

Sentry™

7000

SERIES



**Sundance
Spas®**

INSTALLATION &
OWNERS MANUAL

Part #6530-710 • Revised 1/91 • ©1991 Clark Mfg., Inc.

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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").

Your Sundance spa is designed to accept the SunZone Water Purification System. Use of any other ozone system will invalidate the spa's warranty.

FCC Warning

This equipment generates and uses radio frequency and if not installed and used properly, that is, in strict accordance with the manufacturer's instruction, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a class B computing device in accordance with the specifications in subpart J of part 15 of the FCC rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference, which can be determined by turning the equipment on and off, the user is encouraged to try to correct the interference by one or more of the following measures: • Reorient the receiving antenna • Relocate the receiver with respect to the spa. • Move the receiver away from the spa. • Plug the receiver into a different outlet so that the receiver and spa are on different branch circuits. • If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. • The user may find the following booklet prepared by the Federal Communications Commission helpful: "How to identify and resolve radio-TV interference problems." This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

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 THIS 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. 1.3). 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 (8.4 mm²) 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 mm²) 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 ELECTRICAL 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° 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, 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). 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 areas 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 the “state-of-the-art” Sentry™ equipment system. It contains the most advanced safety and self-protective equipment in the industry. Nonetheless, this spa must be installed properly to insure dependable usage. Please contact your dealer or local building department should you have any questions 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. 1.3. ITEM 3) 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 mm²) solid copper wire. This is a most important safety assurance feature.

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

DOOR INTERLOCK

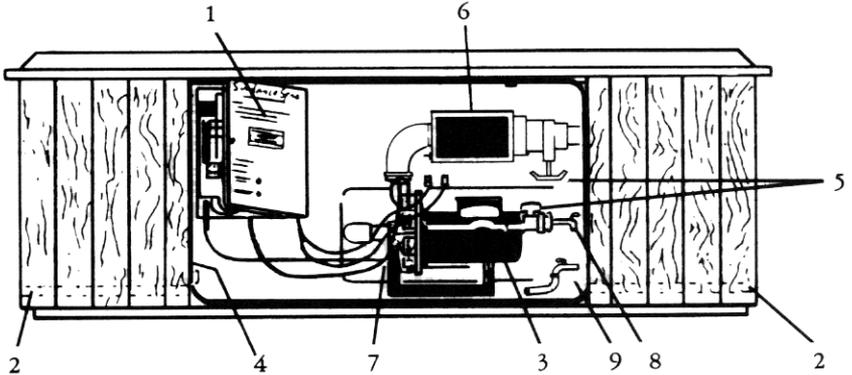
The Sentry 700 Series equipped Sundance Spa contains a door interlock on each door to shut down the power supply to the high voltage electrical components when the door is opened.

NOTE: Polarity indicator lights and low voltage circuitry will continue to function when the door is opened.

POLARITY INDICATOR LIGHTS

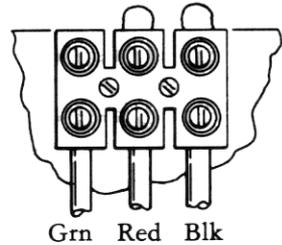
The polarity indicator lights allow for a visual inspection of your electrical installation. On the control box, located behind the equipment door, are two neon lights that are used to identify proper electrical hook up. (See ILL. 1.3 ITEM 2). The upper light indicates ground circuit, the lower light indicates line/load circuit. Check to see that both lights are brightly ON before operating the spa. Should either or both lights flicker, dim, or fail to come on when spa is energized, the spa is not properly installed. This condition must be corrected before the spa can be used.

ILL. No. 1.1
Equipment Bay

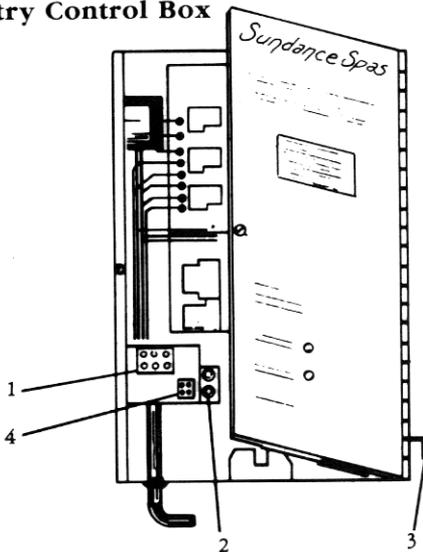


- | | |
|-------------------------------|---------------------|
| 1. Sentry Control Box | 6. Heater |
| 2. Power Supply Conduit Tubes | 7. Pump Drain |
| 3. Pump | 8. Filter Bay Drain |
| 4. Blower Vent | 9. Spa Drain Hose |
| 5. Flow Valves | |

ILL. No. 1.2
724 Terminal Strip (240V)



ILL. No. 1.3
Sentry Control Box



1. Terminal Strip
2. Polarity Indicator Lights
3. Grounding Lug
4. Receptacle for Optional Ozone Purification System

Electrical Installation Instructions for Sundance 700 Series Spas

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. 2).
 - 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 open the door to the control box. (See ILL. 1.1, ITEM 1).
5. Feed cable through the power supply conduit tubes provided and install cable through connector.
6. Connect wires, color to color, on terminal strip TB1 (See ILL. 1.2).
TIGHTEN SECURELY! All wires must be hooked up or damage could result.

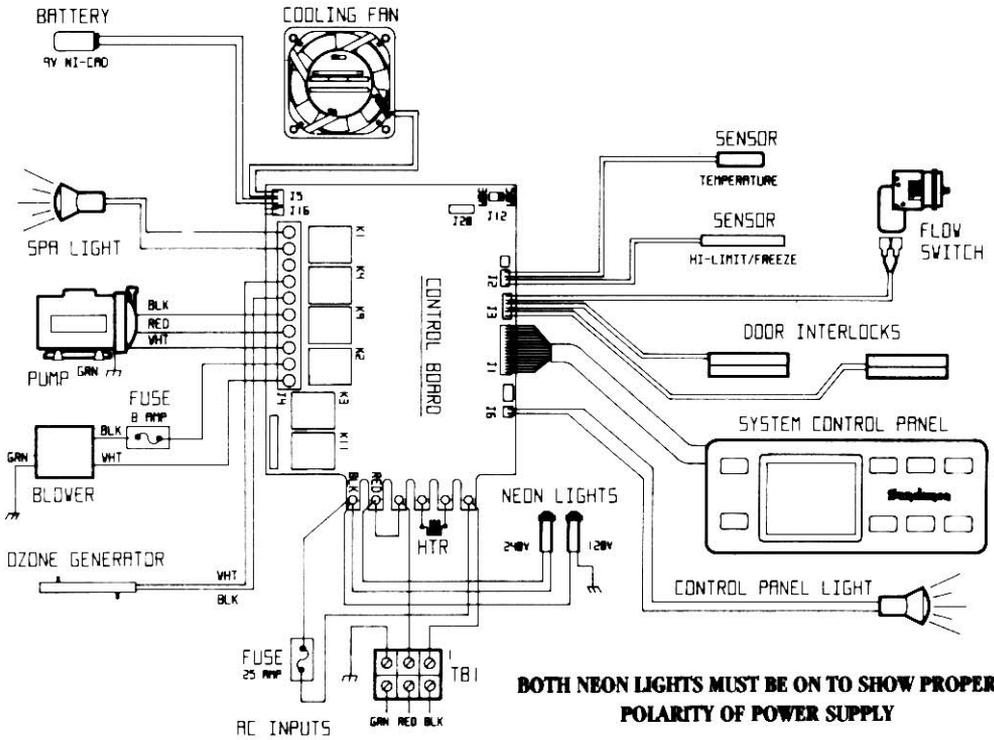
7. To provide an extra measure of safety, we recommend that a separate #8 solid copper ground wire be connected between the spa current collectors (grounding lug on the right side of the control box) and a local UL-recognized ground rod fully driven into the ground.
8. At this point you should be ready to check for proper polarity. Leaving one of the equipment bay doors open to prevent the pump from coming on, turn on the breaker to the spa circuit. Both indicator lights on the Sentry control box should come on brightly (SEE Ill. 1.3, ITEM 2). The upper light indicates the ground circuit and the lower light indicates the line/load circuit. Both lights must be brightly lit to ensure that the electrical safety systems will function. If neither light is on, check to see that power is being supplied to the system. If the lights still fail to light, or if only one lights, there is an error in the electrical supply. Disconnect power immediately and correct the problem.

**ILL. No. 2
POWER SUPPLY REQUIREMENTS**

	240V/50A	240V/30A*
Circuit Breaker	50A dual pole	30A Dual Pole
Number of Wires	3	3
Current draw (amps)	40	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 move the circuit board jumper J12 from 50A to 30A position (See ILL. 3). 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.

ILL. No. 3
Sentry™ 724 Wiring Diagram



BOTH NEON LIGHTS MUST BE ON TO SHOW PROPER POLARITY OF POWER SUPPLY

**LOWER LIGHT "ON", UPPER LIGHT "OFF":
"NO CHASSIS GROUND"**

**UPPER LIGHT "ON", LOWER LIGHT "OFF":
"(RED) POWER LEAD IS NOT CONNECTED"**

**UPPER & LOWER LIGHT BOTH OFF:
"(BLK) POWER LEAD IS NOT CONNECTED"
OR "SYSTEM FUSE BLOWN" OR "NO POWER"**

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.

1. FILL THE SPA

Clear all debris from the spa and fill 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 exclusively 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.

2. TURN ON POWER

Initiate power to your spa by turning on the household circuit breaker installed for the spa. *Be certain that the equipment bay doors are fully closed.*

3. INITIATE WATER CIRCULATION

When power is first supplied to your spa, a variety of messages will appear on the control panel’s screen, some of which are flashing. By following this step-by-step procedure, the meaning and use of each will become clear to you.

If the water used to fill your spa is below 80° F., you will notice that the large message in the center of the screen alternates between displaying the word “cool” and the actual water temperature.

If your fill water is above 80° F., press the sensor marked . You will notice that the low speed pump is on and that the water is gently circulating over the skimmer and through the jets.

NOTE: If this is not the case, check the two flow valves in the equipment bay (See ILL. 1.1 ITEM 5) to be sure that they are open. IF the water is still not circulating, press the sensor pad labeled JETS to activate the high speed pump. Once the water is flowing from the jets, press the sensor again to cycle the pump back to low speed.

4. SET TIME OF DAY

Notice that one of the messages flashing on the screen instructs you to “set time.” To accomplish this, follow this simple 3-step procedure:

Step 1. To enter the “set time” mode, press the following sensors within 3 seconds of each other:  then 

Step 2. To set the time of day, press  or . After either pad is pressed once, the time of day will advance or decrease automatically in one minute increments, beginning slowly, then more rapidly. Press either pad again to stop the display’s time setting cycle. Note the AM/PM display.

Step 3. To exit the “set time” mode once the correct time of day has been set, press . At this point the only messages flashing should be the current water temperature and the word “cool.”

5. SET DESIRED TEMPERATURE

Your Sentry™ 700 Series controls have been pre-programmed to automatically achieve a water temperature of 100°F, which is typically the preferred temperature for comfortable enjoyment of a spa. However, if you prefer a different temperature,

simply press either  or  to display the temperature which has been set. Notice that the message “set heat” is displayed. Then, each time either of these pads is pressed again (within three seconds), the set temperature will increase or decrease, depending on which pad is pressed. Continue pressing the appropriate pad until the desired set temperature has been reached.

NOTE: the maximum temperature for which the spa can be set is 104° F., and the minimum is 80° F.

After three seconds, the screen will automatically return to displaying the actual spa water temperature. Anytime you need to check the thermostat setting, simply press either  or 

NOTE: Setting the thermostat at maximum will not accelerate the heating process. This will only result in a higher ultimate temperature.

6. FILTER CYCLES

Proper filtration is a major key to maintaining the clarity of your spa water. The Slipstream™ filter system is designed for unsurpassed effectiveness at removing debris and suspensions from the water anytime the water is circulating.

To ensure filtration, your spa should be programmed to operate for approximately two (2) hours twice a day (more for heavy use). You can decide whether or not you want it to heat during these filtration cycles.

Pre-Set Filter Cycles

Your spa is pre-programmed to automatically filter itself for a two (2) hour period every twelve (12) hours. If left unchanged, the first filtration cycle (Filter 1) will operate from 2:00 a.m. to 4:00 a.m., and the second filtration cycle (Filter 2) from 2:00 p.m. to 4:00 p.m. During each of these cycles, the heater will operate as called for by the temperature setting.

These preset filter cycles are suitable for most spa owners' needs. However, you may determine that you would prefer filter cycles at times other than the pre-set times, or different durations, or to leave the heater off during either or both of the filter cycles. If so, refer to the section titled "Changing the Filter Cycles" on page 17.

7. ADD START-UP CHEMICALS

Now it's time to take a break from the controls and add the recommended start-up chemicals. Carefully follow the directions supplied to you by your dealer. If you have any questions, contact your dealer for clarification. General water quality maintenance guidelines are given beginning on page 23.

8. SET SPA TO HEAT

Your spa can be programmed to operate in either the "standard or "economy" mode by simply pressing the mode pad  . The screen will indicate the mode selected.

Our recommendation for initial start-up is to set your controls to operate your spa in the "standard" mode until the desired temperature is achieved, then switch to the "economy" mode.

NOTE: for further discussion of these modes, see page 19.

The time required for initial heat-up will vary depending on the temperature of the water used to fill the spa. The temperature will rise approximately five to six degrees per hour.

Operating Instructions

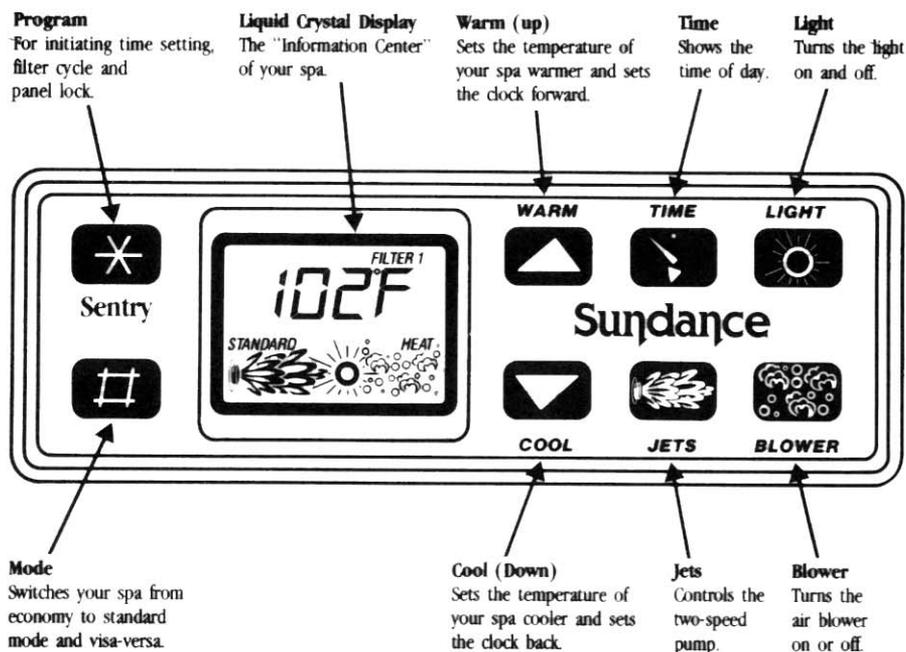
The Sentry™ 700 Series has a touch sensitive control panel, diverter valves and air control knobs located on the top lip of the spa (See ILL. 5). These controls let you operate many of the special functions of your Sundance Spa.

LIGHT

The sensor pad designated "Light" activates the underwater light when touched. The control panel screen will display a light symbol when the light is activated. 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.

ILL. No. 4.1
CONTROL PANEL



JETS AND AIR INJECTION

The "Jets" and "Blower" functions are controlled the same way. The sensor marked "Jets" controls the water pump which powers the three types of jets. A sensor marked "Blower" controls the air blower which powers the air injectors (found on the seat tread areas).

Indicator symbols on the display signal when these functions are on. The "jets" cycle in low, high and off functions. The "air" cycles on and off. Both of these functions are also controlled by an electronic timer which will automatically shut these functions off approximately 15 to 20 minutes after they are started. This is a self-protective mechanism designed to insure the spa cannot be accidentally allowed to run while not in use. To restart, simply depress the sensor.

You will note that occasionally, when the "jet" sensor is cycled off, the jets are continuing to operate at low speed. This happens when the thermostat is calling for heat or when a filter cycle is in progress.

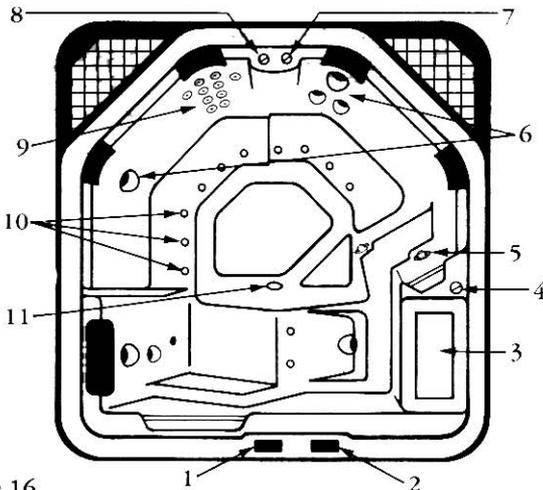
SELECTING THE DESIRED MASSAGE ACTION

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 suit your needs.

Diverter Valves—

Valve #1, near the filter area, is used to divert the water flow to the Whirlpool Jet(s), to valve #2 or both (except Gemini, see page 17). Valve #2, near the Therapy Seat, diverts the water to the Therapy Jets, the Therapy Seat or both. Illustration No. 6 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.



ILL. No. 5
Top View - Spa

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

Air Controls—

Each of the three jet systems has its own air control (Ill. 5, 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. 6

EFFECTS OF VARIOUS DIVERTER VALVE POSITIONS

Valve Position		Jet System Power		
Valve #1	Valve #2	Therapy Seat	Therapy Jets	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.

GEMINI — A Special Case

Because of the smaller size of the Gemini model, it does not include a Whirlpool Jet and has only one diverter valve. This valve allows the user to divert the water flow to the six Therapy Jets, to the Therapy Seat or to both.

"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.

CHANGING THE FILTER CYCLES

It is possible to change three (3) aspects of each of the two filter cycles. You may change the time of day at which they start, the time of day at which they stop, and you may elect whether or not you want the heater to operate during either or both cycles. With experience, you will determine the ideal operation for your needs.

For example, if you establish a pattern of regularly using your spa around the same time of day or night, you will probably find it desirable to program a filter cycle so that the spa operates both before and after use. In this way, you are assured that the spa is properly heated when you are ready to use it and that it is adequately filtered after use.

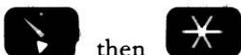
In this example, let's assume you generally use your spa for about thirty (30) minutes around nine o'clock each night. You would, then, set the "Filter 2" cycle to operate each night from around 8:30 p.m. to 11:30 p.m.

An added benefit to this timing of the filter cycle is that your spa's sanitation level, from the bromine in the Brominator™ or the ozone from the optional Sunzone™ system, is at its highest operating level when it is needed most.

Follow these simple procedures to change the filter cycle programming.

To enter into the filter cycle programming function:

Step 1. PRESS the following pads within three seconds of each other.



Step 2. then, PRESS  again.

The panel is now in the filter cycle programming function and across the top of the screen is displayed the message "Set Start Filter 1." At this point, you are ready to adjust the start time for the first filter cycle.

Each subsequent time the program pad  is pressed, you will advance through the following sequence of adjustable functions:

FILTER CYCLE PROGRAMMING SEQUENCE

-  Filter 1 Start Time
-  Filter 1 Heater On or Off
-  Filter 1 Stop Time
-  Filter 2 Start Time
-  Filter 2 Heater On or Off
-  Filter 2 Stop Time
-  Exit filter cycle program function, return to normal functioning.

At any point, you may press the mode pad  to exit the filter cycle programming function and return to normal functioning.

To Set Start Time for Filter Cycle 1

Press either  or  once. The time display will advance slowly at first, then more rapidly. To stop the display from advancing or decreasing, simply press either sensor again. Remember to notice the AM or PM notation displayed on the screen.

Heater On/Off During Filter Cycle

When the filter cycle programming function is cycled to the “heater on/off” setting mode as described in the sequence above, you will notice that either “ON” or “OFF” appears in large letters on the screen. You may change the programming by pressing

 for the heater to be “ON” or  for the heater to be “OFF” during the filter cycle indicated in the upper right corner of the screen.

To proceed through the remainder of the filter programming sequence, PRESS

 and adjust in the manner described above.

CHOOSING THE “STANDARD” OR “ECONOMY” MODE

Your Sundance Sentry™ 700 Series 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.

In summary, 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.
3. Anytime you desire temperature maintenance while using the spa (unless it is during a “heater on” filter cycle).

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

Economy Mode

In the “economy” mode, your spa will turn on automatically *only* during the filter cycles. During these cycles, the heater will operate *only* if programmed to be on during a particular filter cycle *and* 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.

PANEL LOCK

To help prevent unauthorized use of your spa, the Sentry 700 Series incorporates a unique panel locking system which disables the controls on the panel.

To Lock The Panel

PRESS		DISPLAY WILL READ	
PRESS		DISPLAY WILL READ	
PRESS		DISPLAY WILL READ	

NOTE: These must be pressed *within three seconds* or the spa will return to normal functioning.

Once the panel is locked, the display will show the spa temperature along with the lock symbol. All the pads are now deactivated except the program pad  which is used to initiate the unlock sequence.

IMPORTANT: When the panel lock is engaged, all automatic spa functions will operate normally. Only the functions typically operated when the spa is in use are affected.

To Unlock The Panel

PRESS the following pads within a three-second time period:   
The lock symbol will disappear. All pads are now active.

TEMPERATURE SETTING LOCK

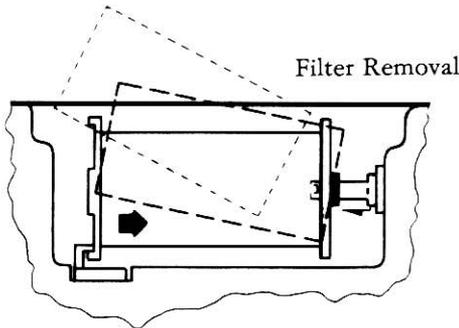
To electronically lock the temperature setting, first enter the “set temperature” mode by pressing either the “warm” or “cool” sensor. Then, within three seconds, press the three sensors described under “Panel Lock” above. This will prevent the temperature setting from being changed by unauthorized persons but all other sensors will remain active.

To unlock the temperature setting so that it can be adjusted, simply follow the instructions above under “To Unlock the Panel.”

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. 7
Cartridge Filter



CLEANING THE FILTER

Each Sentry™ 700 Series controlled Sundance Spa is equipped with a cartridge filter. It is located in the skimmer/filter well (See ILL. 5, ITEM 2) 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 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 four to eight 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 main drain hose you can use within the equipment cabinet (See ILL. 1.1, ITEM 9). Raise the drain hose above water level and remove the cap to connect a garden hose. Don't forget to replace the cap after draining.

To drain the filter bay, open the filter bay drain faucet (See ILL. 1.1, ITEM 8) and allow water to run out. You may wish to catch the approximately one gallon of water in a pail for disposal elsewhere.

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 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. Use water to clean the control panel. Do not use any soaps, chemicals, or solvents.

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 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 22 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 to release the last bit of water.

NOTE: 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, consult your Authorized Sundance Dealer who can recommend appropriate chemical products for sanitizing and maintaining your spa.

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 surfaces (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 OZONE 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

DISPLAY MESSAGES

There are a number of unique functions designed into your Sundance Spa to protect it from damage and/or to aid in trouble-shooting. Following is a listing of all the possible messages along with their meaning:

MESSAGE

MEANING

ILDC

INTERLOCK (Spa is deactivated).

The spa's equipment doors are not properly closed. Doors **must be closed** for *any* of the spa's functions to operate.

Pd

BATTERY BACK-UP

Power has been cut off to the spa, and it is using 15-minute battery back-up to preserve its settings. The control panel will be disabled until power is returned to the spa.

OH

OVERHEAT PROTECTION (Spa is deactivated)

If a malfunction occurs and spa water reaches 112° F., the system will completely shut down. In such a condition, **DO NOT ENTER THE WATER**. Turn off all power to the spa and contact your dealer or service organization.

NOTE: if you set the filter cycle to operate the low speed pump for extended periods of time, overheating may occur. If this happens, remove the spa cover and allow the water to cool to below 110° F. Touch the mode pad



to reset the system. If the water is still hotter than the set temperature, touch the blower pad to cool the spa.

MESSAGE**MEANING****FLO**

FLOW SWITCH (Heater is deactivated)

Proper flow of water is inhibited or a pressure switch has malfunctioned. Check flow valves in equipment bay. Check for proper water level. Check for clogged filter. Contact your dealer or service organization.

COOL

TEMPERATURE SET BACK

If spa water is more than 20° F., cooler than the temperature set point, the heater will automatically activate to provide freeze protection. This is a normal spa function; no corrective action is necessary.

ICE

FREEZE PROTECTION

If a freeze condition is detected, low-speed pump is automatically activated. This is also a normal spa function; no corrective action is necessary.

Sn 1

OPEN SENSOR (Spa is deactivated)

The high-limit temperature sensor is non-functional. This must be repaired only by a dealer or qualified service organization.

Sn 3

OPEN SENSOR (Spa is deactivated)

The main sensor is non-functional. This also must be repaired by a dealer or service organization.

TROUBLESHOOTING PROCEDURES

Your Sundance Spa is the result of many years of careful engineering and a quality first commitment of Sundance personnel. We find that many “problems” are the result of either a misunderstanding of how the spa operates or improper installation.

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 and check the message on the panel display; second, if you are still not satisfied it is working properly, please follow the appropriate troubleshooting instructions.

PROBLEM

PROCEDURE

Spa does not operate.

Check control panel display (ILL No.4.1)

If it is ON go to 1.

If it is OFF go to 2.

1. Make sure equipment door is closed.
2. Check for proper power connection.
3. Check power at circuit breaker.
4. Check service voltage for full 240V.
5. If spa still won't run, call your serviceman.

High speed pump (jets) does not operate.

Check 1 through 4.

Check jet indicator symbol on panel.

If OFF go to 2.

IF ON go to 1.

6. Depress jet sensor.
7. Check flow valves in equipment bay.

Low Speed Pump (jets) does not operate.

Check 1 through 7.

Poor jet action.

8. Check if jet is in High Speed.
9. Rotate whirlpool knob.
10. Check for adequate water level.
11. Check for dirty filter.
12. Open air controls.

No or low heat.

Check 1 through 7.

13. Check operating mode (is it in “Economy” or “Standard”). Spa will not heat in “Economy” unless the filter cycle is engaged.
14. Check that the pump is ON.
15. Set temperature higher than the actual water temperature.

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!

Sentry 700 Series

The Ultimate Spa Controller

