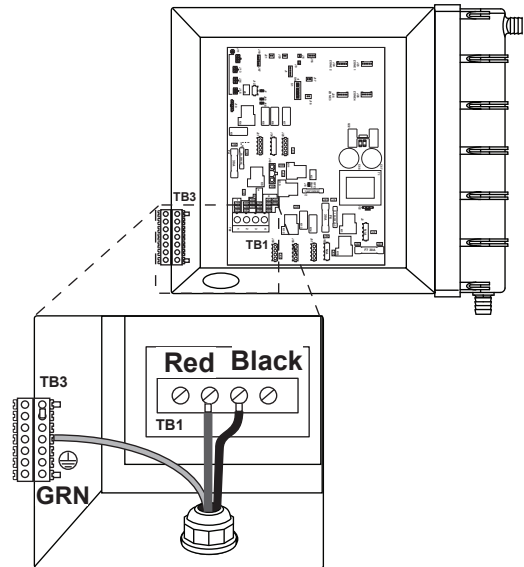


Figure 5

3-wire/240 VAC connection (*Hard Wired Connections Only*)



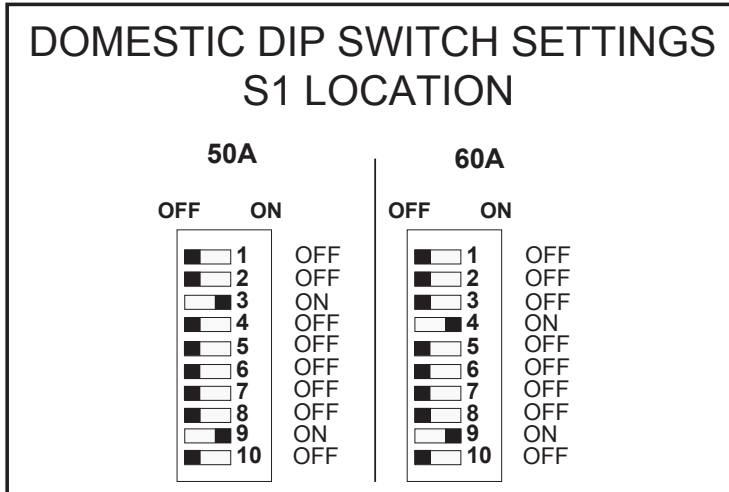
FOR 2 OR 3 SERVICE SEE WIRE DIAGRAM



WIRE STRIP LENGTH
11/16" (0.69", 17.5mm)
BARE METAL

HAND TIGHTEN WITH PHILIPS SCREWDRIVER.

Dip Switch Settings for 980 Kingston™ and Claremont™ Models



Black square indicates switch position.

***60A is the factory default setting**

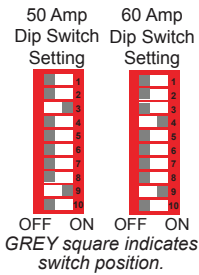
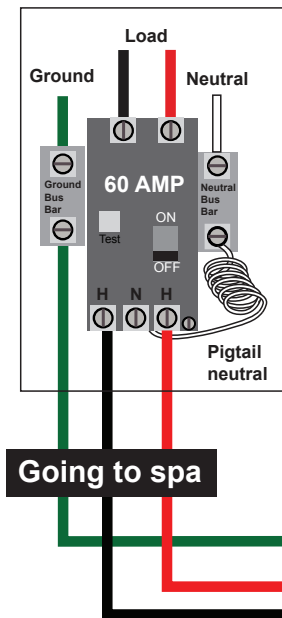
****Dip switch #9 must be ON for all 3-pump 980 models**

Electrical Tasks After Spa Delivery, Continued

240 VAC Connections for 980 Kingston™ and Claremont™ Models (North America 60Hz)

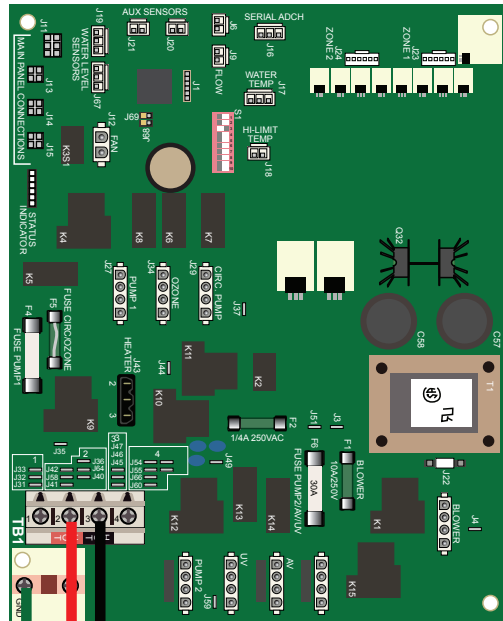
A pressure sensitive terminal block (bonding lug) is attached to the outside surface of the load box. This permits the connection of a bonding wire between this point and any metal equipment chassis, metal water pipe, or metal conduit within 5 ft (1.5m) of the spa. The bonding wire must be at least #8 AWG (8.4 mm²) solid copper wire.

From the House Breaker Box



3-wire connection (2 hot and 1 ground)

NO NEUTRAL





Important: When installed in the United States, the electrical wiring of this spa must meet the requirements of the National Electric Code (NEC) and any applicable state or local codes. The electrical circuit must be installed by an electrical contractor AND approved by a local building/electrical inspector.

Power Configurations for 880 Aspen® Models (North America 60Hz)

This section describes the power configuration choices (Standard 50 Amp or Alternate 60 Amp) for Aspen® hot tub models.

Note

Wire size must meet NEC recommendations and is determined by maximum current draw and length of run.

Important: All of the alternative electrical configurations require a qualified technician to perform minor circuit board modifications. Do not activate power to the spa until these modifications have been made. We recommend Square-D circuit breakers.

Config. #1	Standard 50A Configuration <ul style="list-style-type: none">• 240 VAC/50A 3-wire configuration (2 hots and ground)• 50A dual-pole GFCI breaker (hard wired only)• Maximum electrical current draw of 39A	If your home does not have 240V/60A power available, connect the spa to a 240V/50A power source. Then, have a qualified technician modify the circuit board to match the power source. In this configuration, the heater yields the same rapid temperature rise as in the 60A configuration. However, the heater does not operate while any two jets pumps, or any one jets pump and the blower are running.
Config. #2	Alternate 60A Configuration (factory setting) <ul style="list-style-type: none">• 240 VAC/60A 3-wire configuration (2 hots and ground)• 60A dual-pole GFCI breaker (hard wired only)• Maximum electrical current draw of 48A	In the Standard 60A configuration, the heater operates while any two jets pumps, or one jet pump and the blower are running. However, the heater does not operate when all three jets pumps, or two jets pumps and the blower are running.



Important: When installed in the United States, the electrical wiring of this spa must meet the requirements of the National Electric Code (NEC) and any applicable state or local codes. The electrical circuit must be installed by an electrical contractor AND approved by a local building/electrical inspector.

Power Configurations for 880 Altamar®, Cameo®, Vistamar™, Marin®, and Optima® Models (North America 60Hz)

This section describes the power configuration choices (Standard 50 Amp, Alternate 40 Amp, or Alternate 60 Amp) for Altamar®, Cameo®, Vistamar™, Marin®, and Optima® models.

Note

Wire size must meet NEC recommendations and is determined by maximum current draw and length of run.

Important: All of the alternative electrical configurations require a qualified technician to perform minor circuit board modifications. Do not activate power to the spa until these modifications have been made. We recommend Square-D circuit breakers.

Config. #1	Standard 50A Configuration (factory setting) <ul style="list-style-type: none">• 240 VAC/50A 3-wire configuration (2 hots and ground)• 50A dual-pole GFCI breaker (hard wired only)• Maximum electrical current draw of 39A	In this Standard 50A configuration, the heater does not operate while both jets pumps are running, but will operate while either jets pump and the blower are running.
Config. #2	Alternate 40A Configuration (For homes where 240 VAC/50A or 240 VAC/60A power is unavailable) <ul style="list-style-type: none">• 240 VAC/40A 3-wire configuration (2 hots and ground)• 40A dual-pole GFCI breaker (hard wired only)• Maximum electrical current draw of 28A	If your home electrical service does not have 240V/50A power available, the spa may be connected to a 240V/40A power source after a qualified technician makes a minor circuit board modification. In this configuration, the heater yields the same rapid temperature rise as in the 50A configuration, but does not operate while either jets pump are running or when the blower is running.
Config. #3	Alternate 60A Configuration <ul style="list-style-type: none">• 240 VAC/60A 3-wire configuration (2 hots and ground)• 60A dual-pole GFCI breaker (hard wired only)• Maximum electrical current draw of 48A	If the home's electrical system has the full 240V/60A power available, the spa may be connected to a 240V/60A power source after a qualified technician makes a minor circuit board modification. In the Alternate 60A configuration, the heater operates while both jets pumps, or 1 jets pump and the blower are running.



Important: When installed in the United States, the electrical wiring of this spa must meet the requirements of the National Electric Code (NEC) and any applicable state or local codes. The electrical circuit must be installed by an electrical contractor AND approved by a local building/electrical inspector.

Power Configurations for 880 Capri® Models (North America 60Hz)

This section describes the power configuration choices (Standard 50 Amp or Alternate 40 Amp) for Capri® models.

Note

Wire size must meet NEC recommendations and is determined by maximum current draw and length of run.

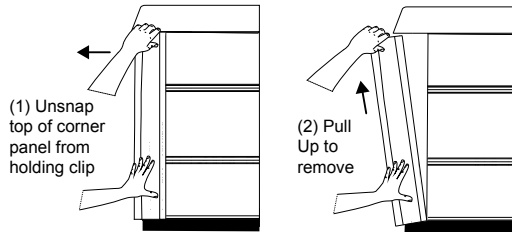
Important: All of the alternative electrical configurations require a qualified technician to perform minor circuit board modifications. Do not activate power to the spa until these modifications have been made. We recommend Square-D circuit breakers.

Config. #1	<p>Standard 50A Configuration (factory setting)</p> <ul style="list-style-type: none">• 240 VAC/50A 3-wire configuration (2 hots and a ground)• 50A dual-pole GFCI breaker (hard wired only)• Maximum electrical current draw of 39A	<p>In this Standard 50A configuration, the heater does run if the jets pump and blower are running.</p>
Config. #2	<p>Alternate 40A Configuration (For homes where 240 VAC/50A is unavailable).</p> <ul style="list-style-type: none">• 240 VAC/40A 3-wire configuration (2 hots and a ground)• 40A dual-pole GFCI breaker (hard wired only)• Maximum electrical current draw of 28A	<p>If the home's electrical system does not have the full 240V/50A power available, the spa may be connected to a 240V/40A power source after a qualified technician makes a minor circuit board modification.</p> <p>In this configuration, the heater yields the same rapid temperature rise as in the 50A configuration, but does not run at the same time as either the jets pump or the blower is running.</p>

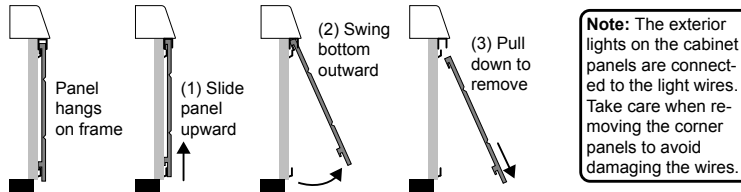
Equipment Access Consideration (All 880 Models with SunSide™ Cabinet)

Remove the corner panels by grabbing the bottom and gently pulling away from the spa to unsnap it from the holding clip. Pull downward to remove the corner panel. Then grab the bottom of the front (or side) cabinet panel and lift upward to remove the panel from the bottom holder. Swing the bottom of the panel outward to clear the upper hanger. This will require approx. 18 inches of access room between the spa and any other structures. Slide the panel downward to remove from the spa.

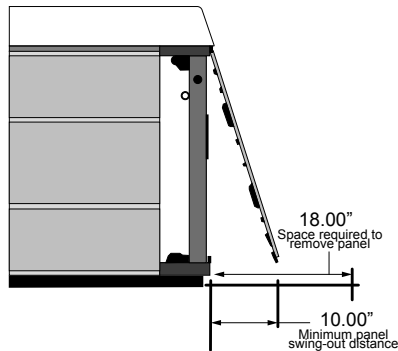
Corner Panel Removal (Front View)



Front / Side Panel Removal (Side View)



Important Measurements



Electrical Tasks After Spa Delivery, Continued

Installing a 3-Wire 240 VAC Connection for 880 Altamar®, Aspen®, Cameo®, Capri®, Marin®, Vistamar™, Optima® Models (North America 60Hz)

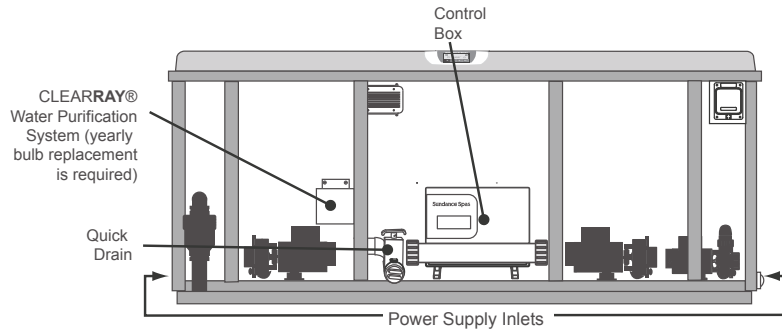
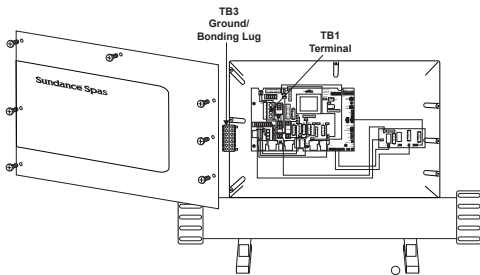


Figure 6: Spa equipment compartment (Spa features subject to change without notice. Component locations vary by model.)

Figure 7:

The Control Box for 3-wire, 240 VAC connection (The location of the TB1 terminal may vary between models.)



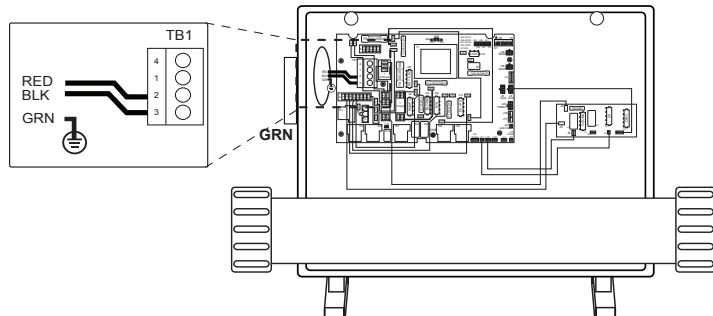
FOR 2 OR 3 SERVICE SEE WIRE DIAGRAM

WIRE STRIP LENGTH
1 1/16" (0.69", 17.5mm)
BARE METAL

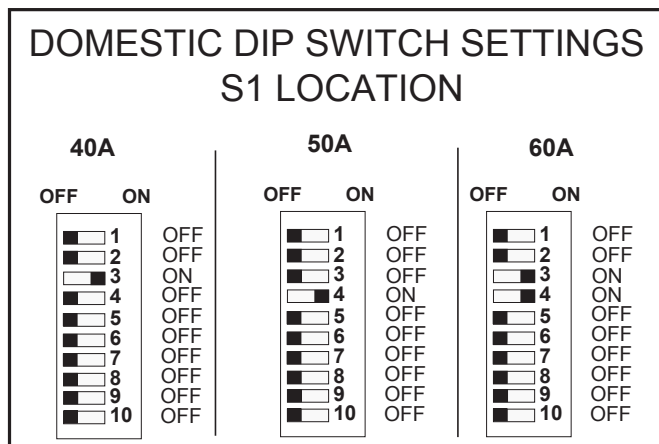
HAND TIGHTEN WITH PHILIPS SCREWDRIVER.

Figure 8

3-wire/240 VAC connection (*Hard Wired Connections Only*)



Dip Switch Settings for 880 Altamar®, Aspen®, Cameo®, Capri®, Marin®, Vistamar™, Optima® Models (North America 60Hz)



***50A is the factory default setting**

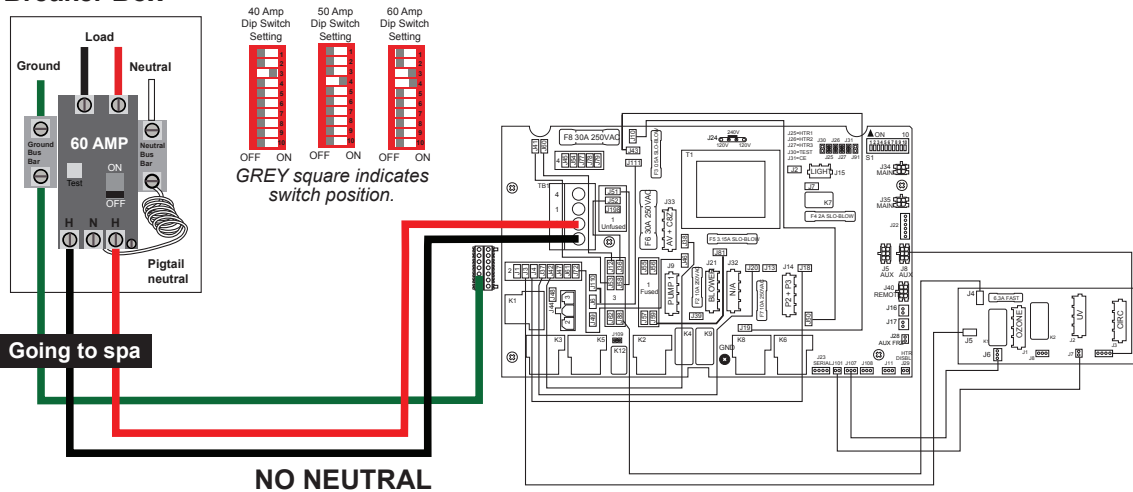
Black square indicates switch position.

Electrical Tasks After Spa Delivery, Continued

240 VAC Connections for 880 Altamar®, Aspen®, Cameo®, Capri®, Marin®, Vistamar™, Optima® Models (North America 60Hz)

A pressure sensitive terminal block (bonding lug) is attached to the outside surface of the load box. This permits the connection of a bonding wire between this point and any metal equipment chassis, metal water pipe, or metal conduit within 5 ft (1.5m) of the spa. The bonding wire must be at least #8 AWG (8.4 mm²) solid copper wire.

From the House Breaker Box



**3-wire
connection
(2 hots and 1
ground)**



Important: When installed in the United States, the electrical wiring of this spa must meet the requirements of the National Electric Code (NEC) and any applicable state or local codes. The electrical circuit must be installed by an electrical contractor AND approved by a local building/electrical inspector.

Power Configurations for 780 Bristol™, Chelsee®, Hamilton™, and Montclair™ Models (North America 60Hz)

This section describes the power configuration choices (Standard 50 Amp, Alternate 40 Amp or Alternate 60 Amp) for Bristol™, Chelsee®, Hamilton™, and Montclair™ models.

Note

Wire size must meet NEC recommendations and is determined by maximum current draw and length of run.

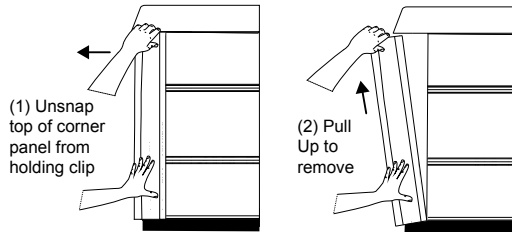
Important: All of the alternative electrical configurations require a qualified technician to perform minor circuit board modifications. Do not activate power to the spa until these modifications have been made. We recommend Square-D circuit breakers.

Config. #1	Standard 50A Configuration (factory setting) <ul style="list-style-type: none">• 240 VAC/50A 3-wire configuration (2 hots and a ground)• 50A dual-pole GFCI breaker (hard wired only)• Electrical current draw of 36A	In this Standard 50A configuration, the heater does not operate while both jets pumps are running.
Config. #2	Alternate 40A Configuration (For homes where 240 VAC/50A or 240 VAC/60A power is unavailable) <ul style="list-style-type: none">• 240 VAC/40A 3-wire configuration (2 hots and a ground)• 40A dual-pole GFCI breaker (hard wired only)• Electrical current draw of 26A	<p>If the home's electrical system does not have the full 240V/50A or 240V/60A power available, the spa may be connected to a 240V/40A power source after a qualified technician makes a minor circuit board modification.</p> <p>In this configuration, the heater does not run while either of the jets pumps are running.</p>
Config. #3	Alternate 60A Configuration (Optional setting for maximum heater performance) <ul style="list-style-type: none">• 240 VAC/60A 3-wire configuration (2 hots and a ground)• 60A dual-pole GFCI breaker (hard wired only)• Electrical current draw of 45A	<p>If the home's electrical system has the full 240V/60A power available, the spa may be connected to a 240V/60A power source after a qualified technician makes a minor circuit board modification.</p> <p>In this configuration, the heater operates while both jets pumps are running. This may be preferable for owners of outdoor spas in cold climates because it will help their spas maintain water temperature during use.</p>

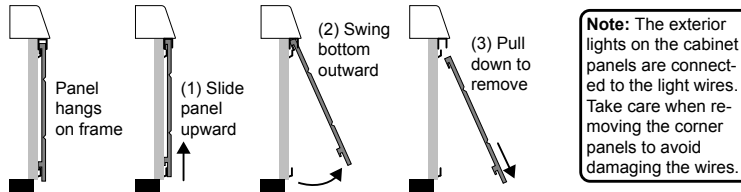
Equipment Access Consideration (All 780 Models)

Remove the corner panels by grabbing the bottom and gently pulling away from the spa to unsnap it from the holding clip. Pull downward to remove the corner panel. Then grab the bottom of the front (or side) cabinet panel and lift upward to remove the panel from the bottom holder. Swing the bottom of the panel outward to clear the upper hanger. This will require approx. 18 inches of access room between the spa and any other structures. Slide the panel downward to remove from the spa.

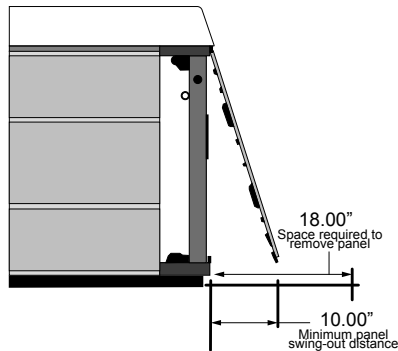
Corner Panel Removal (Front View)



Front / Side Panel Removal (Side View)



Important Measurements



Electrical Tasks After Spa Delivery, Continued

Installing a 3-Wire 240 VAC Connection for 780 Bristol™, Chelsea®, Hamilton™, Montclair™ Models

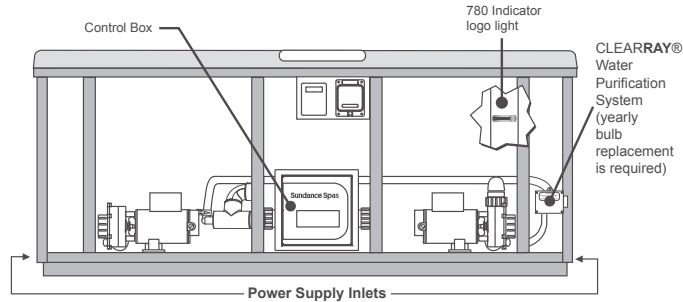


Figure 9: Spa equipment compartment (Spa features subject to change without notice. Component locations vary by model.)

Figure 10:

The Control Box for 3-wire, 240 VAC connection (The location of the TB1 terminal may vary between models.)

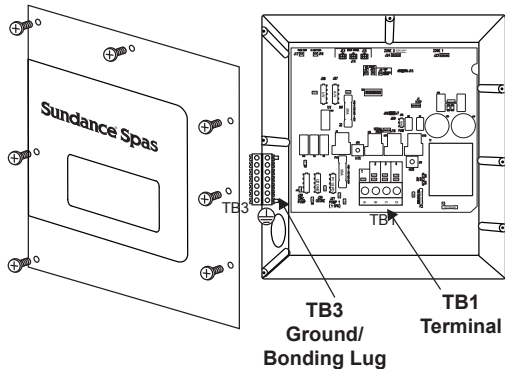
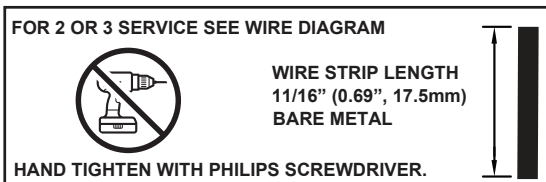
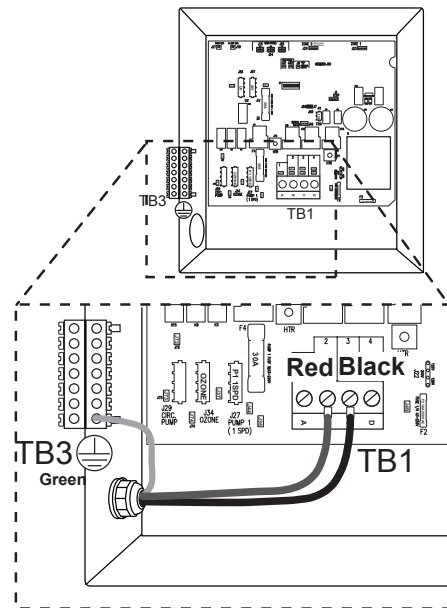
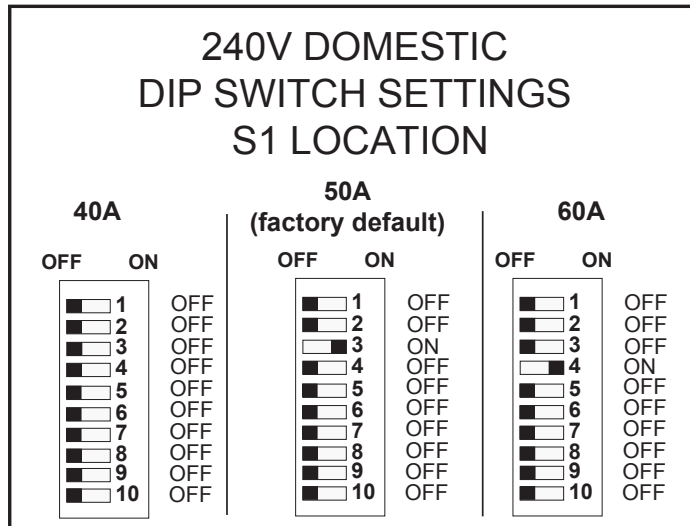


Figure 11

3-wire/240 VAC connection (*Hard Wired Connections Only*)



Dip Switch Settings for 780 Bristol™, Chelsea®, Hamilton™, Montclair™ Models

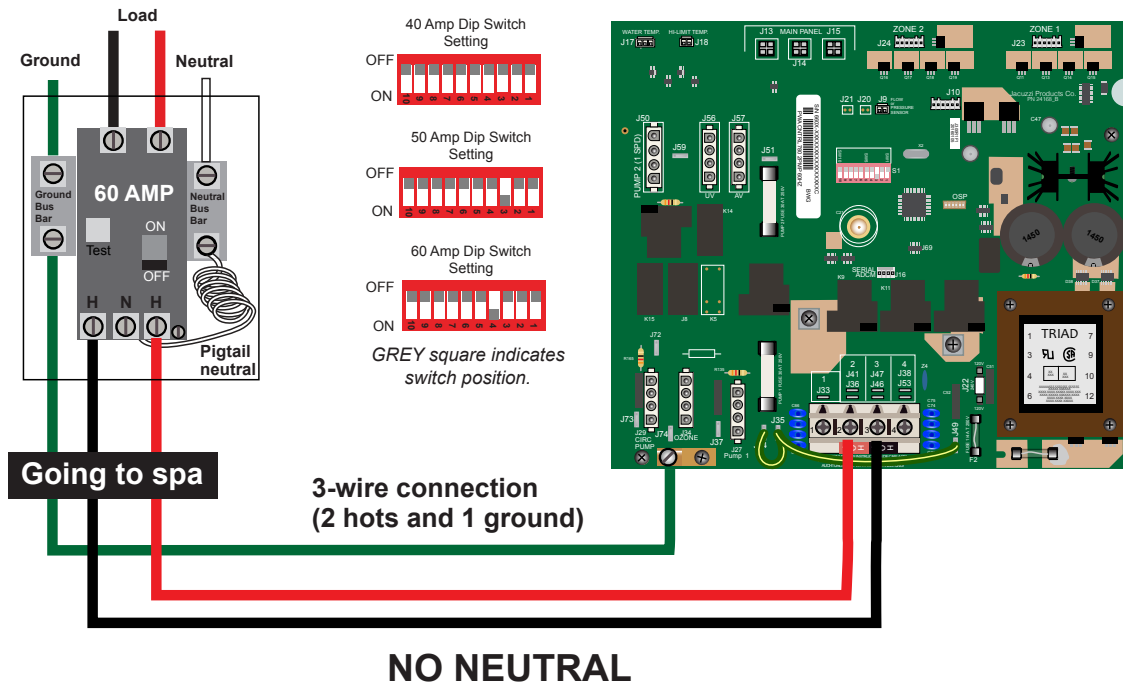


Black square indicates switch position.

240 VAC Connections for 780 Bristol™, Chelsea®, Hamilton™, Montclair™ Models (North America 60Hz)

A pressure sensitive terminal block (bonding lug) is attached to the outside surface of the load box. This permits the connection of a bonding wire between this point and any metal equipment chassis, metal water pipe, or metal conduit within 5 ft (1.5m) of the spa. The bonding wire must be at least #8 AWG (8.4 mm²) solid copper wire.

From the House Breaker Box





Important: When installed in the United States, the electrical wiring of this spa must meet the requirements of the National Electric Code (NEC) and any applicable state or local codes. The electrical circuit must be installed by an electrical contractor AND approved by a local building/electrical inspector.

Power Configurations for 780 Dover™ Models (North America 60Hz)

This section describes the three power configuration choices (Standard 15 Amp, Alternate 30 Amp or Alternate 40 Amp) for Dover™ models.

Note

Wire size must meet NEC recommendations and is determined by maximum current draw and length of run.

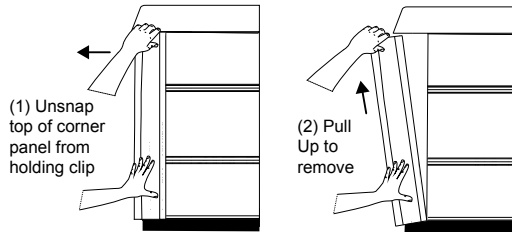
Important: All of the alternative electrical configurations require a qualified technician to perform minor circuit board modifications. To avoid damage to the spa, do not activate power to the spa until these modifications have been made. We recommend Square-D circuit breakers.

Config. #1	<p>Standard 15A Configuration (factory setting)</p> <ul style="list-style-type: none"> • 120 VAC/15A 3-wire configuration (hot, neutral, and ground) • 1 kW heater output • Use either the 15A GFCI power cord (supplied only for US models) or a 15A single-pole GFCI breaker (not supplied) • Maximum electrical current draw of 12A 	<p>In this Standard 15A configuration, the heater does not operate if the high-speed jets pump is activated.</p> <p>Place the spa within 10 ft (3m) of a dedicated grounded, grounding-type electrical outlet so that the power cord supplied with the spa can be plugged directly into it. Use the power cord shipped from the factory. Using another power cord may void the warranty.</p> <p>If the spa is more than 10 ft (3m) from an outlet, it must be hard wired to a 15A single-pole GFCI breaker.</p>
Config. #2	<p>Alternate 30A Configuration</p> <ul style="list-style-type: none"> • 240 VAC/30A 4-wire configuration (2 hots, neutral, and ground) • 4 kW heater output • 30A dual-pole GFCI breaker (not supplied) • Maximum electrical current draw of 20A 	<p>If your home does not have 240V/40A power available, connect the spa to a 240V/30A power source. Then, have a qualified technician modify the circuit board to match the power source.</p> <p>In this configuration, the heater yields the same rapid temperature rise as in the 40A configuration. However, the heater does not operate at the same time the high-speed jets pump is operating.</p>
Config. #3	<p>Alternate 40A Configuration</p> <ul style="list-style-type: none"> • 240 VAC/40A 4-wire configuration (2 hots, neutral, and ground) • 4 kW heater output • 40A dual-pole GFCI breaker (hard wired only) • Maximum electrical current draw of 31A 	<p>In the Alternate 40A configuration, the heater does operate at the same time the high-speed jets pump is operating. It is necessary to have a qualified technician modify the circuit board.</p>

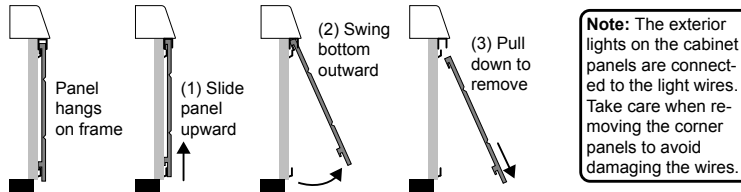
Equipment Access Consideration (All 780 Models)

Remove the corner panels by grabbing the bottom and gently pulling away from the spa to unsnap it from the holding clip. Pull downward to remove the corner panel. Then grab the bottom of the front (or side) cabinet panel and lift upward to remove the panel from the bottom holder. Swing the bottom of the panel outward to clear the upper hanger. This will require approx. 18 inches of access room between the spa and any other structures. Slide the panel downward to remove from the spa.

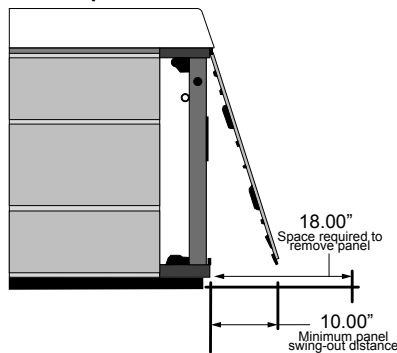
Corner Panel Removal (Front View)



Front / Side Panel Removal (Side View)



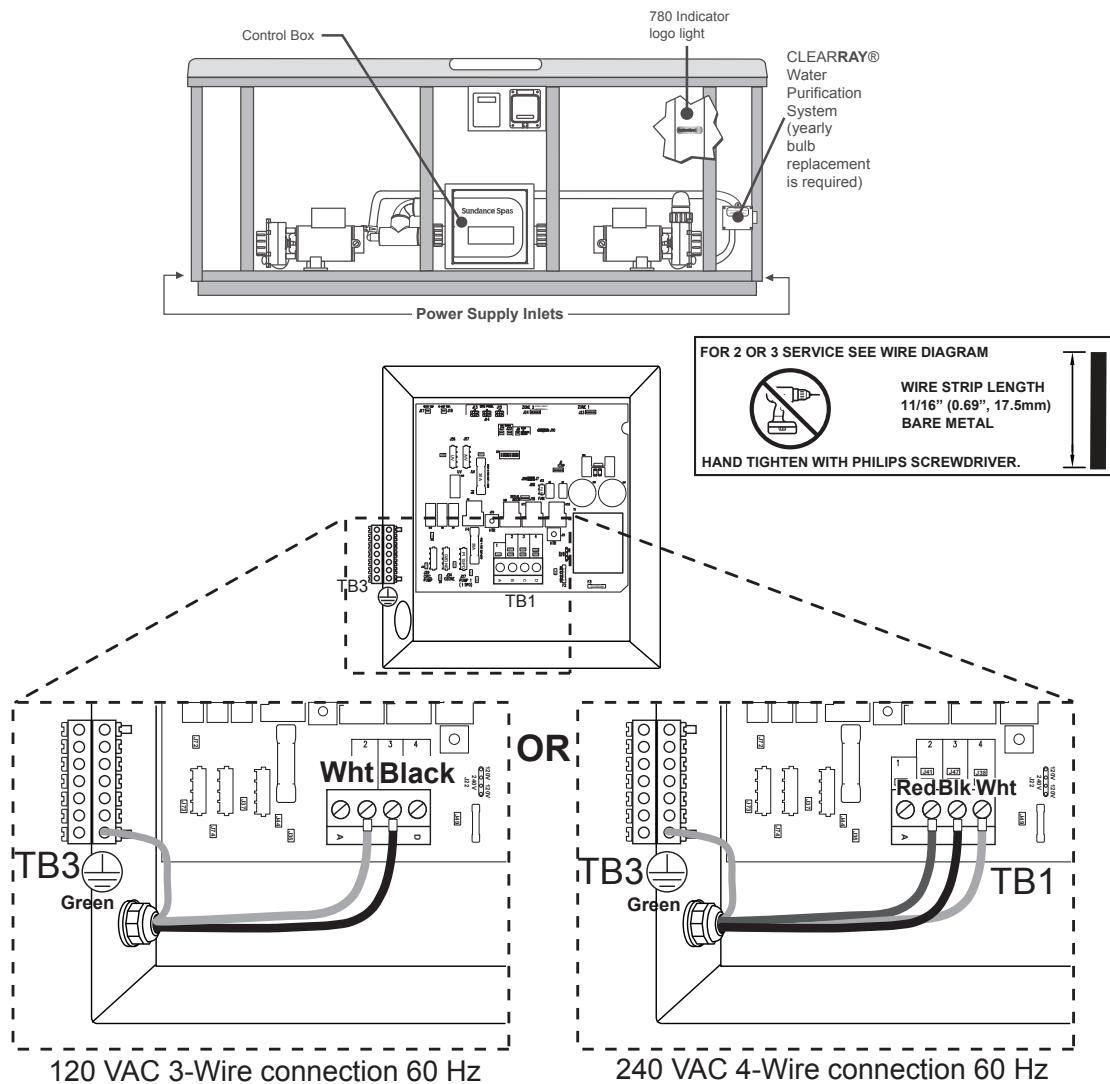
Important Measurements



Electrical Tasks After Spa Delivery, Continued

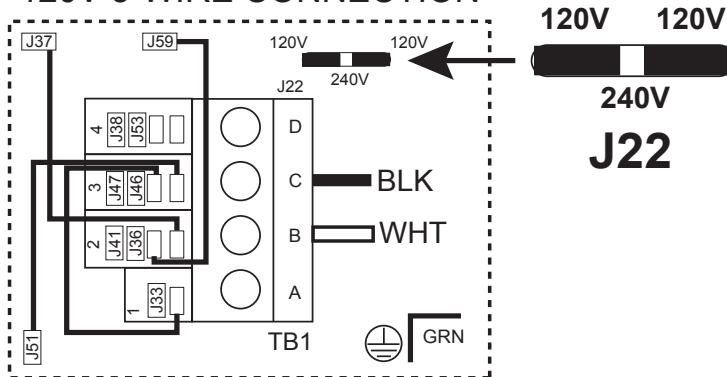
Installing a 3-Wire 120 VAC or 4-Wire 120/240 VAC Connection for: 780 Dover™ Models

Figure 12 The Spa Equipment Compartment (spa features subject to change without notice. Component locations vary by model. 780 Dover model shown.)

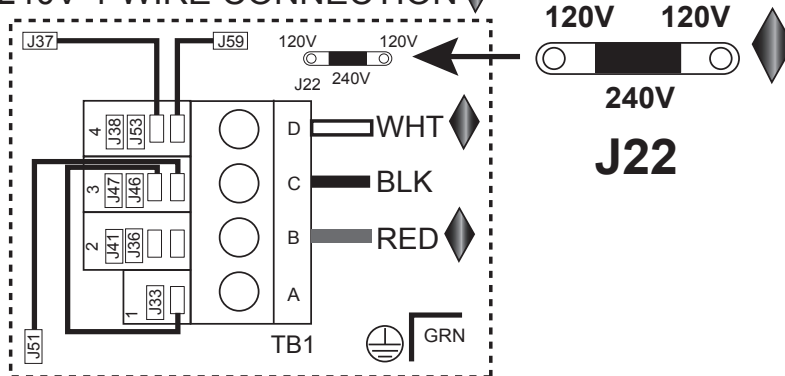


Installing a 3-Wire 120 VAC or 4-Wire 120/240 VAC Connection for: 780 Dover™ Models

120V 3-WIRE CONNECTION

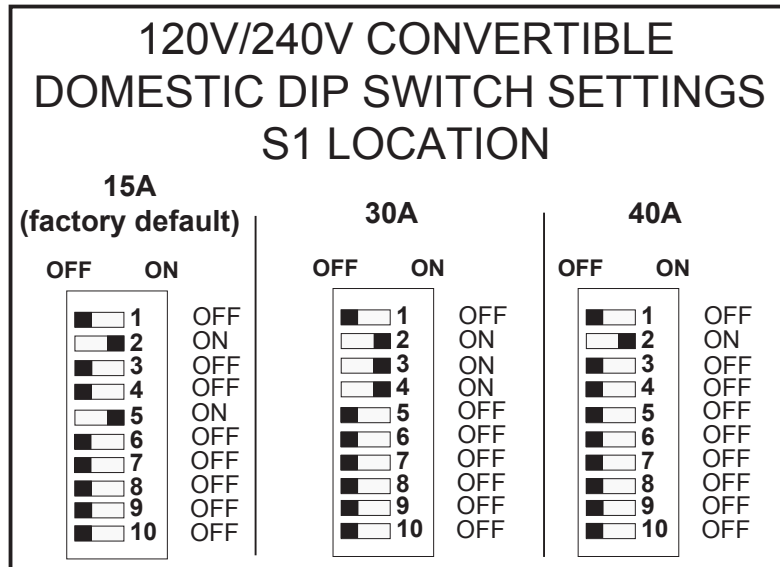


240V 4-WIRE CONNECTION



CAUTION: (FOR 4-WIRE 240 VAC HEATER OPERATION.) The jumper located at J22 must be changed from a 120V to a 240V configuration. Make sure to connect the wires as shown at TB1, for a 240V connection, **before applying power**. Jumper wires **MUST** be changed. Failure to follow these steps will result in damage to the circuit board and/or related components and void the manufactures warranty.

Dip Switch Settings for 780 Dover™ Models



Black square indicates switch position.

Electrical Tasks After Spa Delivery, Continued

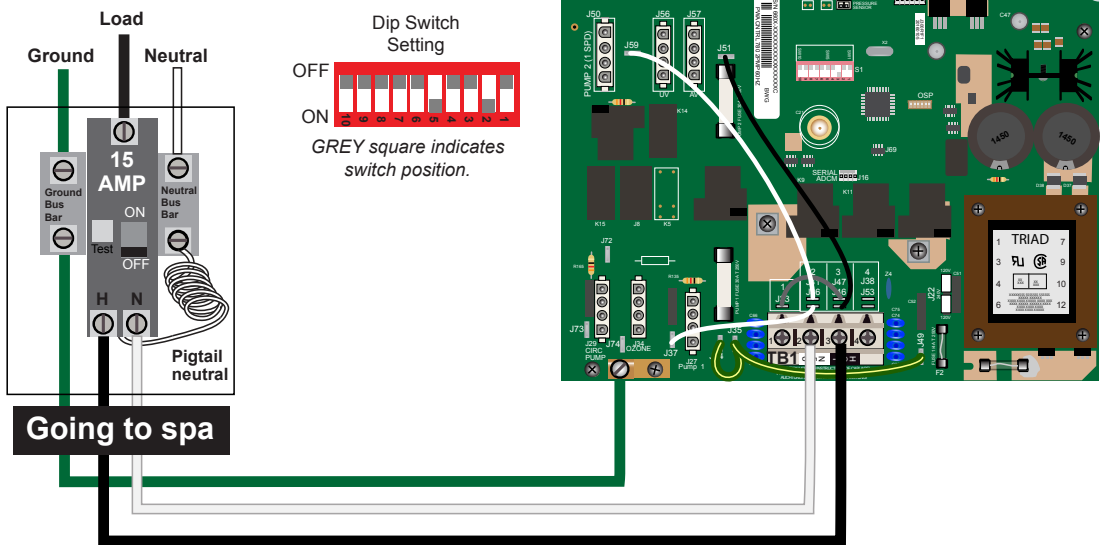
120 VAC Connections for 780 Dover™ Models (North America 60Hz)

If the supplied 10 ft GFCI power cord (US only) cannot reach a dedicated, grounded wall outlet, it is necessary to install a 3-wire, hard-wired connection. These diagrams illustrate that configuration.

For enhanced heater performance the use of a 4-wire power connection is necessary.

A pressure sensitive terminal block (bonding lug) is attached to the outside surface of the load box. This permits the connection of a bonding wire between this point and any metal equipment chassis, metal water pipe, or metal conduit within 5 ft (1.5m) of the spa. The bonding wire must be at least a #8 AWG (8.4 mm²) solid copper wire.

From the House Breaker Box



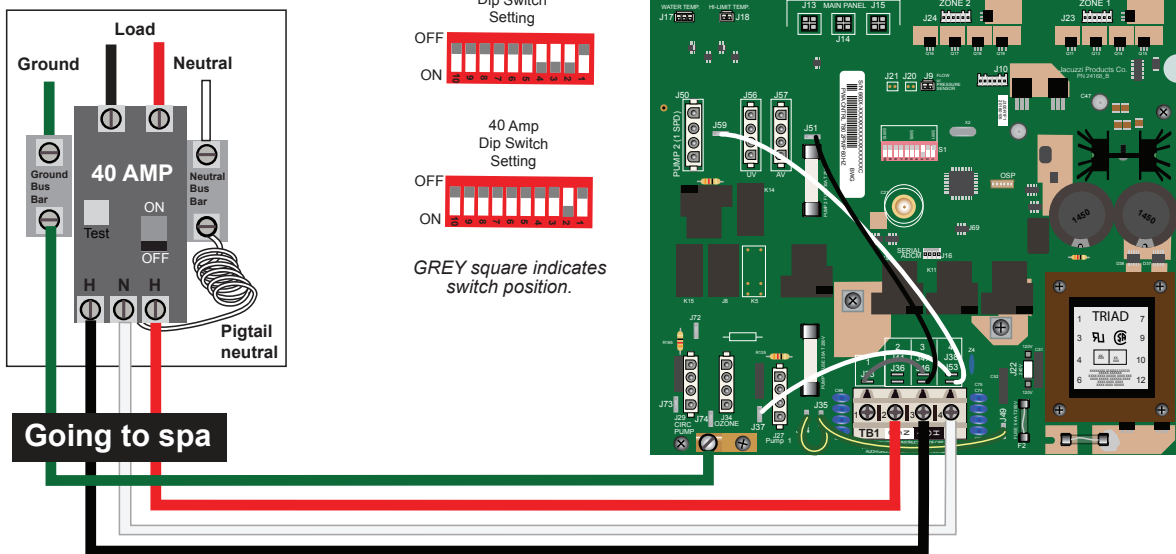
1. If spa is being hard wired, remove the factory installed GFCI cord.
2. Make sure the electrician runs a 15 Amp GFCI breaker. Follow instructions for a 3-wire 120VAC hook up as depicted above.

WARNING: If spa jumper wires are not installed correctly damage will occur.

240 VAC Connections for 780 Dover™ Models (North America 60Hz)

A pressure sensitive terminal block (bonding lug) is attached to the outside surface of the load box. This permits the connection of a bonding wire between this point and any metal equipment chassis, metal water pipe, or metal conduit within 5 ft (1.5m) of the spa. The bonding wire must be at least #8 AWG (8.4 mm²) solid copper wire.

From the House Breaker Box



1. Remove the factory installed GFCI cord.
2. On board, move the white wires from J41 and J36 to J38 and J53 (See page 37).
3. On J22, remove jumpers from pins 1 and 2, & pins 3 and 4. Place one jumper across pins 2 and 3 (See page 37).
4. Make sure the electrician runs a 30A/40A GFCI breaker. Follow instructions for a 4-wire 240VAC hook up as depicted above.
5. Add hot wire (red) to TB1 position 2 and other hot wire to position 3.
6. Add neutral wire to position 4 and ground to ground buss.

WARNING: If spa jumper wires are not installed correctly damage will occur.

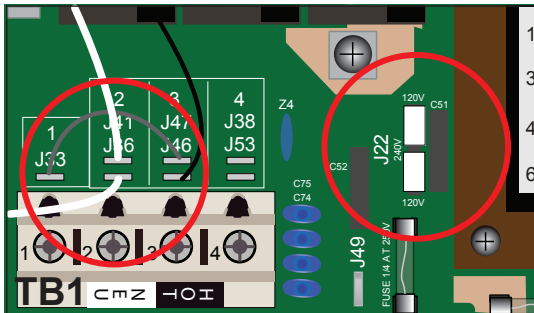
Connection Configuration 120V to 240 VAC Connections side by side for convertible 780 Dover™ Models (North America 60Hz)

If the supplied 10 ft GFCI power cord (US only) cannot reach a dedicated, grounded wall outlet, it is necessary to install a 3-wire, hard-wired connection. These diagrams illustrate that configuration.

For enhanced heater performance the use of a 4-wire power connection is necessary.

A pressure sensitive terminal block (bonding lug) is attached to the outside surface of the load box. This permits the connection of a bonding wire between this point and any metal equipment chassis, metal water pipe, or metal conduit within 5 ft (1.5m) of the spa. The bonding wire must be at least a #8 AWG (8.4 mm²) solid copper wire.

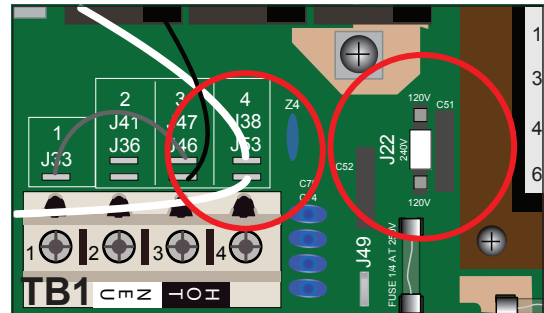
Convertible 120V 3-Wire (1 hot, 1 ground, and 1 neutral)



Jumper wires at
J41 and J36

J22 = 2 jumpers
for 120V

Convertible 240V 4-Wire (2 hots, 1 ground, and 1 neutral)



Jumper wires moved
to J38 and J53

J22 = 1 jumper
for 240V



Important: When installed in the United States, the electrical wiring of this spa must meet the requirements of the National Electric Code (NEC) and any applicable state or local codes. The electrical circuit must be installed by an electrical contractor AND approved by a local building/electrical inspector.

Power Configurations for 680 McKinley™, Ramona™, Peyton®, and Edison® Models (North America 60Hz)

This section describes the three power configuration choices (Standard 50 Amp, Alternate 40 Amp or Alternate 60 Amp) for McKinley™, Ramona™, Peyton®, and Edison® Models.

Note

Wire size must meet NEC recommendations and is determined by maximum current draw and length of run.

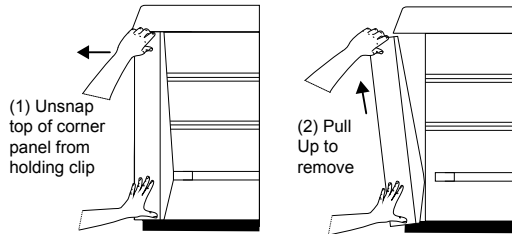
Important: All of the alternative electrical configurations require a qualified technician to perform minor circuit board modifications. Do not activate power to the spa until these modifications have been made. We recommend Square-D circuit breakers.

Config. #1	<p>Standard 50A Configuration (factory setting)</p> <ul style="list-style-type: none"> • 240 VAC/50A 3-wire configuration (2 hots and a ground) • 50A dual-pole GFCI breaker (hard wired only) • Current Draw: 26A 	<p>In this Standard 50A configuration, the heater does not operate while both jets pumps are running in high-speed. Note: Pump 2 runs only in high-speed.</p>
Config. #2	<p>Alternate 40A Configuration (For homes where 240 VAC/50A or 240 VAC/60A power is unavailable)</p> <ul style="list-style-type: none"> • 240 VAC/40A 3-wire configuration (2 hots and a ground) • 40A dual-pole GFCI breaker (hard wired only) • Current Draw: 36A 	<p>If the home's electrical system does not have the full 240V/50A or 240V/60A power available, the spa may be connected to a 240V/40A power source after a qualified technician makes a minor circuit board modification.</p> <p>The heater yields the same rapid temperature rise as in 50A operation, but does not operate while either jets pump is running in high-speed. Note: Pump 2 runs only in high-speed.</p>
Config. #3	<p>Alternate 60A Configuration (Optional setting for maximum heater performance)</p> <ul style="list-style-type: none"> • 240 VAC/60A 3-wire configuration (2 hots and a ground) • 60A dual-pole GFCI breaker (hard wired only) • Current Draw: 45A 	<p>If the home's electrical system has the full 240V/60A power available, the spa may be connected to a 240V/60A power source after a qualified technician makes a minor circuit board modification.</p> <p>In this configuration, the heater operates while both jets pumps are running in high-speed. This may be preferable for owners of outdoor spas in cold climates because it will help their spas maintain water temperature during use.</p>

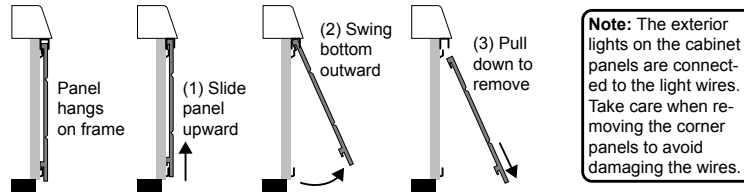
Equipment Access Consideration (All 680 Models)

Remove the corner panels by grabbing the bottom and gently pulling away from the spa to unsnap it from the holding clip. Pull downward to remove the corner panel. Then grab the bottom of the front (or side) cabinet panel and lift upward to remove the panel from the bottom holder. Swing the bottom of the panel outward to clear the upper hanger. This will require approx. 18 inches of access room between the spa and any other structures. Slide the panel downward to remove from the spa.

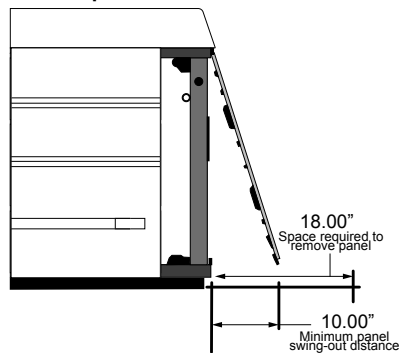
Corner Panel Removal (Front View)



Front / Side Panel Removal (Side View)



Important Measurements



Installing a 3-Wire 240 VAC Connection for 680 Edison[®], McKinley[™], Peyton[®], Ramona[™] Models

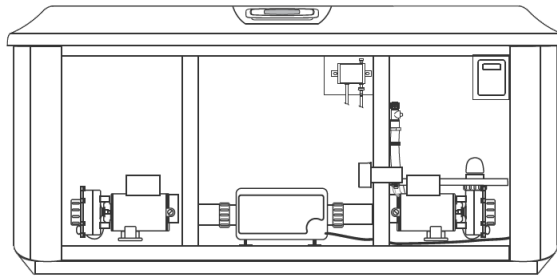


Figure 13: Spa equipment compartment (Spa features subject to change without notice. Component locations vary by model.)

Figure 14:

The Control Box for 3-wire, 240 VAC connection (The location of the TB1 terminal may vary between models.)

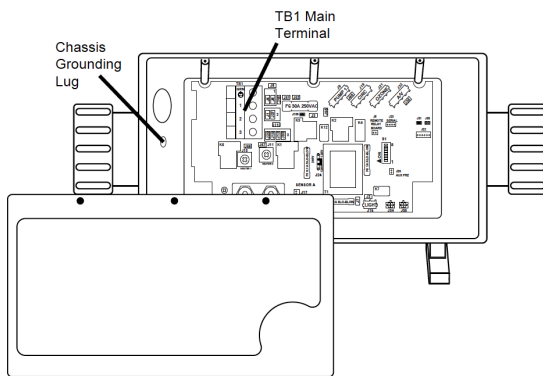
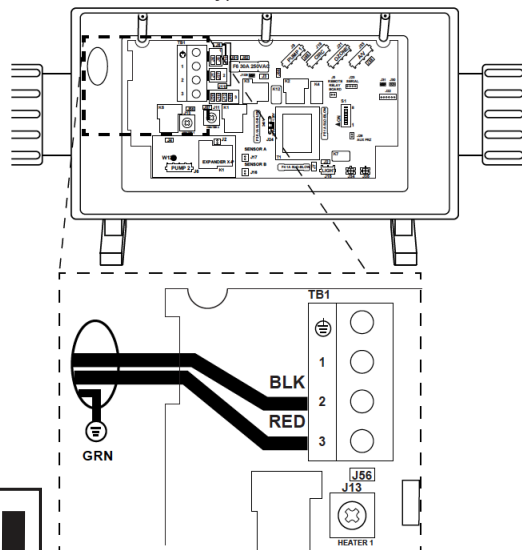


Figure 15

3-wire/240 VAC connection (*Hard Wired Connections Only*)

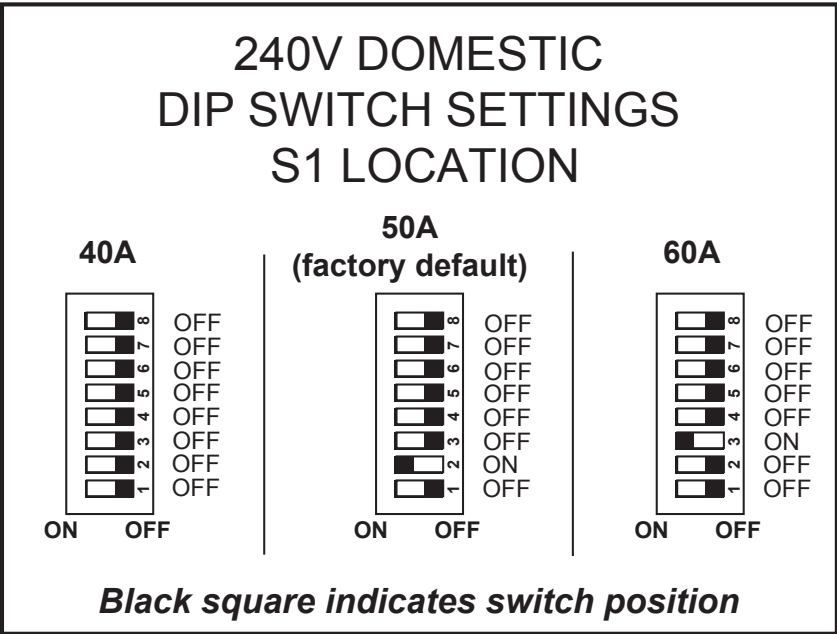


FOR 2 OR 3 SERVICE SEE WIRE DIAGRAM

WIRE STRIP LENGTH
11/16" (0.69", 17.5mm)
BARE METAL

HAND TIGHTEN WITH PHILIPS SCREWDRIVER.

Dip Switch Settings for 680 Edison®, McKinley™, Peyton®, Ramona™ Models

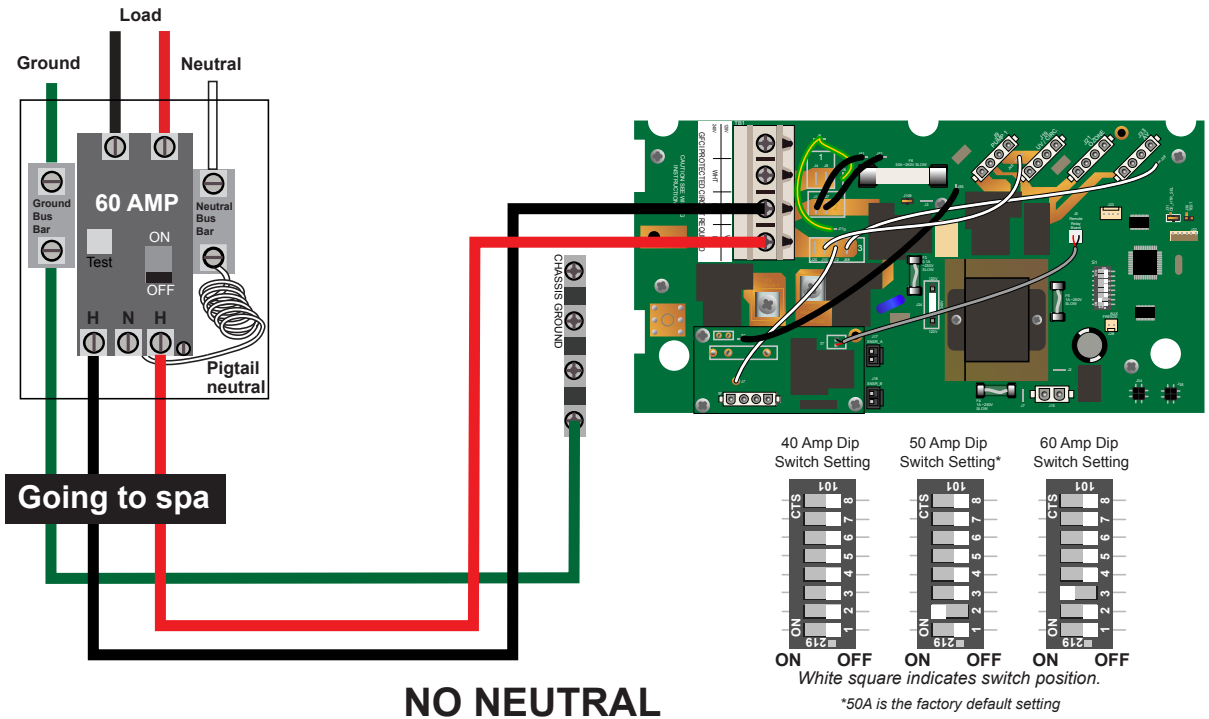


Electrical Tasks After Spa Delivery, Continued

240 VAC Connections for 680 Edison®, McKinley™, Peyton®, and Ramona™ Models (North America 60Hz)

A pressure sensitive terminal block (bonding lug) is attached to the outside surface of the load box. This permits the connection of a bonding wire between this point and any metal equipment chassis, metal water pipe, or metal conduit within 5 ft (1.5m) of the spa. The bonding wire must be at least #8 AWG (8.4 mm²) solid copper wire.

From the House Breaker Box





Important: When installed in the United States, the electrical wiring of this spa must meet the requirements of the National Electric Code (NEC) and any applicable state or local codes. The electrical circuit must be installed by an electrical contractor AND approved by a local building/electrical inspector.

Power Configurations for 680 Prado™ and Alicia™ Models (North America 60Hz)

This section describes the three power configuration choices (Standard 15 Amp, Alternate 30 Amp or Alternate 40 Amp) for Prado™ and Alicia™ models.

Note

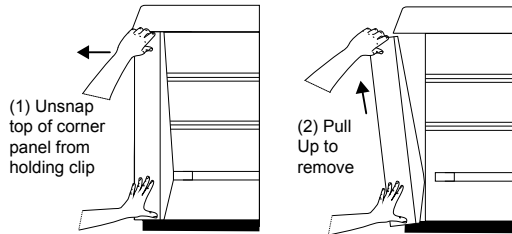
Wire size must meet NEC recommendations and is determined by maximum current draw and length of run.

Important: All of the alternative electrical configurations require a qualified technician to perform minor circuit board modifications. <u>To avoid damage to the spa</u> , do not activate power to the spa until these modifications have been made. We recommend Square-D circuit breakers.		
Config. #1	Standard 15A Configuration (factory setting) <ul style="list-style-type: none">• 120 VAC/15A 3-wire configuration (hot, neutral, and ground)• 1 kW heater output• Use either the 15A GFCI power cord (supplied only for US models) or a 15A single-pole GFCI breaker (not supplied)• Maximum electrical current draw of 12A	<p>In this Standard 15A configuration, the heater does not operate if the high-speed jets pump is activated.</p> <p>Place the spa within 10 ft (3m) of a dedicated grounded, grounding-type electrical outlet so that the power cord supplied with the spa can be plugged directly into it. Use the power cord shipped from the factory. Using another power cord may void the warranty.</p> <p>If the spa is more than 10 ft (3m) from an outlet, it must be hard wired to a 15A single-pole GFCI breaker.</p>
Config. #2	Alternate 30A Configuration <ul style="list-style-type: none">• 240 VAC/30A 4-wire configuration (2 hots, neutral, and ground)• 4 kW heater output• 30A dual-pole GFCI breaker (not supplied)• Maximum electrical current draw of 20A	<p>If your home does not have 240V/40A power available, connect the spa to a 240V/30A power source. Then, have a qualified technician modify the circuit board to match the power source.</p> <p>In this configuration, the heater yields the same rapid temperature rise as in the 40A configuration. However, the heater does not operate at the same time the high-speed jets pump is operating.</p>
Config. #3	Alternate 40A Configuration <ul style="list-style-type: none">• 240 VAC/40A 4-wire configuration (2 hots, neutral, and ground)• 4 kW heater output• 40A dual-pole GFCI breaker (hard wired only)• Maximum electrical current draw of 31A	<p>In the Alternate 40A configuration, the heater does operate at the same time the high-speed jets pump is operating. It is necessary to have a qualified technician modify the circuit board.</p>

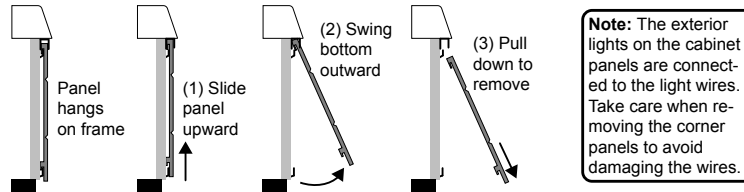
Equipment Access Consideration (All 680 Models)

Remove the corner panels by grabbing the bottom and gently pulling away from the spa to unsnap it from the holding clip. Pull downward to remove the corner panel. Then grab the bottom of the front (or side) cabinet panel and lift upward to remove the panel from the bottom holder. Swing the bottom of the panel outward to clear the upper hanger. This will require approx. 18 inches of access room between the spa and any other structures. Slide the panel downward to remove from the spa.

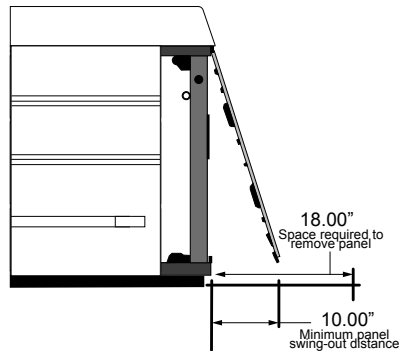
Corner Panel Removal (Front View)



Front / Side Panel Removal (Side View)



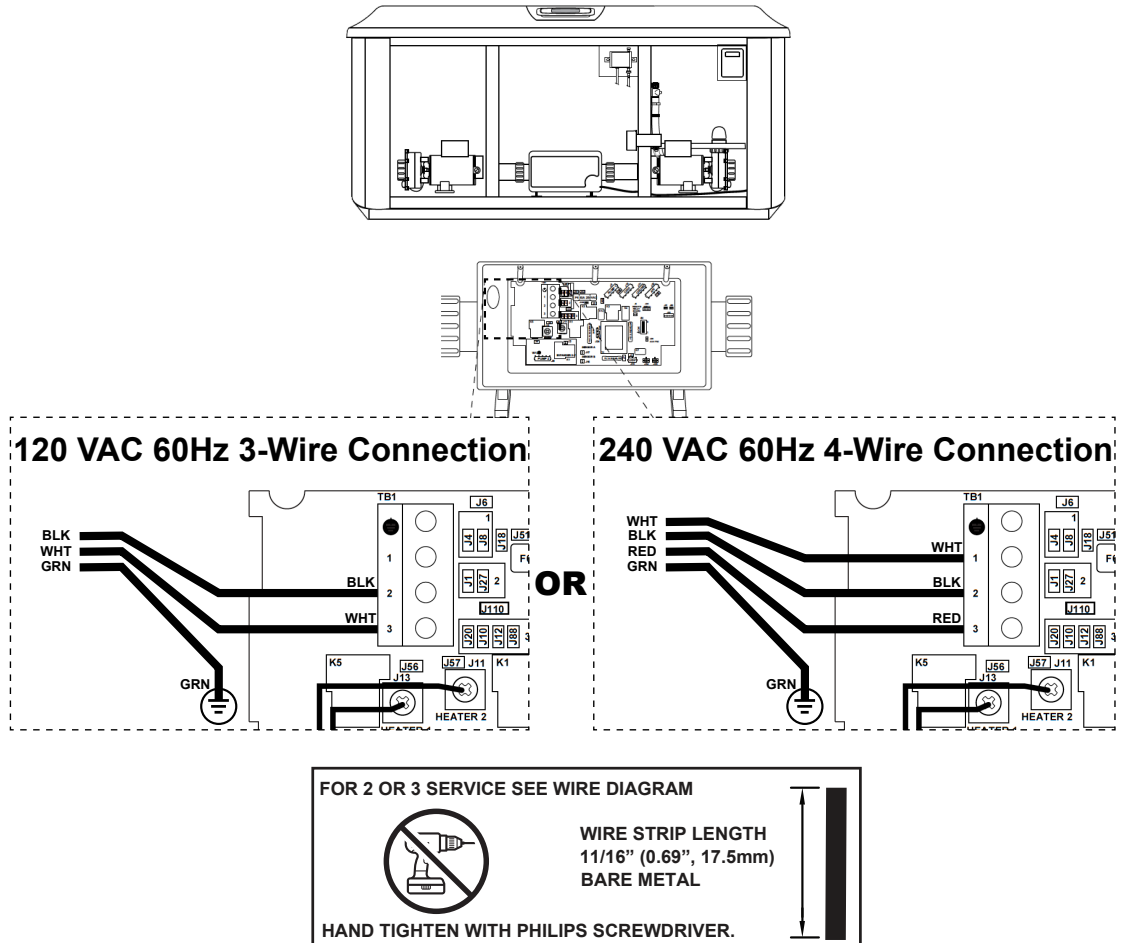
Important Measurements



Electrical Tasks After Spa Delivery, Continued

Installing a 3-Wire 120 VAC or 4-Wire 120/240 VAC Connection for: 680 Prado™ and Alicia™ Models

Figure 16 The Spa Equipment Compartment (spa features subject to change without notice. Component locations vary by model.)



Installing a 3-Wire 120 VAC or 4-Wire 120/240 VAC Connection for: 680 Prado™ and Alicia™ Models

120V 3-Wire Connection

F3 0.16A SLO-BLOW
F3 FUSE MUST BE A 0.16A SLO-BLOW FUSE DEFAULT SETTING

J31 J31 JUMPER MUST BE ON 1 PIN WHEN HEATER IS CONFIGURED AS 120VAC DEFAULT SETTING

J24 JUMPER MUST BE IN 120V POSITIONS AS SHOWN DEFAULT SETTING

SWITCH #2 AND 3 SET TO OFF WHEN HEATER IS CONFIGURED AS 120VAC

240V 4-Wire Connection

- TB1 MUST BE WIRED WHT-1, BLK-2, RED-3
- REMOVE JUMPER WIRE BETWEEN J4 AND J20.
- MOVE J46 WIRE FROM AREA 3 TO AREA 1
- CHANGE F3 FUSE TO 0.1A SLO-BLOW
- REMOVE 1 JUMPER FROM J24, PLACE REMAINING JUMPER ON PINS 2 AND 3.
- PUT J31 JUMPER ON 2 PINS

F3 0.1A SLO-BLOW
F3 FUSE MUST BE REPLACED BY A 0.1A SLO-BLOW FUSE (SUPPLIED WITH PACK)

J24 J24 JUMPER MUST BE IN 240V POSITION AS SHOWN

J31 J31 JUMPER MUST BE ON 2 PINS WHEN HEATER IS CONFIGURED AS 240VAC

SWITCH #2 SET TO ON WHEN HEATER IS CONFIGURED AS 240VAC



CAUTION: FOR 4-WIRE 240 VAC HEATER OPERATION. These directions must be followed before applying power. Connect the wires as shown at TB1 for a 240V configuration. Jumper wire from J4 to J20 **MUST** be removed and jumper wire from J46 to J10 **MUST** be moved to J46 to J4. Jumper at J24 **MUST** be set to the 240V configuration (one jumper on middle two pins). J31 jumper **MUST** be moved to cover both pins. F3 fuse **MUST** be replaced with a 0.1A fuse (supplied with pack). If 40A configuration is being used, Dip switch #2 should be switched to ON.

Electrical Tasks After Spa Delivery, Continued

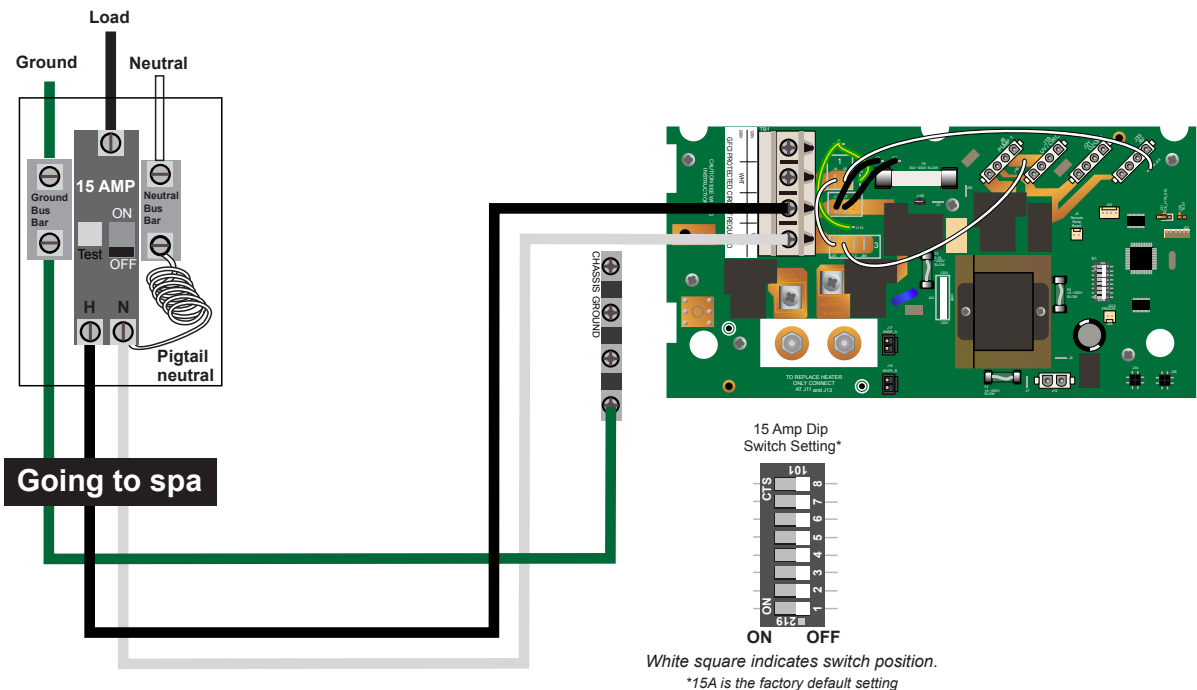
120 VAC Connections for 680 Prado™ and Alicia™ Models (North America 60Hz)

If the supplied 10 ft GFCI power cord (US only) cannot reach a dedicated, grounded wall outlet, it is necessary to install a 3-wire, hard-wired connection. These diagrams illustrate that configuration.

For enhanced heater performance the use of a 4-wire power connection is necessary.

A pressure sensitive terminal block (bonding lug) is attached to the outside surface of the load box. This permits the connection of a bonding wire between this point and any metal equipment chassis, metal water pipe, or metal conduit within 5 ft (1.5m) of the spa. The bonding wire must be at least a #8 AWG (8.4 mm²) solid copper wire.

From the House Breaker Box



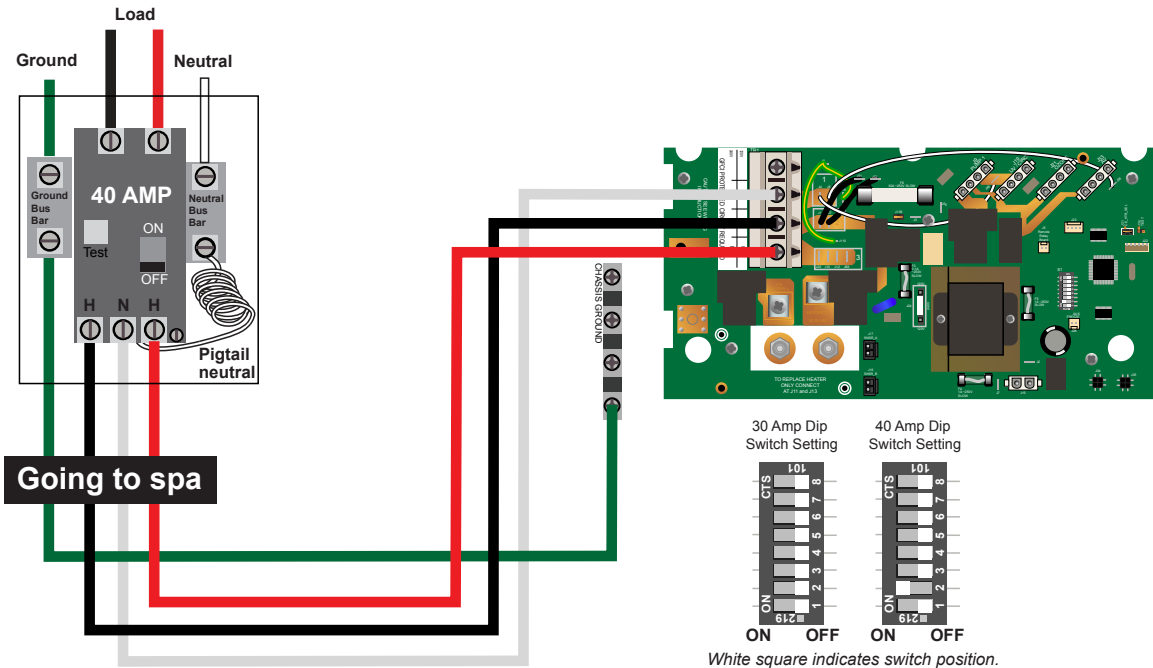
1. If spa is being hard wired, remove the factory installed GFCI cord.
2. Make sure the electrician runs a 15A GFCI breaker with a 3-wire 120VAC hook up, as depicted above.

WARNING: If spa jumper wires are not installed correctly, damage will occur.

240 VAC Connections for 680 Prado™ and Alicia™ Models (North America 60Hz)

A pressure sensitive terminal block (bonding lug) is attached to the outside surface of the load box. This permits the connection of a bonding wire between this point and any metal equipment chassis, metal water pipe, or metal conduit within 5 ft (1.5m) of the spa. The bonding wire must be at least #8 AWG (8.4 mm²) solid copper wire.

From the House Breaker Box



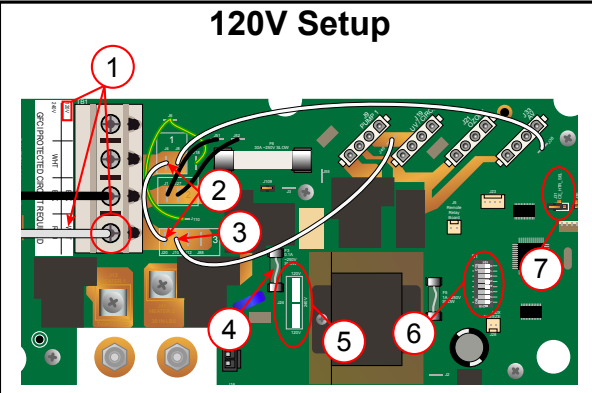
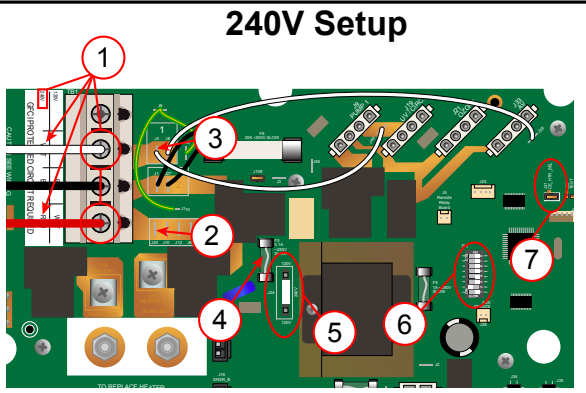
1. Remove the factory installed GFCI cord.
2. On board, remove jumper wire between J4 and J20.
3. On board, find jumper wire from J46 to J10. Move J10 connection to J4.
4. Change F3 fuse to 0.1A Slow Blow fuse supplied in spa packet.
5. Remove one jumper from J24 and place remaining jumper across middle two pins.
6. Put the jumper at J31 across both pins.
7. Make sure the electrician runs a 30A or 40A GFCI breaker with a 4-wire 240VAC hook up, as depicted above.
8. Move white wire at TB1 to position indicated above.
9. Add Red wire to TB1 at position indicated above.

WARNING: If spa jumper wires are not installed correctly, damage will occur.

Electrical Tasks After Spa Delivery, Continued

Connection Configuration 120V to 240 VAC Connections side by side for convertible 680 Prado™ and Alicia™ Models (North America 60Hz)

Shown in the diagram below are the differences between setting up a 120V Connection and a 240V connection for these spas. Failure to properly configure the circuit board for the appropriate voltage can cause damage to the spa's electronics.

<h4>120V Setup</h4> 	<h4>240V Setup</h4> 
<h4>120V 3-Wire Configuration</h4> <ol style="list-style-type: none">1. White wire connected to TB1 at position indicated for a 120V connection.2. Jumper wire between J4 and J20.3. J46 jumper wire connected to J10.4. Standard 0.16A fuse at F3.5. Two jumpers at J24.6. All S1 Dip switches set to OFF for 15A operation.7. Jumper at J31 set across one pin only.	<h4>240V 4-Wire Configuration</h4> <ol style="list-style-type: none">1. White wire moved to TB1 position indicated for a 240V connection. Red wire added, also in indicated 240V position.2. Jumper wire between J4 and J20 REMOVED.3. J46 jumper wire MOVED to J4.4. F3 fuse replaced with 0.1A fuse provided in spa pack.5. One jumper at J24, set across middle two pins.6. S1 Dip switch #2 set to ON (40A operation only).7. Jumper at J31 set across both pins.



Important: When installed in the United States, the electrical wiring of this spa must meet the requirements of the National Electric Code (NEC) and any applicable state or local codes. The electrical circuit must be installed by an electrical contractor AND approved by a local building/electrical inspector.

Power Configurations for Berkeley™ 30 Jet, Brook™ 30 Jet & Paisley™ Models (North America 60Hz)

This section describes the three power configuration choices (Standard 15 Amp, Alternate 30 Amp or Alternate 40 Amp) for Berkeley™ and Brook™ 30 Jet & Paisley™ models.

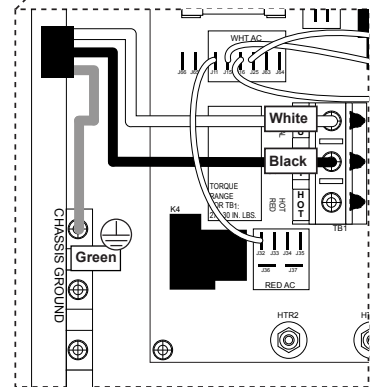
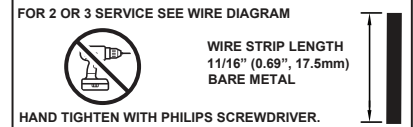
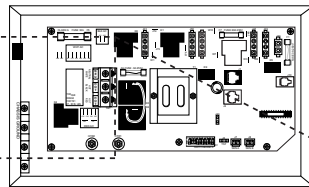
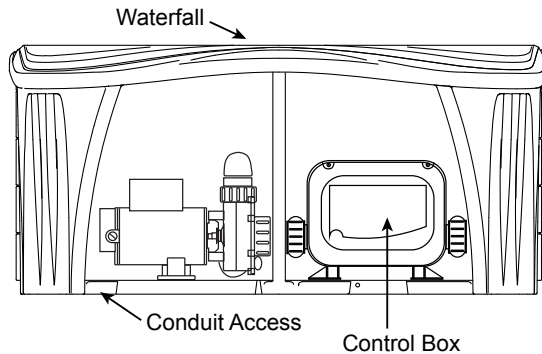
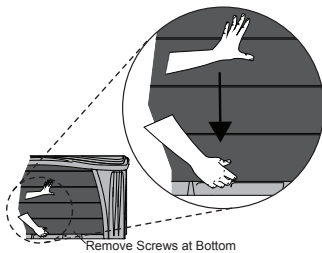
Note Wire size must meet NEC recommendations and is determined by maximum current draw and length of run.

<p>Important: All of the alternative electrical configurations require a qualified technician to perform minor circuit board modifications. <u>To avoid damage to the spa</u>, do not activate power to the spa until these modifications have been made. We recommend Square-D circuit breakers.</p>		
Config. #1	<p>Standard 15A Configuration (factory setting)</p> <ul style="list-style-type: none"> • 120 VAC/15A 3-wire configuration (hot, neutral, and ground) • 1 kW heater output • Use either the 15A GFCI power cord (supplied only for US models) or a 15A single-pole GFCI breaker (not supplied) • Maximum electrical current draw of 12A 	<p>In this Standard 15A configuration, the heater does not operate if the high-speed jets pump is activated.</p> <p>Place the spa within 10 ft (3m) of a dedicated grounded, grounding-type electrical outlet so that the power cord supplied with the spa can be plugged directly into it. Use the power cord shipped from the factory. Using another power cord may cancel the warranty.</p> <p>If the spa is more than 10 ft (3m) from an outlet, it must be hard wired to a 15A single-pole GFCI breaker.</p>
Config. #2	<p>Alternate 30A Configuration</p> <ul style="list-style-type: none"> • 240 VAC/30A 4-wire configuration (2 hots, neutral, and ground) • 4 kW heater output • 30A dual-pole GFCI breaker (not supplied) 	<p>If your home does not have 240V/40A power available, connect the spa to a 240V/30A power source. Then, have a qualified technician modify the circuit board to match the power source.</p> <p>In this configuration, the heater yields the same rapid temperature rise as in the 40A configuration. However, the heater does not operate at the same time the high-speed jets pump is operating.</p>
Config. #3	<p>Alternate 40A Configuration</p> <ul style="list-style-type: none"> • 240 VAC/40A 4-wire configuration (2 hots, neutral, and ground) • 4 kW heater output • 40A dual-pole GFCI breaker (hard wired only) • Maximum electrical current draw of 32A 	<p>In the Alternate 40A configuration, the heater does operate at the same time the high-speed jets pump is operating. It is necessary to have a qualified technician modify the circuit board.</p>

Electrical Tasks After Spa Delivery, Continued

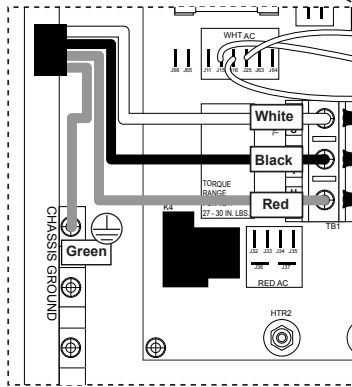
Installing a 3-Wire 120 VAC or 4-Wire 120/240 VAC Connection for: Berkeley™ 30 Jet, Brook™ 30 Jet & Paisley™ Models (North America 60Hz)

The Spa Equipment Compartment (spa features subject to change without notice. Component locations vary by model. Paisley model shown.)



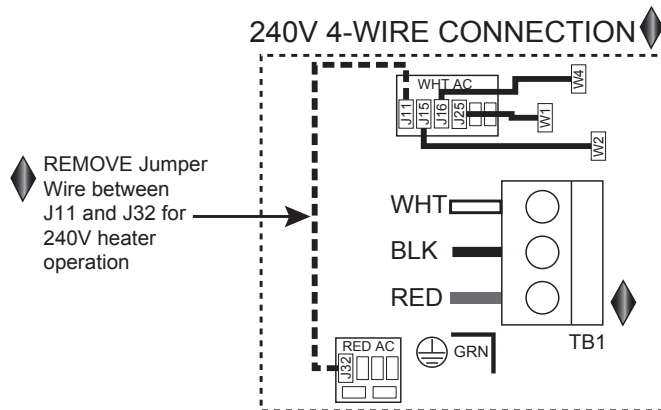
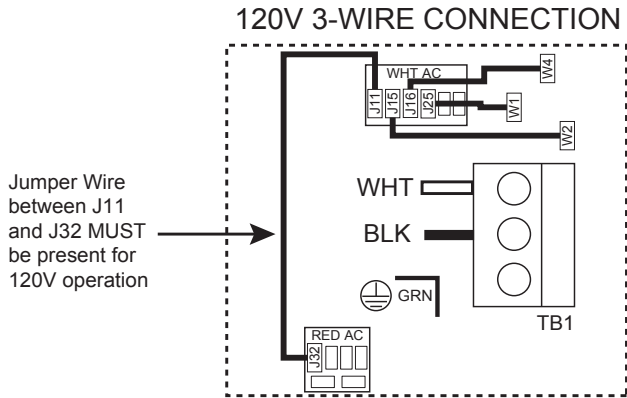
120 VAC 3-Wire connection 60Hz

OR



240 VAC 4-Wire connection 60Hz































**Installing a 3-Wire 120 VAC or 4-Wire 120/240 VAC Connection for:
Berkeley™ 30 Jet, Brook™ 30 Jet & Paisley™ Models (North America 60Hz)**



CAUTION: (FOR 4-WIRE 240 VAC HEATER OPERATION.) The jumper wire between J11 and J32 MUST be REMOVED. Make sure to connect the wires as shown at TB1, for a 240V connection, **before applying power**. Failure to follow these steps will result in damage to the circuit board and/or related components and void the manufacturer's warranty.

Dip Switch Settings for Berkeley™ 30 Jet, Brook™ 30 Jet & Paisley™ Models (North America 60Hz)

**120V/240V CONVERTIBLE
DOMESTIC DIP SWITCH SETTINGS
S1 LOCATION**

15A (factory default)		30A		40A	
ON	OFF	ON	OFF	ON	OFF
 10	ON	 10	ON	 10	OFF
 9	OFF	 9	OFF	 9	OFF
 8	OFF	 8	OFF	 8	OFF
 7	ON	 7	ON	 7	ON
 6	OFF	 6	OFF	 6	OFF
 5	OFF	 5	OFF	 5	OFF
 4	OFF	 4	OFF	 4	OFF
 3	ON	 3	ON	 3	ON
 2	ON	 2	ON	 2	ON
 1	OFF	 1	OFF	 1	OFF

Black square indicates switch position.

Electrical Tasks After Spa Delivery, Continued

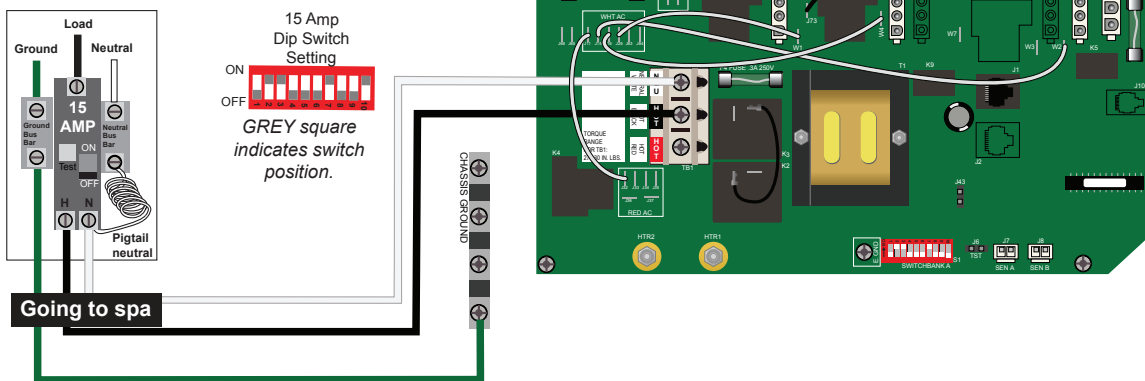
120 VAC Connections for Berkeley™ 30 Jet, Brook™ 30 Jet & Paisley™ Models (North America 60Hz)

If the supplied 10 ft GFCI power cord (US only) cannot reach a dedicated, grounded wall outlet, it is necessary to install a 3-wire, hard-wired connection. These diagrams illustrate that configuration.

For enhanced heater performance the use of a 4-wire power connection is necessary.

A pressure sensitive terminal block (bonding lug) is attached to the outside surface of the load box. This permits the connection of a bonding wire between this point and any metal equipment chassis, metal water pipe, or metal conduit within 5 ft (1.5m) of the spa. The bonding wire must be at least a #8 AWG (8.4 mm²) solid copper wire.

From the House Breaker Box



1. If spa is being hard wired, remove the factory installed GFCI cord.
2. On board, insure that the white jumper wire between J11 and J32 is INSTALLED.
3. Make sure the electrician runs a 15A GFCI breaker. Follow instructions for a 3-wire 120VAC hook up as depicted above.

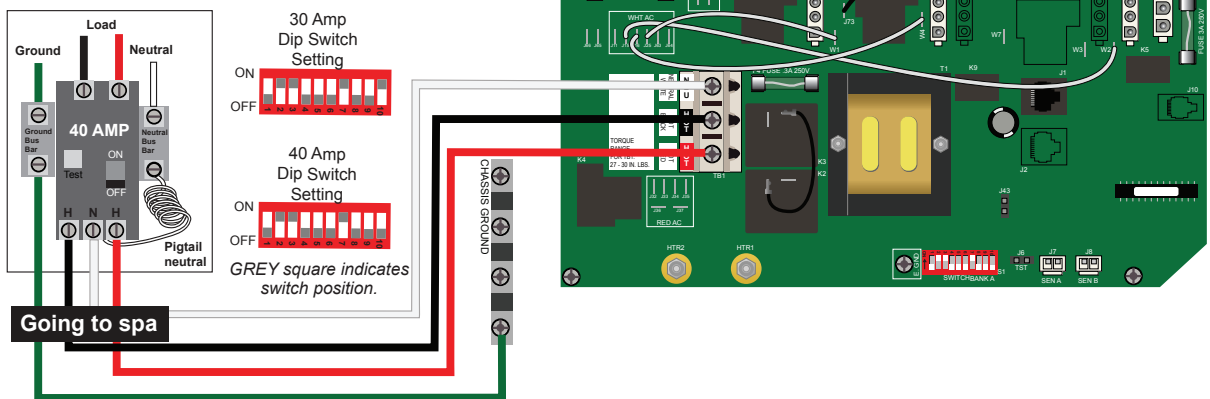
WARNING: If spa jumper wires are not installed correctly damage will occur.

Electrical Tasks After Spa Delivery, Continued

240 VAC Connections for Berkeley™ 30 Jet, Brook™ 30 Jet & Paisley™ Models (North America 60Hz)

A pressure sensitive terminal block (bonding lug) is attached to the outside surface of the load box. This permits the connection of a bonding wire between this point and any metal equipment chassis, metal water pipe, or metal conduit within 5 ft (1.5m) of the spa. The bonding wire must be at least #8 AWG (8.4 mm²) solid copper wire.

From the House Breaker Box



1. Remove the factory installed GFCI cord.
2. On board, remove the white jumper wire between J11 and J32.
3. Make sure the electrician runs a 30A/40A GFCI breaker. Follow instructions for a 4-wire 240VAC hook up as depicted above.
5. Add hot wire (red) to TB1 bottom position and other hot wire to middle position.
6. Add neutral wire to top position and ground to chassis ground buss.

WARNING: If spa jumper wires are not installed correctly damage will occur.

Spa Dimensions and Specifications

Useful Details About the Spa

The tables below provide the spa dimensions and specifications that may be helpful when installing your spa. These specifications are approximate. The filled weight specifications vary depending on the height of the spa's water. The filled weight is the weight of the spa (empty), plus the weight of the water at its maximum potential capacity (filled to the point of overflowing). The filled weight specifications do not include the weight of potential hot tub users who might be inside the hot tub. To ensure proper operation, the spa's water should always be above all the jets, and approximately one inch below all the pillows.

NOTE Always measure your spa before making critical design or delivery pathway decisions. These specifications are subject to change without notice and are for reference only.

980 Series					
Model	Width	Length	Height	Average Filled Weight	Min Pad Size
Kingston™	92 in. (233.7 cm)	100 in. (254 cm)	34 in. (86.4 cm)	4392 lb. (1992 kg)	4 in. (102 mm)
Claremont™	92 in. (233.7 cm)	100 in. (254 cm)	34 in. (86.4 cm)	4423 lb. (2006 kg)	

880 Series					
Model	Width	Length	Height	Average Filled Weight	Min. Pad Size
Altamar™	TBD	TBD	TBD	TBD	4 in. (102 mm)
Aspen®	TBD	TBD	TBD	TBD	
Cameo®	89 in. (226 cm)	89 in. (226 cm)	37 in. (93.98 cm)	3808 lb. (1727 kg)	
Capri®	TBD	TBD	TBD	TBD	
Marin™	76 in (193.04 cm)	91 in (231 cm)	34 in (86.36 cm)	3298 lb. (1496 kg)	
Optima®	89 in. (226 cm)	89 in. (226 cm)	37 in. (93.98 cm)	3905 lb. (1771 kg)	
Vistamar™	84 in (213.36 cm)	84 in (213.36 cm)	37 in. (93.98 cm)	3626 lb (1645 kg)	

Useful Details About the Spa, Continued

780 Series					
Model	Width	Length	Height	Average Filled Weight	Min. Pad Size
Bristol™	84 in. (213 cm)	84 in. (213 cm)	36 in. (91 cm)	3664 lb. (1662 kg)	4 in. (102 mm)
Chelsee®	89 in. (226 cm)	89 in. (226 cm)	36 in. (91.44 cm)	4209 lb. (1909 kg)	
Dover™	69 in. (175.5 cm)	82 in. (208.5 cm)	30.5 in. (77.5 cm)	2538 lb. (1151 kg)	
Hamilton™	89 in. (226 cm)	89 in. (226 cm)	36 in. (91.44 cm)	4104 lb. (1861 kg)	
Montclair™	75 in. (191 cm)	91 in. (231 cm)	33.5 in. (85.09 cm)	3375 lb. (1531 kg)	

680 Series					
Model	Width	Length	Height	Average Filled Weight	Min. Pad Size
Alicia™	69 in. (175 cm)	80 in. (203 cm)	33 in. (84 cm)	2334 lb. (1059 kg)	4 in. (102 mm)
Edison®	84 in. (214 cm)	84 in. (214 cm)	36 in. (92 cm)	3614 lb. (1639 kg)	
McKinley™	89 in. (226 cm)	89 in. (226 cm)	36 in. (92 cm)	4123 lb. (1870 kg)	
Peyton®	84 in. (214 cm)	84 in. (214 cm)	36 in. (92 cm)	3447 lb. (1563 kg)	
Prado™	80 in. (203 cm)	80 in. (203 cm)	33 in. (84 cm)	2897 lb. (1314 kg)	
Ramona™	89 in. (226 cm)	89 in. (226 cm)	36 in. (92 cm)	3960 lb. (1796 kg)	

Useful Details About the Spa, Continued

Splash™ Series					
Model	Width	Length	Height	Average Filled Weight	Min. Pad Size
Berkeley™ 30 Jet	78 in. (198 cm)	78 in. (198 cm)	36 in. (91 cm)	2971 lb. (1348 kg)	4 in. (102 mm)
Brook™ 30 Jet	78 in. (198 cm)	78 in. (198 cm)	36 in. (91 cm)	3150 lb. (1429 kg)	
Paisley™	78 in. (198 cm)	68 in. (178 cm)	32 in. (81 cm)	2404 lb. (1090 kg)	

Water Capacity and Average Fill Volume

Water Capacity Reference For Chemicals

* Use approximate average fill for chemical measurement

Model	*Approximate Average Fill
Altamar™	TBD
Aspen®	TBD
Cameo®	350 US gal. (1325 Liters)
Capri®	TBD
Claremont™	405 US gal. (1533 Liters)
Marin™	295 US gal. (1,117 Liters)
Optima®	355 US gal. (1344 Liters)
Chelsee®	400 US gal. (1514 Liters)
Hamilton™	393 US gal. (1488 Liters)
Kingston™	401 US gal. (1518 Liters)
Montclair™	310 US gal. (1173 Liters)
Edison®	345 US gal. (1,306 Liters)
McKinley™	400 US gal. (1,514 Liters)
Peyton®	325 US gal. (1,230 Liters)
Prado™	275 US gal. (1,041 Liters)
Ramona™	380 US gal. (1,438 Liters)
Alicia™	210 US gal. (795 Liters)
Berkeley™ 30 Jet	310 US gal. (1,173 Liters)
Brook™ 30 Jet	328 US gal. (1,242 Liters)
Paisley™	254 US gal. (961 Liters)
Vistamar™	330 US gal. (1,249 Liters)

- Total Spa Volume is the approximate measurement of water it takes to fill the total area inside the spa.
- Average Fill is the approximate measurement of water used to cover all jets but does not touch the bottom of the lowest headrest.

Sundance® Spas

www.sundancespas.com
800-883-7727

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