



VIKING
Plug~n~Play 
SPAS™

Owner's Manual



V 1 0 0



V 3 0 0 / V 5 0 0

2014

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IMPORTANT SAFETY INSTRUCTIONS

When installing and using this electrical equipment, basic safety precautions should always be followed, including the following:

READ AND FOLLOW ALL INSTRUCTIONS

1. **WARNING:** To reduce the risk of injury, do not permit children to use this product unless they are closely supervised at all times. Keep spa cover locked when not in use.
2. A wire connector is provided on this unit to connect a minimum No. 8 AWG (8.4mm²) solid copper conductor between this unit and any metal equipment, metal water pipe or conduit within 5 feet (1.5m) of the unit.
3. **DANGER:** Risk of Injury. The suction fittings in this spa are sized to match the specific water flow created by the pump. Should the need arise to replace the suction fittings or the pump, be sure that the flow rates are compatible. Never operate the spa if the suction fittings are broken or missing. Never replace a suction fitting with one rated less than the flow rate marked on the original fitting.
4. **DANGER:** Risk of Accidental Drowning. Extreme Caution must be exercised to prevent unauthorized access by children. To avoid accidents, insure that children cannot use this spa unless they are supervised at all times.
5. **DANGER:** Risk of Electric Shock. Install at least 5 feet (1.5m) from all metal surfaces. As an alternative, a spa may be installed within 5 feet of metal surfaces if each metal surface is permanently connected by a minimum No. 8 AWG (8.4mm²) solid copper conductor to the wire connector on the terminal box that is provided for this purpose.
6. **DANGER:** Risk of Electric Shock. Do not permit any

electrical appliance, such as a light, telephone, radio or television within 5 feet (1.5m) of a spa.

7. **WARNING:** To Reduce the Risk of Injury:
- a) Before using your spa you should check the water temperature with a thermometer that is known to be accurate. The water temperature in a spa should never exceed 104°F (40°C). A water temperature of 104°F is considered safe for a healthy adult. Lower water temperatures are recommended for young children and when spa use exceeds 10 minutes.
 - b) Since excessive water temperatures have a high potential for causing fetal injury during the early months of pregnancy, pregnant or possibly pregnant women should limit spa water temperature to 100°F (38°C).
 - c) The use of alcohol, drugs, or medication before or during spa use may lead to unconsciousness with the possibility of drowning.
 - d) Persons suffering from obesity or with a medical history of heart disease, low or high blood pressure, circulatory system problems or diabetes should consult a physician before using a spa.
 - e) Persons using medication should consult a physician before using a spa since some medication may induce drowsiness while other medications may affect heart rate, blood pressure and circulation.
8. The causes, symptoms and affects of hyperthermia may be described as follows:
Hyperthermia occurs when the internal temperature of the body reaches a level several degrees above the normal temperature of 98.6°F. The symptoms of hyperthermia include an increase in the internal temperature of the body, dizziness, lethargy, drowsiness and fainting.
The effects of hyperthermia include:
- Failure to feel heat
 - Failure to recognize the need to exit the spa
 - Unawareness of impending hazards

- Fetal injury in pregnant women
 - Physical inability to exit the spa or hot tub
 - Unconsciousness resulting in the potential of drowning
9. **WARNING:** The use of alcohol, drugs or medication can greatly increase the risk of fatal hyperthermia. If you suspect hyperthermia, immediately get medical help, lay the victim on their back with the head slightly elevated for easier breathing, cover the body with a blanket and apply ice packs to the head.
 10. Never touch or come in contact with any electrical accessory when in your spa or when your body is wet.
 11. Prior to performing any service to the spa pack, turn off ALL power to the system at the main power source breaker.

NOTE: A READILY ACCESSIBLE DISCONNECTING MEANS SHALL BE PROVIDED DURING INSTALLATION.

SAVE THESE INSTRUCTIONS

PERSONAL SAFETY PRECAUTIONS

1. Please use the spa when others are present.
2. Children should have spa access only with the permission and supervision of an adult.
3. To reduce the risk of child drowning, keep the spa filter clean and unclogged. Do not modify the suction or filtration systems.
4. Exercise caution when entering or leaving the spa. When moving or changing positions, be sure of your footing before applying your full weight as water refraction can be misleading.
5. Do not stay in the spa for extended periods of time. Set a reasonable time limit after which you leave the spa, cool down, take a shower, relax and then return for another stay in the spa.

INSTALLATION AND SET-UP INSTRUCTIONS

SURFACE AND PAD REQUIREMENTS

- Your new portable spa must be placed on a uniformly firm, flat and level surface. A concrete pad 4 inches thick is best.
- In order to prevent flooding of the electrical equipment, the pad must be such that water will drain away from the spa.
- If your spa is located near sprinklers, adjust or cap them so as not to hit the siding of the spa.

BALCONIES AND DECK REQUIREMENTS

- Decking must be constructed to support 85 pounds per square ft.
- Balconies must be constructed to meet current state and local codes.
- Gates must be self-closing and self-latching.

ELECTRICAL REQUIREMENTS (All Models)

- Your 120-volt spa pack comes installed with a 15-amp rated dedicated G.F.C.I. cord connected device.
- Your 120-volt spa pack is designed to be “PERMANENTLY CONNECTED”.
- Use of any extension cord is dangerous and is not to be used in conjunction with the operation of the spa. Low voltage damage may result and will void your warranty.
- **It is the customer’s responsibility to acquire necessary permits and to arrange for installation and hook up of the electrical power.**
- **Your spa comes set up from the factory to accept 120v ONLY. Any attempt to remove the factory installed GFCI cord or alter the voltage will result in voiding your warranty.**

SPA STARTUP DIRECTIONS

All Viking Spas require a solid, flat surface.* This is to ensure that the spa cabinet is not exposed to a pressure stress condition that may result in cabinet damage and shell cracking. A concrete pad is the best example of a solid, flat surface, however, wood decking is suitable, provided it can withstand 85# per sq. ft. without deflection.

*** FAILURE TO PROVIDE A PROPER, SOLID, FLAT SURFACE MAY DAMAGE YOUR SPA AND VOID YOUR WARRANTY.**

The following procedure should be followed on initial startup and whenever the spa is drained for maintenance. Read each step in its entirety before proceeding with that step.

FILL THE SPA WITH WATER

- a. Clear all debris from your spa.
- b. Remove filter element.
- c. Using a garden hose, place hose in filter chamber for filling. Do not fill higher than three quarters of the way up the skimmer opening.
- d. **We DO NOT recommend the use of softened water due to the potential harm of damaging equipment.**
- e. As water level rises, check inside equipment compartments for water leaks. It may be necessary to tighten loose unions and/or fittings.
- f. Make sure T-Handled Gate VALVES at pump and heater are open. (Fully extended up position).

APPLY POWER

- a. Apply power by turning on the spa-dedicated circuit breaker.
- b. Test the GFCI: push the TEST button and power is cut off. Push RESET and power is restored. If these do not seem to work, **STOP! Do not use your spa.** There is no power, the GFCI is defective or the equipment is malfunctioning. Only a **LICENSED ELECTRICIAN** should do further inspection.

ELECTRICAL SPECIFICATIONS

GENERAL

NOTICE: All spa electrical wiring must be in accordance to meet NEC (National Electrical Code) state and local codes.

Wire gauge must be in accordance with NEC requirements for the distance from current source to spa and the current rating as stated on the ID label that is attached to the equipment control enclosure.

GFCI CIRCUIT BREAKER REQUIREMENTS

The existing electrical outlet must have correct currently rating per local and state codes to accept GFCI from spa.

Breaker

CAPACITY	15 amps
POLES	2
# WIRES	3

OPERATION INSTRUCTIONS

ACTIVATE WATER PUMP

Press the jet button on the control board. The high-speed pump will come on.

Press the jet button again to turn the water to low speed.

Check for water leaks at unions and/or fittings on your equipment while pump is running.

POWER SYSTEM FEATURES

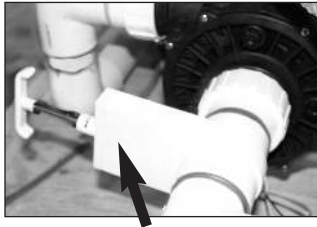


The power system is located under the skirt. The equipment can be serviced by simply removing the access panel screws.

It is very important to make sure that the spa is filled up to the proper level (note the water level mark on the skimmer face) before operating spa. Make sure the gate valves are in the open or up position.

WARNING: Do not run spa with gate valves closed or run pump with no water circulating in spa for long periods. Damage could occur to the spa equipment.

NOTE: The V100, V300 & V500 spas are 120V Only.



Water Gate Valve



Drain* for V100

* To drain the spa, make sure the gate valve is in the Up / Open position. Remove the cap from the drain and attach the garden hose. Open the valve by turning the large part of the drain counterclockwise until it stops. Pull on the drain that the hose is connected to until you hear it "pop". Water will gravity drain through the garden hose. Be sure to close the drain prior to refilling. Note: the drain will not remove all of the water in the spa. You may have to remove a small amount of water by hand.



Drain* for V300/V500

To drain your spa, power must be disconnected at the circuit breaker. Locate the drain faucet on the corner near the bottom of the side panel next to the equipment. 1. Twist cap off and attach a garden hose to the opening. 2. Turn the outside body counter clockwise until it stops. 3. Pull on the drain that the hose is connected to until you hear a "pop". 4. Drain the spa. 5. Reverse this procedure to shut the water off. Note: the drain will not remove all of the water in the spa. You may have to remove a small amount of water by hand.

V300/V500 FEATURES

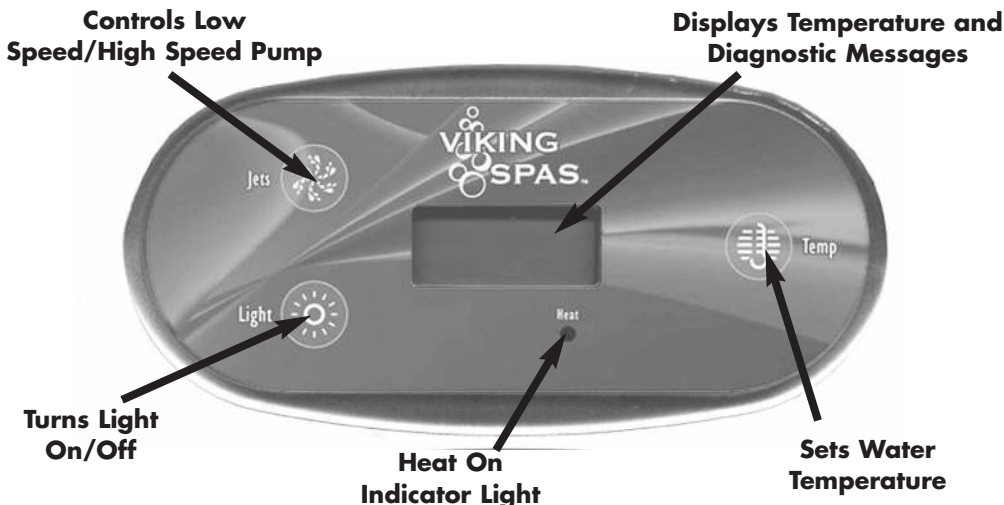
The V300/V500 model features a Waterfall jet, which allows the user to regulate the flow of water to the jet by simply turning the valve for the waterfall from "off" to "on". (See illustration below)

Regulates Air into Jets



Waterfall On/Off Control

V300 in Gray



TOPSIDE CONTROL INSTRUCTIONS

INITIAL START-UP

When your spa is first activated, it will go into Priming mode, indicated by "Pr". The priming mode will last for less than 5 minutes. Then, the spa will begin to heat and maintain the water temperature in the Standard mode indicated by "St".

TEMPERATURE (80°F - 104°F / 26°C - 40°C)

The start-up temperature is set at 100°F/37°C. The last temperature is constantly displayed on the LCD.

Note: The last spa temperature displayed is current only when the pump has been running for at least 2 minutes.

Press the "Temp" button to display the temperature previously set. The set temperature flashes on the display. Pressing the "Temp" button a second time, while it is still flashing, will cause the set temperature to increase or decrease depending on what direction was last chosen. Each press to follow will change the set temperature in the same direction. If the opposite direction is desired, release the pad and let the display revert to the actual water temperature. Press the button to display the set temperature, and press again to make the temperature change in the desired direction. After **three seconds**, the LCD will stop flashing and display the current spa temperature.

TOPSIDE FUNCTIONS

JETS

Press the “Jets” button once to activate the low speed of the pump and again for the high speed. Press the “Jets” button again to turn off the pump. If left running, the low speed of the pump will automatically turn off **after 4 hours**, and the high speed will automatically turn off **after 15 minutes**.

LIGHT

Press the “Light” button to turn the light on and off. If left on, the light automatically turns off **after 4 hours**. For the V300 with LED light and V500 with LED perimeter lighting, press the light button consecutively to change the color sequencing.

MODE

The mode is changed by pressing the “Temp” button, then pressing the “Light” button.

Standard Mode is programmed to maintain the desired temperature. Note that the last measured spa temperature displayed is current **only** when the pump has been running for at least 2 minutes. “**St**” will be displayed momentarily when you switch into Standard mode.

Economy Mode heats the spa to the set temperature only during filter cycles. “**Ec**” will display solid when temperature is not current, and will alternate with temperature when temperature is current.

Sleep Mode heats the spa to within 20°F/10°C of the set temperature only during filter cycles. “**SL**” will display solid when temperature is not current, and will alternate with temperature when temperature is current.

Preset Filter Cycles. The first filter cycle begins 6 minutes after the spa is energized. The second filter cycle begins 12 hours later. Filter duration is programmable for 1, 2, 3, 4, 5, 6, 7 or 8 hours indicated by “**FC**”. The default filter time is 1 hours. To program, press “Temp,” then “Jets.” Press “Temp” to adjust. Press “Jets” to exit programming.

NOTE

The pump will activate for 1 to 2 minutes to check temperature every 30 minutes or whenever the set temperature is raised.

DIAGNOSTIC MESSAGES

Message	Meaning	Action Required
--	Temperature Unknown	After the pump has been running for 2 minutes, the temperature will be displayed.
HH	"Overheat" – The spa has shut down. One of the sensors has detected 118°F/48°C at the heater.	DO NOT ENTER THE WATER. Remove the cover and allow water to cool. Reset by pushing any button.
OH	"Overheat" – The spa has shut down. One of the sensors has detected that the spa water is 110°F/43°C.	DO NOT ENTER THE WATER. Remove the spa cover and allow the water to cool. At 107°F/42°C the spa should automatically reset. If it does not, shut off the power to the spa and call your dealer or service organization.
IC	"Ice" – Potential freeze condition detected.	No action required. The pump(s) will automatically activate regardless of spa status.
SA	The spa has shut down. The sensor that is plugged into the Sensor "A" jack is not working.	If the problem persists, contact your dealer or service organization. (May appear temporarily in an overheat situation and disappear when the heater cools.)
SB	The spa has shut down. The sensor that is plugged into the Sensor "B" jack is not working.	If the problem persists, contact your dealer or service organization. (May appear temporarily in an overheat situation and disappear when the heater cools.)
Sn	Sensors are out of	If the problem persists,

balance. If alternating with spa temp, it may just be a temporary condition. If flashing by itself, spa is shut down. contact your dealer or service organization.

HL A significant difference between temperature sensors has been detected. This could indicate a flow problem. Check water level in spa. Refill if necessary. If the water level is okay, make sure the pump(s) have been primed.

LF Persistent low flow problems. (Displays on the fifth occurrence of HL message within 24 hrs.) Heater is shut down, but other spa functions continue to run normally. Follow action required for "HL"

dr Possible inadequate water, poor flow or air bubbles detected in the heater. Spa is shut down for 15 minutes. Check water level in spa. If water level is okay, make sure pump(s) have been primed. Press any button to reset or this message will automatically reset within 15 minutes.

dy Inadequate water detected in heater. (Displays on third occurrence of "dr" message.) Spa is shut down. Follow action required for "dr" message.

WARNING! / Shock Hazard! / No User Serviceable Parts. Do not attempt service of this control. Contact your spa retailer or service organization for assistance. Installation and/or service must be performed by a licensed electrician and all grounding connections must be properly installed.

SPA JETS AND AIR CONTROLS

SPA JETS

Adjustable Spa Jets may be turned off and on by rotating jet faceplate left or right.

Note: DO NOT TURN ALL SPA JETS OFF AT THE SAME TIME. THIS MAY CAUSE DAMAGE TO THE PUMP AND MOTOR.



AIR CONTROLS

Air controls are adjusted by rotating the topside dial. These controls serve to regulate the amount of air mixed with water when the whirlpool or hydrotherapy jets are operating in the high pump mode.



V100



V300/V500

MAINTENANCE

SKIMMER SIDE FILTER

All Viking spas have a skimmer side filter that does not require “air bleeding” on initial startup. If an air lock develops, loosen the union on return side of pump. Let small amount of water drain from connection while the pump is running. Once the water begins to flow out of the jets retighten the union.

Clean spa filters are critical for proper operation. Dirty filters cause water restriction to the pump, which in turn may cause erratic heating of the spa. A starving pump will degrade performance, result in dirty or murky water and may cause the heater to malfunction.

ADD START-UP CHEMICALS

Ask your spa retailer to HELP you set up a chemical maintenance program.

The importance of chemical balance in your spa cannot be overemphasized.

SANITIZING: Please refer to your dealer supplied sanitizing recommendations for your start up procedures.

NOTE: If you live in an area where city water is not available, or your spa water shows signs of calcium content, you will need to add a “stain n scale” chemical on initial fill and then once a week, thereafter.

SPA DRAINING

Every 3 to 4 months, depending upon water condition, you may need to renew the spa water. To drain your spa, power must be disconnected at the circuit breaker. Locate the drain faucet within the equipment access compartment. Attach a garden hose to the faucet and then open it. Water will start draining. The drain spigot will not remove all of the water in the spa. You may have to remove a small amount of water by hand.

SPA SURFACE CARE

Do not use abrasive solvents or cleaners to clean spa surfaces. Consult your Viking Spa Retailer for the proper cleaners and detergents.

LONG-TERM STORAGE (90 days or more)

If you are not going to use your spa for an extended period of time, drain it as described above. You will also have to drain the pump. Water left in the spa during long-term storage may cause freeze damage.*

To drain the pump, remove drain plug from the face of the pump. Reinstall drain plug before using spa once again.

Additional water removal is required to prevent freeze damage to the spa plumbing assembly. Use of a wet/dry vac is required. Place the shop vac hose over each individual jet and vacuum up any excess water out. Place the shop vac on the Suction fitting(s) and vacuum any excess water. This will eliminate the entrapment of water in the plumbing lines that could freeze and cause damage.

NOTE: We also recommend vacuuming each jet opening to ensure that all of the water is out of the plumbing lines.

***FREEZE DAMAGE TO THE SPA PLUMBING IS NOT COVERED UNDER THE WARRANTY.**

SPA CABINET

All Viking spas have a standard synthetic wood cabinet. This material is virtually maintenance free and does not require any type of sealant or treatment.

FILTER CLEANING

Your filter should be replaced once a year. When filters are removed from the spa, make sure that no objects fall into the filter cavity. They can cause obstruction to water movement. Remove filter cartridges as shown in figure below.

The filter must be cleaned every 2 months, more often with heavy use, to get rid of objects and particles that are lodged in the filter pleats. Using a garden hose with a pressurized nozzle, push water from the inside to the outside of the filter pleats forcing all trapped particles out. If the filter is too dirty to be cleaned as described above, obtain filter cleaner material from your Viking Spa Retailer. Soak the filter overnight; then hose it down.



A. Locate skimmer.



B. Pull weir door open.



C. Remove basket.



D. Remove the two separate filters and follow cleaning instructions above.

OZONATOR

If your spa is equipped with an ozonator, it is factory set to filter during the filter cycles only. We recommend the F4 setting which means your spa will filter a total of 8 hours (4 hours twice a day). This should provide adequate ozonation, provided there is proper chemical balance in the spa.

NOTE: Please **Do Not** attempt to disassemble ozonator if it becomes inoperable. Ozonators contain no user serviceable parts. Please contact your spa retailer or service organization.



SPA SITUATIONS & SOLUTIONS

Situation	Cause or Result	Product to use	Solution
Calcium deposits on surfaces of heater, fittings or plumbing	Hard water pH/total alkalinity out of adjustment	Stain n Scale pH Up pH Down	Add 1oz. of Stain n Scale Test water - adjust with pH Up or pH Down. For preventative maintenance add Stain n Scale weekly. (1oz. up to 300 gals.)
Cloudy or murky water	pH/total alkalinity out of balance	pH Up pH Down	Test water - add pH Up or pH Down as needed
	Plugged filter	Spa Cartridge Filter Cleaner	Use Spa Cartridge Filter Cleaner (min. once/month)
	No sanitizer residual	Chlorinating Granules	Add Chlorinating or Brominating Granules (no more than 2oz. per treatment).
	Oils, soap, foreign matter & other contaminants	Spa See Clear	Treat water with Spa See Clear twice a week (1oz. up to 300 gals.)
	Too many conflicting chemicals		Drain & refill if water is older than 60 days
Eye & skin irritation, rashes allergies	Water balance needs to be corrected (pH/total alkalinity)	pH Up pH Down Total "A"	Test water, add pH Up, pH Down or Total "A" as needed
	Excessive chlorine or bromine		Add fresh water and/or wait a day & re-test sanitizer level
Excessive foam	Build up of body oils, cosmetics and contaminants	Spa Foam Away Spa See Clear	Add Spa Foam Away to foamy area, then add 1oz. Spa See Clear
	pH/Total Alkalinity not in balance or calcium level too low	Spa See Clear Spa Stain n Scale	Add Spa See Clear or Spa Stain n Scale to help remove oils and contaminants
Soft water			Drain and refill.
Blue water	Copper metals in spa being eroded	Cop-Out pH Up pH Down Total "A"	Use Cop-Out as per instructions. Test and restore alkalinity and pH to proper levels.

NOTE: Most water chemistry problems can be resolved by the recommended solutions above. Extreme chemical conditions may warrant draining and refilling the spa. Stains or calcium deposits on the spa may require attention prior to refilling. Please contact your dealer if you have further questions.

TROUBLE SHOOTING

Caution: Viking Spas have slide type water shut off valves referred to as Gate Valves. The spa should never be operated with the Gate Valves in the closed position, as this will cause severe damage to the pump and/or heater.

Spa Will Not Heat

Check For Air Lock

- Is this a new installation with trapped air?

Solution; Open drain hose and cycle pump to high speed for approximately 30 seconds or open bleed plug on face of pump for same amount of time.

- If not, has the spa been drained and refilled?

Solution; Make sure water level three quarters of the way on the skimmer opening.

- Is there proper water flow?

Solution: Make sure both Gate Valves are open and filter is clean.

- Is Mode Setting on Standard?

Solution: Change Mode setting to Standard (see Page 9).

Pump Will Not Prime or Function

Solution: Gate Valves Closed

Improper wiring to spa

Water level in spa too low

No Function

Solution: Not plugged into 120V

Main circuit breaker tripped or not turned on.

GFCI tripped, push reset.

Fuse in power system blown

Contact Your Authorized Spa Retailer for Service.

“Warning: Children should not use spas or hot tubs without adult supervision” and “Avertissement: Ne pas laisser les enfants utiliser une cuve de relaxation sans surveillance”

“Warning: Do not use spas or hot tubs unless all suction guards are installed to prevent body and hair entrapment” and “Avertissement: Pour éviter que les cheveux ou une partie du corps puissent être aspirés, ne pas utiliser une cuve de relaxation si les grilles de prise d’aspiration ne sont pas toutes en place”

“Warning: People using medication and/or having an adverse medical history should consult a physician before using a spa or hot tub” and “Avertissement: Les personnes qui prennent des médicaments ou ont des problèmes de santé devraient consulter un médecin avant d’utiliser une cuve de relaxation”

“Warning: People with infectious diseases should not use a spa or hot tub” and “Avertissement: Les personnes atteintes de maladies infectieuses ne devraient pas utiliser une cuve de relaxation”

“Warning: To avoid injury exercise care when entering or exiting the spa or hot tub” and “Avertissement: Pour éviter des blessures, user de prudence en entrant dans une cuve de relaxation et en sortant”

“Warning: Do not use drugs or alcohol before or during the use of a spa or hot tub to avoid unconsciousness and possible drowning” and “Avertissement: Pour éviter l’évanouissement et la noyade éventuelle, ne prendre ni drogue ni alcool avant d’utiliser une cuve de relaxation ni quand on s’y trouve”

“Warning: Pregnant or possibly pregnant women should consult a physician before using a spa or hot tub” and “Avertissement: Les femmes enceintes, que leur grossesse soit confirmée ou non, devraient consulter un médecin avant d’utiliser une cuve de relaxation”

“Warning: Water temperature in excess of 38°C may be injurious to your health” and “Il peut être dangereux pour la santé de se plonger dans l’eau à plus de 38°C”

“Warning: Before entering the spa or hot tub measure the water temperature with an accurate thermometer” and “Avertissement: Avant d’utiliser une cuve de relaxation mesurer la température de l’eau à l’aide d’un thermomètre précis”

“Warning: Do not use a spa or hot tub immediately following strenuous exercise” and “Avertissement: Ne pas utiliser une cuve de relaxation immédiatement après un exercice fatigant”

NOTES:



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