

Tiger River[®] Spas

***Congratulations on your decision to
enjoy the finest spa available...***

***Welcome to the growing family of
Tiger River[®] spa owners.***

2007 Pre-Delivery Instructions

Please take the time to read this booklet carefully, as it will provide you with the information you will need to ensure the safe, secure, and timely installation of your new spa. The following sections are guidelines on how to prepare for delivery and set-up of your new spa. Specifically covered are site selection, delivery access, ground preparation, and electrical requirements.

Remember to carefully read the Owner's Manual that accompanies your spa, and to complete the warranty card within 10 days of delivery. These items, along with other valuable information, will be found in the Owner's Package which has been placed in the equipment compartment of your spa, where you will also find its serial number.

Watkins Manufacturing Corporation reserves the right to change features, specifications and design without notification and without incurring any obligation.

DATE PURCHASED: _____

DATE INSTALLED: _____

DEALER: _____

ADDRESS: _____

TELEPHONE: _____

In most cities and counties, permits will be required for the installation of electrical circuits or the construction of exterior surfaces (decks and gazebos). In addition, some communities have adopted residential barrier codes which may require fencing and/or self-closing gates on the property to prevent unsupervised access to a pool (or spa) by children under 5 years of age. Your Tiger River spa is equipped with a locking cover that meets the ASTM F1346-91 Standard for Safety Covers and as a result, is usually exempt from most barrier requirements. As a general practice, your local Building Department will inform you of any applicable barrier requirements at the time a permit is obtained for the installation of an electrical circuit. Your Tiger River dealer can provide information on which permits may be required.

Site Selection and Preparation

IMPORTANT: Site selection and preparation are your responsibility. Carefully read these instructions and consult your authorized Tiger River® dealer if you have any questions.

You probably have a spot picked out for your new spa, whether it's indoors or outdoors, on a patio or on a deck. Just make sure you check the following:

- Always put your spa on a structurally sound, level surface. A filled spa can weigh a great deal. Make certain that the location you choose can support the weight of your filled spa.
- Don't forget to level your spa before filling it. (See Spa Leveling Instructions included in Owner's Manual.)
- Locate your equipment compartment, which houses all of the electrical components, in a place where water will drain away from it. Allowing water into the equipment compartment can damage the electronics, or may result in tripping your house's circuit breaker.
- Leave yourself easy access to the circuit breakers in the subpanel (230 volt models), or to the interrupter switch on the end of the power cord (115 volt models).
- Never let water get into the subpanel (230 volt models), into the interrupter switch (115 volt models), or into the electrical outlet that your spa is plugged into. Your 115 volt Tiger River spa will come with a protective box designed to keep out rain and water from sprinkler systems. Your 230 volt spa's subpanel is raintight when installed correctly with the door closed.
- Leave access to the equipment compartment for periodic spa care and maintenance.

OUTDOOR AND PATIO INSTALLATION

No matter where you install your new spa, it's important that you have a solid foundation to support it. Structural damage to the spa resulting from incorrect installation or placement on an inadequate foundation is not covered under the spa's limited warranty.

If you install the spa outdoors, a reinforced concrete pad at least four inches thick is recommended for the Caspian™, Bengal® and Sumatran® spas. The reinforcing rod or mesh in the pad should be attached to a bond wire (see your Owner's Manual). All Tiger River spas may be installed onto a deck, provided that the load capacity of the deck is greater than the dead weight of the spa (see Deck Installation).

If you place the spa on the ground, even temporarily, place stepping stones under the leveling areas (see Spa Leveling Instructions in your Owner's Manual). The stones should be at least two inches thick and twelve inches square. Even with stones in place, the spa will inevitably settle and become unlevel. Plus, a spa surrounded by dirt or grass will soon be filled with dirt or grass from users' feet; therefore, it is important to get it onto a solid foundation as soon as possible.

NOTE: The Caspian spa has a drainage hole directly below each speaker between the bottom of the wood siding and the black base of the spa. Should water get into the speaker area it will drain through these holes.

DECK INSTALLATION

To be certain your deck can support your spa, you must know the deck's maximum load capacity. **Consult a qualified building contractor or structural engineer before you place the spa on an elevated deck or indoors.** To find the weight of your spa, its contents and occupants, refer to the Spa Specification chart on page 12. This weight per square foot must not exceed the structure's rated capacity, or serious structural damage could result.

INDOOR INSTALLATION

Be aware of some special requirements if you place your spa indoors. Water will accumulate around the spa, so flooring materials must provide a good grip when wet. Proper drainage is essential to prevent a build-up of water around the spa. When building a new room for the spa, it is recommended that a floor drain be installed. The humidity will naturally increase with the spa installed. Water may get into woodwork and produce dryrot, mildew, or other problems. Check for airborne moisture's effects on exposed wood, paper, etc. in the room. To minimize these effects, it is best to provide plenty of ventilation to the spa area. An architect can help to determine if more ventilation must be installed.

Your Tiger River dealer can help you with local information such as zoning regulations and building codes.

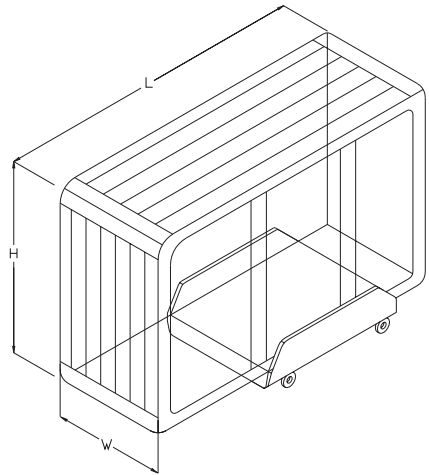
DELIVERY ACCESS

First, locate the dimensions of your spa on the following chart. The dimensions shown are the measurements of the spa in the vertical position, laid on its side.

Next, contact your dealer to find the height and width added by the delivery cart which the dealer will use to deliver your new spa. Use the height of the cart plus the dimension shown as H to determine the vertical clearance required to pass the spa and cart. Use the width of the cart, or dimension W, whichever is greater, to determine the maximum width of clearance necessary.

NOTE: It may be necessary to allow for additional over-head clearance if the spa will be rolled up or down an incline or moved up or down a short flight of stairs.

Use the information on previous page to determine the requirements for access to your desired location.



Model	Width W	Length L	Height H
Caspian™ (CHP)	36"	7' 0"	7' 0"
Bengal® (M & MM)	33"	7' 2 1/2"	6' 7"
Sumatran® (N)	33"	6' 6"	6' 6"

How is your width clearance?

Check all gates

Protruding electric meters

Gas meters

A/C units

Do you have sufficient overhead clearance?

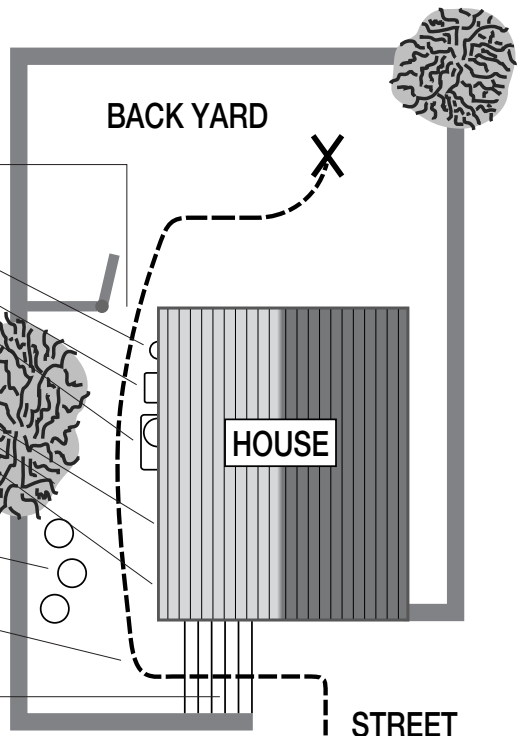
Check low roof eaves, overhanging branches, rain gutters

Is the path clear?

Move away branches, dog houses, firewood, etc.

If there is a 90° turn, can we clear it? (The spa will not bend)

No more than 6 consecutive stairs without a landing



It may be necessary to remove a gate, part of a fence, or other movable obstructions in order to roll the spa to its installation site. About ten percent of the time, a crane is the only way to install the spa by lifting it to its final destination.

If the spa has to be taken off of the cart to go over a wall (either because the entry area is too narrow, the eaves are too low, the corner is too tight, or the stairway is too steep), a crane will be required. Don't be alarmed!

The crane has a truck-mounted boom which can fit right in your driveway. It is run by a licensed and insured operator. For a charge, the crane operator will lift your spa over walls, buildings, or any other obstruction and place it as close to the installation site as possible. The Tiger River® spa delivery personnel will supervise the crane delivery and complete the spa installation. Crane delivery typically takes an average of 30 minutes to complete.

NOTE: If your spa delivery requires the use of a crane, you may be required to pay for its services at the completion of the delivery.

GROUND PREPARATION

Your Tiger River spa has been engineered to perform on all kinds of common yard surfaces. While a concrete slab is best for long-term use*, other foundations are acceptable so long as a level base is prepared prior to delivery. Three foundation base pictures, shown at right, represent examples of alternatives to a concrete slab for spas installed without gazebos or other accessories.

***NOTE:** A reinforced concrete pad at least four inches thick or a deck that is able to withstand more than 115lbs. per square foot is recommended for the Caspian™, Bengal® and Sumatran® spas.

INSTALLATION NOTES:

- If stepping stones or railroad ties are selected for the spa foundation, they should be placed at the designated leveling areas of your spa to maintain even distribution of the spa weight.
- It is important to note that soft surfaces, even when stepping stones are used to distribute the weight of the spa as evenly as possible, will still have a tendency to settle unevenly, resulting in an unlevel spa.
- Remember, placing the spa on grass or dirt may increase the amount of debris which is inadvertently brought into the spa water on the user's feet.

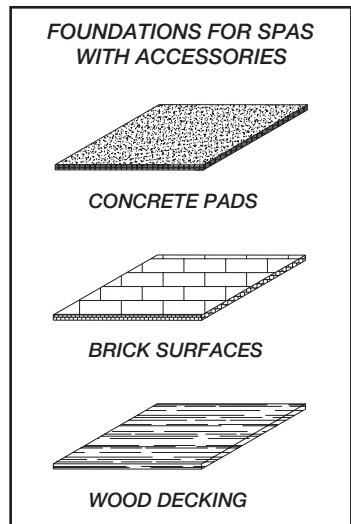
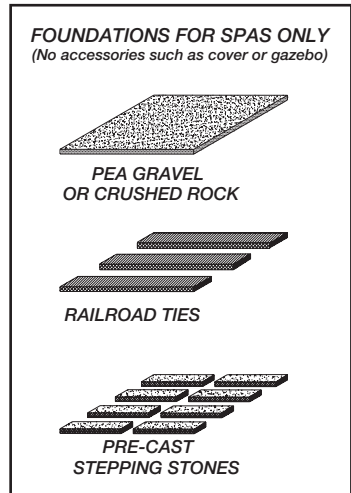
If you are purchasing a deck package or a gazebo with your spa, a solid foundation becomes mandatory. Placing them on any surface other than a single level pad could create problems with their installation. Pictured at right are a few of the recommended surfaces.

As a homeowner, it is your responsibility to provide a suitable, level foundation for your spa. Keep in mind that most delivery crews are not equipped to level and prepare spa sites.

If you are interested in having a concrete slab, brick surface, or wood deck installed, your Tiger River dealer should be able to suggest a qualified, licensed contractor.

NOTE: In order for the spa to operate properly and the internal plumbing to drain completely, you must ensure that the spa is leveled after it has been installed. The diagrams on the following pages indicate the recommended shimming points on your spa's base support system. Your Tiger River spa delivery crew can help you perform the procedure.

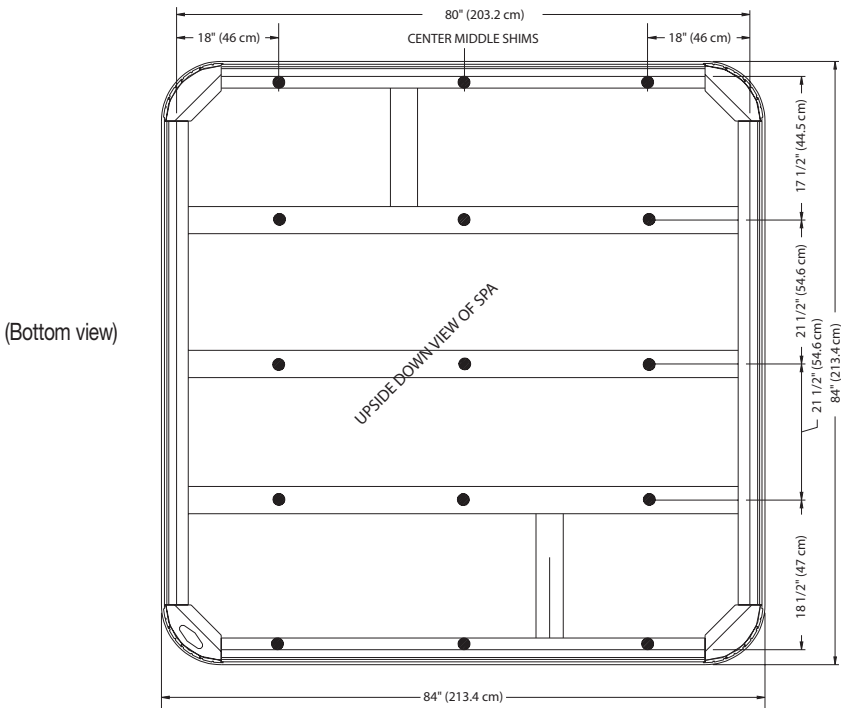
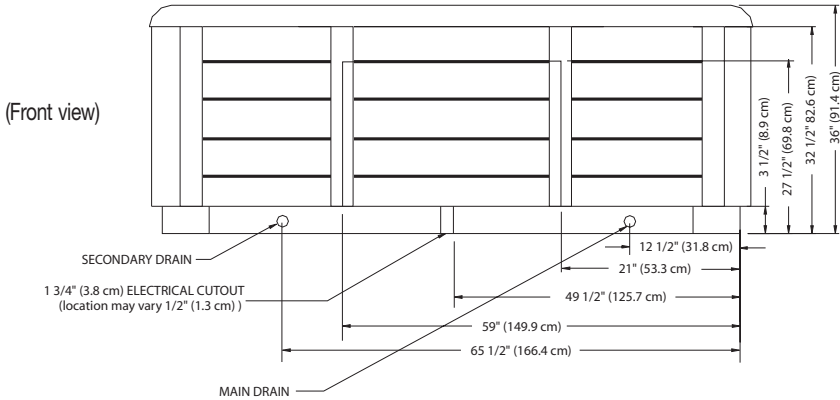
ELECTRICAL



Caspian™ (Model CHP)

Dimensions

NOTE: All dimensions are approximate; measure your spa before making critical design or pathway decisions.



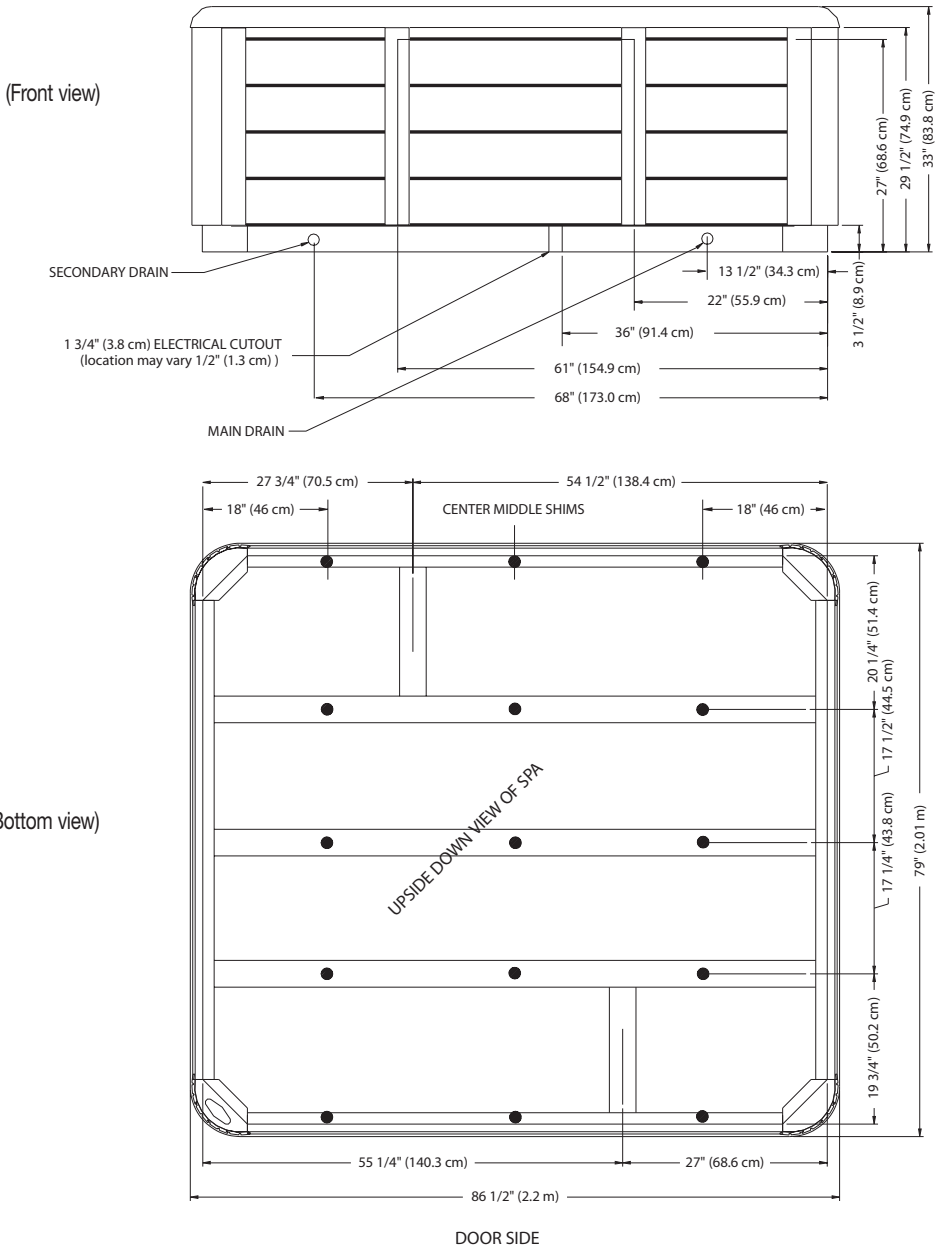
DOOR SIDE

- 15 Leveling Points (place shims approx. 18" in from edge, then center middle shims)

Bengal® (Model M & MM)

Dimensions

NOTE: All dimensions are approximate; measure your spa before making critical design or pathway decisions.

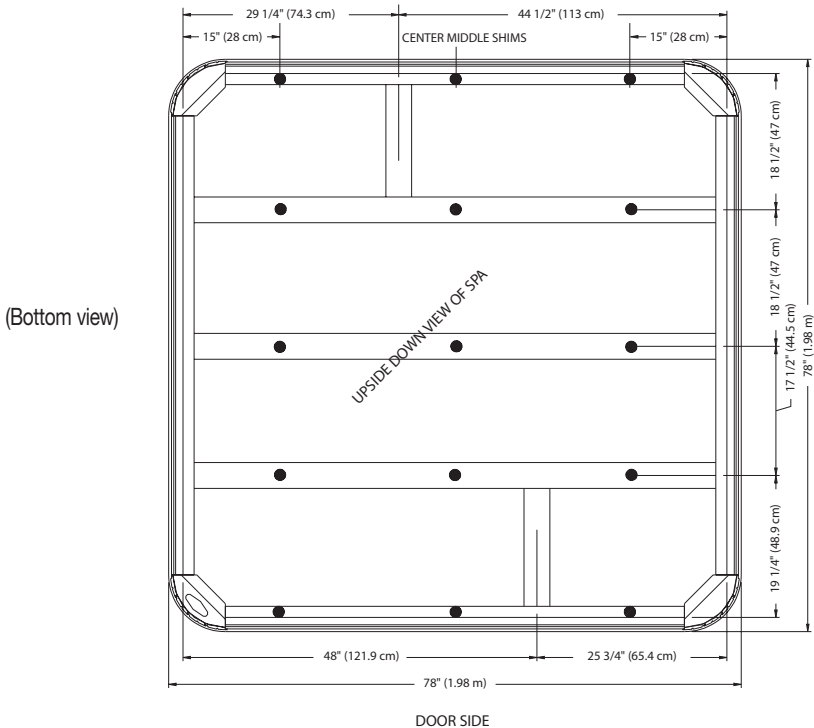
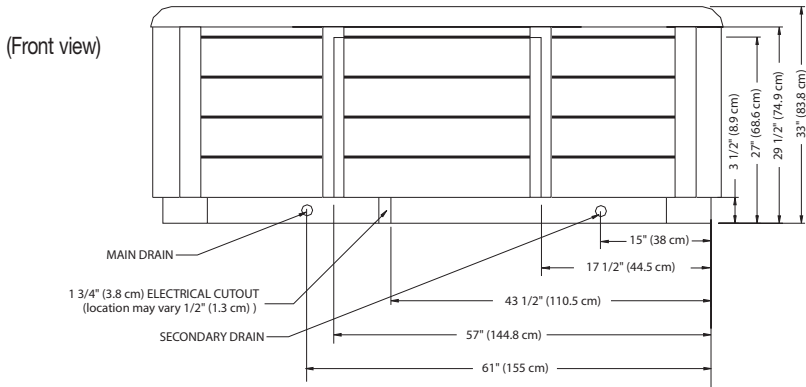


- 15 Leveling Points (place shims approx. 18" in from edge, then center middle shims)

Sumatran® (Model N)

Dimensions

NOTE: All dimensions are approximate; measure your spa before making critical design or pathway decisions.



- 15 Leveling Points (place shims approx. 15" in from edge, then center middle shims)

REQUIREMENTS

To ensure you will have an opportunity to use your spa soon after delivery, it is very important that the required electrical service has been installed. Unless otherwise stipulated by your dealer, THIS IS YOUR RESPONSIBILITY.

IMPORTANT: All electrical circuits must be installed by a qualified, licensed electrician.

Tiger River® spas are manufactured in two different electrical versions. The Caspian™ and Bengal® (MM) models are available with a 230 volt continuous heating system. This spa cannot be converted to 115 volt operation.

The Bengal (M) and Sumatran® models are available as 115/230 volt convertible heating systems. These models come standard from the factory with 115 volt heating systems; however, with the addition of a subpanel and a control box wiring change, they can be converted to 230 volt operation. See the following sections for the electrical requirements for 115 volt operation, 230 volt operation and 230 volt converted operation.

115 VOLT OPERATION REQUIREMENTS

The 115 volt spa requires a dedicated 20 amp, 115 volt circuit. This circuit must be properly wired; that is, it must have a 20 amp GFCI breaker in the main electrical service panel, and #12 AWG wire (including ground wire) and the correct polarity throughout the circuit.

WIRE SPECIFICATION NOTE: Long electrical runs may require a larger gauge feed wire than stated. We recommend that a maximum voltage drop of 3% be used when calculating the larger wire size.

NOTE: The term “dedicated” means that only the spa operates on the circuit.

Each 115 volt model comes equipped with approximately 15 feet of usable power cord. (This is the maximum length allowed by Underwriters Laboratory.) When the spa is installed, the power cord will come out of the bottom of the equipment compartment.

In addition to the dedicated 20 amp, 115 volt GFCI protected circuit, your spa requires a 20 amp single receptacle. This receptacle, which contains an outdoor-rated, weather-resistant receptacle cover plate, will be provided to you. The single receptacle and cover plate should be installed by your electrician prior to the delivery of your spa.

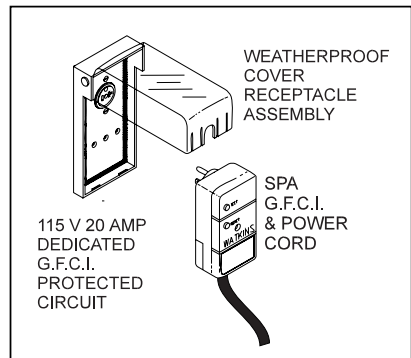
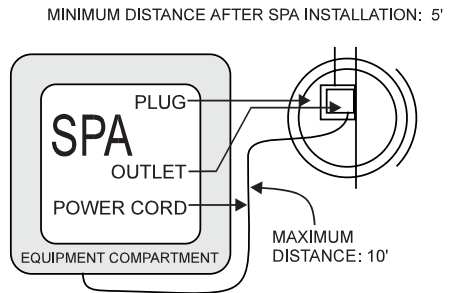
For your safety, when your electrician is installing the electrical outlet, it should be no closer than five (5) feet and no further than ten (10) feet from the spa. (Reference National Electric Code 680-6a(1) and 680-41a.)

WARNINGS: Do not connect your spa to an extension cord!

The 115 volt GFCI switch and the receptacle must be protected from weather and landscape sprinklers—they should never get wet.

NOTE: If you require the services of a licensed electrician, your Tiger River dealer should be able to suggest one for you.

Your Tiger River spa has been carefully engineered to provide maximum safety against electric shock. Remember, connecting the spa to an improperly wired circuit will negate many of its safety features.



230 VOLT OPERATION REQUIREMENTS

The Caspian™ and Bengal® (MM) and converted Bengal (M) and Sumatran® models require a 50 amp, single phase, 230 volt circuit breaker in the main electrical service panel.

All 230 volt Tiger River® spas must be wired in accordance with applicable local and national electrical codes, all electrical work must be done by a licensed electrician.

NOTE: Watkins Manufacturing Corporation REQUIRES THE USE OF A SUBPANEL TO SUPPLY POWER AND PROTECT THE SPA. On the Caspian and Bengal (MM) models, the subpanel containing GFCI breakers is included with the spa. On the converted 230 volt Bengal (M) and Sumatran models, the subpanel containing GFCI breakers must be purchased separately and can be purchased from your Tiger River dealer.

A licensed electrician should install a four-wire electrical service (two line voltages, one neutral, one ground) from the main electrical service panel to the sub-panel, and from the sub-panel to the spa per the appropriate wiring diagram as illustrated below.

The grounding conductor must be the same gauge as the line conductor, but at least #10 AWG. Your electrician should mount the subpanel in the vicinity of the spa but it should not be closer than five (5) feet from the spa water edge (NEC 680-6c).

INSTALLATION NOTE: After the spa has been installed by the dealer's delivery crew, your electrician can connect the conduit from the subpanel to the spa's IQ 2020® Spa Control Box and then complete the wiring connections in the control box.

IMPORTANT NOTE: Three different wiring diagrams are shown: one for the Caspian, one for the Bengal (MM) and one for the Bengal (M) and Sumatran models. Always follow the wiring diagram for your specific model.

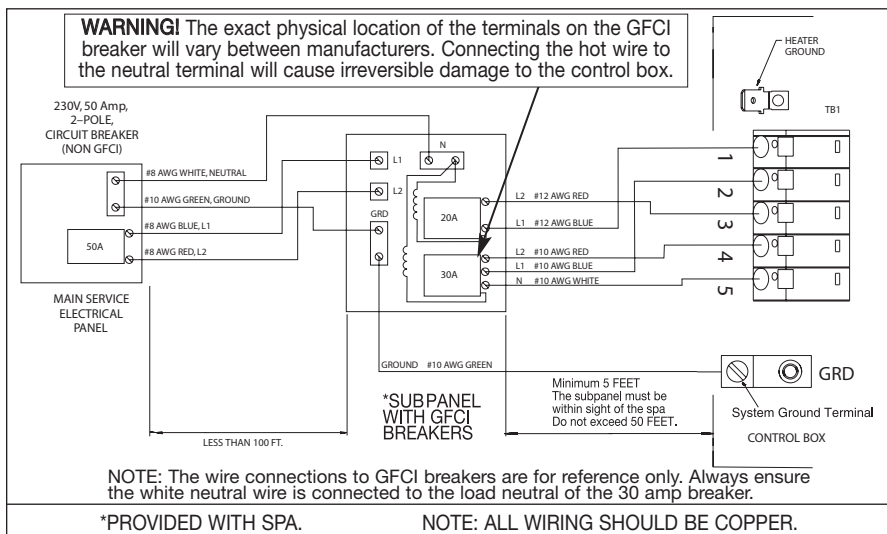
NOTE: Complete step-by-step Installation and Wiring Instructions for all 230 volt Tiger River models are included in the Owner's Manual and with each sub-panel, which can be obtained from your dealer.

WARNING: Removing or bypassing the GFCI breakers in the subpanel at any time will result in an unsafe spa and will void the warranty.

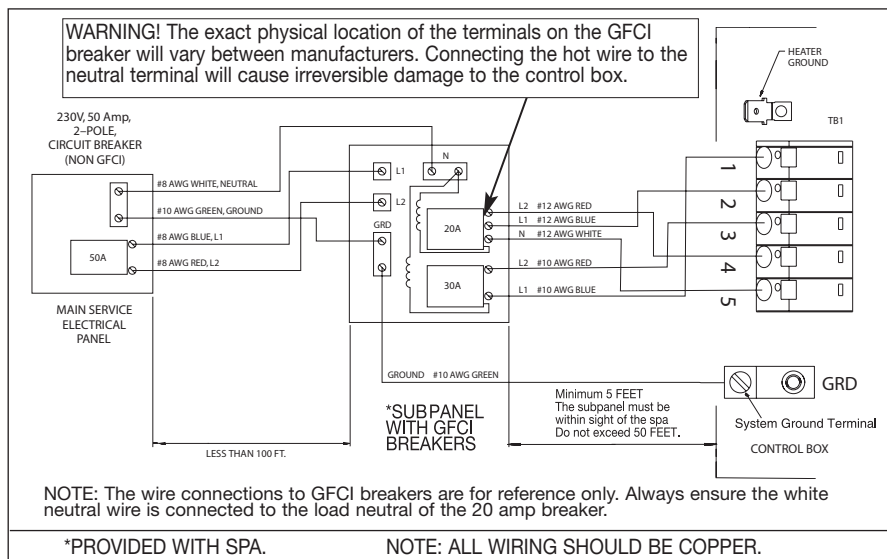
WIRE SPECIFICATION NOTE: Long electrical runs may require a larger gauge feed wire than stated. We recommend that a maximum voltage drop of 3% be used when calculating the larger wire size.

Refer to the Wiring Diagrams below for the electrical requirements of the 230 volt models.

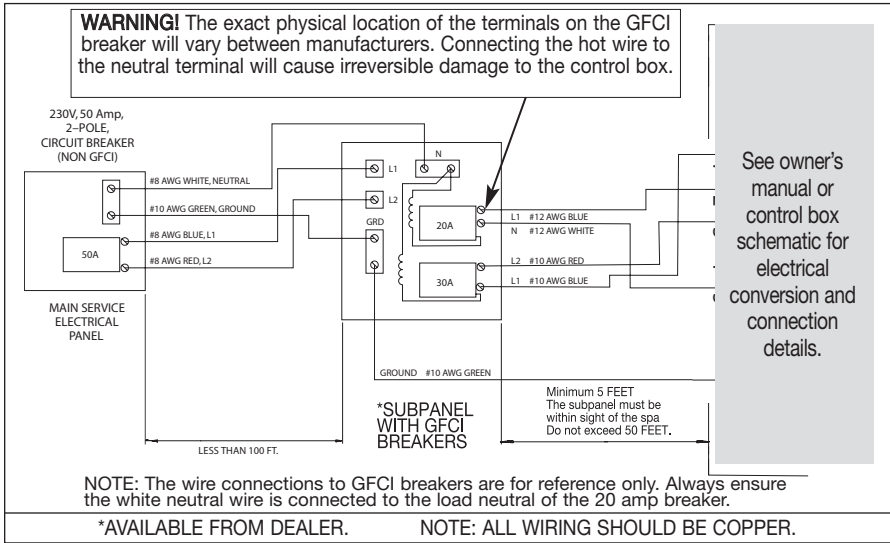
CASPIAN™ 230 VOLT PERMANENTLY CONNECTED MODEL



BENGAL® (MM) 230 VOLT PERMANENTLY CONNECTED MODEL



BENGAL® (M) AND SUMATRAN® 230 VOLT CONVERTED MODELS



Spa Specifications

	Footprint dimensions	Height	Effective filter area	Heater (Watts)	Water capacity	Dry weight	Filled weight*	Dead weight*	Electrical Requirements
Caspian™ (Model CHP)	7'0" x 7'0" 2.13m x 2.13m	36" .91m	65 Square feet	4,000 (230 volt)	330 Gallons 1,249 Litres	789 Lbs. 358 Kg.	4,479 Lbs. 2,032 Kg.	110 Lbs. per square foot	115V System: Not available 230V System: 230 Volt, 50 Amp single phase GFCI protected circuit
Bengal® (Model MM)	7' 2 1/2" x 6'7" 2.2m x 2.01m	33" .84m	65 Square feet	6,000 (230 volt)	330 Gallons 1,249 Litres	689 Lbs. 312 Kg.	4,204 Lbs. 1,907 Kg.	105 Lbs. per square foot	115V System: Not available 230V System: 230 Volt, 50 Amp single phase GFCI protected circuit
Bengal® (Model M)	7' 2 1/2" x 6'7" 2.2m x 2.01m	33" .84m	65 Square feet	1,500 (115 volt) 6,000 (230 volt)	330 Gallons 1,249 Litres	689 Lbs. 312 Kg.	4,204 Lbs. 1,907 Kg.	105 Lbs. per square foot	115v System: 115 volt, 20 amp dedicated circuit 230v System: 230 volt, 50 amp single phase GFCI protected circuit
Sumatran® (Model N)	6'6" x 6'6" 1.98m x 1.98m	33" .84m	65 Square feet	1,500 (115 volt) 6,000 (230 volt)	310 Gallons 1173 Litres	613 Lbs. 278 Kg.	3,793 Lbs. 1,720 Kg.	105 Lbs. per square foot	115v System: 115 volt, 20 amp dedicated circuit 230v System: 230 volt, 50 amp single phase GFCI protected circuit

CAUTION: Watkins Manufacturing suggests a structural engineer or contractor be consulted before the spa is placed on an elevated deck.

* **NOTE:** The "Filled weight" and "Dead weight" of the spa includes the weight of the occupants (assuming an average occupant weight of 175 lbs).

CONTRACTOR SUGGESTIONS

Electrician

Name: _____

Telephone: _____

Name: _____

Telephone: _____

Masonry

Name: _____

Telephone: _____

Name: _____

Telephone: _____

General

Name: _____

Telephone: _____

Name: _____

Telephone: _____

ADDITIONAL PRODUCTS AVAILABLE FROM YOUR TIGER RIVER® SPA DEALER

- EverFresh® water care system
- FreshWater® III high output ozone purification system
- Hot Spring® MPS chlorine-free oxidizer
- MPS test strips
- FreshWater® Reduce™ Waterline Control
- FreshWater Refresh™ Oxidizer
- FreshWater Revitalize™ Sanitizer
- FreshWater Cleanser
- FreshWater Multi-Purpose
- FreshWater Filter Cleaner
- FreshWater Biguanide Test Strip
- FreshWater® Stain and Scale Defense
- FreshWater Spa Shine
- FreshWater Instant Filter Cleaner
- FreshWater Filter Cleaner
- FreshWater Ph-Alkalinity Down
- FreshWater Ph-Alkalinity Up
- FreshWater Defoamer
- FreshWater Concentrated Chlorinating Granules
- FreshWater Calcium Hardness Increaser
- FreshWater 4-way test strips
- Hot Spring Cover Shield
- Retractable cover system with clearance requirements:
 - Cover Cradle® - 24" Clearance required
 - Cover Cradle II - 24" Clearance required
 - UpRite® - 7" Clearance required
 - GlideRite® - 14" Clearance required
 - Lift 'n Glide® - 7" Clearance required
- Vinyl covers
- Spa vacuums
- Spa steps
- Stain kits
- Spa upgrade jet kits
- Replacement filter cartridges
- Pillows

SERVICES AVAILABLE FROM YOUR TIGER RIVER SPA DEALER

Service

Cost

Pre-Delivery site inspection	_____
Deliver spa to installation site	_____
Unwrap spa and haul away packaging material	_____
Set up & level spa	_____
Fill the spa with water	_____
Connect the spa to its power source (115 volt models)	_____
Explain and test the spa's operation	
• Jet system	
• Comfort Control® system	
• Set temperature control	
• Control panel functions	
Explain the safety features	
• GFCI	
• Heater high limit	
• Heater thermal cut-off	
General spa operation & maintenance orientation	_____
Water quality and maintenance orientation	_____
Adjust the water's Total Alkalinity, Calcium Hardness and pH	_____
Sanitize the water	_____
Inspect the spa cover, place on spa	_____
Review winterizing instructions	_____
Review Owner's Manual & Warranty Card	_____
Follow-up call	_____
In-store spa water analysis	_____
TOTAL COST	_____



WATKINS MANUFACTURING CORPORATION

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