

# THE **RIO**

## OWNER'S MANUAL



### **CAUTION:**

More than one GFCI  
used on the electrical  
circuit will render this  
spa inoperable.

This spa must be on a  
dedicated circuit.



**STRONG SPAS**<sup>TM</sup>

*Creating a lifestyle that lasts a lifetime.*

P.O. Box 108  
Northumberland, PA 17857  
**1-800-STRONG-9**

1-800-787-6649

2/15/06

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**Be sure to locate the  
Registration Form  
at the back of this owner's manual.  
Please fill it out and send it to  
Strong Pools and Spas immediately.**

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**Failure to return this registration card within 30 days of purchase voids all warranties provided by  
Strong Pools and Spas**

# Introduction

Congratulations on your purchase of the finest, Rotational Molded resin whirlpool spa on the market today. We at Strong Pools & Spas are excited to assist your family in "Creating a Lifestyle that Lasts a Lifetime".

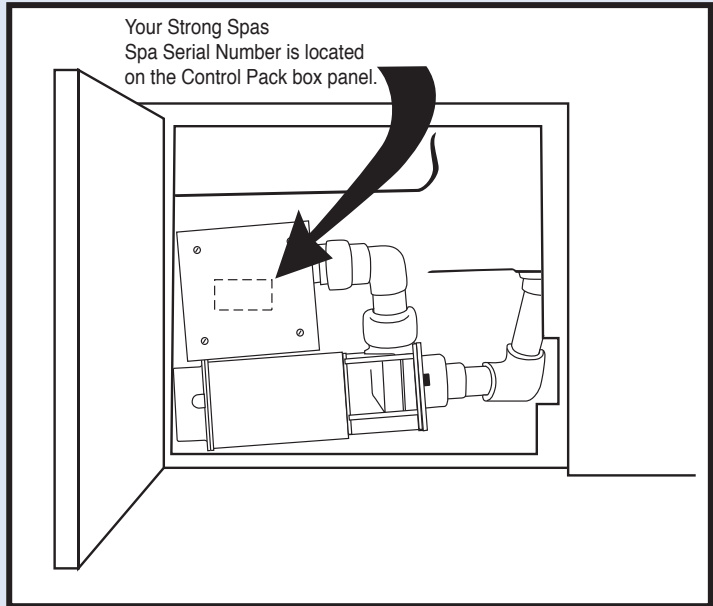
With proper care, operation and maintenance, your spa will provide your family many years of comfort and pleasure. Please take time to read all the instructions before you install your Strong Pools & Spa, "Rio" spa.

This manual explains safety precautions, installation instructions, operating directions and maintenance procedures. If you have any questions after reading this manual, please call your dealer or Strong Pools & Spas service representative at 1-800-787-6649.

Read and understand all safety instructions, operating instructions and all warnings and cautions before adding water or attaching electrical power.

## The Rio Spa

Please use this space to record the pertinent information about your new spa here:



Date of Purchase: \_\_\_\_/\_\_\_\_/\_\_\_\_

Color: \_\_\_\_\_

Serial #

# Important Safety Instructions

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**WARNING** People with infectious diseases should not use a spa.

The use of alcohol, drugs or medication before or during spa use may lead to unconsciousness with the possibility of drowning.

Do Not use the spa immediately following strenuous exercise.

Persons suffering from heart disease, diabetes, high or low blood pressure or any other serious illness and pregnant women should consult with their physician before using the spa.

Excessive water temperature can be dangerous. Before entering the spa, the user should measure the water temperature with an accurate thermometer, since the tolerance of the water temperature regulating devices may vary as much as  $\pm 3^{\circ}\text{C}$  ( $5^{\circ}\text{F}$ ). The Water should never exceed  $40^{\circ}\text{C}$  ( $104^{\circ}\text{F}$ ) and lower water temperature is recommended for extended use (exceeding 10-15 minutes) and for young children.

Long exposure at higher temperature can result in dizziness and/or hyperthermia. Hyperthermia occurs when the internal temperature of the body reaches a level several degrees above the normal body temperature of  $98^{\circ}\text{F}$  ( $36.7^{\circ}\text{C}$ ). The symptoms of hyperthermia include dizziness, fainting, drowsiness or lethargy.

The affects of hyperthermia include:

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

Children should be supervised at all times.

**DO NOT OPERATE SPA WITHOUT CORRECT WATER LEVEL!**

Actual features included in spa's descriptions and photos are subject to change without notice.

# Installation Instructions

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## **Spa Location:**

Improper installation may result in equipment damage and will void the warranty. Your spa must be placed on a flat, level surface.

The space you choose to install your spa is a very important decision, you should consider all of the listed suggestions.

Check your local code office for understanding of building, fencing, gates, electrical, plumbing and enclosure required codes.

A location should be selected to compliment your lifestyle, the view from your house and the ability to supervise the spa.

Position the spa in relation to the surroundings of trees, sunlight exposure, wind, bathroom location, landscaping and evening lighting.

The spa with water is very heavy, if the spa is placed on flooring or decking, be sure the structure is strong enough to support the weight. The necessary support should be at least 75 pounds per square foot.

Install your spa, in a way that will allow easy access to the equipment door.

Storage area for maintenance equipment and chemicals (storing chemicals inside your spa cabinet will void the warranty)

## **Indoor Considerations:**

All of the interior of the spa location must be able to withstand high humidity. The spa chemicals may have some corrosive effect.

Floor drain is needed to carry off splashed water from the spa.

It is strongly advised NOT to locate a spa on second story location that may be above finished living space.

# Electrical - General Instructions

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It is recommended that a licensed electrician install the power to your spa, in accordance with the National Electric Code or any local electrical codes in effect at the time of installation.

The circuit breaker must be dedicated and cannot be shared with any other appliances. It should be labeled and easily accessible to users. **DO NOT USE EXTENSION OR PLUG-TYPE CORDS OF ANY KIND.** The use of a shut-off box near the spa is recommended. Metal surfaces within 5 feet of the spa must be grounded to the spa.

A 120 Volt - 15 Amp GFI rated plug is furnished with the Rio Spa.

**CAUTION: This spa will not work if more than one GFCI is used on the circuit.**

Connections should be made using copper conductors only. The connecting wire and circuit breakers or fuses must be sized to accommodate the total ampere load as specified on the equipment module data label.

**Strong Pools and Spas only makes electrical recommendations, always consult a certified electrician.**

# Control Panel Identification

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**JETS 1** Press the Jets1 key to activate the pump. The system will run for 30 minutes, at which time the system will automatically shut off, unless done so manually prior to 30 minute period.

**AUX** The auxiliary key will activate an optional second pump or blower. Auxiliary key is also used in conjunction with other keys to change settings.

**LIGHT** Press Light to turn the light on/off. The Antigua Spa is equipped with an LED Multi-Color Light. The colors will cycle as you press the light button on and off.

**HEAT** Press the Heat key to adjust the temperature. Press once and hold will raise temperature. Press a second time and hold will lower temperature to the minimum set point of 70° F or 21° C. A red LED will flash at the topside control when the heater is on.

## BEFORE START UP! IMPORTANT UNION ADJUSTMENTS

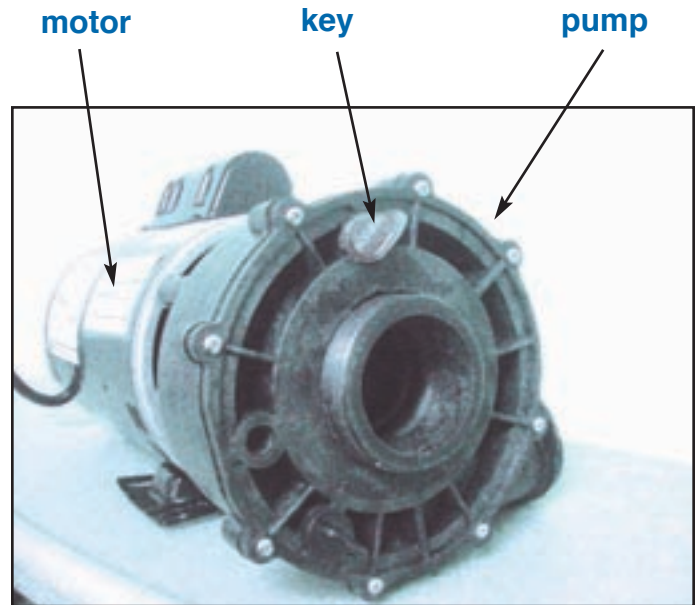
There are FOUR unions that may require hand tightening prior to operation of your spa. When filling the spa with water, keep observing these fittings for any slight water drips. If a drip is observed, just hand tighten until dripping ceases.

# Startup Preparations

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Before starting up your spa, make sure you have read and understand all of the previous instructions. Make sure the spa has been installed correctly, including the electrical wiring connections as specified,

- Spa's water is at the correct level
- Pump is primed  
To prime the air from the system, simply turn open the key type screw at the right end of the motor/pump. The key should be turned just enough to allow the excess air in the water lines to escape. When a spurt of water is flowing, close the screw and you have completed the priming of the pump.
- Ensure all valves are opened
- Turn circuit breaker on



The control panel has automatic functions that operate upon start up and normal operation to protect the system. Upon power up, the read out will display three-digit software release. This number will then change to 888 while the system is booting up. After starting up, the low speed pump will start running if the water temperature is below 100°F (37.8°C). If a "FL1" appears on the display, turn the system off and repeat step 2. If the water temperature is below 55°F (12.8°C) "ICE" will alternately display with the water temperature, this is normal operation.

Approximately two minutes after the system has been powered up, the first filtration cycle will begin to operate. Any time after the start up, you will be able to change the filter cycle and reset your temperature set point

**NOTE:** Let run 3 seconds, if no water flow can be detected, turn off the power to the spa and re-prime the pump.

On Cold startups, the air valve must be closed.



# Changing Filter Cycles

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## FILTRATION

Proper filtration is an important key to maintaining the clarity of your spa's water. The filter system is designed for unsurpassed effectiveness at removing debris and suspensions from the water anytime the water is circulating.

Your control panel is set to filter for two hours every twelve hours. A two speed pump is supplied with your spa that provides filtration on low speed, the low speed will shut off if the temperature creeps more than 2 degrees above the set point, it will turn back on when temperature drops to the set point.

Press Heat key and Auxiliary key simultaneously and hold to adjust the filter cycle from the two hours every 12 hours period.

## Troubleshooting

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\*indicates qualified service technician recommended

### Heat Mode 120V Version

In LC ( Low Current ) Mode ( 120V versions ): Jets 1 must be in low speed and AUX (optional pump 2 or blower) must be off before heater can be turned on.

If the red indicator DOT in the bottom right of your temperature window is not flashing when there is a demand for heat, press the AUX key to shut off the optional secondary pump / blower circuit. This secondary circuit will automatically shut off in 30 min if left on.

### No display at topside\*

- Check that connection to main board is clean and sound at J8.
- Test a new topside control
- Check for 120V primary power going into the transformer and for 12V secondary power out of the transformer to J6 and J7 on the board before replacing the transformer.
- Relace board if there is 12V to J6 and J7.

### Display flashes “th1/38” on system start up\*

- Check that temperature sensing probe connection to main board is clean and sound at location J2.
- Try new temperature sensing probe.

### Display flashes “th2/current temperature” on system start up\*

- Check that the temperature sensing probe connected to the main board is clean and sound at location J1.
- Try new temperature sensing probe.

### Display flashes “th2/39” on system start up

- This indicates that both sensors ( thermisters ) are detecting tub water temperature of less than 39F or they are both disconnected ( open ). Pump(s) will run in this condition. See Freeze Protect Override (FPO) instructions for cold water fill up.

### Display flashes”OH” (OVERHEAT)

- This indicates that the spa water temperature is over 112°F. The system should be shut down in this state and will re-start automatically when the water cools below 112°F.

## **Display flashes “hot” (OVERHEAT)**

- This indicates that the heater body is over 112°F. The system should be shut down in this state and will re-start automatically when the water cools below 112°F.

## **Display flashes “HL” (HIGH LIMIT)**

- This indicates that either the heater or the spa has reached 118°F or higher. The system will not re-start automatically. To re-start the system, the water temperature must be below 112°F and the heater key at the topside control must be pressed.

## **Display flashes “FLO” (FLOW)**

- This indicates that there is a water flow problem or defective pressure switch.
- make sure filters are clean
- check that service valves are open
- check for obstruction of flow
- adjust pressure switch (see pressure switch detail under description and use of controls)

## **Display flashes “FLC”\*\***

- This indicates that the pressure switch is stuck in the closed position and should be replaced.

## **Erratic operation at topside panel\***

- Check for proper connection at J8
- Shut off system and restart
- Check for debris inside topside panel control housing
- Check cable connection at the topside control remove, clean reconnect.
- Try new topside control
- Replace main board

## **Pump(s), blower or light does not shut off\***

- Try new topside control
- Replace main board

## **Circulation pump does not work\***

- Check the fuse and power connections.

## **Light does not work**

- Press Light to turn the light on/off. The Antigua Spa is equipped with an LED Multi-Color Light. The colors will cycle as you press the light button on and off.

## **Freeze Protect Over-ride FPO**

This function is intended to be used on start-up after a fresh fill if water temp is below 52°F. The 6 hour duration of the FPO cycle is counted from the time the unit is powered-up and not from the time of its activation.

By pressing the Jets 1 and Light key simultaneously for 10 seconds, the freeze protect feature will be suspended for 6 hours. ( the FPO will be activated) This is to allow the installer of the spa to check for normal operation if the spa is filled with water that is less than the set freeze protect level 52°F. FPO will appear every 10 seconds at the topside control. To manually go back to freeze protect mode, power down the system and re-boot. It is recommended that the system be left on low speed and heating in FPO mode.

# Spa Maintenance

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The maintenance and care of your spa is simple and easy to carry out, and if performed regularly as scheduled, problems will be minimal. It is important that the following procedures be read through and carried out on a regular basis for the best, long term, overall performance of your spa.

The filtering cycle of your spa should be operated at least two hours or more a day (whether or not the heater is heating) to remove impurities and to prevent disposition of contaminants in your spa. The filtering system works automatically. Keep the spa covered when not in use to reduce the loss of heat and to keep debris from settling in the water.

Maintaining the spa's proper water chemical balance is essential to the comfort and safety of the user. Water mineral content varies constantly and is directly affected by evaporation and the use of cleaning and maintenance chemicals, which will increase mineral content, when added. If the mineral content deviates from prescribed pH level (7.2-7.8) deposits on the spa walls, filter, electric heating element or gas heater manifold and piping may adversely affect the condition of your spa equipment.

Since the water capacity of your spa is far less than that of a swimming pool, the chemical reaction caused by the presence of one or more persons in the spa is more rapid and pronounced. In other words, it is much more difficult to maintain the proper pH balance in a spa than in a swimming pool. For these reasons, it is important to check frequently, the total alkalinity of the water, the pH level, and the sanitize level, then add prescribed chemicals as necessary to maintain the proper chemical balance. Failure to maintain a proper balance of chemicals in your spa will result in an early, premature failure of your spa parts including, but not limited to, the spa cover, piping, certain electrical components in the spa, electrical control box and topside panel, thus voiding the warranty.

## ESSENTIAL CHEMICALS AND THERE USE

The following information on chemical use for spa maintenance is provided strictly as a guide for the spa owner and may or may not be appropriate to maintain your spa correctly and may, under certain conditions, be harmful to your spa and/or persons using the spa. Always check with your pool and spa dealer to determine which chemicals and/or procedures they recommend to maintain your spa correctly. STRONG POOLS and SPAS does hereby claim no responsibility or liability for use of and quantities of the chemicals listed.

# Spa Maintenance

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**CONCENTRATED CHLORINATING GRANULES** - The minimum chlorine level in the spa should be at least 2PPM (parts per million). Chlorine level should be tested frequently and the chemical added to maintain a safe level of 2PPM. This type of chemical can be added in quantities of 0.5 ounce per 500 gallons of spa water. Check the chlorine level at least seven hours or more after adding to determine the full effect of the added chemical. Liquid chlorine is not recommended.

**ORGANIC POLYMERS** - are used in various forms. These chemicals clear up cloudy or dirty water appearance and prevent calcium deposits on the inside spa finish, plumbing and heating equipment. Use as recommended by the manufacturer.

**METAL GON** - or its equivalent is a chemical that will prevent iron in the spa water from staining the spa finish. This chemical is added to the spa water when the spa is filled for the first time or when refilled. Use as recommended by the manufacturer.

**SILICONE EMULSION** - quickly and effectively disperses foam and is completely compatible with the other chemicals listed. Use as recommended by the manufacturer.

**SPA WATER** - should be changed periodically, depending upon frequency of use and other conditions that may affect water suitability. Typically 60 to 90 days is a satisfactory interval under normal conditions. With heavy usage, the interval between water changing should be less.

**SPA FILTER CARTRIDGE** - should be cleaned every 2 to 4 weeks depending on the frequency of use. Rinse the filter cartridge with a pressure hose and re-install filter cartridge in the filter housing. When changing spa water it is good practice to soak the filter cartridge in filter cleaner. The filter cleaner is specially made to remove accumulation of oils and other contaminants which will ensure good, sanitary water and extended filter cartridge life.

**ADDING CHEMICALS** - to your spa water: Add to the center of the spa with the pump and the air blower (bubbles) operating simultaneously. Make sure the water is heated. Never add chemicals to cold water, as this will effect chemical action. Also, never add chemicals directly into the skimmer.

Store all chemicals in a cool, dry place and in such a way as to prevent children and pets from contacting.

# Jets, Valves, Injection and Suction

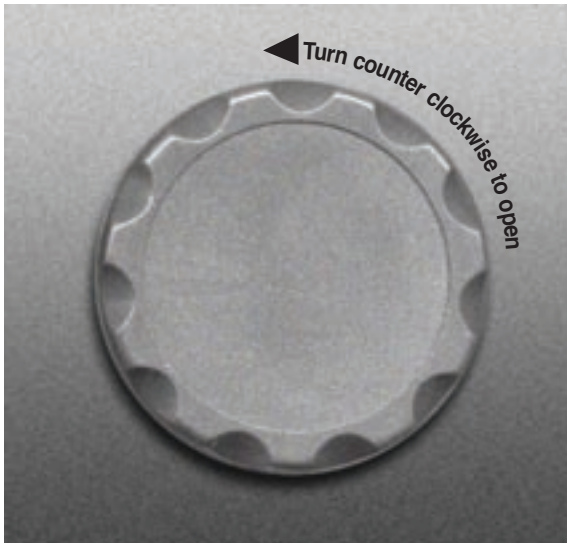
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Jet 2"



Bottom Suction



Top Air Control Valve

(Air Control Valve should be turned off when spa is not in use. The spa will heat up faster.)





# WARRANTIES

## LIFETIME ON THE SHELL

The Rio Spa is forge-cast from authentic granite resin and is warranted for the life of the spa to the original owner.

### ONE YEAR ON CONTROL EQUIPMENT AND PLUMBING

**The control equipment** (power pack, heater, pump/motor) is warranted against defects in materials and/or workmanship for a period of one year on parts.

**The plumbing** (including fittings) is warranted against leaking due to defects in materials and/or workmanship for a period of one (1) year on parts.

**Ozone Generator System** – is warranted against defects in materials and/or workmanship for a period of one (1) year on parts. Warranty extends only to the original purchaser. Warranty does not apply to breakage due to obvious misuse.

NOTE: the warranty begins from the date of delivery and is only valid to the original owner. The warranty does not cover damage caused by neglect, misuse, improper hookup and water chemistry or leaving the empty spa exposed to the sun. Pressure Switch adjustments are covered for thirty (30) days from delivery. Travel or mileage costs are not covered under these warranties and may be assessed to the consumer by the repair company. Strong Spas shall not be liable for loss of use of the spa or other incidental or consequential costs, expenses or damage.

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1-800-787-6649

For current update changes on warranties, consult our website at [www.strongspas.com](http://www.strongspas.com)

# Points on Spa Safety for Strong Spas Spa Owners

## **SAFETY PRECAUTIONS / DANGER - RISK OF INJURY**

1. Please use the Hot Tub when others are present.
2. Children should be supervised at all times.
3. To avoid the risk of drowning, keep the filter clean and unclogged. Do not remove the suction drain cover. Do not modify the suction or filtration systems.
4. Exercise caution when entering or leaving the Hot Tub. When changing positions, be sure of your footing before applying your full weight as water refraction can be misleading.
5. Do not stay in the water for extended periods of time. Set reasonable time limits. Leave the Hot Tub, cool down, take a shower, relax, then return for another stay.

## **FOR YOUR RECORDS:**

For future use, it is advisable that you write down some information pertaining to the model of the spa you have purchased. If you are unsure of the model name, frame size, etc., contact your dealer immediately to acquire the information needed. When making a warranty claim or just purchasing replacement parts, it is necessary to know the following information.

PURCHASE DATE: \_\_\_\_\_

MODEL NAME: \_\_\_\_\_

SERIAL NUMBER: \_\_\_\_\_

SHELL COLOR: \_\_\_\_\_

▼ **Failure to return this registration card within 30 days of purchase voids all warranties provided by Strong Pools and Spas** ▼

## **REGISTRATION CARD**

I have read and fully understand the warranties given to me by **STRONG POOLS & SPAS** and have assembled my spa in accordance with **THIS INSTRUCTION BOOKLET**. Furthermore, I have read the **POINTS ON SPA SAFETY** at the top of this warranty card. I am returning this card to you, signed by me, in order to register my spa in accordance with your warranties.

Purchaser's Name: \_\_\_\_\_ Purchase Date: \_\_\_\_\_

Address: \_\_\_\_\_ Model Name: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_ Serial Number: \_\_\_\_\_

Telephone No.: \_\_\_\_\_ Dealer's Name: \_\_\_\_\_

Address: \_\_\_\_\_

Signature: \_\_\_\_\_

Comments: \_\_\_\_\_

**RETAIN THIS BOOKLET FOR FUTURE REFERENCE:  
FOR ANY MISSING PARTS, PROBLEMS OR QUESTIONS CALL:  
MONDAY THROUGH FRIDAY 8:30 AM - 5:00 PM E.S.T.  
(570) 275-2700**

- GIVE YOUR NAME
- TELEPHONE NUMBER (AREA CODE)
- NAME OF SPA
- NAME OF MODEL
- QUANTITY AND TYPE OF PARTS
- REASON FOR REQUEST
  - A. DAMAGED
  - B. DEFECTIVE

---

PLACE  
STAMP  
HERE

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Northumberland PA 17857