

Sundance Spas®

400 Series

Installation

&

Owners Manual

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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").

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. 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.

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.)

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° 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, level 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 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.

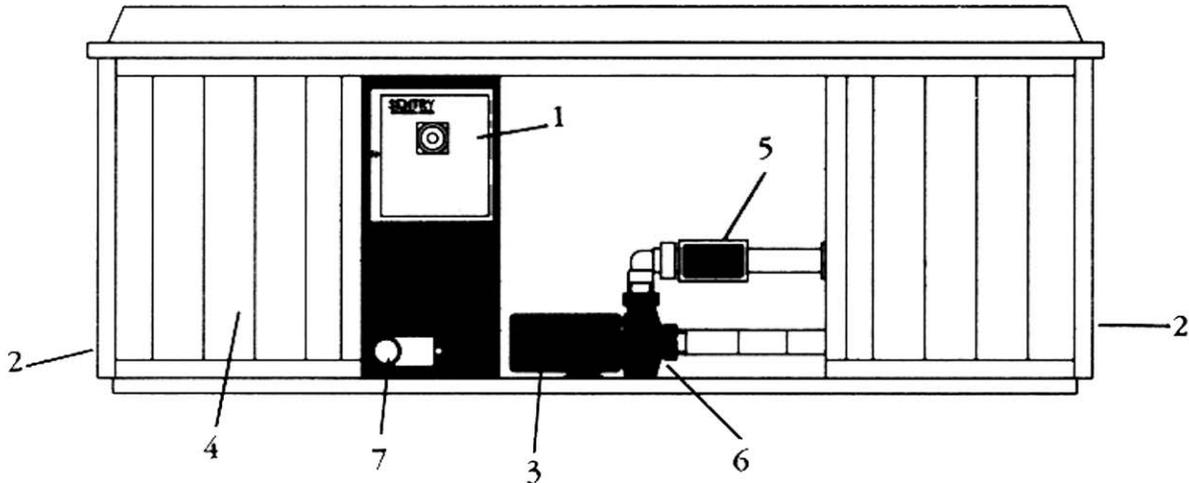
General Electrical Safety Instructions

Your new Sundance spa is equipped with 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. 2, ITEM 2) 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.

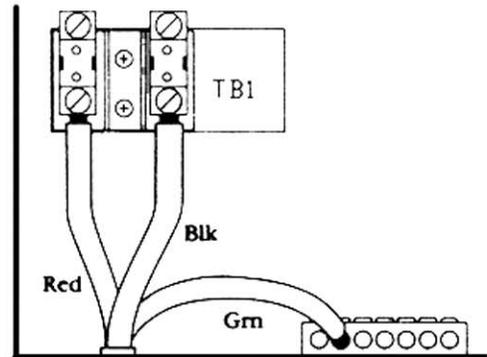
Before installing this spa, check with the local building department to insure installation conforms to local building codes.

ILL. No. 1
Equipment Bay



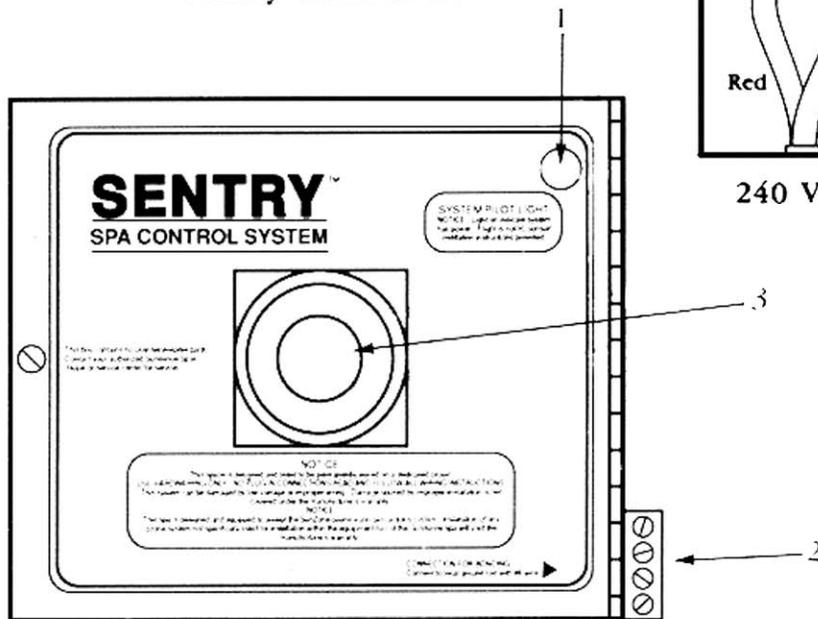
- | | |
|------------------------------|---------------|
| 1. Sentry Control Box | 5. Heater |
| 2. Power Supply Entrance | 6. Pump Drain |
| 3. Pump | 7. Spa Drain |
| 4. Air Blower (behind panel) | |

ILL. No. 3
Terminal Strip Connection



240 Volt / 3 Wire Connection

ILL. No. 2
Sentry Control Box



- | |
|---|
| 1. Power Indicator Light |
| 2. Current Collector Terminal |
| 3. Time Clock |
| 4. Receptacle for Ozone Purification System |

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 independent testing agency 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. 4).
 - Wire size must be appropriate for the distance of the wire run per NEC.
 - We recommend type THHN wire.
 - 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. 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.
5. The electrical circuit supplied for the spa must include a suitable ground fault circuit interruptor (GFCI) as required by NEC Article 680-42.
6. To gain access to the spa's power terminal strip, open the hinged door at the left end of the side panel below the controls by removing the two screws. Then open the door to the control box. (ILL. 1, Item 1).
7. Feed cable through one of the power supply inlets provided (ILL. 1, Item 2) and install cable with connector through the large opening provided in the bottom of the control box.
8. Connect wires, color to color, on terminal strips TB1 and TB3 (ILL. 3).
TIGHTEN SECURELY! All wires must be hooked up or damage could result.

9. To provide an extra measure of safety, we strongly 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.

ILL. No. 4
POWER SUPPLY REQUIREMENTS

	240 V/50A*
Circuit Breaker	50A dual pole
Number of Wires	3
Current draw (amps)	40

***NOTE:** If your household's electrical service does not have the full 50A, 240V power available for the spa, the spa may be connected to 30A, 240V service if a minor circuit board modification is performed by your dealer. 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 or air blower.

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. (Although the spa shell has been polished at the factory, some new spa owners like to treat their new spa with specially formulated spa cleaner and wax prior to filling for the first time.)

— Fill the spa with water from a garden hose 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.

2. TURN ON POWER

Close the cabinet access door and turn on power to the spa at the home’s circuit breaker.

3. ACTIVATE JETS

Depress the JETS sensor on the control panel. This causes the pump to activate water flow to the jets. If the pump is properly primed, you should be able to feel a steady flow of water through at least some of the jets. If not, depress the JETS sensor again to activate the pump’s high speed.

4. ADD START-UP CHEMICALS

Add the spa water chemicals as recommended by your Sundance Dealer. (See the section titled WATER QUALITY MAINTENANCE for general guidance.)

5. SET SPA TO HEAT

To bring the spa water up to a comfortable temperature, follow these steps:

— Set the operating mode to “Standard” by pressing the MODE sensor until the “Standard” indicator is lit.

— Depress the JETS sensor as many times as required to turn off the indicator light nearest the JETS sensor.

— Turn the thermostat knob clockwise. (See section titled “The Thermostat” on page 15.) Note that both the “Flow” and “Heat” indicators are now lit, and the low speed pump is operating.

— Both the heater and the pump will turn off when the temperature corresponding to the thermostat setting is achieved.

PLACE COVER ON SPA

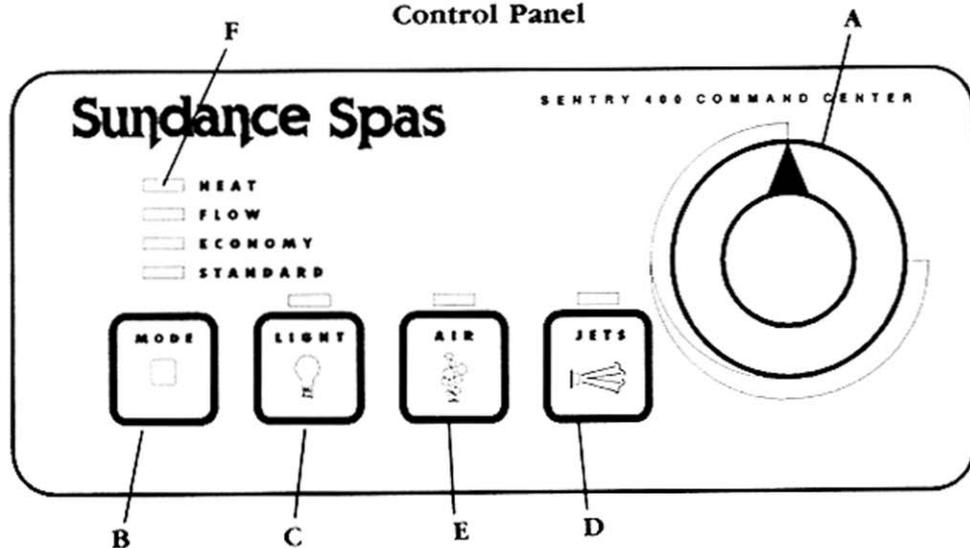
IMPORTANT: For all models except the Tango, it is critical that the cover is positioned so that the joint between the two sections of the cover is *parallel* with the side of the spa on which the controls are located (i.e. cover’s handles

should be on the control side of the spa).

The time required for initial heat-up will vary depending on the starting water temperature and the gallon capacity of your spa. Smaller spas heat at a rate of approximately 8 to 10 degrees per hour; larger spas heat at about 4 to 6 degrees per hour. Use an accurate thermometer designed for spa use to monitor the water temperature.

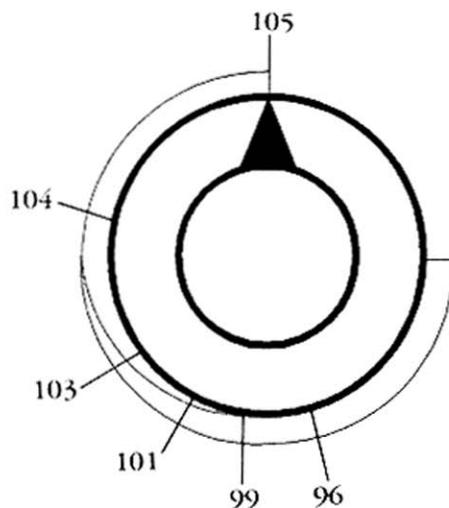
DANGER. RISK OF INJURY. Always check the water temperature carefully before entering the spa.

ILL. No. 5
Control Panel



- | | |
|----------------------------|-----------------------------|
| A. Thermostat Control Knob | D. Pump Sensor |
| B. Energy Control Sensor | E. Air Blower On/Off Sensor |
| C. Light On/Off Sensor | F. Indicator Lights |

ILL. No. 5.1
Thermostat Control
Approximate Temperature Settings ($\pm 2^{\circ}$)



Operating Instructions

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

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 CENTREX-surfaced spa, as permanent staining can result.

JETS

The "Jets" pad switches the pump first to low speed, then to high speed operation. Anytime the pump is turned on manually, an electronic clock is activated which turns the pump off after approximately 20 minutes.

You will notice that, occasionally, when the pump is on high speed and you press the "Jets" pad to turn it off, it continues to operate on low speed. This happens when the thermostat is calling for heat or when the time clock has activated a filter cycle. (For further clarification, see the section titled "Choosing the Standard or Economy Mode".)

MONTEGO LX — this model has two pumps. The primary pump is a two-speed pump which powers the therapy jets. The second pump is a single-speed pump which can power either the therapy seat jets or the whirlpool jet. Pressing the "Jets" pad cycles the operation of the pumps through the following sequence.

1. Pump 1 on Low Speed
2. Pump 1 on High Speed
3. Pump 1 on High Speed, Pump 2 on High Speed*
4. Pump 2 on High Speed, (Pump 1 subject to automatic functions)
5. Both pumps off, (Pump 1 subject to automatic functions)

*(NOTE: heater cannot activate when both pumps are on high speed.)

AIR CONTROLS

When operating the jets you may regulate the amount of air that is mixed with the water by adjusting the appropriate air control knob.

AIR INJECTION

The pad labeled "Air" controls the air blower which powers the air injectors. As with the pump, the control system turns the air blower off after approximately 20 minutes of operation. (Note: On Montego LX models only, at the beginning of each filter cycle, the air blower activates automatically for approximately 45 seconds.)

WHIRLPOOL JET

If your spa is equipped with a whirlpool jet, there is a built-in diverter valve which is controlled by a knob on the lip of the spa. Rotating this knob allows you to direct the flow of water between the whirlpool jet and therapy jets.

MONTEGO LX — The diverter knob on this model directs the flow of the single-speed pump between the therapy seat jets and the whirlpool jet.

FOR BEST RESULTS, ALWAYS CYCLE THE JETS OFF OF HIGH SPEED BEFORE ATTEMPTING TO ROTATE THIS KNOB.

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 on the time clock 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 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.

NOTE: The control system is programmed to “assume” that you want it to maintain the set temperature while you are using the spa. Therefore, if either the jets or blower is turned on manually while the spa is set for the economy mode, the heater will activate as needed to maintain the set temperature.

THE THERMOSTAT

The spa's thermostat is designed to provide you with optimum control of the spa water temperature. The maximum setting is approximately $105^{\circ} (\pm 2^{\circ})$. As the knob is turned counter-clockwise, the temperature will drop in ever increasing proportions (see ILL. 5.1). 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.

TIME CLOCK — SETTING FILTER CYCLES

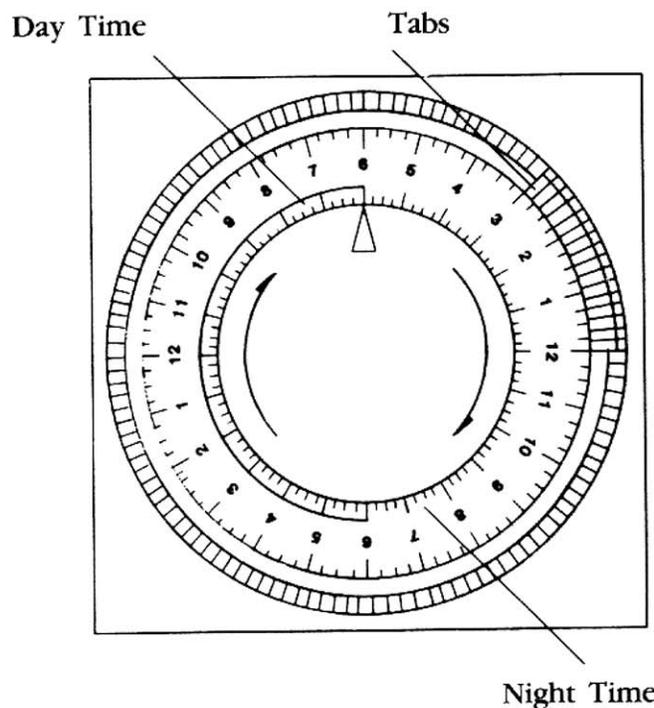
The time clock (See ILL. 2, Item 3) operates your spa's filtration cycles. Routine filtration cycles serve to remove tiny suspensions from the water and help maintain water clarity. In addition, if your spa is programmed for the Economy operating mode, these cycles allow for pre-heating the water.

To set the time of day, rotate the entire dial until the arrow just above the dial indicates the correct time.

To set the filtration cycle(s), locate the tabs for the time periods you would like 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.

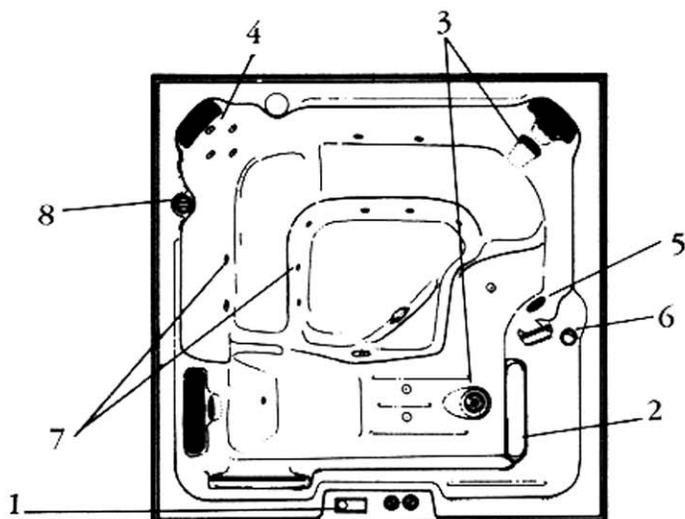
NOTE: On Montego LX Models only, at the beginning of each filter cycle, the air blower activates for approximately 30 seconds.

ILL. No. 6
Time Clock



ILL. NO. 7
Top View - Spa

1. Control Panels
2. Filter
3. Hydrotherapy Jets
4. Therapy Seat Jets
5. Whirlpool Therapy Jet
6. Diverter Valve Knob
7. Air Injectors
8. Fragrance Dispenser



“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.

FRAGRANCE DISPENSER

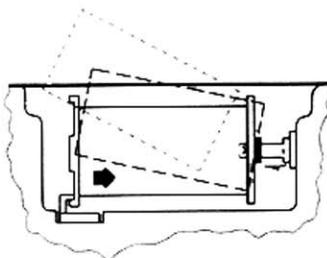
On the lip of your spa is a screw-off cap labeled “SunScents Dispenser” (Ill. 7, item 8). It is designed to contain packages of a specially made fragrance available from your Sundance dealer. The fragrance is carried into the spa water by the air coming through the injector system when the air blower is on.

IMPORTANT: Do not use this dispenser for any other type of fragrance. Always make certain that the dispenser cap is securely in place before operating the spa’s air blower.

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

Your Sundance spa is equipped with a cartridge filter located in the skimmer/filter well (See ILL. 7, ITEM 2) near the top edge of the spa for easy removal and cleaning. Filtering is accomplished by causing water to flow through the 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

About every 3 to 6 months, you will want to replace the spa's water. The frequency depends on a number of variables including the amount of use, attention paid to water quality maintenance, etc. You will know it is time for a change when you cannot control sudsing and/or you can no longer get the normal feel or sparkle to the water even though the key water balance measurements are all within the proper parameters.

WARNING: READ THIS BEFORE DRAINING: To prevent damage to the spa's components, **turn off power to the spa at the circuit breaker before draining it.** Do not turn the power back on until your spa has been refilled.

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 (see "Winterizing", page 19). On the other hand, if it is hot outdoors, do not leave the spa's surface exposed to direct sunlight for long periods.

To drain your spa using the drain port provided, **first, turn off the power to the spa at the circuit breaker.** Then open the cabinet's hinged access panel. The drain port is secured to the base inside the door and features a white "T" handle (see Ill. 1, item 7). You may use either a garden hose or, for faster draining, a special, large-diameter drain hose is available from your Sundance dealer.

Next, remove the threaded plug from the end of the drain port. If you intend to use a garden hose, install the threaded fitting provided with your spa. After installing the hose, rotate the "T" handle counterclockwise 1/4 turn and pull outward, away from the pipe to allow the water to drain from the spa.

After draining, always remember to close the "T" handle valve *and reinstall the threaded plug* (to prevent water from seeping past the valve) prior to refilling. After refilling, turn on power to the spa and follow the steps listed under "Start Up Instructions".

CLEANING THE INTERIOR OF THE SPA

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.

Your Sundance Dealer offers a specially formulated surface sealant which aids in cleaning the spa surface and adds a protective coating to enhance the luster of the surface. This product should also be occasionally applied to the stainless steel grab rails and accents in the spa to help preserve their appearance.

PILLOW CARE

Remove and clean the headrest pillows regularly with soapy water using a cloth or soft-bristle brush. To maintain water resistance and luster, apply a quality vinyl conditioner once a month.

Always remove the pillows when adding chemical shock treatment to the spa water. The pillows can be returned to the spa when the sanitizer reading drops below 5 ppm.

IMPORTANT: When removing pillows equipped with suction cups, always slide them upwards until the suction cups release from the spa's surface. Never pull the pillows straight out from the spa as this will likely cause the suction cups to permanently separate from the pillow. Pillows on spas with Centrex surfaces are equipped with ball-and-socket type connectors. To remove these from the spa, gently pull the pillow straight out from the spa.

(Pillow damage or deterioration caused by improper care is not covered by the spa's warranty.)

MAINTAINING THE WOOD CABINET

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. A specially formulated wood stain available from your Sundance dealer is ideal for this.

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 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. In extreme, bitter cold, weather program the filter cycles for 24-hour operation to protect the spa (i.e. four consecutive six-hour cycles.)

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. In emergency situations, damage can be minimized by taking the following steps:

1. Follow the directions on page 17 for draining the spa.
2. As the water level drops below the seats, use whatever means necessary to get the water out of the recessed seating areas and into the footwell.
3. When the water level ceases to drop, use whatever means available to remove any remaining water from the footwell.
4. Turn on the air blower to evacuate the water from the air injector lines. (Note: Stand back to avoid the misty spray.)
5. Turn off power the spa.
6. Remove the equipment-side cabinet panel and locate the drain plugs in the front of the pumps (See Ill. 1, Item 6). Remove these plugs to allow the water to drain out of the pumps and heater. (Note: Approximately one to two gallons will be released during this procedure. Use a wet/dry vacuum or other means to keep this from flooding the equipment compartment.) Replace the drain plugs.

7. Re-install the cabinet side panel and 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.

RE-STARTING YOUR SPA IN COLD WEATHER

If you want to start up your spa after it has sat empty for a time in freezing temperatures, be aware that the water remaining in certain sections of the piping may still be frozen. This situation will block water flow preventing the spa from operating properly and possibly damaging the equipment. We recommend you consult your dealer for guidance before attempting to re-start your spa under these conditions.

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 and potentially unhealthful 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 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. This chemical can have an extremely corrosive effect on certain materials in the spa. Damage caused by use of this chemical, or *improper* use of any chemicals, is not covered under the spa's warranty.

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.

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 chemical sanitizer usage. You will also probably be able to go longer between complete spa drainings. (Note: the Sunzone system will generate ozone only during filter cycles.)

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

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.

PROBLEM	PROCEDURE
NONE OF THE COMPONENTS OPERATE (i.e. pump, air blower, spa light).	Check the control panel lights. <ol style="list-style-type: none">1. Either the "ECON" or "STD" should always be lit. If either <i>is</i> lit, contact your service center.2. If none of the control panel lights are on, remove the equipment bay door and check the status of the "System Pilot Light" on the face of Sentry control box. If it's lit, contact your service center. If it is not lit:<ol style="list-style-type: none">a. Check household circuit breaker.b. Check for proper power connection.c. Contact your service center.
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">1. If no sound is detected or if a "buzzing" sound is detected, turn off power to the spa and contact your service center.2. If motor operates but no water flows to jets:<ol style="list-style-type: none">a. Pump may not be properly primed. Follow the instructions in the section headed "Activate Jets" on page 11.b. Contact your service center.

(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 "Jets" pad has the pump in the high speed position.
 2. Rotate Whirlpool diverter control.
 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. 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. 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!

