Owner's Manual

SweetwaterSpas®

Table of Contents

Important Hot Tub Owner Information

Your Sweetwater hot tub is constructed to the highest standards and is capable of providing many years of trouble-free use. However, because heat retentive materials are utilized to insulate the hot tub for efficient operation, an uncovered hot tub surface directly exposed to sunlight and high temperatures for an extended period is subject to permanent damage. Damage caused by exposing the hot tub to this abuse is not covered by warranty. We recommend that you always keep the hot tub full of water when it is exposed to direct sunlight and that you keep the Sweetwater insulating cover in place at all times when the hot tub is not in use. Read and carefully follow the requirements for your hot tub's support base (found in the section titled, "Locating Your Sweetwater Hot Tub").

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

FCC Notice

This equipment has been tested and found to comply with the limits for a Class B Digital Device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: I) Rearrange or relocate the receiving antenna. 2) Increase the separation between the equipment and receiver. 3) Connect the equipment into an outlet on a circuit different from the circuit connected. 4) Consult the dealer or an experienced radio/TV technician for help. (Changes or modifications not expressly approved by the party responsible for FCC compliance could void the user's authority to operate this equipment.)

IMPORTANT SAFETY INSTRUCTIONS: READ AND FOLLOW ALL INSTRUCTIONS CAREFULLY

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

1) **WARNING:** To reduce the risk of injury, do not permit children to use this product unless they are closely supervised at all times.

2) **WARNING:** A grounding wire connector is provided on this unit to connect a minimum No. 8AWG (8.4mm2) solid copper conductor between this unit and any metal equipment, metal enclosures of electrical equipment, metal water pipe, or conduit within 5 feet (1.5m) of the unit.

3) **DANGER:** *Risk of Accidental Drowning.* Extreme caution must be exercised to prevent unauthorized access by children. To avoid accidents, ensure that children cannot use this hot tub unless they are supervised at all times.

4) **DANGER:** *Risk of Injury.* The suction fittings in this hot tub are sized to match the specific water flow created by the pump. Should the need arise to replace the suction fittings or the pump, be sure that the flow rates are compatible. Never operate the hot tub if the suction fittings are broken or missing. Never replace a suction fitting with one rated less than the flow rate marked on the original suction fitting.

5) **DANGER:** *Risk of Electric Shock.* Install at least 5 feet (1.5m), from all metal surfaces. As an alternative, a hot tub may be installed within 5 feet of metal surfaces if each metal surface is permanently connected by a minimum No. 8 AWG (8.4 mm2) solid copper conductor attached to the wire connector on the grounding lug, inside the equipment compartment on the equipment box.

6) **DANGER:** *Risk of Electric Shock.* Do not permit any electrical appliance, such as a light, telephone, radio, television, etc. within 5 feet of a hot tub.

7) **ELECTRICAL SUPPLY:** 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. The disconnect must be readily accessible and visible to the hot tub occupant but installed at least 5 feet (1.5m), from the hot tub water.

8) **WARNING: To Reduce the Risk of Injury:**

a) The water in a hot tub should never exceed 104°F (40°C). Water temperatures between 100°F (38°C) and 104°F (40°C) are considered safe for a healthy adult. Lower water temperatures are recommended for young children and when hot tub use exceeds 10 minutes.

b) 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 hot tub water temperatures to 100°F (38°C). If pregnant, please consult your physician before using a hot tub.

c) Before entering the 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 +/- 5 F (2°C).

d) The use of alcohol, drugs, or medication before or during hot tub use may lead to unconsciousness with the possibility of drowning.

e) Persons suffering from obesity or a medical history of heart disease, low or high blood pressure, circulatory system problems, or diabetes should consult a physician before using a hot tub.

f) Persons using medication should consult a physician before using a hot tub since some medication may induce drowsiness, while other medication may affect heart rate, blood pressure, and circulation.

IMPORTANT SAFETY INSTRUCTIONS (CSA SAFETY INFORMATION)

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

a) **READ AND FOLLOW ALL INSTRUCTIONS.**

b) A green colored terminal or a terminal marked G, Gr, Ground, ,Grounding or the ⏚ symbol* is located inside the supply terminal box or compartment. To reduce the risk of electric shock, this terminal must be connected to the grounding means provided in the electric supply service panel with a continuous copper wire equivalent in size to the circuit conductors that supply this equipment.

* IEC Publication 417, Symbol 5019.

c) At least two lugs marked "Bonding Lugs" are provided on the external surface or on the inside of the supply terminal box/compartment. To reduce the risk of electric shock, connect the local common bonding grid in the area of the hot tub to these terminals with an insulated or bare copper conductor not smaller than No. 6 AWG.

d) All field-installed metal components such as rails, ladders, drains or other similar hardware within 3m of the hot tub shall be bonded to the equipment grounding bus with copper conductors not smaller than No. 6 AWG.

e) **SAVE THESE INSTRUCTIONS.**

WARNING: Children should not use hot tubs without adult supervision.

AVERTISSEMENT: *NE PAS LAISSER LES ENFANTS UTILISER LA CUVE DE RELAXATION SANS SURVEILLANCE.*

WARNING: Do not use hot tubs unless all suction guards are installed to prevent body and hair entrapment.

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

WARNING: People with infectious diseases should not use a hot tub.

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

WARNING: To avoid injury, exercise care when entering or exiting the hot tub.

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

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

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

WARNING: Pregnant or possibly pregnant women should consult a physician before using a hot tub.

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

WARNING: Water temperature in excess of 38°C may be injurious to your health.

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

WARNING: Before entering the hot tub, measure the water temperature with an accurate thermometer.

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

WARNING: Do not use a hot tub immediately following strenuous exercise.

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

WARNING: Prolonged immersion in a hot tub may be injurious to your health.

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

WARNING: Do not permit electric appliances (such as light, telephone, radio, television, etc.) within 1.5m of this hot tub.

AVERTISSEMENT: *NE PAS PLACER D'APPAREIL ELECTRIQUE (LUMINAIR, TELEPHONE, RADIO, TELEVISEUR, ETC.) A MOINS DE 1.5M DE LA CUVE DE RELAXATION.*

CAUTION: Maintain water chemistry in accordance with manufacturer's instructions.

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

WARNING: The use of alcohol or drugs can greatly increase the risk of fatal hyperthermia in hot tubs.

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

SAVE THESE INSTRUCTIONS

HYPERTHERMIA

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

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

a) Unawareness of impending hazard:
b) Failure to perceive heat;
c) Failure to recognize the need to exit hot tub;
d) Physical inability to exit hot tub;
e) Fetal damage in pregnant women; and
f) Unconsciousness and danger of drowning.

Cautions

1. Persons suffering from heart disease, diabetes, high or low blood pressure, and any condition requiring medical treatment, pregnant women,the elderly, or infants should consult with a physician before using a hot tub.
2. The Consumer Products Safety Commission has stated that the water temperature in a hot tub should not exceed 104°F (40°C). Immersion in water in excess of 104°F (40°C) can be hazardous to your health.
3. Observe a reasonable time limit when using the hot tub. Long exposures at higher temperatures can cause high body temperature. Symptoms may include dizziness, nausea, fainting, drowsiness, and reduced awareness. These effects could possibly result in drowning.
4. Do not use the hot tub under the influence of alcohol, narcotics, or other drugs. Use of the hot tub under these conditions may lead to serious consequences.
5. Always test the hot tub water temperature before entering the hot tub. Enter and exit the hot tub slowly. Wet surfaces can be very slippery.
6. Never bring any electrical appliances into or near the hot tub. Never operate any electrical appliances from inside the hot tub or when you are wet.
7. Proper chemical maintenance of hot tub water is necessary to maintain safe water and prevent possible damage to hot tub components.
8. Use the hot tub straps and clip tie downs to secure the cover when not in use. This will help to discourage unsupervised children from entering the hot tub and keep the hot tub cover secure in high-wind conditions. There is no representation that the cover, clip tie downs, or actual locks will prevent access to the hot tub.

Locating Your Sweetwater Hot Tub

Aspen and Vail Models Only
Aspen and Vail and models to be connected to 110V electrical service must be located no more than 10 feet from a grounded, grounding type electrical outlet so that the power cord included can be plugged directly into it.* DO NOT USE AN EXTENSION CORD as this could cause damage to the hot tub's equipment due to insufficient voltage. The power supplied to this hot tub must be a dedicated circuit with no other appliances or lights sharing the power provided by the circuit. To prepare your hot tub for connection to 110V service, refer to the instructions on page 12.

IMPORTANT: Because of the combined weight of the hot tub, water and users, it is extremely important that the base upon which the hot tub rests be smooth, flat, level and capable of uniformly supporting this weight, without shifting or settling, for the entire time the hot tub is in place. If the hot tub is placed on a surface which does not meet these requirements, damage to the skirt and/or the hot tub shell may result. Damage caused by improper support is not covered under warranty. It is the responsibility of the hot tub 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 hot tub must be installed in such a manner as to provide drainage away from the hot tub. Placing the hot tub 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 it would sit.

For hot tubs 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 hot tub, 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 hot tub (this should be free of debris so that dirt and leaves are not easily tracked into the hot tub); 3) the closeness to trees and shrubbery (remember that leaves and birds could create extra work in keeping the hot tub 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 hot tub under an unguttered roof overhang since run-off water will shorten the life expectancy of the hot tub cover.

* Power cord is not available for Canada - the hot tub must be hard wired.

For *indoor* installations, be certain to make provisions for proper ventilation. When the hot tub 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 hot tub consult your authorized Sweetwater Dealer.

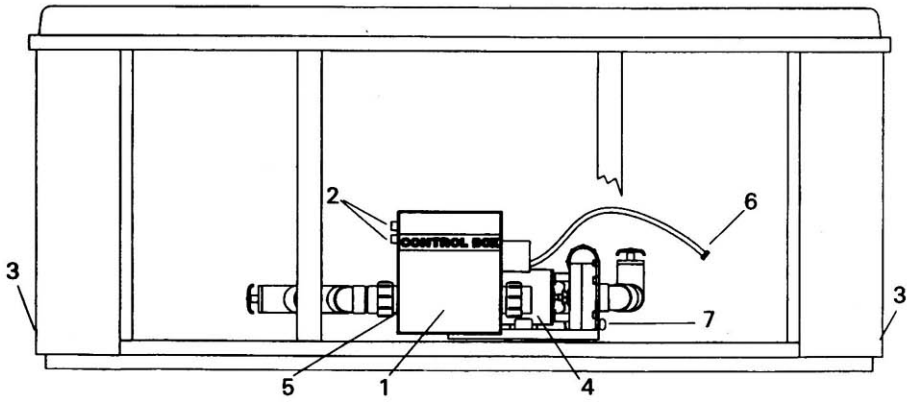
General Electrical Safety Instructions

Your new hot tub is equipped with the "state-of-the-art" equipment system. It contains the most advanced safety and self-protective equipment in the industry. Nonetheless, this hot tub must be installed properly to insure dependable usage. Please contact your dealer or local building department should you have any questions regarding your installation.

Proper Grounding Is Extremely Important. Sweetwater hot tubs 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 illustration 1, item 1) 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 hot tub, or copper clad grounding rod buried within 5 feet of the hot tub. Bonding wire must be at least No. 8 AWG (8.4 mm^2) solid copper wire. This is a most important safety assurance feature.

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

Illustration No. 1
Equipment Bay



1. Control Box
2. Grounding Lugs
3. Power Supply Entrances (Telluride Model).
   Use Equipment Panel 'notch' on Vail and Aspen Models.
4. Pump
5. Heater
6. Hot Tub Drain
7. Pump Drain Plug

Illustration No. 2
240V 3 Wire Hook-up Madison, Hartford, Austin and Telluride

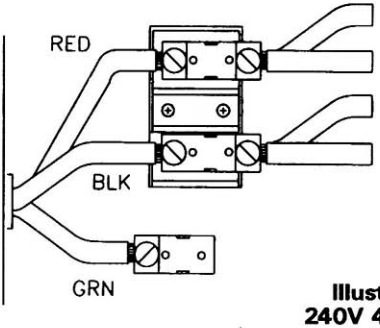


Illustration No. 3
120V 3 Wire Hook-up Vail and Aspen

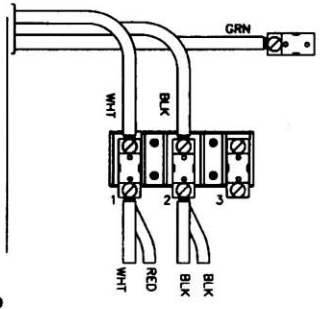
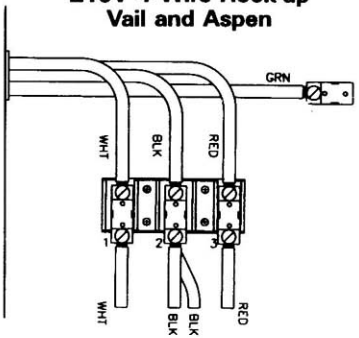


Illustration No. 4
240V 4 Wire Hook-up Vail and Aspen



Important: move red wire from position #1 to position #3 for this hook-up

Electrical Installation Instructions For Connection to 240V Service

(Note: The Vail and Aspen, models may be connected to 120V service. See the Instructions on next page.)

IMPORTANT NOTICE: The electrical wiring of this hot tub 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 hot tub 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 hot tub.** Supplying power to the hot tub 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 hot tub *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, refer to 'Table No. 1, Power Supply Options and Requirements' on page 13.

   - Wire size must be appropriate per NEC and/or local codes.
   - 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 junction box near the hot tub and reduce to short lengths of #6 wire to connect to the hot tub.

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. The disconnecting means must be readily accessible to the hot tub's occupant but installed at least 5 feet (1.5m) from hot tub water.

5. The electrical circuit supplied for the hot tub must include a suitable ground fault circuit interruptor (GFCI) as required by NEC Article 680-42.

6. To gain access to the hot tub's power terminal block, remove the cabinet panel on the side of the hot tub under the controls. Then open the door to the control box. (Illustration No. 1, item 1).

7. Use the appropriate power supply inlet and remove the panel from the front of the hot tub to allow you to feed the cable through to the control box. Install the cable with connector through the large opening provided in the bottom of the control box.

8. Connect wires, color to color, on terminal blocks TB1 and ground (Illustration No. 1). TIGHTEN SECURELY! All wires must be hooked up or damage could result.

9. Close the control box door and reinstall the cabinet side panels.

Aspen 120V Service Connection

Unless your dealer has already done so, you will need to prepare the hot tub's power cord by following these steps:

1. Remove the center cabinet panel directly under the hot tub's control panel.

2. Open the control box door (Illustration No. 1, item 1).

3. Locate the hot tub's GFI protected power cord* and carefully note where each of its different colored wires are connected.

4. Remove the hot tub's power cord by loosening the screws securing the wires to the terminals and pulling the power cord out.

5. Feed the bare wire end of the power cord into the appropriate power supply entrance.

6. Remove the cabinet side panel adjacent to the one you previously removed to allow you to continue feeding the cord through to the control box.

7. Feed the cord into the control box and reconnect the wires to the same terminals as before. Be sure to securely tighten all screws.

8. Close the control box door and re-install the cabinet panel.

Vail 120V Service Connection

1. Remove the center cabinet panel directly under the hot tub's control panel.

2. Locate and unroll the GFI protected power cord.

3. Replace cabinet panel making sure cord passes through notch.

Refer to additional instructions in box on page 8.

* Power cord is not available for Canada - the hot tub must be hard wired

Table No. 1
Power Supply Options and Requirements

Sweetwater hot tubs are designed to provide optimum performance and flexibility of use when connected to the maximum electrical service as listed below. Vail, Aspen and Delete are shipped configured for 120V, 15A connection with a GFI protected cord provided. The Telluride is shipped configured 240V, 40A.

If you prefer, your Sweetwater dealer can perform a minor circuit board modification to allow the hot tub to accept different electrical service. The operational considerations of these modifications are listed in the footnotes below.

MADISON and HARTFORD MODELS

	240V/30A *	240V/50A
Voltage	240 volts	240 volts
Current Draw	24 amps	40 amps
Number of Wires	Three	Three
Circuit Breaker	30 amp dual pole	50 amp dual pole

In 50A configuration, the heater will not operate while both the pumps are operating at high speed.

AUSTIN and TELLURIDE MODEL

	240V/30A *	240V/40A
Voltage	240 volts	240 volts
Current Draw	24 amps	32 amps
Number of Wires	Three	Three
Circuit Breaker	30 amp dual pole	40 amp dual pole

VAIL and ASPEN MODELS **

	120V/15A	240V/30A *	240V/40A ***
Voltage	120 volts	240 volts	240 Volts
Current Draw	12 amps	22 amps	28 amps
No. of Wires	Three (15 amp cord)	Four	Four
Circuit Breaker	15 amp	30 amp dual pole	40 amp dual pole

In 40A configuration, the heater will not operate while the pump is operating at high speed.

* In 30A configuration, the heater will not operate at the same time as the high speed of either pump or the air blower.

** For 240V connection of the Vail and Aspen and move the red wire from position #1 to position #3 on the terminal block.

*** If the Vail and Aspen is to be operated on 40A service, remove the jumper at location JP1-1 on the circuit board. 30A, 240V operation increases the output capacity of the heater four-fold compared to 120V. However, the heater cannot operate when the pump is on high speed. 40A, 240V operation allows the heater to operate at the same time as the high speed pump.

Start Up Instructions

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

1. PREPARE THE HOT TUB FOR FILLING

- Clear all debris from the hot tub. (Although the hot tub shell has been polished at the factory, you may want to treat it with a specially formulated hot tub cleaner and wax available from your dealer prior to filling the first time.)
- Remove the filter.

2. FILL THE HOT TUB

- Place the end of your garden hose into the pipe exposed when you removed the filter cartridge.

Important: Always fill your hot tub through the filter pipe after draining. Failure to do so may cause air to be trapped in the pump, preventing the pump from circulating water.

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. Or, you may fill entirely with hard water if you use a special water additive available from your Sweetwater dealer.

- Fill the hot tub until the water level is above all jets. **Warning: Do not over-fill.**

- Remove the hose and replace the filter cartridge.

3. TURN ON THE POWER

Turn on the power to the hot tub at the home's circuit breaker. The heater and the pump's low speed automatically activate and the LED display on

the control panel shows the water temperature.

4. ACTIVATE JETS

Press the **JETS** button on the control panel to activate the pump's high speed and initiate maximum water flow to certain jets.

5. ADD START-UP CHEMICALS

Add the hot tub water chemicals as recommended by your Sweetwater Dealer. (See the section titled MAINTAINING WATER QUALITY for general guidance.)

6. SET HOT TUB TO HEAT (Default Set Temp is 100°F (38°C)

To warm the hot tub water up to a comfortable temperature, follow these steps:

- The LED display on the control panel displays the actual temperature of the hot tub water. Press either the **COOLER** (Down) or **WARMER** (Up) button to display the "set" temperature for 5 seconds. If you want the water to heat to a different temperature, simply press **COOLER** or **WARMER** within 5 seconds. The set temperature advances or decreases by one degree each time one of these sensor pads is pressed.
- The heater will turn off when the temperature corresponding to the thermostat setting is achieved.

NOTE:

- *The maximum temperature for which the hot tub can be set is 104°F (40°C) and the minimum is 65°F (18°C).*
- *Setting the thermostat at maximum will not accelerate the heating process. This will only result in a higher ultimate temperature.*
- *If hot tub is hooked up to a 15 amp/120V (Vail, and Aspen) Turn off high speed pump to operate heater.*

7. PLACE COVER ON HOT TUB

- Keeping the insulating cover in place anytime the hot tub is not in use will reduce the time required for heating, thereby minimizing operating costs.
- The time required for initial heat-up will vary depending on the starting water temperature and the capacity of your hot tub. Smaller hot tubs heat at a rate of approximately 6 to 8 degrees per hour; larger hot tubs heat at about 4 to 6 degrees per hour. (The heating rate of a hot tub connected to 120V will be about 2 or 3 degrees per hour.)

DANGER. RISK OF INJURY. *Always check water temperature carefully before entering hot tub.*

Control Panels

Illustration No. 5
Vail andAspen
Digital Command Center

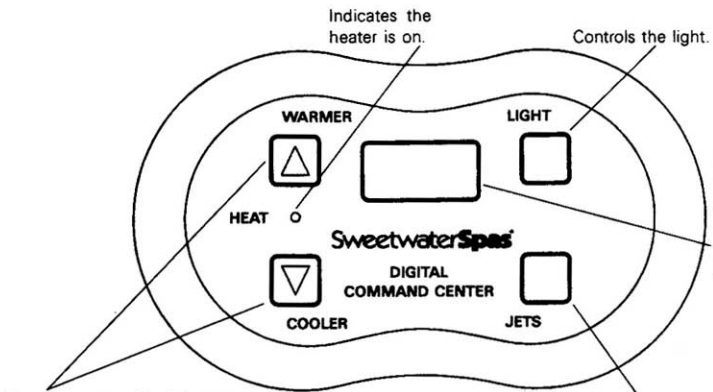


Illustration No. 6
Austin and Telluride
Digital Command Center

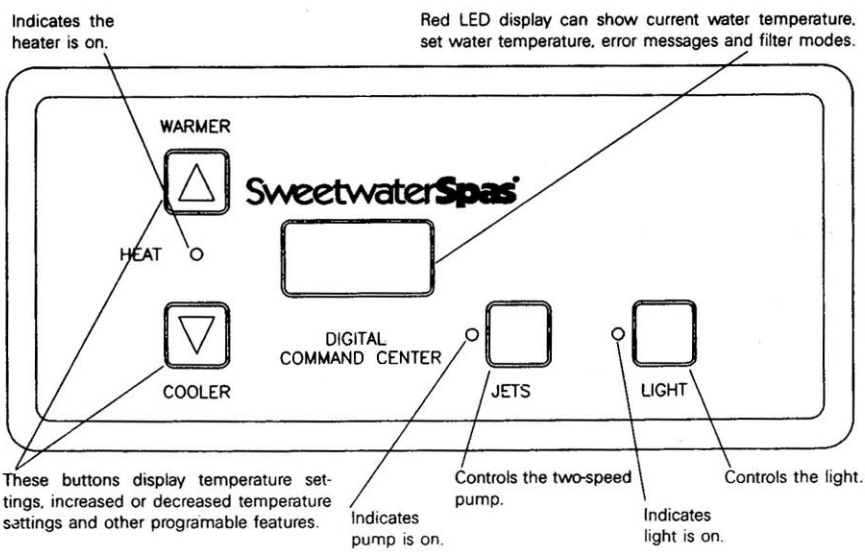
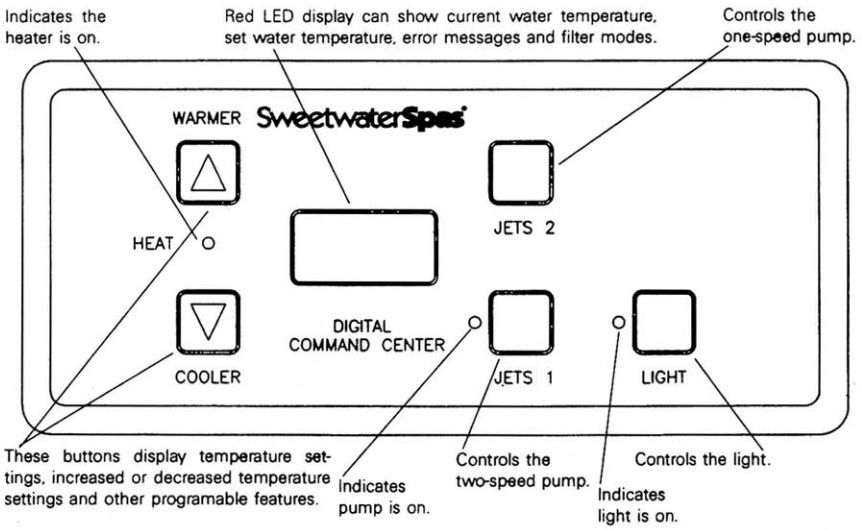


Illustration No. 7
Madison and Hartford
Digital Command Center



WARMER AND COOLER BUTTONS

The hot tub's thermostat is to provide you with optimum control of the hot tub water temperature. This temperature set point can be adjusted from 65°F (18°C) to 104°F (40°C). In conjunction with setting the temperature, these two buttons are used in changing the filter cycles (see "Changing the Filter Cycles" section.)

LIGHT

The control panel button labeled **LIGHT** activates the underwater hot tub light when depressed and the LED indicator light above this sensor comes on when the hot tub light is turned on. The light has a one hour default.

There are two colored lenses included with your hot tub which may be placed over the light lens inside the hot tub. To remove a lens, simply rotate it counterclockwise and pull.

JETS

The **JETS** button controls the dual-speed pump. Pressing this button switches the pump from off, to low speed, to high speed, and back to off.

JETS 2

The **JETS 2** button controls the single speed pump featured on Madison and Hartford models.

NOTE: Auto Shut-off – *Anytime a pump has been manually turned on, it will automatically turn off after approximately 20 minutes. If at this time you desire more jet operation, you may simply turn them back on.*

You will notice that occasionally, when you touch the button to turn off the high speed of the pump, the low speed continues to operate. This is normal if the hot tub is in the "Standard" mode and calling for heat, if a filter cycle is in progress or if the heater has recently turned off. (After the heater turns off, the pump continues to circulate water for approximately 30 seconds to cool the heating element.)

Initial Start Up

The hot tub control has automatic functions that operate upon start up. Upon power up, the read out will display a three digit number that identifies the software revision. This number will then change to "888" while the system is booting up. Also during the boot up, all of the indicator LED's will be lit.

At the end of the boot up, the water temperature will be displayed. If the temperature is below 100°F (38°C), the low speed pump and the heater will turn on until the temperature rises to the preset 100°F (38°C). **Approximately two minutes after the system has been initially powered up, the first filtration cycle will begin to operate.** Any time after the boot up, you will be able to select a pre-programmed filter cycle and reset your temperature set point.

Selecting The Filter Cycles

FILTRATION

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

You may change the filtration cycle start time by one of the following methods:

1. Turn power to the hot tub off and then back on at the breaker, or
2. Press and hold for three seconds the **"WARMER"** and **"COOLER"** buttons at the same time. When currently set cycle appears **(01-06)** press the jets one button one time and the control will go into the initial power up routine.

Example: If you want your first filter cycle start time to be at 4 PM, perform above functions just before the desired start time. Filter cycle start time may vary slightly.

Your hot tub comes with six pre-programmed filtration cycles **(01-06)** and two lockout modes **(07-08)**. Of the six filter cycles, three cycles are in the standard mode and three cycles are in the economy mode.

To change the filter cycles, press and hold the **"WARMER"** button and **"COOLER"** buttons for 3 seconds. This will get you into the filter cycle programming mode. Use the **"WARMER"** and **"COOLER"** buttons to scroll between **01** and **06**. This numeric value coincides with a specific filter cycle that is to be used for filtration.

Filter Cycles

STANDARD MODE
Heating is automatically controlled by the loss of water temperature. If the hot tub water drops 2°F (1.2°C) below the set temperature, the low speed pump and the heater will automatically turn on. They will both remain on until the water temperature reaches the temperature set point.

> **NOTE:** The initial time still operates the filter cycle in this mode to ensure proper filtration.

01 2 hours of filtration every 12 hours
02 2 hours of filtration every 8 hours
03 2 hours of filtration every 6 hours

ECONOMY
In this mode, the timer determines when the filtering and heating take place.

04 2 hours of filtration every 12 hours
05 2 hours of filtration every 8 hours
06 2 hours of filtration every 6 hours
07 LOCKOUT - special feature used when cleaning or changing the filter cartridge or any type of non-electrical servicing that requires the hot tub's pump operation to be suspended while the work is completed. The temperature readout flashes in this function.

> **NOTE:** If the hot tub is heating when the system is put into the lockout mode, the heater will immediately turn off and the pump will cycle water for thirty seconds, then turn off. This will assist in cooling the heater element.

08 LOCK MODE - Special feature to prevent unauthorized use of your hot tub which disables Jets and Light buttons. Your filter cycles and heating will continue to operate normally. The temperature readout flashes in this function.

Care and Maintenance of Your Hot Tub

Proper and regular maintenance of your hot tub will help it retain its beauty and performance. Your dealer can supply you with all the information, supplies and accessory products you will need to accomplish this.

CLEANING THE FILTER

Your Sweetwater hot tub is equipped with a cartridge filter located beneath the strainer grid. Filtering is accomplished by causing water to flow through the polyester mesh of the filter. As water flows through the filter, suspended particles become trapped on its surface. It is necessary to remove the filter cartridge and clean its surface, generally once a week, depending on usage and water quality.

To remove the filter first turn off power or put your hot tub in lockout mode **(07)** then, remove the filter. Cleaning is accomplished by washing the entrapped particles from the filter using a garden hose with a high-pressure nozzle.

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

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

OZONATORS

The Ozone is injected into the water to supplement chemical sanitizers, kill bacteria, oxidize organics and control minerals. Ozone is injected anytime the pump is turned on *automatically* like in heat call or filter cycles. The ozonator will turn off anytime the pump is *manually* activated by pressing the jets button. It will remain off until five minutes after that specific function has been turned off.

DRAINING AND REFILLING

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

To drain your Sweetwater hot tub, open the equipment access panel and locate the drain hose (see Illustration 1). Raise the end of the drain hose above the water level, remove the cap and connect a garden hose. Lay the garden hose out to drain the hot tub.

Be sure to disconnect the garden hose and replace the cap before refilling.

After refilling, turn power back on.

CLEANING THE HOT TUB SURFACE

To preserve your hot tub's surface, it is crucial that you avoid using abrasive cleaners 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 Sweetwater dealer.

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

Your Sweetwater dealer offers a specially formulated surface cleaner and sealant which aids in cleaning the hot tub surface and adds a protective coating to enhance the luster of the surface.

MAINTAINING THE WOOD CABINET

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

Light sanding with a 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 Sweetwater 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 insulating hot tub cover anytime the hot tub is not in use will significantly reduce your operating costs, heatup 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 quality vinyl conditioner will help protect against deterioration caused by UV rays from the sun. Never allow anyone to stand or sit on the cover, and avoid dragging it across rough surfaces.

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

For expert winterization of your hot tub, contact your Sweetwater dealer. If this is not practical in your situation, damage can be minimized or avoided by taking the following steps.

1. Follow the directions in the care and maintenance section for draining and refilling.

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. Locate the union at one end of the heater (see Illustration 1). Loosen this ring to allow the water to drain out of the pump and heater. (Note: Approximately one-half gallon will be released during this procedure. Use a wet/dry vacuum or other means to keep this from flooding the equipment compartment.) Retighten the union and reinstall the equipment access panel.

5. Cover the hot tub so that no casual moisture can enter the hot tub.

Consult your Sweetwater dealer if you have any questions regarding winter use or winterizing.

Maintaining Water Quality

Maintaining the quality of the water within specified limits will serve to enhance your enjoyment and prolong the life of the hot tub's equipment. It is a fairly simple task, but it requires regular attention because the water chemistry involved is a balance of several factors. A careless attitude in regard to water maintenance will result in poor conditions for soaking and even damage to your hot tub investment.

For specific guidance on maintaining water quality, consult your pool and hot tub chemical dealer who can recommend appropriate chemical products for sanitizing and balancing your hot tub water.

CAUTION: Never store hot tub chemicals inside the hot tub's equipment bay.

pH CONTROL

pH is a measure of the 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 acidic.

In hot tub water, *it is very important to maintain a slightly alkaline condition of 7.2 to 7.8.* Problems become proportionately more severe when this range is exceeded or diminished. A low pH will be corrosive to metals in the hot tub equipment. A high pH will cause minerals to deposit (scaling) on the interior surfaces of the hot tub and equipment. In addition, the ability of the sanitizing agents to keep the water clean is diminished as the pH moves further outside of the ideal range.

Your dealer can provide you with any chemicals and instruction you may need to adjust the pH of your hot tub water.

SANITIZING

To destroy bacteria and organic compounds in the hot tub water, a sanitizer must be used regularly. A residual sanitizer level of 1 to 3 ppm (parts per million) is generally considered desirable.

Bromine tablets, a two-part bromine system or granular chlorine (dichlor) are all acceptable sanitizers.

IMPORTANT: Do not use chlorine tablets (trichlor) in your hot tub. This chemical can have an extremely corrosive effect on certain materials in the hot tub. Damage caused by use of this chemical, or improper use of any chemical is not covered under the hot tub's warranty.

OTHER ADDITIVES

Many other additives are available for your hot tub. Some are necessary to compensate for out-of-balance water, some aid in cosmetic water treatment and others simply alter the feel or smell of the water. Your pool and hot tub dealer can advise you on the use of these additives.

WATER SANITIZATION WITH OZONE

The Ozone Water Purification System, available from your Sweetwater hot tub dealer, is designed to work in conjunction with chemical sanitizers to keep your hot tub water cleaner, clearer, and fresher, allowing for longer intervals between drainings.

The Ozone system works by converting oxygen to ozone as air passes through an enclosed chamber located in the equipment compartment of your hot tub. When this powerful oxidizer is mixed with the hot tub water, bacteria and contaminants are destroyed and organic compounds are reduced to their lowest elements for removal by the filtration system.

Although your Ozone system will substantially reduce the need for chemical sanitizers, it is recommended that either bromine or granular chlorine be used to provide residual germ-killing action when the ozone system is not in operation. In addition, it is important that the chemical balance be maintained within the proper parameters for the ozone to provide effectiveness. For more detailed information about proper use of chemicals consult your local dealer.

Troubleshooting

Your hot tub has a self-diagnostic control system. The system will automatically display a numeric symbol of **-01** to **-08** if a problem is detected.

-01 Nonfunctional hi-limit sensor
Open or a short in hi-limit sensor. Heater is deactivated. This must be repaired by the dealer or qualified service technician.

-02 Nonfunctional temperature sensor
Open or short in temperature sensor. Heater is deactivated. This must be repaired by the dealer or qualified service technician.

-03 Water flow problem
Pressure switch is not closed when the pump is activated. Heater is deactivated. Proper flow of water is inhibited or pressure switch has malfunctioned. Check for proper water level, pump is primed and/or clogged filter. Contact dealer or qualified service technician.

-04 Pressure switch problem
Pressure switch is closed, while pump is deactivated. Contact dealer or qualified technician.

-05 Cool condition
If the water temperature drops 20°F (11°C) below the set temperature (in economy mode), the low speed pump and the heater will activate to bring the temperature within 15°F (8°C) of the set temperature. No corrective action is required.

-06 Freeze condition
A potential freeze condition of 55°F (13°C) has been detected. No action is required. The low speed pump will be activated along with the heater. The hot tub will automatically bring the water temperature up, until the hot tub is out of danger.

-07 High temperature condition
Water temperature is above acceptable limits. Do not enter the hot tub water. Water temperature has reached 110°F (43°C) and the low speed of the pump is activated to circulate the water through the heater.

-08 Watchdog

Water temperature has reached 118°F (48°C). The entire system is disabled. Contact dealer or qualified service technician.

Troubleshooting Procedures

In the unlikely event your hot tub 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
NONE OF THE COMPONENTS OPERATE (i.e. pump, light)	Check the control panel lights. 1. If there are letters or symbols displayed on the screen, refer to the previous section to determine meaning and action required. 2. If nothing appears on the screen: a. Check the household circuit breaker. b. Contact your dealer or authorized service center.
PUMP DOES NOT OPERATE BUT LIGHT DOES OPERATE.	Depress "Jets" sensor. 1. If no sound is detected or if a "buzzing" sound is detected, turn off power to the hot tub and contact your dealer or service center. 2. If motor operates but no water flows to jets: a. Pump may not be properly primed. See instructions on the next page. b. Contact dealer or authorized service center.

Pump Priming Instructions: ***Turn Hot Tub Off!***

Remove filter and insert end of garden hose into filter pipe. Seal-off pipe opening around hose using a large, clean rag and turn on maximum water flow through the hose. After about 30 seconds, turn off water, remove hose and rag, reinstall filter and activate pump's high speed.

> **IMPORTANT:** *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 pump is on high speed. 2. Make sure jets are fully open. 3. Open air control for the jet system selected. 4. Check for adequate water level. 5. Check for dirty filter.

WATER IS TOO HOT	1. Reduce thermostat setting. 2. Reduce filtration cycle length. (Even without heater on, water temperature can increase from prolonged pump operation.)
NO HEAT	1. Check thermostat setting. 2. Keep the cover in place while heating. 3. If "heater on" indicator is lit. but no temperature rise is experienced after a reasonable period of time, contact your dealer or authorized service center.

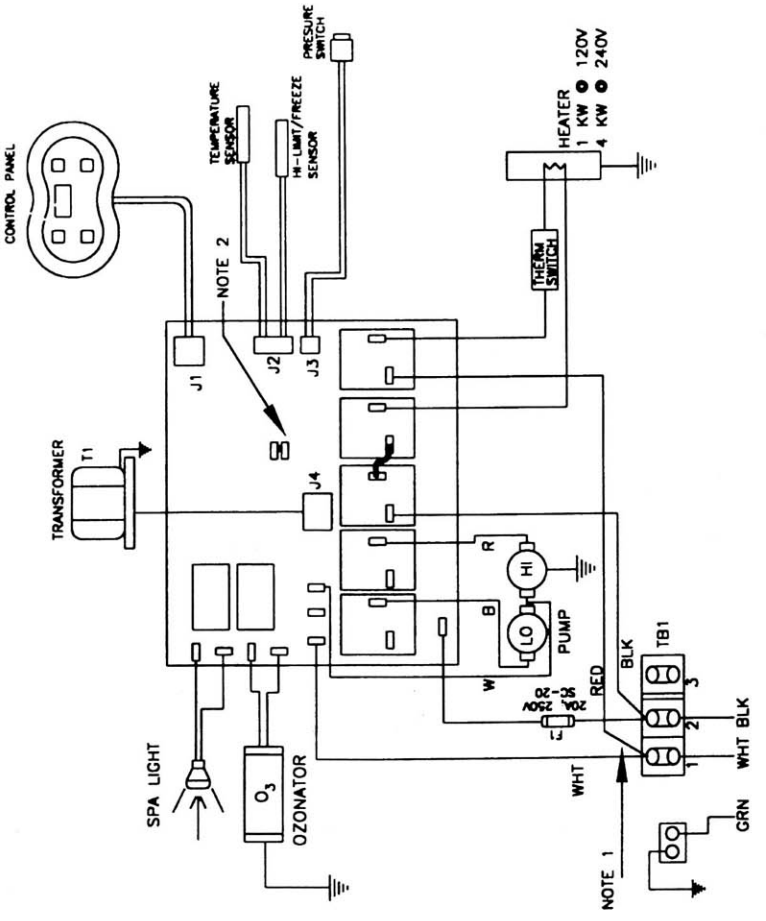
Your authorized Sweetwater dealer is a trained service repair center. Should checking the above steps fail to correct the problem, please call your dealer so that he may arrange service.

Your Sweetwater dealer's phone number: _____

Sweetwater builds the best hot tubs in the industry. Nonetheless, we are always striving to improve the quality and features of our products. Your input as a Sweetwater hot tub 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 hot tub, please write to us.

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

Electrical Wiring Diagram
Vail and Aspen

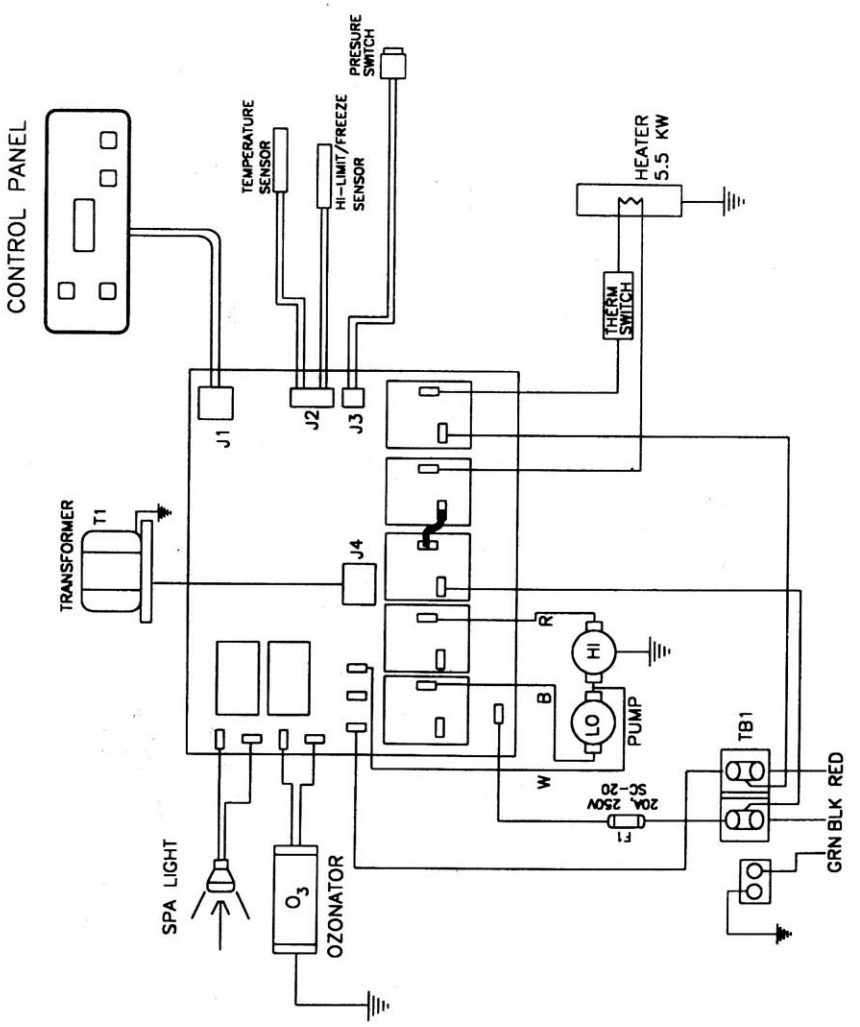


120V, 12A, 50/60 Hz, single phase USE COPPER CONDUCTORS ONLY Wires must be 14 AWG minimum service requirements 120V, 15A, 50/60 Hz, single phase.

NOTE: FOR 240 VOLTS PERMANENTLY CONNECTED UNIT:

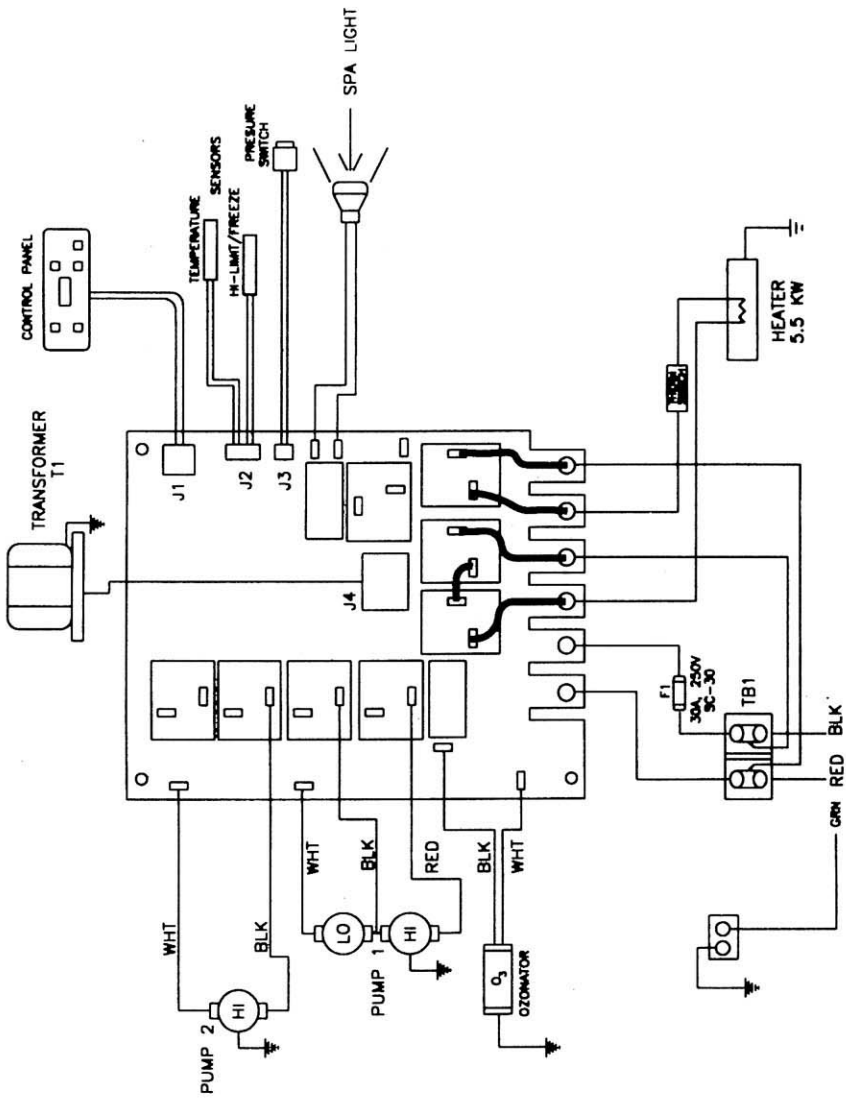
1. MOVE THE RED WIRE FROM POS. 1 TO POS. 3 ON THE TB1 TERMINAL BLOCK.
2. IF THE SPA IS TO BE OPERATED ON A 40A SERVICE. REMOVE THE JUMPER PROVIDED AT LOCATION JP1-1.

Electrical Wiring Diagram
Austin and Telluride



240 VAC, 1 PHASE, 50/60 Hz USE COPPER CONDUCTORS ONLY Wire size must be appropriate per NEC and/or LOCAL CODES.

Electrical Wiring Diagram
Madison and Hartford



240 VAC. 1 PHASE, 50/60 Hz
USE COPPER CONDUCTORS ONLY
Wire size must be appropriate per
NEC and/or LOCAL CODES

SweetwaterSpas®
P.O. Box 2408, Chino, CA 91708
Part #6530-193 • Rev. B • © 1999 Sweetwater Spas