

# **Sundance Spas®**

## **600 Series**

**Installation**

**&**

**Owners Manual**

## Table of Contents

Important Spa Owner Information .....	2
Important Safety Instructions .....	3
Locating Your Sundance Spa .....	5
General Electrical Safety Instructions .....	6
Door Interlock .....	6
Fuses .....	6
High Temperature Limit Reset .....	6
Electrical Installation Instructions .....	8
Start Up Instructions .....	10
Operating Instructions .....	12
Light .....	12
Jets and Air Injection .....	13
Selecting the Desired Massage Action .....	13
Diverter Valves .....	13
Air Controls .....	13
Sunstorm Rotating Jets .....	14
Choosing the “Standard” or “Economy” Mode .....	14
The Thermostat .....	15
Time Clock .....	15
Spa Maintenance .....	16
Cleaning The Filter .....	16
Draining & Refilling .....	17
Cleaning The Spa Surface .....	17
Maintaining The Wood Skirt .....	18
Maintaining The Cover .....	18
Winterizing .....	18
Water Quality Maintenance .....	19
pH Control .....	19
Sanitizing .....	19
Optional Sunzone Water Purification System .....	19
Other Additives .....	19
Troubleshooting .....	20

## **Important Spa Owner Information**

Your Sundance Spa is constructed of the highest standards and is capable of providing many years of trouble-free use. However, because heat retentive materials are utilized to insulate the spa for efficient operation, an uncovered spa surface directly exposed to sunlight and high temperatures for an extended period is subject to permanent damage. Damage caused by exposing the spa to this abuse is not covered by warranty. We recommend that you always keep the spa full of water when it is exposed to direct sunlight and that you keep the Sundance insulating cover in place at all times when the spa is not in use.

Read and carefully follow the requirements for your spa's support base (found in the section titled, "Locating Your Sundance Spa").

Sundance Spas constantly strives to offer the finest spas available, therefore modifications and enhancements may be made which affect the specifications, illustrations and/or instructions contained herein.

## Important Safety Instructions

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

- 1. READ AND FOLLOW ALL INSTRUCTIONS BEFORE OPERATING THE SPA!**
- 2. DANGER** — To reduce the risk of injury, do not permit children to use this product unless they are closely supervised at all times.
- 3. WARNING — RISK OF CHILD DROWNING.** Extreme caution must be exercised to prevent unauthorized access by children. To avoid accidents, ensure that children cannot use a spa or hot tub unless they are supervised at all times.
- 4. DANGER** — To reduce the risk of injury, do not remove the main drain suction grate or cover.
- 5. DANGER** — A wire connector marked “ground” is provided within the power box (See ILL. 2). To reduce the risk of electric shock, connect this terminal or connector to the grounding terminal of your electrical service or supply panel with a continuous green insulating copper wire equivalent in size to the circuit conductors supplying this equipment, but no smaller than No. 8 AWG. In addition, a second wire connector is provided for bonding to local ground points. To reduce the risk of electrical shock, this connector should be bonded with a No. 8 AWG (8.4MM<sup>2</sup>) copper wire to any metal ladders, water pipes, or other metal within five feet (1.52 m) of the spa.
- 6. DANGER — RISK OF ELECTRICAL SHOCK,** Install at least five feet (1.52 m) from all metal surfaces.  

(A spa may be installed within five feet of metal surfaces, if in accordance with the National Electrical Code, ANSI/NFPA 70-1984, each metal surface is permanently connected by a No. 8 AWG (8.4 mm<sup>2</sup>) copper conductor attached to the wire connector on the terminal box that is provided for this purpose.)
- 7. CAUTION** — This spa must be hardwired to your household electrical service box only. Do not use an extension cord or any other disconnectable power cord. The use of an extension cord or a disconnectable power cord is highly dangerous and will void all warranties!
- 8. INSTALLATION** — The spa must be installed in such a manner as to provide drainage of the compartment for electrical components.
- 9. DANGER — RISK OF ELECTRIC SHOCK.** Do not permit any electric appliance, such as a light, telephone, radio, or television, within 5 feet (1.52 m) of the spa.
- 10.** The water in a spa or hot tub should never exceed 40° C (104° F). Water temperatures between 38° C (100° F) and 40° C (104° F) are considered safe for a healthy adult. Lower water temperatures are recommended for extended use (exceeding 10 - 15 minutes) and for young children.
- 11.** 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 or hot tub water temperatures to 38° C (100° F).

12. Before entering a spa or hot tub, the user should measure the water temperature with an accurate thermometer since the tolerance of water temperature-regulating devices may vary as much as  $\pm 3^{\circ}$  C ( $5^{\circ}$  F).
13. The use of alcohol, drugs, or medication before or during spa or hot tub use may lead to unconsciousness with the possibility of drowning.
14. 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 or hot tub.
15. Persons using medication should consult a physician before using a spa or hot tub since some medication may induce drowsiness while other medication may affect heart rate, blood pressure, and circulation.
16. The electrical supply for this product must include a suitably rated switch or circuit breaker to open all ungrounded supply conductors to comply with Section 422-20 of the National Electrical Code, ANSI/NFPA 70-1987. The disconnecting means must be readily accessible to the spa's occupant but installed at least 5 feet (1.5 m) from spa water.
17. Always enter and exit the spa slowly and cautiously. Wet surfaces will be slippery.
18. Long exposures in the spa may result in nausea, dizziness or fainting. Observe a reasonable time limit, leave the spa, then shower, cool down and, if you wish, return for another brief stay.
19. Do not use the spa alone.
20. It is recommended that the following emergency telephone numbers be listed at the nearest telephone: physician, hospital, ambulance and police.
21. Excessive temperatures may cause hyperthermia. The symptoms and first aid information are as follows:

HEAT STROKE: The most susceptible people are the very young and elderly, alcoholics and most people under the influence of drugs, medication and alcohol.

SYMPTOMS: Hyperthermia causes loss of salt, sweating, ordinary dizziness, headache, dryness of mouth and nausea, faintness and/or unconsciousness, convulsions, flushed appearance of skin and rapid pulse and/or weak, shallow breathing.

TREATMENT: Place the victim on his back, head slightly elevated. Apply wet cloths or ice packs to the head, wrap the body in a sheet, pouring on a small amount of water. Follow with a cool shower or bath. Get medical attention as soon as possible.
22. **SAVE THESE INSTRUCTIONS!**

## Locating Your Sundance Spa

**IMPORTANT:** Because of the combined weight of the spa, water and users, it is extremely important that the base upon which the spa rests be smooth, level, flat and capable of uniformly supporting this weight, without shifting or settling, for the entire time the spa is in place. If the spa is placed on a surface which does not meet these requirements, damage to the skirt and/or the spa shell may result. Damage caused by improper support is not covered under warranty. It is the responsibility of the spa owner to assure the integrity of the support over time.

We recommend a poured, reinforced concrete slab (minimum of 4 inches thick). However, wood decking is also acceptable provided it is constructed so that it meets the requirements outlined above.

The spa must be installed in such a manner as to provide drainage away from the spa. Placing the spa in a depression without provisions for proper drainage could allow rain, overflow and other casual water to flood the equipment and create a wet condition in which the spa would sit.

For spas which will be recessed into a floor or deck, install so as to permit access to the equipment, either from above or below, for servicing. Make certain that there are no obstructions which would prevent removal of the cabinet side panels, especially on the side with the equipment bay doors.

In selecting the ideal outdoor location for your spa, we suggest that you take into consideration 1) the proximity to change area and shelter (especially in colder weather); 2) the pathway to and from your spa (this should be free of debris so that dirt and leaves are not easily tracked into the spa); 3) the closeness to trees and shrubbery (remember that leaves and birds could create extra work in keeping the spa clean); 4) a sheltered environment (less wind and weather exposure can result in lowered operation and maintenance costs); and 5) the overall enhancement of your environment. It is preferable not to place the spa under an unguttered roof overhang since run-off water will shorten the life expectancy of the spa cover.

For *indoor* installations, be certain to make provisions for proper ventilation. When the spa is in use, considerable amounts of moisture will escape. This can damage certain surfaces over time.

If you have any questions regarding the placement or installation of your spa, consult your authorized Sundance Dealer.

## **General Electrical Safety Instructions**

Your new Sundance Spa is equipped with “state-of-the-art” equipment and controls. Nonetheless, this spa must be installed properly to insure dependable usage. Please contact your dealer or local building department should you have any question regarding your installation. In the event they are unable to answer your questions, direct your inquiries to Sundance Spas. Please refer to the back of this manual for our address and telephone number.

Proper grounding is extremely important. Sundance Spas are equipped with a current collector system. A pressure wire connector is provided on the surface of the control box, located inside the equipment door (See ILL. 2, ITEM 4) to permit connection of a bonding wire between this point and any ground metal equipment, metal water pipe or conduit within 5 feet of the spa, or copper clad grounding rod buried within 5 feet of the spa. Bonding wire must be at least No. 8 AWG (8.4 mm<sup>2</sup>) solid copper wire. Use copper wire only. Do not use aluminum wire.

Before installing the spa, check with the local building department to insure installation conforms to local building codes.

### **DOOR INTERLOCK**

Your Sundance Spa contains a door interlock on each door to shut down the power supply to the high voltage electrical components when the door is opened.

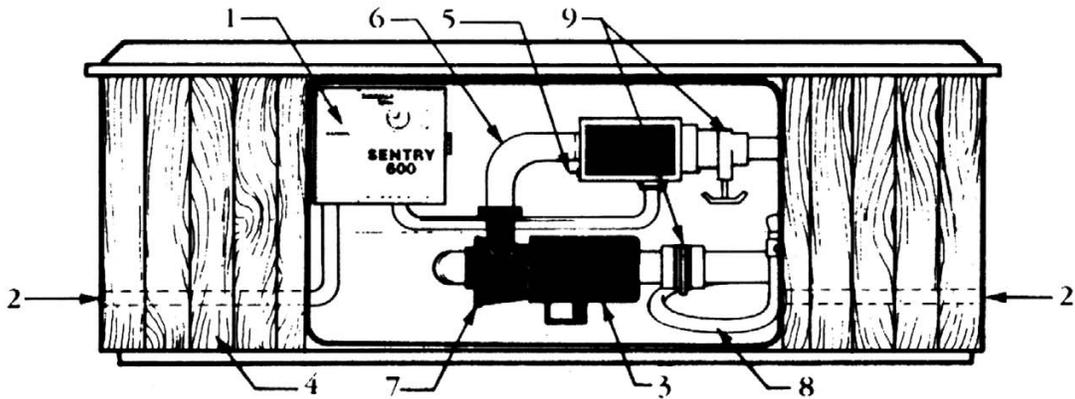
### **FUSES**

On the face of the control box are two fuses (See ILL. 2, item 5). The “System” fuse is a 25 amp, 125 volt slo-blo fuse which protects the entire system against damage from low-voltage or high-voltage surge situations. The “Blower” fuse is a 10 amp, 125 volt slo-blo fuse which protects the air blower circuit only. If either of these fuses should ever require replacement (see “Troubleshooting”), replace only with fuses of the exact same type and rating.

### **HIGH TEMPERATURE LIMIT RESET**

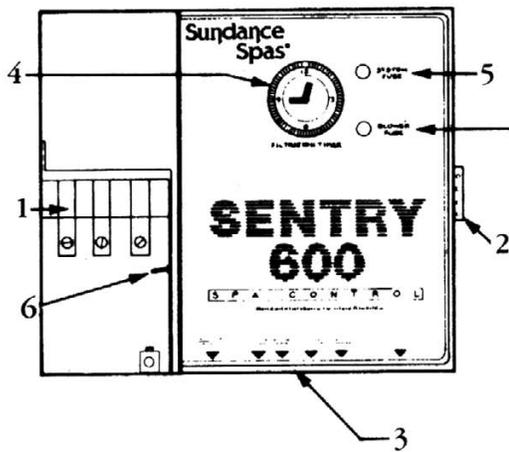
A manual high limit reset is located at the electrical heater connector box (See ILL. 1, ITEM 5). It is a solid red button designed to pop out in the event the spa water becomes too hot. If this occurs, the high limit reset will discontinue power to the heater only, allowing other spa functions to operate normally. The high limit reset must be manually depressed to rest its function. This can only be done when the water has cooled sufficiently for the reset to hold. The high limit reset is designed to protect against overheating in the event the thermostat should fail to operate. It also protects against heat damage to the plumbing in the unlikely event the heater should remain on without a flow of water (See “Troubleshooting”).

ILL. No. 1  
Equipment Bay



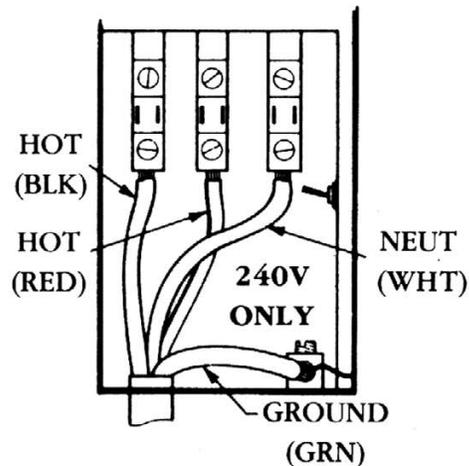
- |                              |                |
|------------------------------|----------------|
| 1. Sentry Control Box        | 6. Heater      |
| 2. Power Supply Entrance     | 7. Pump Drain  |
| 3. Pump                      | 8. Spa Drain   |
| 4. Air Blower (behind panel) | 9. Flow Valves |
| 5. High Limit Reset          |                |

ILL. No. 2  
Sentry Control Box  
(with access panel removed)



1. Terminal Strip
2. Current Collector Terminal
3. Receptacle for Optional Ozone Purification System
4. Time Clock
5. Fuses
6. Toggle Switch

ILL. No. 3  
Terminal Strip  
240V CONNECTION



## Electrical Installation Instructions

**IMPORTANT NOTICE:** The electrical wiring of this spa must meet the requirements of the National Electrical Code (NEC) and any applicable state or local codes. The electrical circuit must be installed by a qualified electrician and approved by a local building/electrical inspection authority.

1. This spa must be permanently connected (hard-wired) to the power supply. No plug-in connections or extension cords are to be used in conjunction with the operation of this spa. Supplying power to the spa which is not in accordance with these instructions will void both the U.L. listing and the manufacturer's warranty.
2. The power supplied to this spa *must* be a *dedicated* circuit with no other appliances or lights sharing the power provided by the circuit.
3. To determine the current, voltage and wire size required for the spa and configuration to be connected, refer to the power supply chart (ILL. No. 5).
  - We recommend type THHN wire.
  - Wire size must be appropriate for the distance of the wire run per NEC.
  - All wiring must be copper to ensure proper connections. Do not use aluminum wire.
  - When using wire larger than #6, add a 'J' box near the spa and reduce to short lengths of #8 wire to connect to the spa.
4. To gain access to the spa's power terminal strip, unlock and slide open the left door of the spa's equipment bay. Then remove the access panel on the left side of the face of the Sentry control box. (See ILL. 2).
5. Feed cable through one of the power supply conduit tubes provided (See ILL. 1, Item 2) and install cable through connector.
6. Connect wires to terminal strip (See ILL. 3). **TIGHTEN SECURELY!** All wires must be hooked up or damage could result.
7. To provide an extra measure of safety, we recommend that a separate #8 solid copper ground wire be connected between the spa current collectors (See ILL. 2, Item 2) and a local UL-recognized ground rod fully driven into the ground.

ILL. No. 4  
POWER SUPPLY REQUIREMENTS

	240V/50A	240V/30A *
Circuit Breaker	50A Dual Pole	30A Dual Pole
Number of Wires	4	4
Current Draw	40 amps	26 amps

**\*NOTE:** If your household's electrical service does not have the full 50A, 240V power available for the spa, the spa can be connected to 30A, 240V service. To accomplish this, connect as described above for 50A, 240V but position the toggle switch in the 30A position. In this configuration, the heater will yield the same rapid temperature increase as in 50A operation but will not operate at the same time as the high speed pump.

## **Start-Up Instructions**

CONGRATULATIONS! You are now all set to get your new spa ready to use. Simply follow this step-by-step procedure and, before long, you will be enjoying your first glorious experience in your Sundance Spa.

**FOR BEST RESULTS, READ EACH STEP IN ITS ENTIRETY BEFORE PROCEEDING WITH THAT STEP.**

### **FILL THE SPA**

First, clear all debris from the spa and fill the spa with water from a garden hose. As the spa is filling, check the plumbing connections inside the equipment bay to see that there are no leaks. Occasionally, it may be necessary to tighten one of these fittings as they can loosen during shipping. Continue to fill the spa until the water level is midway in the skimmer opening and above all jets.

**NOTE:** Never fill with water from a water softener. If your water is extremely "hard," it is preferable to fill half-way with hard water and the rest of the way with softened water.

### **TURN ON POWER**

Second, close equipment bay doors and turn on power to the spa at the circuit breaker.

### **ACTIVATE JETS**

Depress the pad labeled "Jets" on the control panel. This causes the pump to activate water flow to the jets. If the pump is well primed, you should be able to feel a steady flow of water. If not, depress the "High/Low" pad to engage the high speed, then depress the "Jets" pad a few times at intervals of 3 to 4 seconds until the pump is primed.

### **ADD START-UP CHEMICALS**

Third, add spa water chemicals (See SPA MAINTENANCE).

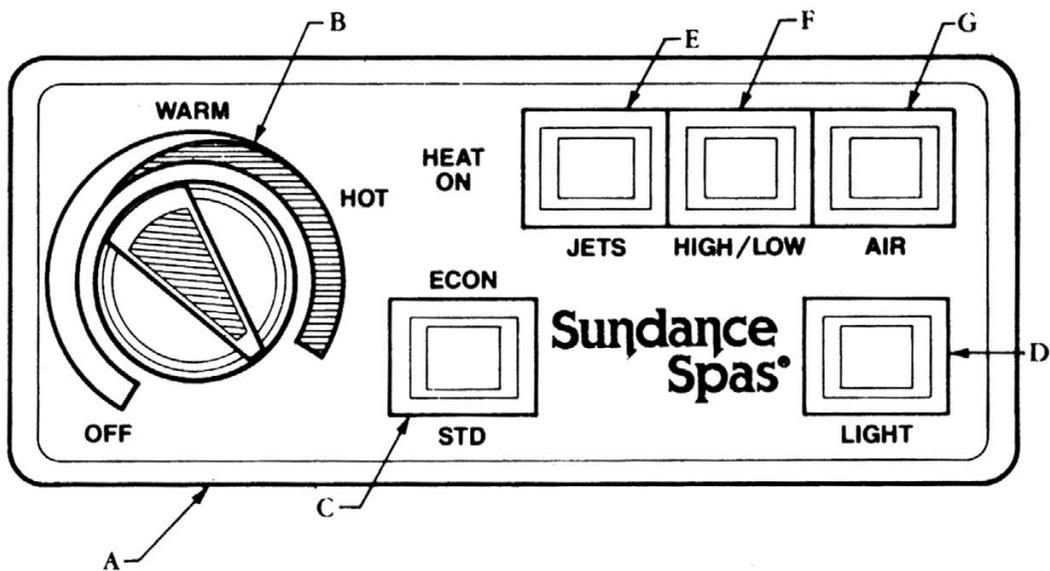
### **SET SPA TO HEAT**

Fourth, to heat the spa, set the energy selector to "STD", depress the "Jets" pad to turn the pump off and turn the thermostat knob clockwise. The top range of temperature is approximately 104°F. By turning the thermostat knob counter-clockwise, you will find the sensitivity to temperature will change geometrically. A minimum temperature setting is programmed into the Sentry™ controls to provide automatic freeze protection. Note that the "Heat On" indicator is now lit. It will remain on until the spa reaches the temperature selected by the thermostat. Cover the spa with the Sundance insulating cover and allow the spa to heat. Initial heat-up time will vary depending on the starting water temperature and the gallon capacity of your spa. Small spas will heat at a rate of approximately 6 to 8 degrees per hour. Larger spas will heat at about 4 to 6 degrees per hour.

Use an accurate thermometer designed for spa use to monitor the water temperature. Always check the thermometer before entering the spa.

**NOTE:** Contrary to popular belief, setting the thermostat at maximum will not accelerate the heating process. This will only result in a higher ultimate temperature.

ILL. No. 5  
Control Panel



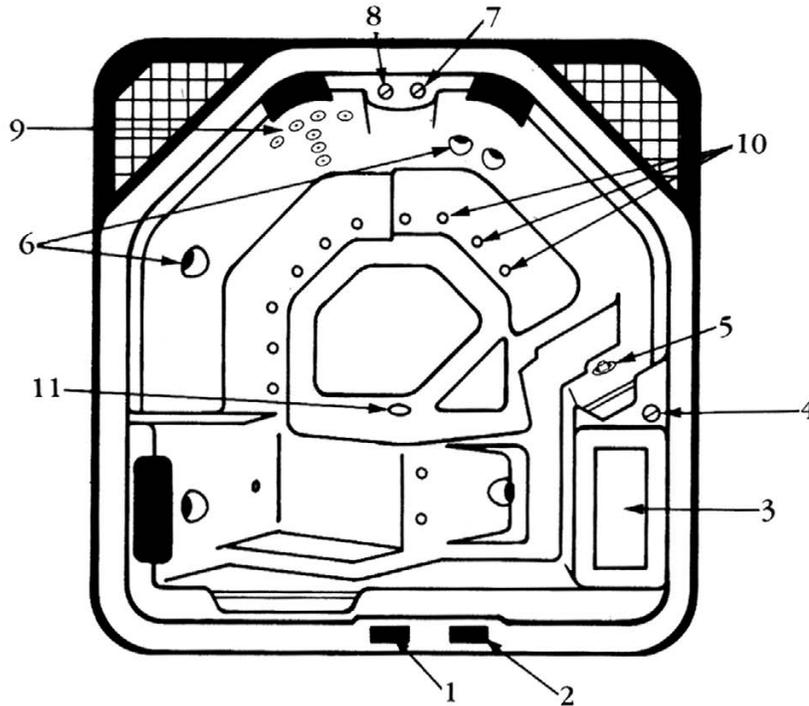
- A. Control Panel
- B. Thermostat Control Knob
- C. Energy Control Pad
- D. Light On/Off Pad

- E. Jets On/Off Pad
- F. High/Low Jets Pad.
- G. Air Blower On/Off Pad

## Operating Instructions

Your Sundance Spa has a control panel, diverter valve controls and air controls located on the top lip of the spa. These controls let you operate most of the functions of your Sundance Spa.

ILL. NO. 6  
Top View - Spa



- |                      |                      |
|----------------------|----------------------|
| 1. Control Panel     | 7. Diverter Valve #2 |
| 2. Air Controls      | 8. Air Control       |
| 3. Filter            | 9. Therapy Seat      |
| 4. Diverter Valve #1 | 10. Air Injectors    |
| 5. Whirlpool Jets    | 11. Spa Light        |
| 6. Therapy Jets      |                      |

### LIGHT

The control panel pad designated "Light" activates the spa light when depressed. An LED light behind the word "Light" will come on when the spa light is turned on.

There are two color lenses included with your spa which may be placed over the light lens.

**CAUTION:** Do not allow a colored light lens which is not in use to rest on the surface of a Rovel surfaced spa, as permanent staining can result.

## JETS AND AIR INJECTION

The jets and air functions are controlled the same way. The pad labeled “Jets” activates the pump. The “High/Low” pad switches the pump between high and low speed operation. The pad labeled “Air” controls the air blower which powers the air injectors.

You will note that occasionally, when the “Jets” pad is cycled off, the jets are continuing to operate at low speed. This happens when the thermostat is calling for heat or when the time clock is on. (For further clarification, see section titled “Choosing the Standard or Economy Mode.”)

## SELECTING THE DESIRED MASSAGE ACTION

Your Sundance spa is uniquely equipped to allow you to select from a wide variety of types of massages. Using the diverter valves as described below, you can direct the water flow to any one of three\* different jet systems or any combination of these systems. Using the appropriate air control, you can “fine tune” the massage action to suite your needs.

### Diverter Valves—

Valve #1, near the filter area, is used to divert the water flow to the Whirlpool Jet\*, to valve #2 or both. Valve #2, near the Therapy seat, diverts the water to the Therapy Jets, the Therapy Seat or both. Illustration No. 7 describes the various combinations of valve settings and the effects of these settings.

**NOTE:** FOR EASE OF OPERATION, ALWAYS CYCLE THE PUMP OFF OF HIGH SPEED BEFORE ATTEMPTING TO ROTATE A DIVERTER VALVE.

### Air Controls—

Each of the three jet systems has its own air control (Ill. 6, Item 2 and 8). These controls allow you to regulate the amount of air which is mixed with the water entering through the jets. Clockwise rotation adds more air and counter-clockwise rotation reduces the air flow. These controls should be closed when the spa is not in use to minimize heat loss during filter cycles.

**ILL. No. 7  
EFFECTS OF VARIOUS DIVERTER VALVE POSITIONS**

Valve Position		Jet System Power		
Valve #1	Valve #2	Therapy Jets	Therapy Seat	Whirlpool
Combo 1	Combo 2	Low*	Low*	Low*
Combo 1	Therapy Seat	Med.	————	Med.
Combo 1	Therapy Jets	————	Med.	Med.
Whirlpool	(Any)	————	————	High
Jets	Combo 2	Med.	Med.	————
Jets	Therapy Seat	High	————	————
Jets	Therapy Jets	————	High	————

\*It is not intended or expected that the spa will ever be used with both valves in the “Combo” position because of the resulting low jet pressure. However, it is necessary to include this position on each of the two valves so that all of the other combinations are possible.

## **“SUNSTORM” ROTATING JETS**

Any of the Therapy Jets in a Sundance spa can easily be converted to a “rotating” jet which continuously moves the jetstream in a circular motion. The “Sunstorm” rotating jet assembly, available from your Authorized Sundance Spas Dealer, simply replaces the nozzle in the therapy jet. No tools are required for this conversion. You may use as many of these as you like, or you can move one Sunstorm assembly from one jet to another.

## **CHOOSING THE “STANDARD” OR “ECONOMY” MODE**

Your Sundance Sentry™ controls have been designed to give you maximum convenience, as well as economy of operation. By selecting the appropriate operating mode, you can ensure that your spa will be ready to use anytime with the lowest possible energy consumption.

### **Standard Mode**

In the “standard” mode, the spa water temperature will always be held at the set temperature. The low speed pump and the heater will turn on as needed to maintain the spa water temperature within one degree of the temperature you have set with the temperature control. When the desired temperature has been achieved, both the pump and heater will turn off.

In addition, when in the “standard” mode, the filter cycles will operate the low speed pump as programmed to give your spa the required filtration.

We suggest you use the “standard” mode in the following situations:

1. Upon initial fill-up to bring the water up to the desired temperature.
2. Anytime you desire a temperature rise prior to the next “heater on” filter cycle.

At all other times, it is advisable to use the “economy” mode.

### **Economy Mode**

In the “economy” mode, the low speed pump will turn on automatically *only* during the filter cycles. During these cycles, the heater will operate *only* if the actual water temperature is lower than the set desired temperature.

Because of the exceptionally high heat retention capabilities of your Sundance Spa, you will find that the “economy” mode is more than adequate for normal day-to-day operation.

**IMPORTANT:** In 120 volt systems, heating will occur *only* when the jets are on low speed; that is, activating the high-speed jets will automatically de-activate the heater. In 240 volt systems, heating can take place during high-speed operation provided that the thermostat is set high enough to demand heat.

**NOTE:** If your spa behaves differently (i.e. in the reverse of what your power supply calls for) check to make certain the toggle switch behind the left access panel inside the control box is positioned properly (See ILL. 2 Item 6.)

## **THE THERMOSTAT**

The spa's thermostat has been designed to provide you with optimum control of the spa water temperature. The maximum setting is approximately 104°. As the knob is turned counter-clockwise, the temperature will drop in ever increasing proportions. This geometric temperature scale allows you much greater precision and control at the upper temperature levels.

The Sentry™ thermostat is a highly precise temperature control. We suggest that once you find the temperature you like best, identify its location on the panel. The thermostat is calibrated at the factory and should remain set for years.

## **TIME CLOCK**

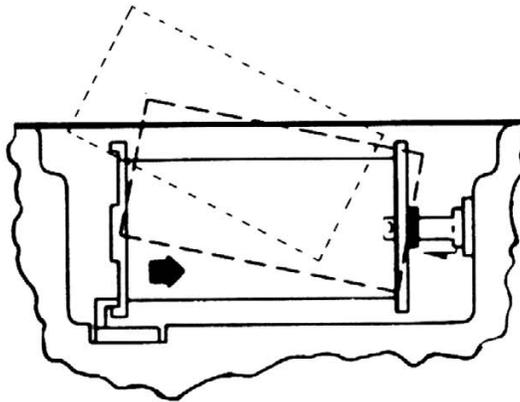
The time clock (See ILL. 2, Item 3) is intended to operate your spa's filtration cycles. To set the time of day, rotate the entire dial until the arrow just above the number "3" is indicating the correct time. (Notice the "AM" and "PM" designations at the 6:00 position).

To set the filtration cycle(s), locate the tabs for the time you wish filtration to occur. Press from the outside toward the center. Press one (1) tab for each 15 minutes of the filter period. The entire group of tabs between on-time and off-time must be depressed. It is suggested that cycle times should be a minimum of one (1) hour long and the spa should filter for at least four to six hours per day. For best results, divide the total filtration time between two or more cycles per day.

## Spa Maintenance

Proper and regular maintenance of your spa will help it retain its beauty and performance. Your authorized Sundance Dealer can supply you with all the information and accessory products you will need to accomplish this.

ILL. No. 8  
Cartridge Filter Removal



### **CLEANING THE FILTER**

Each Sundance Spa is equipped with a cartridge filter. It is located in the skimmer/filter well (ILL. 8) near the top edge of the spa and is uniquely designed for easy removal and cleaning. Filtering is accomplished by causing water to flow through the fine polyester mesh of the filter, and as water flows through the filter, suspended particles become trapped on its surface.

It is necessary to remove the filter and clean the cartridge surface, generally every 4 to 8 weeks, depending on usage and water quality. This is done by loosening the large retainer nut on the pipe at the base of the filter and rotating the cartridge gently. When the cartridge pops loose (up), slide the cartridge off the filter pipe. Cleaning is accomplished by washing all the entrapped dirt from the filter with a garden hose with a high pressure nozzle.

**NOTE:** When replacing the filter cartridge, rotate the retainer nut around the pipe until it touches the base of the cartridge. **DO NOT OVERTIGHTEN!** This retainer nut is intended only to hold the filter in place and is not intended to act as a positive seal.

Occasionally, the cartridge will need a better cleaning to remove oils and grime from its surface. For this we suggest you remove the cartridge, clean with a high-pressure nozzle, then place the cartridge in a Sundance filter cleaning bag, soaking the cartridge three to six hours or overnight in a solution of specially formulated cartridge filter cleaner, available from your Sundance Dealer.

The average life expectancy of a Sundance filter cartridge is approximately two years with proper care and water quality maintenance. A replacement cartridge may be purchased from your Sundance Dealer.

## **DRAINING & REFILLING**

**CAUTION:** There are certain precautions to keep in mind when draining your spa. If it is extremely cold, and the spa is outdoors, freezing could occur in the lines or the equipment. On the other hand, if it is hot outdoors, do not leave the spa surface exposed to direct sunlight for long periods.

One method of draining your spa is by natural siphon. First, slide open one of the equipment doors to discontinue power to the spa so that none of the automatic functions will come on during this process. Second, place the outlet end of an ordinary garden hose in the bottom of the spa. Third, connect the other end to an outside faucet and turn on the faucet to fill the hose with water. Next, shut off the faucet, disconnect the hose and place this end of the hose in the area to which you want the water to drain, making sure it is lower than the bottom of the spa. Repeat this process with as many hoses as you like in order to speed the draining of the spa.

There is also a spa drain hose within the equipment bay which can be used. (See ILL. 1, ITEM 8). To use, rise the end of the hose above the water level, remove cap and connect a garden hose. Be sure to disconnect the garden hose and replace the cap before refilling.

After refilling, follow the steps listed under "Start Up Instructions."

## **CLEANING THE SPA SURFACE**

To preserve the sheen of your spa's surface, it is crucial that you avoid using abrasive cleansers or cleansers which have adverse chemical effect on the surface. If you are not certain as to the suitability of a particular cleanser, consult your authorized Sundance Dealer.

Regardless of the cleanser used, use extreme care to assure that no soap residue is left on the surface. This could cause severe sudsing when the spa is refilled.

## **MAINTAINING THE WOOD SKIRT**

With time and exposure to the elements, the wood on your spa will tend to lose its new appearance. Protecting or reviving the wood surfaces is a fairly simple process.

Light sanding with fine-grit sandpaper will help smooth any roughness and regular applications of a penetrating, wood preservative available from your authorized Sundance Dealer, will enhance and protect the richness of the wood.

**NOTE:** Do not apply varnish, shellac or other surface sealants to the wood. These tend to react with the chemicals in the wood and the UV rays of the sun, causing yellowing, flaking and peeling.

## **MAINTAINING THE COVER**

Using the optional Sundance insulating spa cover anytime the spa is not in use will significantly reduce your operating costs, heat-up time and maintenance requirements. To prolong the life of the cover, handle it with care and clean it regularly using mild soap and water. Periodic treatments with a special conditioner developed for Sundance Spa covers will help protect against deterioration caused by U.V. rays from the sun. Never allow anyone to stand or sit on the cover, and avoid dragging it across rough surfaces.

## **WINTERIZING**

Your Sundance Spa is designed to automatically protect itself against freezing when operating properly. During periods of severe freezing temperatures, you should check periodically to be certain that the electrical supply to the spa has not been interrupted.

If you do not intend to use your spa, or if there is a prolonged power outage, during periods of severe freezing temperatures, it is important that all water be removed from the spa and equipment to protect against damage from freezing.

For expert winterization of your spa, contact your authorized Sundance Dealer. If this is not practical in your situation, damage can be minimized or avoided by taking the following steps. Follow the directions on page 18 for draining the spa. Then, as the water level drops below the seats, turn on the air blower momentarily to evacuate the injector lines. Open the filter compartment drain to allow all the water to run out of it. Finally, when the entire spa is drained, remove the black bolt-type plug located at the bottom of the left side of the pump (See ILL. 1, ITEM 7).

**NOTE:** When this plug is removed, approximately one quart of water will escape. Be prepared with a shallow pan to catch this water so as not to allow it to remain in the equipment bay.

Cover the spa so that no casual moisture can enter the spa.

Consult your Authorized Sundance Dealer if you have any questions regarding winter use or winterizing.

## Water Quality Maintenance

Maintaining the quality of the water within specified limits will serve to enhance your enjoyment and prolong the life of the spa's equipment. It is a fairly simple task, but it requires regular attention because the water chemistry involved is a balance of several factors. There is no simple formula, and there is no avoiding it. A careless attitude in regard to water maintenance will result in poor conditions for soaking and even damage to your spa investment.

For specific guidance on maintaining water quality, refer to the instructions in the chemical kit supplied with your spa. If you have further questions, please consult your Authorized Sundance Dealer.

**CAUTION:** Never store spa chemicals inside the spa's equipment bay.

### pH CONTROL

pH is a measure of relative acidity or alkalinity of water and is measured on a scale of 0 to 14. The midpoint of 7 is said to be neutral, above which is alkaline and below which is acid. In spa water, IT IS VERY IMPORTANT TO MAINTAIN a slightly alkaline condition of 7.2 to 7.8. Problems become proportionately severe when this range is exceeded or diminished. A low pH will be corrosive to metals in the spa equipment. A high pH will cause minerals to deposit on the interior surface (scaling). In addition, the ability of the sanitation agents to keep the spa clean is severely affected as the pH moves beyond the ideal range. That is why almost all spa water test kits contain a measure for pH as well as sanitizer.

### SANITIZING

To destroy bacteria and organic compounds in the spa water, a sanitizer must be used regularly. Your Sundance Spa is equipped with The Brominator™, a special compartment built into the floating skimmer gate to hold bromine tablets. By regulating the number of bromine tablets in The Brominator, and the length of the filtration cycles, you can control the amount of bromine which is actively working in your spa water. A bromine residual of 2 to 3 ppm is generally considered desirable.

A two-part bromine system or granular chlorine (dichlor) are also acceptable sanitizers.

**IMPORTANT:** Do not use chlorine tablets (Trichlor) in your spa.

### OPTIONAL SUNZONE WATER PURIFICATION SYSTEM

If you have elected to have your spa equipped with the optional Sunzone ozone water purification system you will find that your water stays fresh and clear with significantly less bromine usage. You will also probably be able to go longer between complete spa drainings.

Read and follow the instructions included with your Sunzone ozone water purification system to determine how to adjust your bromine usage and filter cycles.

### OTHER ADDITIVES

Many other additives are available for your spa. Some are necessary to compensate for out-of-balance water, some aid in cosmetic water treatment and others simply make the water feel or smell better. Your Authorized Sundance Dealer can advise you on the use of these additives.

## Troubleshooting

In the unlikely event your spa is not working the way you believe it should, please first review all the installation and operating instructions in this manual; second, if you are still not satisfied it is working properly, please follow the appropriate troubleshooting instructions.

<b>PROBLEM</b>	<b>PROCEDURE</b>
NONE OF THE COMPONENTS OPERATE (i.e. pump, air blower, spa light).	Check the control panel lights. <ol style="list-style-type: none"><li>1. Either the "ECON" or "STD" should always be lit. If either <i>is</i> lit, make certain the equipment bay door is closed. If this does not correct the problem, contact your service center.</li><li>2. If none of the control panel lights are on:<ol style="list-style-type: none"><li>a. Check household circuit breaker.</li><li>b. Check the "System" fuse on the face of the control panel. If faulty, replace with a fuse of the exact same type and rating (see "Fuses" on page 6).</li><li>c. Check for proper power connection.</li><li>d. Contact your service center.</li></ol></li></ol>
PUMP DOES NOT OPERATE BUT AIR BLOWER AND SPA LIGHT DO OPERATE.	Depress "Jets" sensor and listen to the sound of the motor. Then: <ol style="list-style-type: none"><li>1. If no sound is detected or if a "buzzing" sound is detected, turn off power to the spa and contact your service center.</li><li>2. If motor operates but no water flows to jets:<ol style="list-style-type: none"><li>a. Check to be certain flow valves are open (See ILL. 1, Item 9).</li><li>b. Pump may not be properly primed. Follow the instructions in the section headed "Activate Jets" on page 10.</li><li>c. Contact your service center.</li></ol></li></ol>

(Note: If freezing conditions exist and pump is not operational, take measures to protect the system from freeze damage. See section titled "Winterizing".)

- POOR JET ACTION.
1. Make certain the "High/Low" pad has the pump in the high speed position.
  2. Rotate diverter controls.
  3. Open the appropriate air control knob.
  4. Check for adequate water level. (Low water level will cause "surging".)
  5. Check for dirty filter.

- WATER IS TOO HOT.
1. Turn thermostat setting down.
  2. Reduce filtration cycle length. (Even without heater on, water will gain temperature from prolonged pump operation.)

- NO HEAT.
1. Check the thermostat setting.
  2. Check the operating mode and time clock. If the spa is set to operate in the "ECON" mode, the time clock must be set for filtration cycles. Otherwise, the heater will operate only when the pump is manually turned on.
  3. Depress the "high temperature limit reset" button (see ILL. 1, Item 5; also, refer to page 6).
  4. Make certain that the pump comes on when it is supposed to. (Refer to the section above regarding pump operation.)

- AIR BLOWER DOES NOT OPERATE BUT OTHER COMPONENTS DO.
1. Check the fuse on the face of the control box. If faulty, replace with one of the exact same type and rating. (See the section titled "Fuses" on page 6.)
  2. Contact your service center.

Your authorized Sundance Dealer is a trained service repair center. Should checking the above steps fail to correct the problem, please call your dealer so that he may arrange service.

Your Sundance Dealer's phone number: \_\_\_\_\_

Sundance builds the best spas in the industry. Nonetheless, we are always striving to improve the quality and features of our products. Your input as a Sundance Spa owner is a cherished part of this process. If you have any comments or suggestions, or if you wish to be informed on any new products for your spa, please write to us.

CONGRATULATIONS on your good taste and welcome to the happiest and most relaxed family in the world!

**Sundance Spas, Inc. • 14525 Monte Vista Ave, Chino, CA 91710**