

# ROTO Spa

## Owners Manual

Dealer: **Liquid Leisure Hot Tubs**

Dealer Address: **Box 290, Woodlands, MB**

Dealer Telephone: **(204) 477-8827**

Spa Model: **RSO1**

Serial No: \_\_\_\_\_

Gallons / Liters: **270 gal – 300 gal (1020 L – 1134 L)**

Weight: **275 lbs (125 Kilogram)**

### ROTO Spa

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# **Introduction**

Congratulations on your decision to enjoy a Roto Spa and welcome to the Roto Spa family of quality products

Your Roto Spa has been engineered and built to the highest standards. Enjoy it regularly and experience the wellness, serenity and satisfaction that your Roto Spa will bring.

The information and instructions set out in this Owner's Manual are provided to help you to use your Roto Spa and care for it as easily as possible.

We ask you to read the manual thoroughly. Your Roto Spa dealer will be happy to assist if you have any questions.

Your comments and suggestions are always appreciated. We welcome all correspondence and want you to share your experiences with us.

# Safety Instructions

Read all of the instructions in this manual before you install or attach any electrical power to your Roto Spa.

This manual provides safety tips, installation instructions, operating directions, and maintenance procedures to help ensure the safety of those enjoying your Roto Spa, and to protect it from potential damage.

Please follow the instructions carefully and retain this manual for future reference

## Safety Warnings and Precautions

**READ AND FOLLOW ALL INSTRUCTIONS CAREFULLY!**

### Important safety 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.
2. **WARNING:** A grounding wire connector is provided on this unit to connect a minimum No. 8 AWG (8.4mm<sup>2</sup>) solid copper conductor between this unit and any metal equipment, metal enclosures of electrical equipment, metal water pipe, or conduit within 5 feet (1.5m) of the unit.
3. **DANGER: Risk of Accidental Drowning.** Extreme caution must be exercised to prevent unauthorized access by children. To avoid accidents, ensure that children cannot use this spa unless they are supervised at all times.
4. **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 suction fitting.
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 (bonded) by a minimum No. 8 AWG (8.4 mm<sup>2</sup>) solid copper conductor attached to the wire connector on the grounding lug, inside the equipment compartment on the equipment box.
6. **DANGER: Risk of Electric Shock.** Do not permit any electrical appliance, such as a light, telephone, radio, television, ect. Within 5 feet (1.5m) of a spa unless such appliances are built-in by the manufacturer.
7. **WARNING: To Reduce the Risk of Injury:**
  - The water in a spa should never exceed 104 F (40 C). Water temperatures between 100 F (38 C) and 104 F (40 C) are considered safe for a healthy adult. Lower water temperatures are recommended for young children and when spa use exceeds 10 minutes
  - Since excessive water temperatures have a high potential for causing fetal damage during the early months of pregnancy, pregnant or possibly pregnant women should limit spa water temperatures to 100 F (38 C). If pregnant, please consult your physician before using a spa.

## **Safety Warnings and Precautions**

**READ AND FOLLOW ALL INSTRUCTIONS CAREFULLY!**

**Important safety instructions Continued**

- Before entering the spa, the user should measure the water temperature with an accurate thermometer since the tolerance of water temperature-regulating devices may vary (+/- 5 F) (2 C)
- The use of alcohol, drugs, or medication before or during spa use may lead to unconsciousness with the possibility of drowning.
- Persons suffering from obesity or a medical history of heart disease, low or high blood pressure, circulatory system problems, or diabetes should consult a physician before using a spa.
- Persons using medication should consult a physician before using a spa since some medication may induce drowsiness, while other medication may affect heart rate, blood pressure and circulation.

## **Safety Warnings and Precautions**

### **IMPORTANT SAFETY INSTRUCTIONS**

(CSA STANDARD)

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

1. **READ AND FOLLOW ALL INSTRUCTIONS.**
2. A green coloured terminal or a terminal marked G, GR, Ground, Grounding or the symbol\* is located inside the supply terminal box or compartment. To reduce the risk of electric shock, this terminal must be connected to the grounding means provided in the electric supply service panel with a continuous copper wire equivalent in size to the circuit conductors that supply this equipment.
3. At least two lugs marked "BONDING LUGS" are provide on the external surface or on the inside of the supply terminal box/compartment. To reduce the risk of electric shock, connect the local common bonding grid in the area of the spa to these terminals with an insulated or bare copper conductor not smaller than No. 6AWG.
4. All field-installed metal components such as rails, ladders, drains or other similar hardware within 3m (10 feet) of the spa shall be bonded to the equipment grounding buss with copper conductors not smaller then N0. 6AWG.
5. **WARNING: WATER TEMPERATURE IN EXCESS OF 38 C (100 F) MAY BE INJURIOUS TO YOUR HEALTH.**  
**AVERTISSEMENT: IL PEUT ETRE DANGEREUX POUR LA SANTE DE SE PLONGER DANS DEL"EAU A PLUS DE 38 C (100F).**

**SAVE THESE INSTRUCTIONS.**

## Safety Warnings and Precautions

**Warning:** Children should not use spas or Roto Spa hot tub without adult supervision.  
**AVERTISSEMENT:** NE PAS LAISSER LES ENFANTS UTILISER LA CUVE DE RELAXATION SANS SURVEILLANCE.

**Warning:** Do not use your Roto Spa unless all suction guards are installed to prevent body and hair entrapment.

**AVERTISSEMENT:** NE PAS UTILISER LA CUVE DE RELAXATION SI LES GRILLES DE PRISE D'ASPIRATION NE SONT PAS TOUTES EN PLACE; POUR EVITER QUE LES CHEVEUX OU UNE PARTIE DU CORPS SOIENT ASPIRES.

**Warning:** People using medications and / or having an adverse medical history should consult a physician before using a spa or Roto Spa hot tub.

**AVERTISSEMENT:** LES PERSONNES QUI PRENNENT DES MEDICAMENTS OU ONT DES PROBLEMES DE SANTE DEVRAIENT CONSULTER UN MEDECIN AVANT D'UTILISER UNE CUVE DE RELAXATION

**Warning:** People with infectious diseases should not use a Roto Spa hot tub.

**AVERTISSEMENT:** LES PERSONNES ATTEINTES DE MALADIES INFECTIEUSES NE DEVRAIENT PAS UTILISER LA CUVE DE RELAXATION.

**Warning:** To avoid injury exercise care when entering or exiting the Roto Spa hot tub.

**AVERTISSEMENT:** POUR EVITER DES BLESSURES, SOYEZ PRUDENT EN ENTRANT ET SORTANT DE LA CUVE DE RELAXATION.

**Warning:** Do not use drugs or alcohol before or during the use of a Roto Spa hot tub to avoid unconsciousness and possible drowning.

**AVERTISSEMENT:** POUR EVITER L'EVANOUISSEMENT ET LA NOYADE EVENTUELLE, NE PRENDRE NI DROGUE NE ALCOOL AVANT D'UTILISER LA CUVE DE RELAXATION NI QUAND ON S'Y TROUVE

**Warning:** Pregnant or possible pregnant women should consult a physician before using a Roto Spa hot tub

**AVERTISSEMENT:** LES FEMMES ENCEINTES, QUE LEUR GROSSESSE SOIT CONFIRMEE OU NON, DEVRAIENT CONSULTER UN MEDECIN AVANT D'UTILISER LA CUVE DE RELAXATION.

**Warning:** Water temperature in excess of 38C may be injurious to your health.

**AVERTISSEMENT:** IL PEUT ETRE DANGEREUX POUR LA SANTE DE SE PLONGER DANS DE L'EAU A PLUS DE 38 C (100 f).

**Warning:** Before entering the Roto Spa hot tub measure the water temperature with an accurate thermometer.

**AVERTISSEMENT:** AVANT D'UTILISER UNE CUVE DE RELAXATION MESURER LA TEMPERATURE DE L'EAU A L'AIDE D'UN THERMOMETRE PRECIS.

**Warning:** Do not use a spa or Roto Spa hot tub immediately following strenuous exercise.

**AVERTISSEMENT:** NE PAS TILISER LA CUVE DE RELAXATION IMMEDIATEMENT APRES UN EXERCICE FATIGANT.

**Warning:** Prolonged immersion in a Roto Spa hot tub may be injurious to your health.

**AVERTISSEMENT:** RESTER TROP LONGTEMPS DANS LA CUVE DE RELAXATION PEUT ETRE DANGEREUX POUR LA SANTE.

# Safety Warnings and Precautions

continued

**Warning:** Do not permit electric appliance (such as a light, telephone, radio, or television) within 1.5 M of this Roto Spa hot tub.

**AVERTISSEMENT:** NE PAS PLACER D'APPAREIL ELECTRIQUE (LAMINAIR, TELEPHONE, RADIO, TELEVESEUR, ECT.) A MOINS DE 1.5M DE LA CUVE DE RELAXATION, SAUF SI INSTALLE' A' LA MANUFACTURE.

**Caution:** Maintain water chemistry in accordance with Manufacturer's instruction.

**ATTENTION:** LA TENEUR DE L'EAU EN MATIERES DISSOUTES DOIT ETRE CONFORME AUX DIRECTIVES DU FABRICANT.

## **SAVE THESE INSTRUCTIONS!**

### **HYPERTHERMIA**

Prolonged immersion in hot water may induce hyperthermia. A description of the causes, symptoms, and effects of hyperthermia are as follows:

Hyperthermia occurs when the internal temperature of the body reaches a level several degrees above the normal body temperature of 37 C (98.6 F). The symptoms of hyperthermia include drowsiness, lethargy, and an increase in the internal temperature of the body. The effects of hyperthermia include:

- Unawareness of impending hazard;
- Failure to perceive heat;
- Failure to recognize the need to exit spa;
- Physical inability to exit spa;
- Fetal damage in pregnant women; and
- Unconsciousness and danger of drowning.

**Warning:** THE USE OF ALCOHOL, DRUGS, OR MEDICATION CAN GREATLY INCREASE THE RISK OF FATAL HYPERTHERMIA.

**AVERTISSEMENT:** LA CONSOMMATION D'ALCOOL OU DE DROGUE AUGMENTE CONSIDERABLEMENT LES RISQUES D'HYPERTHERMIE MORTELLE DANS NUE CUVE DE RELAXATION.

# Important Safety Instructions

## Manufacturer's warnings

**In addition to the Safety Instructions found in this manual, these warnings have been assembled to help you enjoy the use of your Roto Spa hot tub. Reading and understanding these warnings will allow you to reduce the risk of causing inadvertent damage to your Roto Spa hot tub, your surroundings, or yourself. Read these warnings carefully.**

- The water level must be maintained at 6cm above the skimmer height. Do not let the water level fall below the height of the skimmer level. If the water level falls below the skimmer level this air will enter the system and may result in an overheat situation and void the warranty.
- Always turn off your Roto Spa before draining and filling process.
- Maintain proper water pH (7.4-7.6), to high a pH level can damage the heater and void warranty.
- **Never use an extension cord to connect the Roto Spa to the power source. Using an extension cord will void your warranty.**
- **Do not operate without an approved ground fault circuit interrupter. This safety device shuts off the power immediately in the event of an electrical short.**
- Install the Roto spa only on floors or areas that can withstand repeated exposure to water. Splashing, dripping, filling and draining are routine operations, which spill water. Equipment failure may also cause substantial water spillage. If located in a multiple floor structure, objects on the floor below should be protected in the event of a major spill.
- Certain objects reflect and concentrate the sun's rays. Close proximity of the Roto Spa cover to such objects should be avoided or damage may incur.
- When changing the water or storing the Roto spa **do not leave in direct sunlight.** This may cause damage to the shell of the Roto spa.
- Do not open the controller. There are no user serviceable parts inside. Opening the control unit will void the warranty.

# Installation Instructions

## Site Selection

Before selecting a site, please read the Safety Information, Manufacturer's Warnings and the relevant indoor/outdoor sections.

Your Roto Spa is completely self-contained and portable. It can be set up on a patio, deck or even indoors.

The dimensions of your Roto spa are 33" (84cm) high X 78.5" (199cm) wide.

1. **Structure:** The Roto Spa should always be placed on a structurally strong, relatively smooth and level surface.
2. **Drainage:** do not place the Roto Spa in an area where water will puddle around the tub.
3. **Electrical:** Allow easy access to the controller situated behind the access panel for electrical hook up.

## Outdoor Installation

Your Roto Spa is totally self-contained and portable. You can place it just about anywhere you wish; on any smooth surface (tile, concrete, wood, and brick). Verify the tub is placed on a firm, level well-drained base prior to set-up. If you need to step on grass or dirt to enter the Roto Spa, we recommend the use of stepping-stones to reduce the amount of dirt and debris entering the tub.

ANY DAMAGE CAUSED BY THE SPA RESTING ON AN UNEVEN SURFACE WILL NOT BE COVERED BY THE WARRANTY.

When considering an installation site, always allow for easy access to your equipment. The installation site should also allow enough room to completely remove and store the spa cover during used.

## Indoor/Basement Installation

Water splashing on the floor during use may cause a walking hazard and/or structural damage unless good drainage is provided. Proper building materials must be used in the area surrounding and beneath the tub. Take into consideration the room humidity, which will exist due to high temperatures. Providing natural or forced ventilation in the room will help maintain comfort and minimize moisture damage to the surrounding environment. Consult an architect for aid in designing your indoor Roto Spa room.

Note: Using your spa for 15 to 20 minutes gives off the same moisture/condensation as a 15 to 20 minute shower, so a proper bathroom fan should be installed.



# Installation Instructions

## Site Preparation

As a homeowner, it is your responsibility to provide a suitable, level foundation for your Roto Spa since the delivery crews are not equipped to level or prepare sites.

Keep in mind that placing the spa on grass or dirt may increase the amount of debris that is inadvertently brought into the spa water on users' feet.

**Caution:** Your Roto Spa is not intended to be installed below ground level.

## Deck Installation

You must know the deck's maximum load capacity to be certain you deck can support you spa. Consult a qualified building contractor or structural engineer. Your Roto Spa when filled with water has a maximum weight of 3300 lb or 7260 kg.

## Electrical Connection

Your Roto Spa comes ready to install using an 110V 15amp corded connection complete with an inline GFCI ready to plug into a dedicated 15amp household circuit.

Roto Spas have been designed to meet the maximum safety requirements to prevent electrical shock. Improper wiring may cause electrocution, risk of fire, risk of injuries, and damage to the equipment. Never use an extension cord to connect the Roto Spa to the power source.

## Starting Your Roto Spa

**Caution:** The control module must never be operated without water in the Roto Spa; serious damage to the heater and/or pump may result.

**NOTE:** Never fill your spa with soft water. Soft water makes it impossible to maintain the proper water chemistry and may cause the water to foam.

After your Roto spa has been positioned follow these instructions for start-up. The same steps apply each time the Roto Spa is emptied and refilled:

1. Ensure electrical power is off.

2. Do not connect power to an empty spa. Power to the Roto Spa automatically activates the electrical equipment. Serious damage to the equipment components may result and this is a non-warranty component failure.
3. Begin filling the Roto spa with water. The use of hot water is acceptable and will reduce the heating time to the set point. When using this method you should first add 30mm of cold water. Filling the Roto spa in stages will allow your hot water tank to recover.
4. Every Roto Spa has been tested during the manufacturing process to ensure functionality, performance, reliability and complete customer satisfaction. As a result a small amount of water may have remained in the system after testing. Clean the interior of the Roto Spa of any remaining debris. Completely wipe the interior of the Roto Spa with a wet sponge or a soft rag. For added cleaning you may use an isopropyl alcohol such as Windex.
5. Before filling your spa for the first time, remove the pump compartment door, check to ensure that the unions on either side of the pump and heater units are hand-tight and the water valves are fully open. Remove the filter lid and skimmer basket. Then insert the end of a garden hose into the filter canister and begin filling the spa to the recommended level. The water level of the spa should be approximately 3cm above the highest jet in the spa and at least 5 to 8 cm over the skimmer/filter opening. Low water levels can cause damage to the pump and heater unit. Check all connections for leaks and hand tighten union fittings as required. The equipment may shift slightly during transportation.
6. Reinstall the skimmer basket and filter lid once the spa is filled and check to ensure that the filter is installed correctly.
7. After the spa has been filled with water (and only when water level is adequate to avoid pump damage) power up the Roto Spa. When the spa is powered up, the electronic system will automatically activate and in the first few seconds of power-up the system will be in auto diagnosis mode, checking the power levels (voltage correctness of wiring fuses etc.) At the end of the first step, the temperature of the water will be displayed and the system will begin the heating process. **NOTE:** Do not expect to feel hot water immediately coming from the jets. The highly efficient heaters are designed to provide cost-saving, low level heating. The expected time to reach the set point depends on initial water temperature and ambient temperature.
8. The default set point water temperature is 95F. You can raise or lower the water temperature by pressing the “(▼▲)” button on the control panel to the desired temperature.



9. **Pump** key is used to turn pump on or to select between off, low and high speeds. Press **Pump** key to turn pump on. A second press will change pump speed. A built-in timer will turn pump off 20 minutes after it has been started unless the user does so manually. The “Pump” indicator lights up on keypad display when pump is on.

10. The system will automatically perform two filtering cycles per day, 12 hours apart. During a cycle the pump will start on high speed for 1 minute then will run on low speed for a predetermined number of hours. The ozonator is always on during a filter cycle.

**To set the duration of the filtering cycle (the amount of time the pump will be on), follow this procedure:**

- Press **Light** key and hold for 5 seconds.



- The display will show a digit that represents the duration of the filter cycle in hours.
- Use **Up & Down** arrow keys to change setting.  
0 = no filtration,  
12 = continuous filtration



- When the desired setting is displayed, press **Light** key again. The filter cycle will start. The “Filter” indicator lights up when a filter cycle is on.

## Winterizing

1. Remove the filter cover.
2. Remove the filter basket and filter.
3. Use a siphon hose (garden hose) to drain the Roto Spa completely. To start the siphon you can put the siphon hose over a jet while the pump is running on high speed until the hose is completely full, and then put the hose at the bottom of the foot well. Turn off the power to the Roto Spa and let the tub drain completely.  
**Note:** The shorter the hose the faster the tub drains. You may also use a submersible pump if available.
4. Disconnect the unions from both sides of the pump
5. Use a wet/dry vacuum to blow any remaining water out of the jets and equipment area.
6. Cover your spa with a good all weather spa cover. This cover can be purchased through your local dealer.

**Never allow the Roto Spa hot tub to run without water or in a low water situation. This may damage components and void warranty.**