



Sundance® Spas

How to make delivery and
installation of your new hot tub
fast, easy and trouble-free.

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, made to exacting ISO 9001 quality standards. 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 the information you'll need to ensure a safe, speedy, and trouble-free spa delivery and installation.

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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. A minimum of 10 feet (3 meters) is suggested.
- 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.

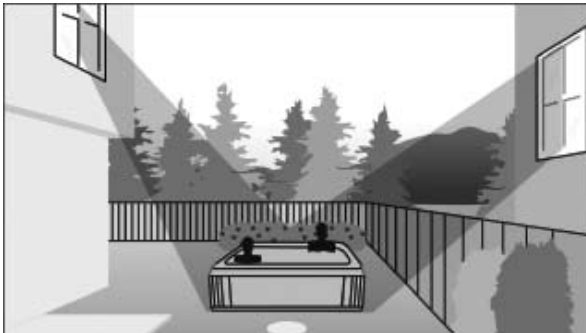


Figure 1 Plan for privacy before the spa is delivered

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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).

Note

If the spa is placed on a surface which does not meet these requirements, damage to the skirt 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.

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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 from below or by removing the side access panels.

To make access easy, create an installation plan that includes the details for removing the spa's access panel to easily reach the spa's equipment 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.

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.

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 panels of the spa. It is important to install the spa to allow easy access to the spa equipment.

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 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.

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?
- 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.

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Planning to Move the Spa Into Your Yard, Continued

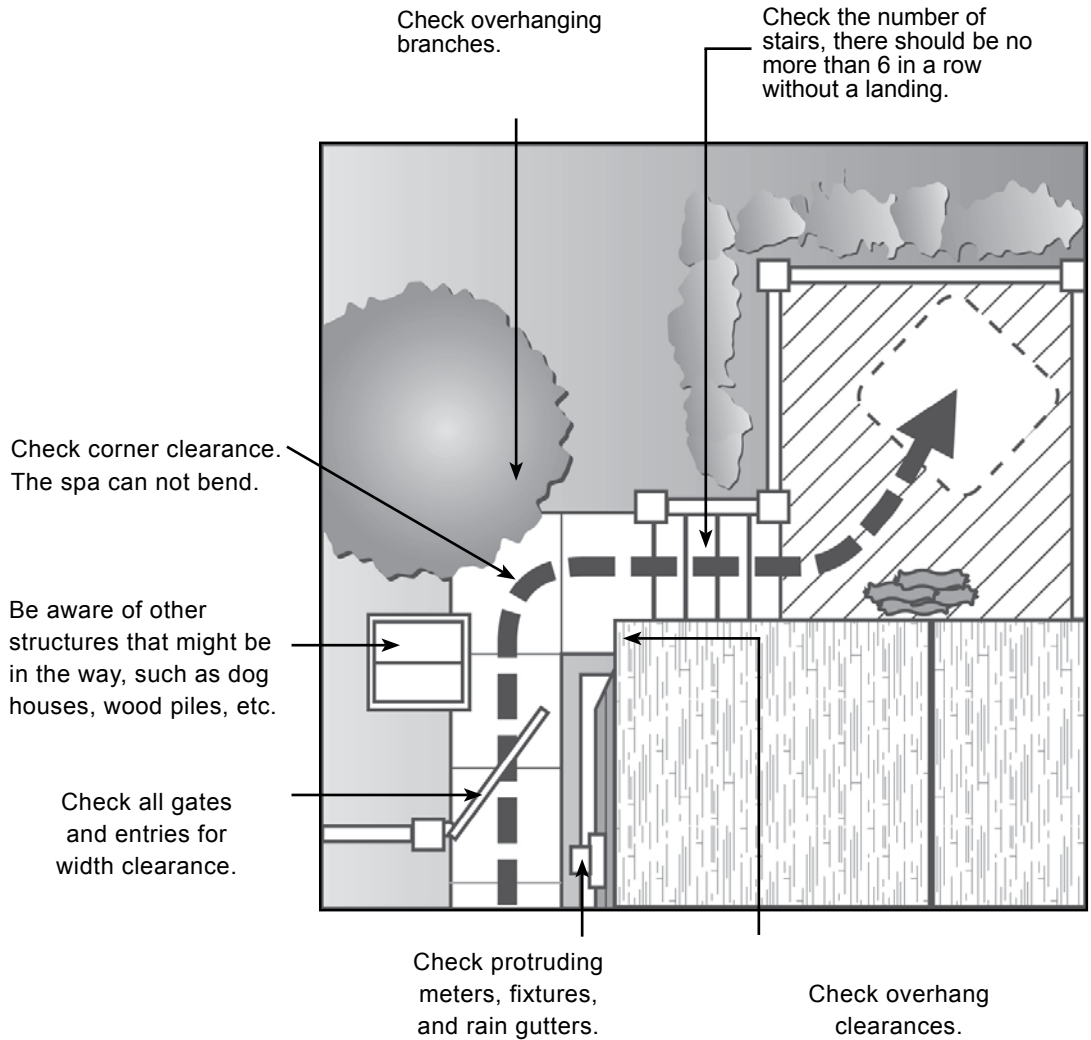


Figure 2 Check for obstacles in the delivery route BEFORE receiving your new spa

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.



Never use an extension cord of any kind. Using an extension cord can damage the spa equipment and void your warranty.

The Sundance Denali, Dover, and Tacoma 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 (USA only)	Plugged into a dedicated grounded outlet using the GFCI cord supplied with the spa.
120V (Canada)	Hard wired to the power supply per CSA standards.

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Electrical Tasks Before Spa Delivery, Continued

 To Keep Warranty Valid	<p>The manufacturer's warranty becomes void if the spa's electrical connections do not meet the specifications as stated in this document.</p>
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- 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		
○	<p>Select the wire size based on NEC and/or local codes.</p> <table border="1" style="width: 100%; background-color: #f0f0f0;"> <tr> <td style="text-align: center; width: 20%;">Note</td> <td>If you use wire larger than #6 (10 mm²), add a junction box near the spa, and reduce the wire to short lengths of #6 (10 mm²) wire between the junction box and the spa.</td> </tr> </table>	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.
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. Do not use aluminum wire.		

- 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 or Cutler Hammer GFCI breakers. The appropriate wiring configuration for your spa appear elsewhere in this document.

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

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 or Cutler Hammer circuit breakers.

Power Configurations for 880 Maxxus Models (North America, 60Hz)

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

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

Config. #1	<p>Standard 60A Configuration (factory setting)</p> <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 	<p>In the Standard 60A configuration, the heater operates while any two jets pumps and the blower are running.</p> <p>However, the heater does not operate when all three jets pumps are running.</p>
Config. #2	<p>Alternate 50A Configuration</p> <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 38A 	<p>If your home does not have 240 VAC/60A power available, connect the spa to a 240 VAC/50A power source. Then, have a qualified electrician 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 60A configuration. However, the heater does not operate while any two jets pumps are running.</p>

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 or Cutler Hammer circuit breakers.

Power Configurations for 880 Altamar, Cameo, Majesta, 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, Majesta, Marin, and Optima hot tub models.

		Note
Config. #1	<p>Standard 50A Configuration (factory setting)</p> <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 40A 	<p>In this Standard 50A configuration, the heater does not operate while both jets pumps are running.</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 ground) • 40A dual-pole GFCI breaker (hard wired only) • Maximum electrical current draw of 26A 	<p>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 electrician 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 operate while either jets pump are running or when the blower is running.</p>
Config. #3	<p>Alternate 60A Configuration</p> <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 	<p>In the Alternate 60A configuration, the heater operates while both jets pumps and the blower are running.</p>

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 or Cutler Hammer circuit breakers.

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

This section describes the power configuration choices (Standard 50 Amp, and Alternate 40 AMP) for Capri hot tub models.

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

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 40A 	<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 26A 	<p>If the home's electrical system does not have the full 240 VAC/50A power available, the spa may be connected to a 240V/40A power source after a qualified electrician 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 of the jets pumps or when the blower is running.</p>

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 or Cutler Hammer circuit breakers.

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 hot tub models.

		Note
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>Wire size must meet NEC recommendations and is determined by maximum current draw and length or run.</p> <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 21A 	<p>If your home does not have 240 VAC/40A power available, connect the spa to a 240 VAC/30A power source. Then, have a qualified electrician 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 30A 	<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 electrician modify the circuit board.</p>

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 or Cutler Hammer circuit breakers.

Power Configurations for 780 Camden Models (North America, 60Hz)

This section describes the power configuration choices (Standard 50 Amp and Alternate 40 Amp) for Camden hot tub models.

Note

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

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) • Electrical current draw of 36A 	<p>In this Standard 50A configuration, the heater does run if the jets pump is running in high-speed.</p>
Config. #2	<p>Alternate 40A Configuration (For homes where 240 VAC/50A 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) • Electrical current draw of 26A 	<p>If the home's electrical system does not have the full 240 VAC/50A, the spa may be connected to a 240V/40A power source after a qualified electrician makes a minor circuit board modification.</p> <p>In this configuration, the heater does not run while the jets pump is running in high-speed.</p>

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 or Cutler Hammer circuit breakers.

Power Configurations for 780 Certa, Chelsee, and Hamilton Models (North America, 60Hz)

This section describes the power configuration choices (Standard 50 Amp, Alternate 40 Amp, and Alternate 60 AMP) for Certa, Chelsee and Hamilton hot tub models.

	<p>Note Wire size must meet NEC recommendations and is determined by maximum current draw and length or run.</p>
<p>Config. #1</p>	<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) • Electrical current draw of 36A <p>If the home's electrical system does not have 240 VAC/60A, the spa may be connected to a 240V/50A power source after a qualified electrician makes a minor circuit board modification.</p> <p>In this Standard 50A configuration, the heater yields the same rapid temperature rise as in 60A operation, but does not operate while both jets pumps are running in high-speed. Note: Pump 2 runs only in high-speed.</p>
<p>Config. #2</p>	<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) • Electrical current draw of 26A <p>If the home's electrical system does not have the full 240 VAC/50A or 240 VAC/60A power available, the spa may be connected to a 240V/40A power source after a qualified electrician makes a minor circuit board modification.</p> <p>In this configuration, the heater does not run while either of the jets pumps are running in high-speed. Note: Pump 2 runs only in high-speed.</p>
<p>Config. #3</p>	<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) • 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 electrician 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>

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 or Cutler Hammer circuit breakers.

Power Configurations for 680 Hartford, and Hawthorne Models (North America, 60Hz)

This section describes the power configuration choices (Standard 50 Amp, Alternate 40 Amp, and Alternate 60 AMP) for Hartford and Hawthorne hot tub models.

		Note
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) • Electrical current draw of 36A 	<p>If the home's electrical system does not have 240 VAC/60A, the spa may be connected to a 240V/50A power source after a qualified electrician makes a minor circuit board modification.</p> <p>In this Standard 50A configuration, the heater yields the same rapid temperature rise as in 60A operation, but 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) • Electrical current draw of 26A 	<p>If the home's electrical system does not have the full 240 VAC/50A or 240 VAC/60A power available, the spa may be connected to a 240V/40A power source after a qualified electrician makes a minor circuit board modification.</p> <p>In this configuration, the heater does not run while either of the jets pumps run. 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) • 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 electrician 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>

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 or Cutler Hammer circuit breakers.

Power Configurations for 680 Burlington Models (North America, 60Hz)

This section describes the power configuration choices (Standard 50 Amp and Alternate 40 AMP) for Burlington hot tub models.

		Note
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) • Electrical current draw of 36A 	<p>Wire size must meet NEC recommendations and is determined by maximum current draw and length or run.</p> <p>In this Standard 50A configuration, the heater does operate while the jets pump is running in high-speed.</p>
Config. #2	<p>Alternate 40A Configuration (For homes where 240 VAC/50A 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) • Electrical current draw of 26A 	<p>If the home's electrical system does not have the full 240 VAC/50A, the spa may be connected to a 240V/40A power source after a qualified electrician makes a minor circuit board modification.</p> <p>In this configuration, the heater does not run while the jets pump is running in high-speed.</p>

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 or Cutler Hammer circuit breakers.

Power Configurations for 680 Denali and Tacoma Models (North America, 60Hz)

This section describes the three power configuration choices (Standard 15 Amp, Alternate 30 Amp, or Alternate 40 Amp) for Denali and Tacoma hot tub models.

Note

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

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) • Maximum electrical current draw of 21A 	<p>If your home does not have 240 VAC/40A power available, connect the spa to a 240 VAC/30A power source. Then, have a qualified electrician 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 30A 	<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 electrician modify the circuit board.</p>

Electrical Tasks After Spa Delivery



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 (see Figure 3 on the next page). After removing the spa cabinet panel, remove the four metal control box cover screws and metal 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 metal control box.
4	Connect the wires, color to color, on the terminal strips and tighten securely.
5	To complete the electrical installation, secure the metal control box door by replacing its 4 screws, then re-install the spa cabinet panel under the control panel.

For specific electrical information about the spa model being installed, look through Figures 3 through 9 in this section.

Continued on next page

Electrical Tasks After Spa Delivery, Continued

Installing a 3-Wire 240 VAC Connection for 880 Altamar, Cameo, Capri, Majesta, Marin, Maxxus, Optima Models, 780 Camden, Certa, Chelsee, Hamilton Models, and 680 Burlington, Hartford and Hawthorne Models

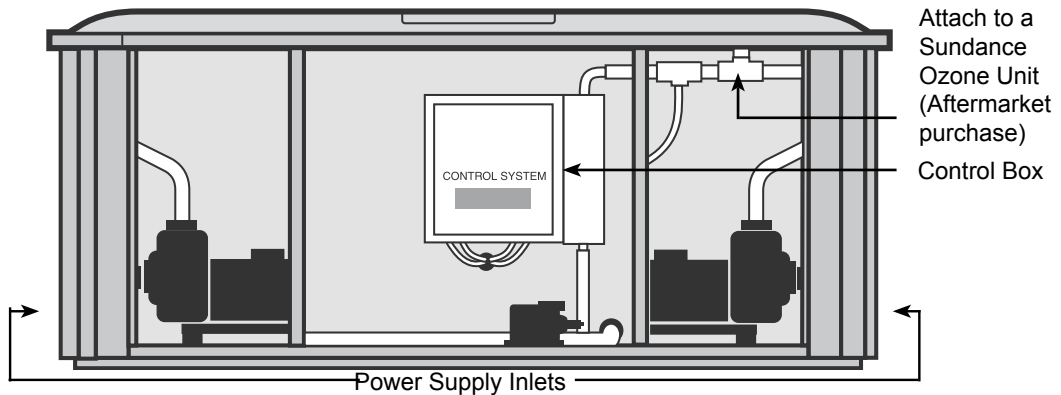
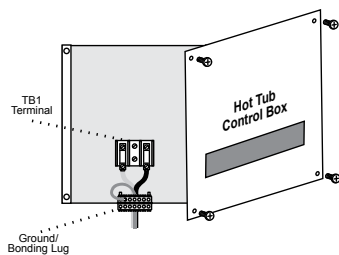


Figure 3: Spa equipment compartment

Figure 4: Control Box



Note: TB1 terminal location will vary between models; 3-wire/240 VAC connection illustrated

The Control Box for 3-wire, 240 VAC connection

The location of the TB1 terminal may vary between models.

Figure 5A: 3-Wire/240 VAC Connection for 880 Altamar, Cameo, Capri, Majesta, Marin, Maxxus, Optima, Models.

Hard Wired Connections Only.

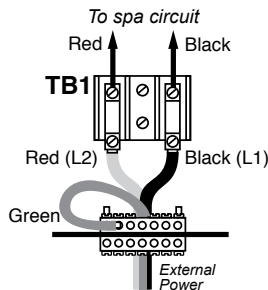
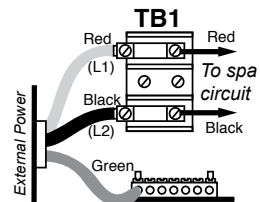


Figure 5B: 3-Wire/240 VAC Connection for 780 Camden, Certa, Chelsee, Hamilton, and 680 Burlington, Hartford, Hawthorne Models.

Hard Wired Connections Only.

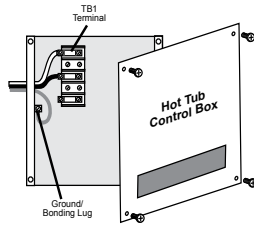
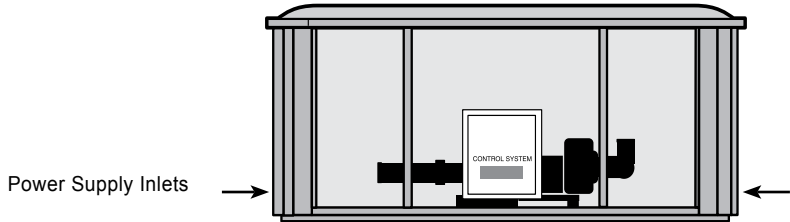


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Electrical Tasks After Spa Delivery, Continued

Installing a 3-Wire 120 VAC or 4-Wire 120/240 VAC Connection for 780 Dover Models, 680 Denali, Tacoma Models

Figure 6 The Spa Equipment Compartment



Note: TB1 terminal location will vary between models

Figure 7 The Control Box for Denali, Dover, and Tacoma Models

The 3-wire, 120 VAC connection is illustrated. The location of the TB1 terminal may vary between models.

Figure 8 Standard 3-wire, 120 VAC connection for Denali, Dover and Tacoma models.

Use the supplied GFCI cord for installations in the USA. Otherwise, hard wire a 3-wire connection.

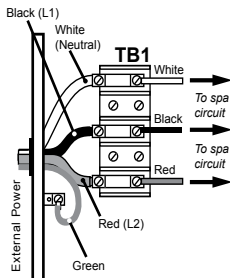
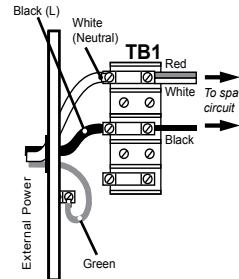


Figure 9 Standard 4-wire, 240/120 VAC connection for Denali, Dover and Tacoma models. Move red wire to terminal position #3 as shown. (Hard wired connections only).

Final Electrical Connections

Now, you can have the final electrical connections made to your spa. Various wiring diagrams are illustrated on the next few pages. Each spa model has a slightly different configuration, so use the chart below to find the configuration for your spa.

Configuration #	Details
1	240 VAC Connections for North America 60 Hz: <ul style="list-style-type: none">• 880 Altamar, Cameo, Capri, Majesta, Marin, Optima, Maxxus Models• 780 Camden, Certa, Chelsee, Hamilton Models• 680 Burlington, Hartford, Hawthorne Models
2	120 VAC Connections for North America 60 Hz: <ul style="list-style-type: none">• Denali, Dover, Tacoma Models
3	240 VAC Connections for North America 60 Hz: <ul style="list-style-type: none">• Denali, Dover, Tacoma Models

Ask your electrician to view the diagrams on the next few pages to ensure all connections are correct.

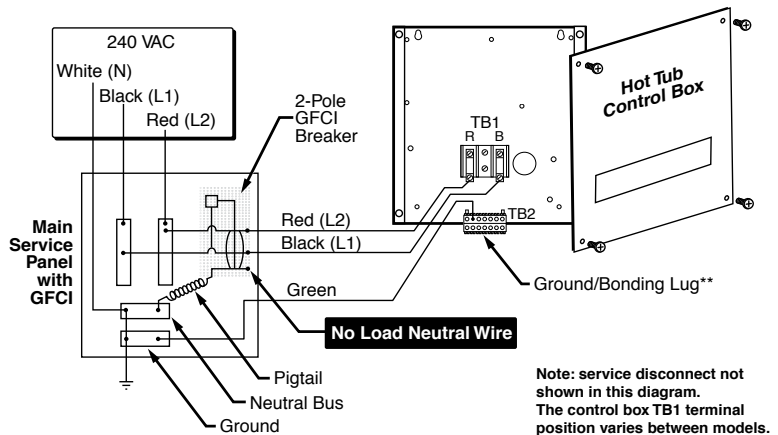
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Connection Configuration #1

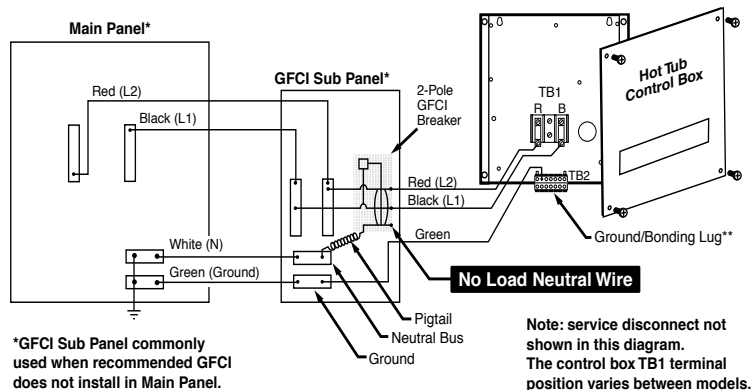
240 VAC Connections for 880 Altamar, Cameo, Capri, Majesta, Marin, Optima, Maxxus, 780 Camden, Certa, Chelsea, Hamilton Models, 680 Burlington, Hartford, Hawthorne Models (North America 60 Hz)

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.

2-Pole Circuit Breaker with 2-Wire Grounded Load Connection (3 Wires to Hot Tub, 2-Hot (L1-L2), 1-Ground)



Main Panel with Secondary GFCI Shut-Off Box Using a 2-Pole GFCI Breaker with 2-Wire Grounded Connection (3 Wires to Hot Tub, 2-Hot (L1-L2), 1-Ground)



Connection Configuration #2

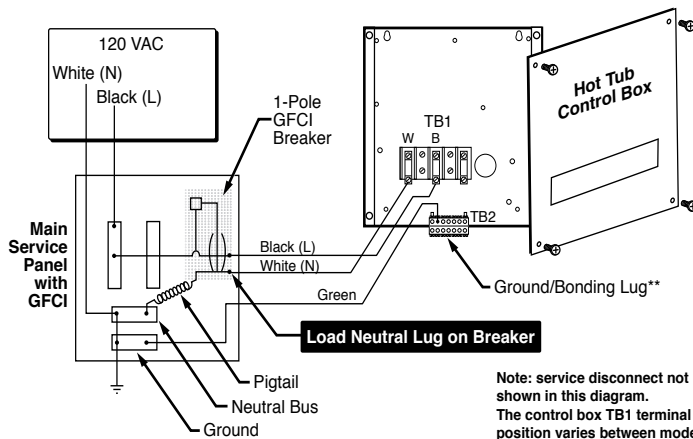
120 VAC Connections for Denali, Dover, Tacoma Models (North America 60 Hz)

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.

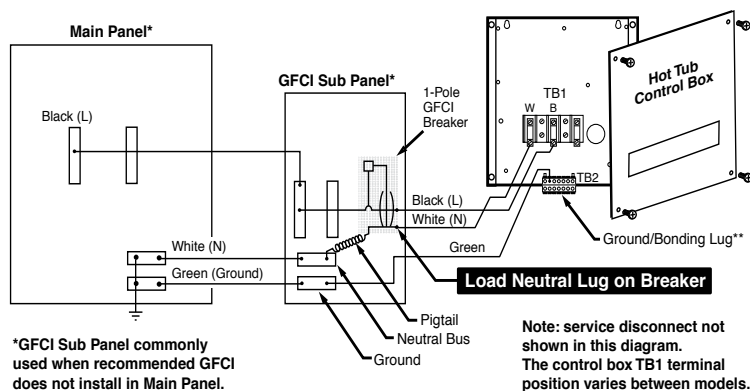
For enhanced heater performance the use of a 4-wire power connection is necessary.

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.

1-Pole Circuit Breaker with 3-Wire Grounded Load Connection (3 Wires to Hot Tub, 1-Hot (L), 1-Neutral (N), 1-Ground)



Main Panel with Secondary GFCI Shut-Off Box Using a 1-Pole GFCI Breaker with 3-Wire Grounded Connection (3 Wires to Hot Tub, 1-Hot (L), 1-Neutral (N), 1-Ground)

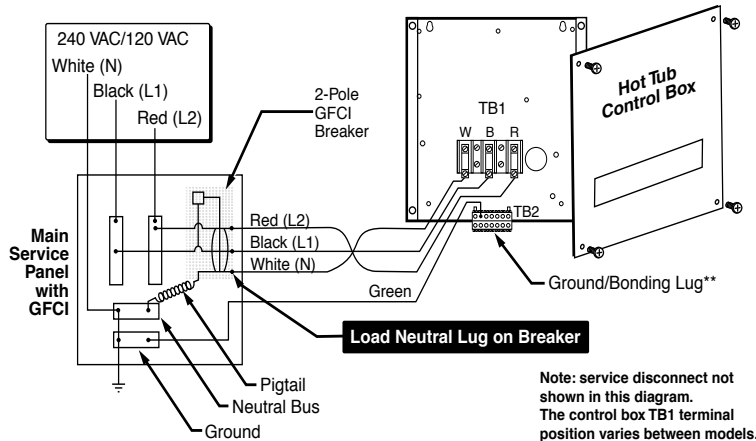


Connection Configuration #3

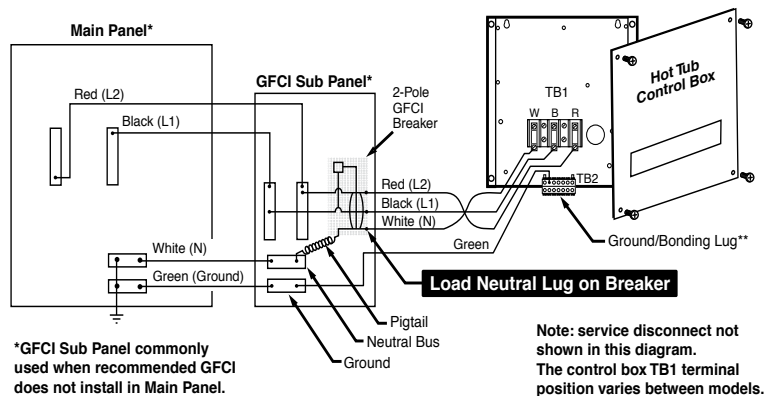
240 VAC Connections for Denali, Dover, Tacoma Models (North America 60 Hz)

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.

2-Pole Circuit Breaker with 3-Wire Grounded Load Connection
(4 Wires to Hot Tub, 2-Hot (L1-L2), 1-Neutral (N), 1-Ground)



Main Panel with Secondary GFCI Shut-Off Box Using a 2-Pole GFCI Breaker with 3-Wire Grounded Connection
(4 Wires to Hot Tub, 2-Hot (L1-L2), 1-Neutral (N), 1-Ground)



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.

NOTE These specifications are subject to change without notice and are for reference only.

880 Series					
Model	Width	Length	Depth	Filled Weight	Min. Pad Size
Altamar	81 in. (206 cm)	86 in. (218.5 cm)	37.5 in. (95.5 cm)	4618 lb. (2095 kg)	4 in. (102 mm)
Cameo	89 in. (226 cm)	89 in. (226 cm)	37.5 in. (95.5 cm)	4691 lb. (2128 kg)	
Capri	69 in. (175.5 cm)	82 in. (208.5 cm)	30.5 in. (77.5 cm)	3215 lb. (1458 kg)	
Majesta	81 in. (206 cm)	86 in. (218.5 cm)	37.5 in. (95.5 cm)	4331 lb. (1965 kg)	
Marin	75 in. (190.5 cm)	91 in. (231 cm)	33 in. (84 cm)	4178 lb. (1895 kg)	
Maxxus	90 in. (229 cm)	110 in. (279.5 cm)	41.5 in. (105.5 cm)	6708 lb. (3043 kg)	
Optima	89 in. (226 cm)	89 in. (226 cm)	37.5 in. (95.5 cm)	5361 lb. (2432 kg)	

Continued on next page

Useful Details About the Spa, Continued

780 Series					
Model	Width	Length	Depth	Filled Weight	Min. Pad Size
Camden	76 in. (193 cm)	83 in. (211 cm)	34 in. (86.5 cm)	3476 lb. (1577 kg)	4 in. (102 mm)
Certa	81 in. (206 cm)	86 in. (218.5 cm)	37.5 in. (95.5 cm)	4477 lb. (2031 kg)	
Chelsee	88 in. (223.5 cm)	88 in. (223.5 cm)	36 in. (91.5 cm)	4711 lb. (2137 kg)	
Dover	69 in. (175.5 cm)	82 in. (208.5 cm)	30.5 in. (77.5 cm)	3124 lb. (1417 kg)	
Hamilton	92 in. (234 cm)	92 in. (234 cm)	36 in. (91.5 cm)	5440 lb. (2468 kg)	

680 Series					
Model	Width	Length	Depth	Filled Weight	Min. Pad Size
Burlington	81 in. (206 cm)	86 in. (218.5 cm)	37.5 in. (95.5 cm)	4249 lb. (1927 kg)	4 in. (102 mm)
Denali	78.5 in. (200 cm)	78.5 in. (200 cm)	36 in. (91.5 cm)	2987 lb. (1314 kg)	
Hartford	88 in. (223.5 cm)	88 in. (223.5 cm)	36 in. (91.5 cm)	4697 lb. (2131 kg)	
Hawthorne	92 in. (234 cm)	92 in. (234 cm)	36 in. (91.5 cm)	5353 lb. (2428 kg)	
Tacoma	68 in. (173 cm)	68 in. (173 cm)	31 in. (79 cm)	1946 lb. (883 kg)	

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