

Happiness is  
a Warm Spa  
by

**CalSpa**

A DIVISION OF CALIFORNIA ACRYLIC INDUSTRIES, INC.  
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**Models: Portable Spas 110 & 220, Supra,  
California Classic and Gas Pack Units.**

**INSTALLATION and OPERATING MANUAL**



**U.L. LISTED 110 VOLT and 220 VOLT  
PORTABLE and INGROUND SPAS**

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# IMPORTANT SAFETY INSTRUCTIONS

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

## 1. READ AND FOLLOW ALL INSTRUCTIONS.

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. **Unit attachment cord:** A flexible cord of a water resistant material with a grounding conductor and an attachment plug. The cord shall extend at least 10', but no more than 15'.

5. (For cord and plug connected units) Do not bury cord.

6. (For cord and plug connected units) **WARNING**—To reduce the risk of electric shock, replace damaged cord immediately.

7. (For all units) **DANGER**—To reduce a risk of injury to persons, do not remove suction fitting.

To reduce the risk of injury:

A. 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. **TO ADJUST WATER TEMPERATURE, ROTATE MIDDLE DIAL ON TOP SIDE CONTROL PANEL — FOLLOWING TEMPERATURE INDICATORS.**

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 spa or hot tub water temperatures to 38°C (5°F).

C. 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 plus/minus 3°C (5°F).

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

E. 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.

F. 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.

G. Prolong **IMMERSION** in hot water May Induce hyperthermia. Long exposure 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.

3. (For cord and plug connected units only) A pressure wire connector is provided on the surface of the control box inside the spa (or hot tub) to permit connection of a bonding wire between this point and any metal equipment, metal enclosures of electrical equipment, metal water pipe or conduit within five feet of the spa (or hot tub) as needed to comply with local requirements. The bonding wire must be at least a No. 8 AWG solid copper wire.

9. (For permanently installed units only) A green color terminal (or a wire connector marked "GR", or "Grounding") is provided within the control box. To reduce the risk of electrical shock, connect this terminal or connector to the grounding terminal of your electrical service or supply panel with a continuous green insulated copper wire equivalent in size to the circuit conductors supplying this equipment, but no smaller than No. 12 AWG (3.3mm<sup>2</sup>). In addition, a second wire connector is provided for bonding to local ground points. To reduce the risk of electric shock this connector should be bonded with a No. 8 AWG (8.4mm<sup>2</sup>) copper wire to any metal ladders, water pipes, or other metal within 5 feet (1.52m) of the tub.

10. (For cord and plug connected type only) This equipment is provided with a ground fault circuit interrupter (give location). Before each use of your spa (or hot tub), with the plug connected to the power, push the test button. A red light should appear. Push the reset button. The red light should disappear. If the interrupter fails to operate in this manner, there is a ground current flowing indicating the possibility of an electric shock. Disconnect the plug from the receptacle unit; the source of the breakdown has been identified and corrected.

11. (For permanently installed units with GFCI only) Your spa (or spa equipment) is provided with a ground fault circuit interrupter (give location). Before use of your equipment, push the test button. A red light should appear. Push the reset button. The red light should disappear. If the interrupter does not perform in this manner, a ground current is flowing indicating the possibility of an electric shock. Disconnect the power until the fault has been identified and corrected.

12. (For floor-recessed hot tubs and spas) Install to permit access for servicing from above or below floor.

13. (For all units) Install to provide drainage of compartment for electric components.

14. (For assemblies with air blowers) Install in accordance with the diagram to keep tub water out of electrical equipment. (To be accompanied with diagram and information for mounting height, routing of air hose, and use of furnished check valves, if any.)

15. (For assemblies) Install with nonmetallic pipe connections to tub and at least 5 feet (1.52m) from metal enclosure of assembly to inside wall of tub.

16. (For all spas) **DANGER—RISK OF ELECTRICAL SHOCK.** Install at least 5 feet (1.52m) from all metal surfaces. (A spa may be installed within 5 feet of metal surfaces if, in accordance with the National Electrical Code, ANSI/NFPA 70-1984, and each metal surface is permanently connected by a No. 8 AWG (8.4mm) copper conductor attached to the wire connector on the terminal box that is provided for this purpose.)

17. (For units with gas heaters that are intended only for outdoor use) **WARNING**—Do not install indoors. This unit employs a gas heater that requires proper ventilation and is intended for outdoor use only.

18. **DANGER—RISK OF ELECTRICAL SHOCK.** Do not permit any electrical appliances such as a light, telephone, radio, or television within 5 feet of the spa or hot tub.

19. **SAVE THESE INSTRUCTIONS.**

# GLOSSARY OF TERMS

<b>AIR BLOWER:</b>	The air blower supplies air to the air channel caps in the lower portion of the spa, creating the hydro massage action. The blower works independently off the pump, filter, and heater.
<b>AIR LOOP:</b>	A back up system for the check valve.
<b>AIR VENTURI:</b>	Mounted generally on the lip of the spa and regulates the functions of the jets.
<b>BLEEDER VALVE:</b>	Located at the top of the filter. Used for releasing air out of filter.
<b>CHECK VALVE:</b>	To prevent water back flow to blower.
<b>CONTROL PANEL:</b>	Mounted generally on the lip of the spa and regulates the functions of the spa.
<b>DOOR INTERLOCK:</b>	Mounted in the doors of the spa skirting. Safety device that cuts off power to equipment when activated.
<b>FILTER:</b>	The filter cleans the spa by passing the water through a filtering system where debris and impurities are removed.
<b>GATE VALVES:</b>	T-handled valves located at the inlets and outlets of the equipment. Used in cleaning the filter to prevent the water to drain out.
<b>HEATER:</b>	The thermostatically controlled heater raises the temperature of the water to a desired degree.
<b>HOSE BIB:</b>	Used in the draining of the spa.
<b>JETS:</b> A—HYDRO: B—SWIRL: C—WHIRLPOOL:	Produces a straight flow of water. Produces a spinning, softer flow of water. Produces a whirlpool effect.
<b>MAIN DRAIN:</b>	During the operation of the equipment, the main drain works in conjunction with the skimmer to return water to the filter along with the surface and bottom debris, keeping the spa sparkling clean.
<b>NO FREEZE PROTECTION:</b>	Used for continuous heating of spa or in colder months to prevent pipes from freezing.
<b>VALVE KNOB:</b>	Use to divert air or water to various channels.
<b>SKIMMER:</b>	This is the rectangular outlet at the water level. The skimmer moves surfaces debris to the filter. The water level in the spa should be kept at the center of the skimmer for best operations.
<b>TIMER OPERATION:</b>	Allows you to set the filtering and heating time of the spa.

# THE THERAPEUTIC POOLS (SPAS) — SAFETY RULES

Therapeutic pools or "spas" are usually piped and controlled so that very warm water or hot water, often with air injection, is forced at high velocity into a confined area of a swimming pool or into a small separate pool. Both the energy of the water and the heat furnish certain hydro-therapeutic benefits. These pools are excellent for relaxation, body conditioning and for arthritic and rheumatic problems, but can also be hazardous to the user.

Each person's body and circulation system has different tolerances and responds differently to warm/hot immersion. The amount of time that safe, therapeutic use of spas or hot tubs will vary. Most people in good health find a water temperature of about 102°F to be satisfying and limit time in water at this temperature to 20-30 minutes. Use of alcoholic beverages and certain medications may affect the way your body's system reacts to warm water/hot water immersion. Consult your physician for recommendations.

The Consumer Product Safety Commission has recommended the following "Safety Rules for Hot Tubs":

- A. Spa or hot tub water temperature should never exceed 104°F (40°C). A temperature of 102°F (38°C) is considered safe for a healthy adult. Special caution is suggested for young children.
- B. Drinking of alcoholic beverages before or during spa or hot tub use can cause drowsiness which could lead to unconsciousness and subsequently result in drowning.
- C. Pregnant women beware! Soaking in water above 102°F (39°C) can cause fetal damage during the first three months of pregnancy (resulting in the birth of a brain damaged or deformed child). Pregnant women should stick to the 100°F (38°C) maximum rule.
- D. Before entering the spa or hot tub, users should check the water temperature with an accurate thermometer; spa or hot tub thermostats may err in regulating water temperatures by as much as 4°F (2.2°C).
- E. Persons with medical histories of heart disease, circulatory problems should obtain their physician's advice before using the spas or hot tubs.  
  
Persons taking medications which induce drowsiness such as tranquilizers, antihistamines or anticoagulants, should not use spas or hot tubs.
- G. Never touch or come in contact with any electrical accessory when in your spa or when your body is wet.
- H. Prior to performing any service to the Spa Pak, turn off ALL power to the system at the main power source breaker.
- I. Never turn equipment pak on unless spa is filled with water to the center of the skimmer.

Read all instructions very carefully and completely before installation of the spa may void the warranty. If you have any questions that are not explained in this manual, consult your spa dealer. Consult your local building department for any questions that may need, i.e. plumbing, electrical, etc. Some areas may require a swimming pool or building permit.

## WARNING

Do Not Exceed 104°  
Excessive Temperature Voids Warranty

# SET-UP AND DELIVERY GUIDELINES

## GETTING READY FOR DELIVERY AND SET-UP OF YOUR NEW SPA

Listed herein is a checklist of CUSTOMER REQUIREMENTS AND RESPONSIBILITIES required for delivery and set-up of your new portable spa.

### ELECTRICAL REQUIREMENTS—ALL SELF-CONTAINED SPA—110 VOLT, OR 220 VOLT ELECTRIC HEATERS.

1. Your 110 volt spa requires an isolated (no other appliances or lights on this circuit at any time) 110 volt, 20 amp grounded circuit.
2. Your 220 volt spa requires a 40 amp grounded circuit with a neutral lead.
3. Extension cords are not to be used in conjunction with the operation of the spa. Low voltage damage could result, which is not covered by warranty.
4. If you have any doubts, have your electrical system checked by a qualified electrician. Use #8 wire (up to 40 feet). #6 wire (over 40 feet) 1" conduit, 4 wires.

### SURFACE AND PAD REQUIREMENTS:

1. Your new portable spa must be placed on a uniformly firm, flat and level concrete pad. (We recommend a 3-1/2" thick Slab.) Alternate decking methods require approval.
2. If your spa is to be placed near where sprinklers may hit, adjust or cap them to prevent from hitting on the skirt or spa equipment.

### REQUIREMENTS FOR DECKING, GATES AND BALCONIES:

1. Decking must be constructed to support 150 pounds per square foot.
2. Gates must be self-closing and self-locking (California requirements).
3. Balconies must be constructed to current state and local codes (spa load requirements are 150 pounds per square foot).

# BASIC INFORMATION

## INTRODUCTION:

Congratulations on the purchase of your new Cal Spa. Our purpose is to provide you with a warm and relaxing bath which incorporates a soothing water massage. In order to maximize the pleasure of your spa, you will need to understand how it works.

All spas work in the same general fashion. A high-powered pump pushes water through the jets which can be very relaxing to sore muscles. Spas today have controls that allow the spa owner to manipulate the water and air flow. All spas will vary in regard to the amount of controls, the size of the spa and the amount of options purchased with it.

Do not be afraid to push buttons and turn knobs. Your new Cal spa is built with quality materials and craftsmanship. It is very hard to harm anything by experimenting with the controls. In fact, this is the best way to get to know your spa.

The following operating and maintenance instructions are very important, and must be followed carefully. With the proper care and maintenance, your Cal spa will provide you with years of satisfaction and performance with a minimum of effort.

- A. The pump and heater should be operated a minimum of two hours per day for cleaning and heating. (Refer to page 8 for more information on programming time clock.)
- B. The length of time required to heat your spa to the desired temperature will vary depending on the heater size, season, water temperature, wind velocity, etc. Therefore, this is something each owner must adjust to their liking. We highly recommend using a solar blanket and/or vinyl hard cover to minimize heat loss and protect your spa when not in use. Covers are available from your local Cal Spas Dealer.
- C. Operating the air blower should be limited to when the spa is in use. Continuous operation increases heat loss and dissipates the chemicals.
- D. The replaceable filter cartridge is easy to clean and trouble-free. A routine cleaning is the best practice. Make sure the pump is off, remove the cartridge, wash it off with a water hose and re-assemble. (Be sure not to overtighten the filter retaining ring.) This should be done on a routine basis, whether you feel necessary or not. For more information on filter maintenance, refer to page 7.
- E. Keep spa filled half (1/2) way up the face of the skimmer plate with water. Never allow water level to drop below the bottom of the skimmer opening. If the water level is too low, the skimmer will allow air into the water lines of the pump, causing it to lose its prime (water flow). Running the pump without water flow will damage the pump seal assembly.
- F. The power pak system is located under the wood skirt (on portables). The equipment can be serviced by simply opening the doors. Again, because of the safety power shut-off interlock, the doors must be closed for the equipment to operate.
- G. When spa is on "NO FREEZE PROTECTION" the thermostat will turn the low speed pump "ON" and "OFF" to maintain desired temperature.
- H. If your spa has a redwood skirt, we recommend to be protected by any wood sealer of your choice, repeat as directions suggest.
- I. You should drain spa water at least every 3 months and clean it. Use a liquid cleaner that contains no abrasives. Such cleaners would be, for example: 409, Fantastic, or Soft Scrub. DO NOT use a cleanser or hard brushes. After cleaning, we recommend waxing your spa with Spa Gloss. Fill with regular tap water and chemically treat the water for a clean and healthy spa.

**SECTION II**

**OPERATING INSTRUCTIONS**



# GENERAL PRE-OPERATION INSTRUCTION

## THREE BUTTON PANEL

Different models have different control panels. However, the basic panel consists of three buttons: "Jet", "Light", and "Air". The "Jet" button activates the pump pushing water through the jets. The "Light" button operates on two modes "ON" and "OFF". Most spas have the option to add air. The "AIR" button activates the air blower injecting air through the air channel producing a soft bubbling effect.



## PRIMING PUMP

It is important to make sure that all of the air is out of the equipment pak before operating. To do this follow the procedures below.

Turn power off at the breaker.

- b. Fill spa with water half-way up the face of the "SKIMMER".
- c. Open doors and bleed air from **AIR RELIEF VALVE** located at the top of the pressure **FILTER** located in the equipment area. (SEE **FILTER DIAGRAM**, PAGE 7.)
- d. Make sure **GATE VALVES** are in the up position, and hand tighten all fittings or **QUICK DISCONNECTS**.
- e. Set **TOGGLE SWITCH** on **NO FREEZE PROTECTION** and turn **THERMOSTAT** down. (SEE **MODULAR EQUIPMENT DIAGRAM**, PAGE 11.) *Note: Depending on model, thermostat can be located on the control panel or control box.*
- f. Turn power on at the breaker.
- g. Close doors and turn **JETS** on for 1 minute, then turn off.
- h. Open doors, turn **THERMOSTAT** to desired temperature. (LOCATED ON EITHER TOP SIDE CONTROL PANEL OR CONTROL BOX.)
- i. Leave **TOGGLE SWITCH** on **NO FREEZE PROTECTION** and continue heating until desired temperature has been reached. Usual heating time is 4 to 7 hours. (Remember spa doors must be closed for the equipment to operate.)
- j. After spa has reached desired temperature, set **TOGGLE SWITCH** to **TIMER OPERATION** and set **TIMER**. (SEE **TIMER DIAGRAM**, PAGE 8.)

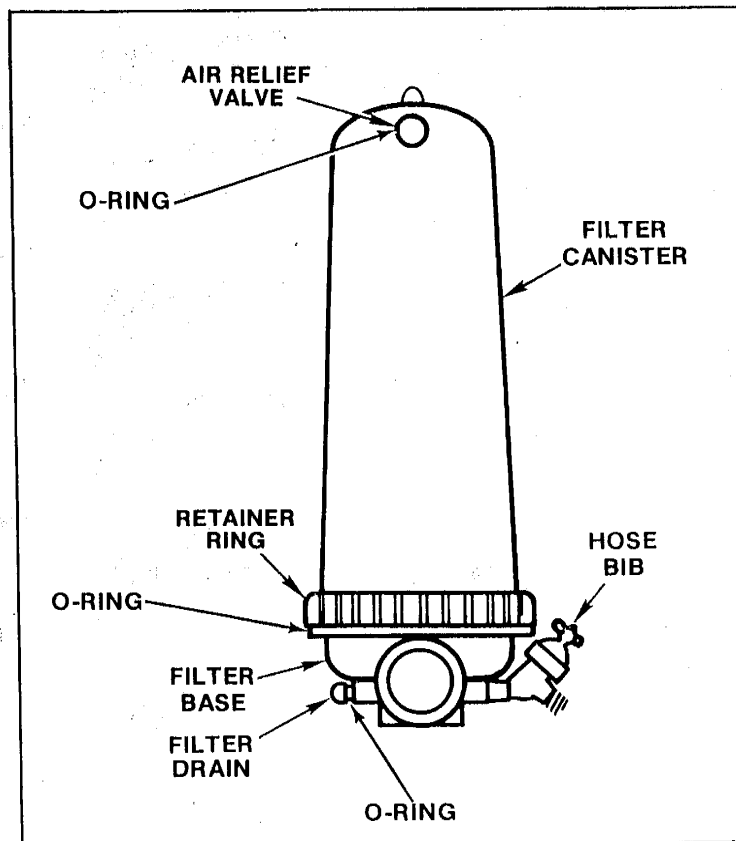
# FILTERING MAINTENANCE

Filteration starts as soon as flow is steady through the filter. As the filter cartridge removes the dirt from the spa water, the accumulated dirt causes a resistance to flow. A dirty cartridge will decrease flow and may cause spa not to heat properly.

## CLEANING AND REPLACING CARTRIDGE

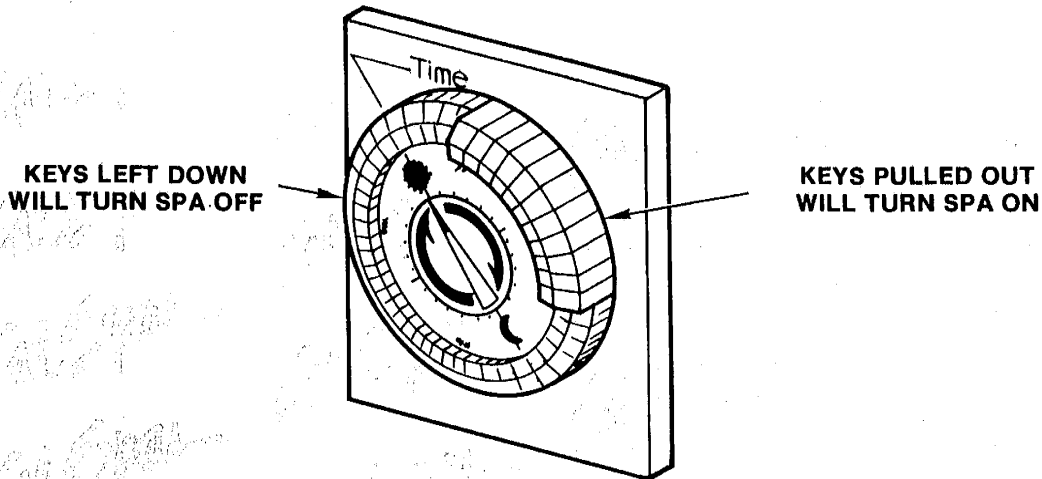
Your Cal Spa filter has been designed to maintain as easy as 1-2-3. The filter should be cleaned at least once every two weeks.

- a. Turn power off at the breaker.
- b. Close **GATE VALVES**. This will prevent spa from draining. (SEE EQUIPMENT DIAGRAM, PAGE 11.)
- c. Attach garden hose to **HOSE BIB** and open. This will allow excess water to drain from filter. (SEE MODULAR EQUIPMENT DIAGRAM, PAGE 11.)
- d. Unscrew **RETAINING RING** and remove **FILTER CANISTER**.
- e. Remove **CARTRIDGE** and clean with a high pressure nozzle attached to a garden hose or soak in cartridge cleaner.
- f. Clean **O-RINGS** and apply a very light film of vaseline to all **O-RINGS** and threads. (SEE **FILTER DIAGRAM FOR LOCATION.**)
- g. Re-install **CARTRIDGE** in **FILTER CANISTER** and place back on **FILTER BASE**.
- h. Screw **RETAINING RING** into **FILTER CANISTER**. DO NOT OVERTIGHTEN.
- i. Close **HOSE BIB**, and remove garden hose.
- j. Open **GATE VALVES** and release air from filter **CANISTER** by opening the **AIR RELIEF VALVE** at the top of the **FILTER CANISTER**. When a steady stream of water comes out, hand tighten.



Note: DO NOT overtighten retaining ring, air relief valve, drain plug or other connections.

# TIME CLOCK (220 VOLTS UNITS)



## TO SET TIMER:

- a. Simply pull out keys to set time desired for the spa to run. (Each key is equivalent to 1/2 hour.) We recommend 2 hours a day—one in the A.M. and one in the P.M.  
Keys left pushed in will turn spa off. (As shown above)
- c. Turn dial clockwise to set the time of day.
- d. Your spa will be heated and filtered daily, to the temperature set on thermostat, for the programmed time.

## NOTES

Your time clock controls units are equipped with a "TOGGLE SWITCH" located above the timer dial on the control box.

**TIMER OPERATION** — The time clock will turn the low speed pump on or off at times selected by user. This is when the spa water is filtered and heated. (Water will heat to temperature set on thermostat, provided running time is adequate.) Unit heats 5° to 7° per hour with cover on (220V).

For ease of operation, use the **NO FREEZE PROTECTION** during the initial starting and heating of your spa. **NO FREEZE PROTECTION** is the same as automatic, with a lower temperature setting.

# WINTERIZING AND DRAINING THE SPA

## WINTERIZING:

In areas of the country where the temperature drops below 32°F, it is important to follow these instructions:

1. If the spa is not going to be used, drain completely and store in garage.
2. If you are going to use your spa, set the toggle switch on **NO FREEZE PROTECTION**. (SEE MODULAR EQUIPMENT DIAGRAM, PAGE 11.) This will allow the spa to stay warm. Do not turn unit off with water in the spa, as frozen water may burst plumbing.
3. In areas where sub-freezing temperatures can be expected, the filter should be drained and/or removed from its operating location and stored indoors. Remove and clean cartridge, store with filter housing in secure place. (SEE FILTER DIAGRAM, PAGE 7.)

## DRAINING:

Your spa should be drained every 3 months and filled with clean tap water. There are two recommended methods of spa draining:

### METHOD ONE:

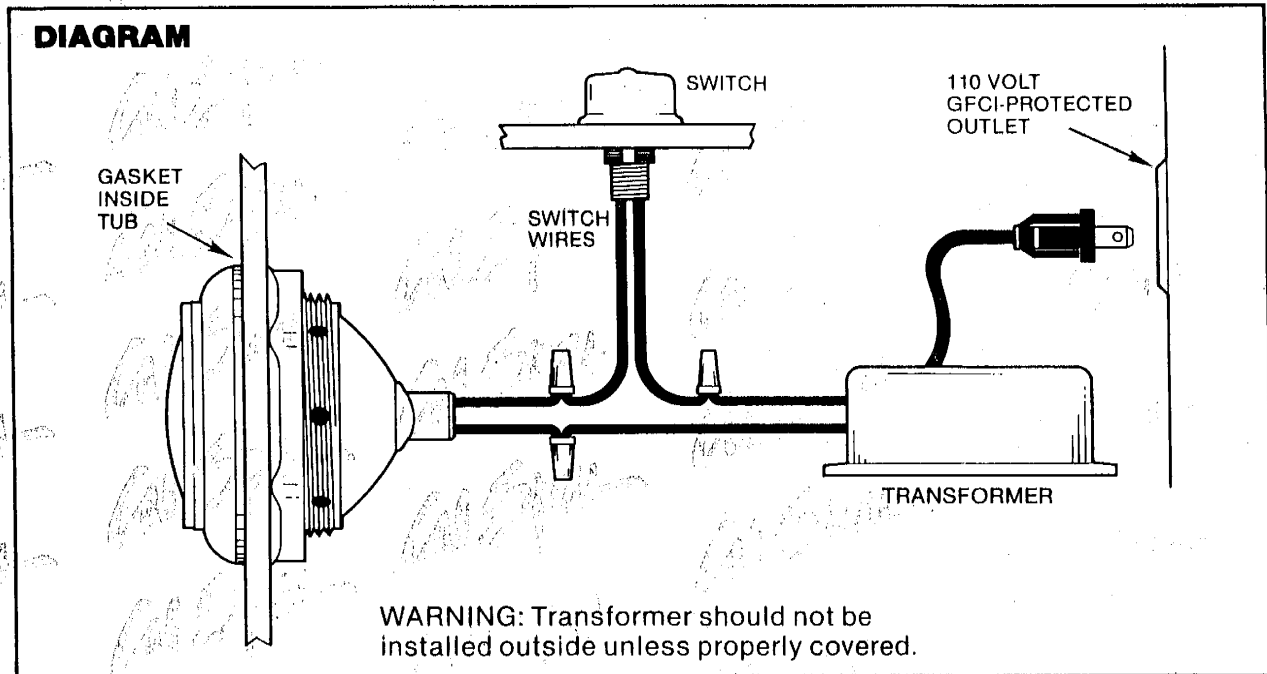
1. Turn off power at breaker.
2. Hook up a garden hose to the **hose bib** located in spa equipment area and open **hose bib**. (SEE MODULAR DIAGRAM, PAGE 11.)
3. When water begins to drain out of the hose, open **air relief** valve at the top of the **pressure filter** (SEE FILTER DIAGRAM, PAGE 7.) and drain water in a convenient place.

### METHOD TWO:

1. Using a garden hose or 1-1/2" flex, place one end in a convenient place for draining.
2. Hold other end of hose on the center of a jet, turn jets on. When water starts to flow out of the other end of the hose, submerge hose into the spa and turn off jets, an automatic syphon will begin.

A small amount of water will remain in the bottom of the spa. This can be taken out by hand or with a WET/DRY vac.

# SPA LIGHT



## SPECIFICATIONS

12 volt, 20 VA  
Flushing—energy limiting  
UL—listed power supply

Cord Length—20 feet  
Bulb Life—120 hours  
Bulb type—912

## LAMP REPLACEMENT

Open doors to spa. Remove lamp from back of light assembly by turning and pulling at the same time. Replace lamp with a 912 bulb and reinsert socket completely in light fixture.

## WARNING

Transformer should not be installed outside unless covered.

## CAUTION

Due to possible overheating, the vent holes at the back of the light housing must be left open. Do not insulate to the point of contact with this part of the light.

# WARNING

Do Not Exceed 104°  
Excessive Temperature Voids Warranty

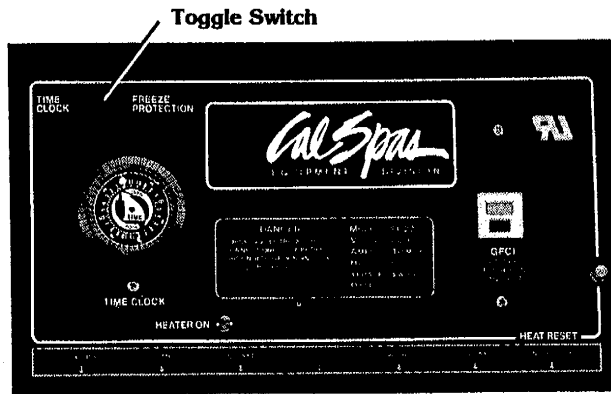
# MODULAR EQUIPMENT

**Cal Spas**  
 A DIVISION OF CALIFORNIA ACRYLIC INDUSTRIES, INC.

# A Great Spa Deserves a Great Equipment Pack

Cal Spas, the World's Largest Spa Company proudly introduces the latest in our evolution of "state of the art" equipment packs. Cal Spas first introduced the tool-free modular design years ago as an innovation to the spa industry. The simple tool-free design allows troubleshooting to be done by "hands only" by the owner, eliminating the need for technicians or service calls. That has not changed for the 90's.

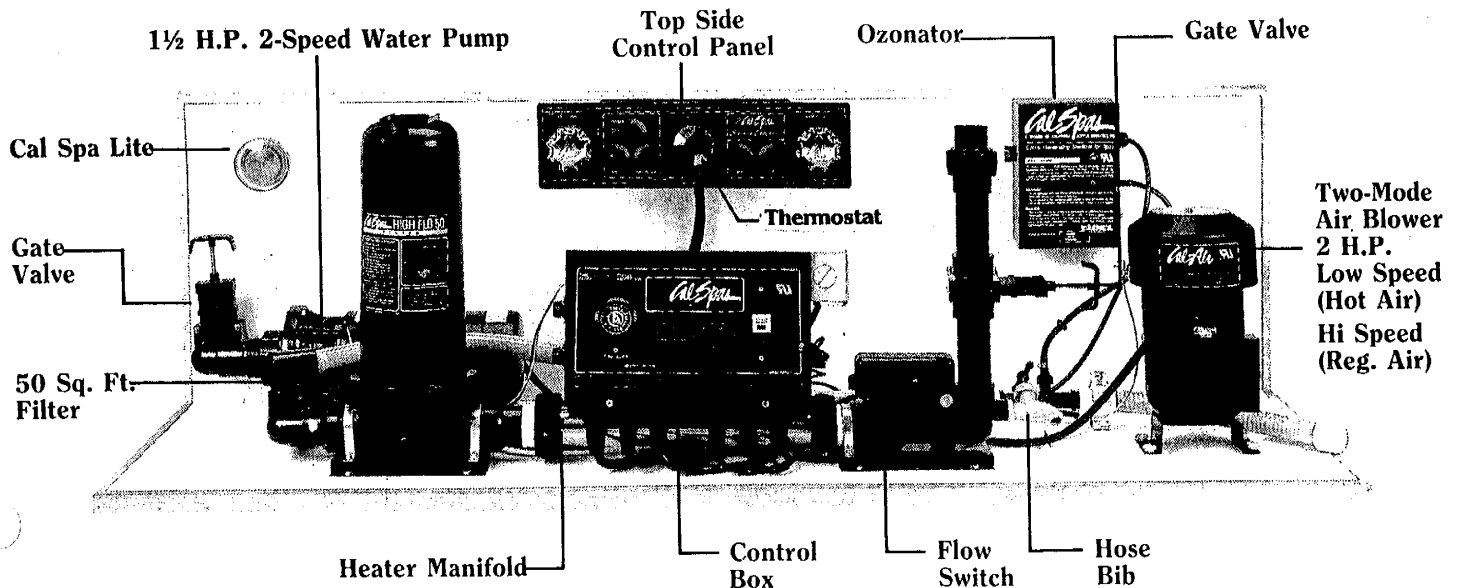
For years, spa companies have strived to compact equipment into as little space as possible within the spa cabinet. Our engineers at Cal Spas have done the opposite.



By separating the components that comprise your equipment pack, we've allowed for better cooling, increased flow performance and increased longevity. Cal Spas also has instituted a 3 step testing program for equipment: the individual components are tested prior to assembly, the assembled packs are tested, then the entire spa functions are water tested before a Cal Spa is

delivered. The extra effort and extensive testing means your equipment pack will stand the test of time, and provide you the same pleasurable performance it did brand new.

Thanks to Cal Spas' engineers' sensible design, anyone can repair their own spa with their bare hands and a phone call.

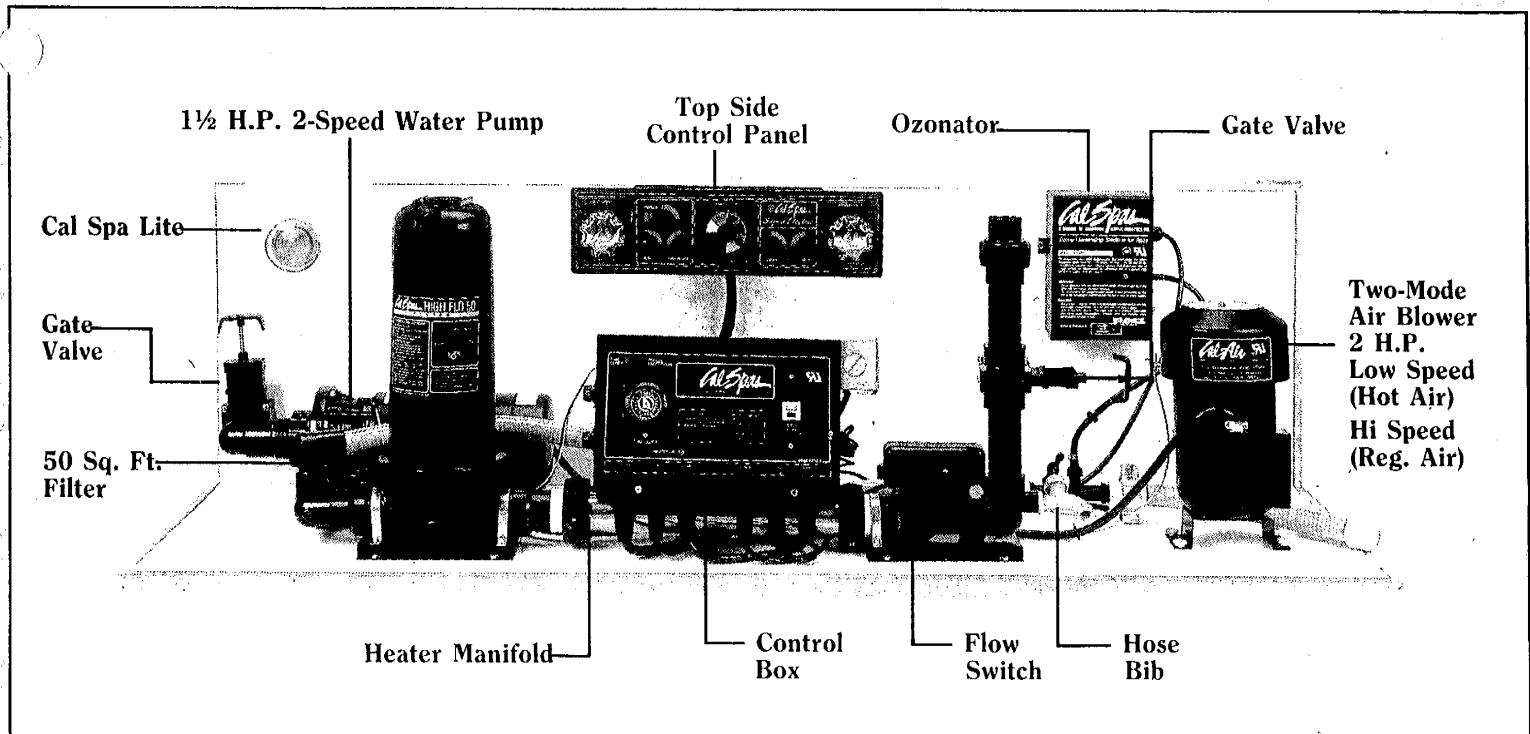


# CAL SPAS SUPRA OPERATIONS

The Cal Spa state-of-the-art equipment is designed to be able to identify and locate individual parts for trouble shooting or repair. Remember, whenever you open the doors to the equipment area the system will automatically shut off because of the interlock device located inside the doors. The following information will help you learn how to properly locate and maintain your spa equipment.

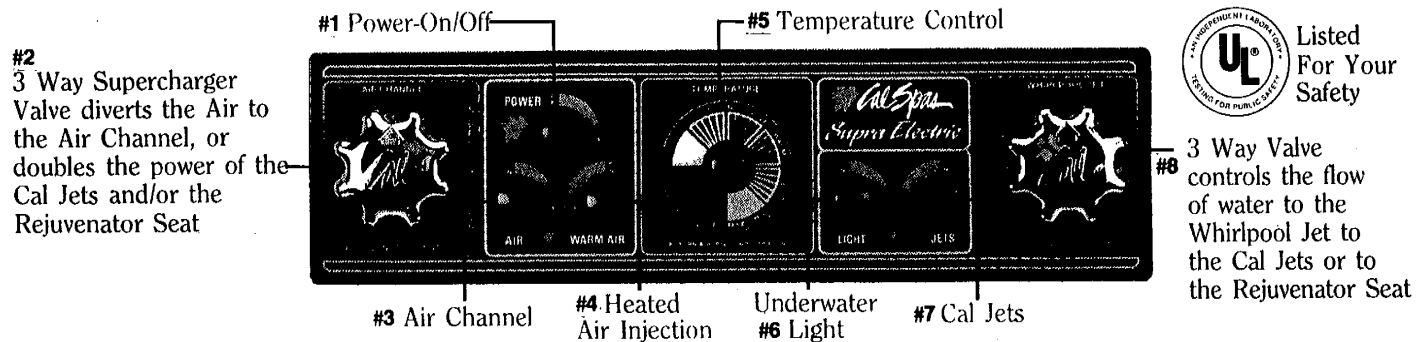
Turn breaker off at house before you begin. Open both doors to spa.

1. Fill spa to the proper level half-way up to the face of the skimmer. Open **GATE VALVES** (T-handled valves pulled upwardly), hand-tighten all fittings including hose bib and air relief valve.
2. Check all plugs, verifying all plugs are in **RECEPTACLES**.
3. Priming the pump or bleeding the air out of the system is an important factor. To insure that all air is out of the equipment pak before operating, open the **AIR RELIEF VALVE** on the top of the **PRESSURE FILTER CANISTER**. Once a steady stream of water is coming out, hand-tighten **AIR RELIEF VALVE**, being careful not to overtighten. The **SKIMMER FILTER** is bled through the **AIR RELIEF VALVE**, located on the top of the **FILTER LID**, except that **SKIMMER FILTER** is a vacuum type, therefore there will always be some air in the canister.
4. When the pump priming is accomplished, follow Pre-Operation Instructions on page 6, Items D-J.
5. Appropriate timer use is two hours every day. We suggest 1 hour in the morning, and the second in the evening. This will allow the spa to properly filter the water, and at the same time heat the spa. The timer rotates in a clockwise direction and the time is verified by lining up the time on the dial at the indicator arrow in correlation with the time of day.



# SUPRA ROTARY SWITCH CONTROL PANEL

## New — “Light Switch” Style Mechanical Top-Side Controls



*When was the last time you replaced a light switch at home? Never? Cal Spas function controls work the same way. A simple turn of the switch on our clearly marked control panel handles all spa functions within easy reach while enjoying your spa.*

### OPERATION INSTRUCTIONS ON THE TOP SIDE CONTROL PANEL

Power to the top side control panel is operated by Knob #1. Knob #1 does not control the low speed pump. The low speed pump is controlled by either the thermostat setting or the timer.

After air blower being activated by either Knob #3 or #4, Valve Knob #2 is a three-way Supercharge valve which diverts the air to the air channel, or doubles the power to the Cal Jets and/or the Rejuvenator Seat.

Knob #3 activates the Air Blower on high speed mode.

Knob #4 activates the Air Blower on low speed mode blowing warm air.

Knob #5 controls the temperature activating the heater and low speed pump.

Knob #6 controls spa light.

Knob #7 activates the high speed pump for stronger water pressure.

Knob #8 is a three-way valve which controls the flow of water to the Jets, Whirlpool jet or to the Rejuvenator Seat.

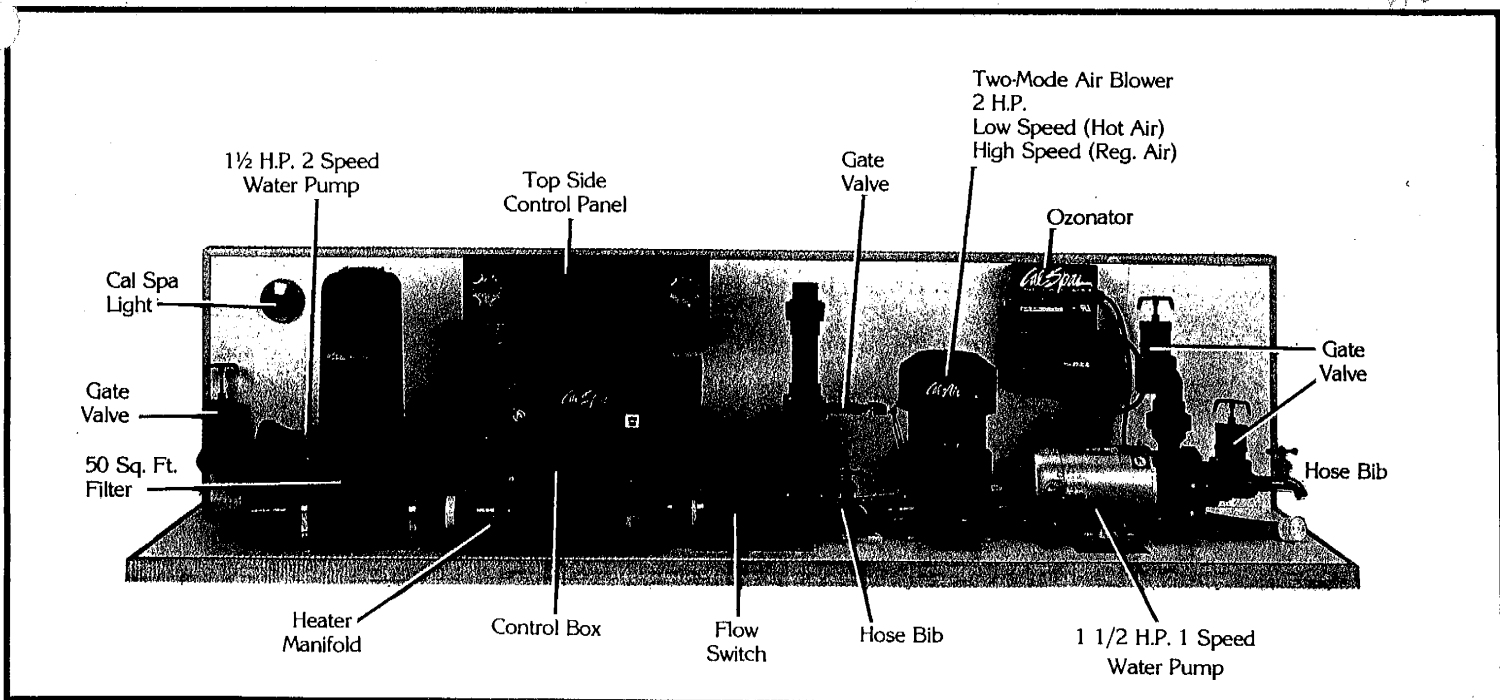


# CALIFORNIA CLASSIC OPERATION

The California Classic Electric 220 Spa System is quite unique from the others because it offers a Dual Pump System. One pump has been dedicated to the Whirlpool Jet, delivering a true penetrating hydro-massage. The other pump has been plumbed to the remaining spa jets and filtration system. Like all other Cal Spas Equipment, this unit has been designed for the consumers ease of operation.

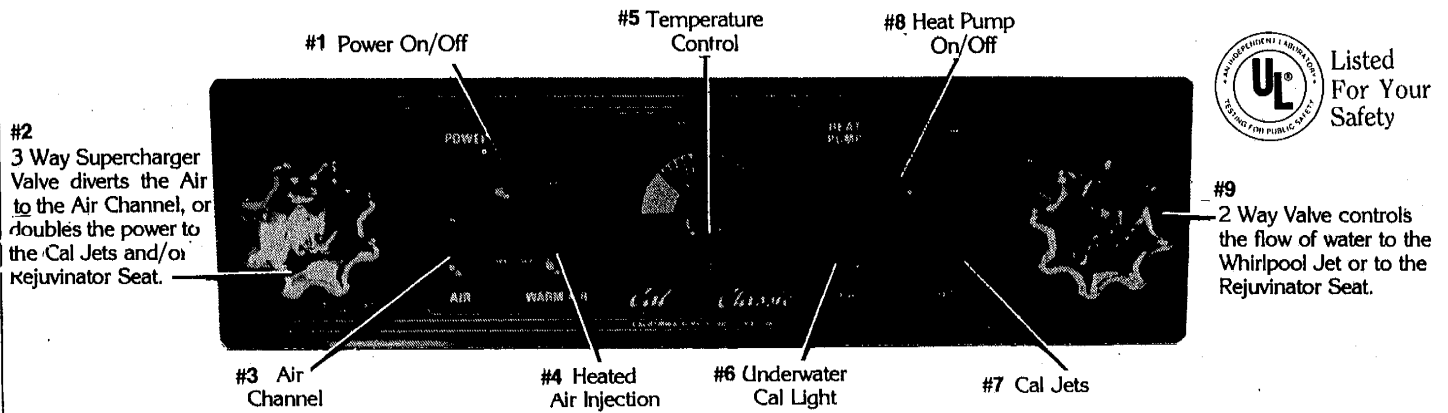
**Turn breaker off at house before you begin. Open both doors to spa.**

1. Fill spa to the proper level—half way up to the face of the skimmer—open gate valves (T-handled valves pulled upwardly). Hand tighten all fittings that may have come loose in shipping or delivery including hose bib and air relief valve.
2. Check all plugs, verifying all plugs are in receptacles.
3. To insure that all air is out of the equipment before operating, open the air relief valve at the top of the pressure filter canister. Once a steady stream of water is coming out, hand tighten air relief valve, being careful not to overtighten.
4. The Hydro Jet pump is located behind the pressure filter. To insure all air is out of the lines, slightly open union at the suction side of the pump. Once all air has been released, hand tighten the union.
5. The skimmer filter is bled through the air relief valve located on the top of the filter lid, except that the skimmer filter is a vacuum-type filter, therefore there will always be some air in the canister. When pump priming is accomplished, follow Pre-Operation Directions on Page 6, Items D through J.
6. Appropriate time use is 2 hours everyday. We suggest one hour in the AM and the other in the PM. This will allow the spa to properly filter the water and at the same time heat the spa. The timer rotates in a clockwise direction. The time is verified by lining up the time on the dial of the indicator arrow in correlation with the time of day.



# CAL CLASSIC ROTARY SWITCH CONTROL PANEL

## New — "Light Switch" Style Mechanical Top-Side Controls



When was the last time you replaced a light switch at home? Never? Cal Spas function controls work the same way. A simple turn of the switch on our clearly marked control panel handles all spa functions within easy reach while enjoying your spa.

Power to the top side control panel is operated by Knob #1. Knob #1 does not control the low speed pump. The low speed pump is controlled by either the thermostat setting or the timer.

After air blower being activated by either Knob #3 or #4, Valve Knob #2 is a supercharge valve which diverts the air to the air channel, or doubles the power to the Cal Jets and/or the Rejuvenator Seat.

Knob #3 activates the air blower on high speed mode.

Knob #4 activates the air blower on low speed mode blowing warm air.

Knob #5 controls the temperature activating the heater and low speed pump.

Knob #6 controls spa light.

Knob #7 activates the high speed pump for stronger water pressure.

Knob #8 activates the heat pump working in conjunction with the heater on two positions, Whirlpool and Rejuvenator Seat.

Valve Knob #9 is a 2-way valve which controls the flow of water to the whirlpool jet or to the Rejuvenator Seat.

# PRE-PLANNING STEPS FOR INSTALLATION

Selecting the right site for installing your spa is very important. Ease of access, surrounding, architectural styling, landscaping, and other recreational areas are factors in choosing your location.

In order to determine the amount of supplies and length of pipes needed, carefully lay out the measurements of the spa site on paper. The following are a number of considerations that will be helpful in planning:

1. Local codes pertaining to fences, gates, electrical, and plumbing.
2. Finished height of spa rim.
3. Location of pump, filter, and heater.
4. Good site drainage.
5. Wind direction and shielding.
6. Surrounding decking.

**DO NOT INSTALL PUMP AND HEATER MORE THAN 25 FEET FROM SPA IF POSSIBLE.**

**DO NOT INSTALL EQUIPMENT HIGHER THAN SIX INCHES ABOVE WATER LEVEL OF SPA OR LOWER THAN THE BOTTOM LEVEL OF THE SPA.**

## EXCAVATION

Check local codes for trench depths. Dig hole 4 inches deeper than finished spa depth for sand base and one foot large all around to allow for plumbing and backfill. See drawing.

## PRE-PLUMBING SPA

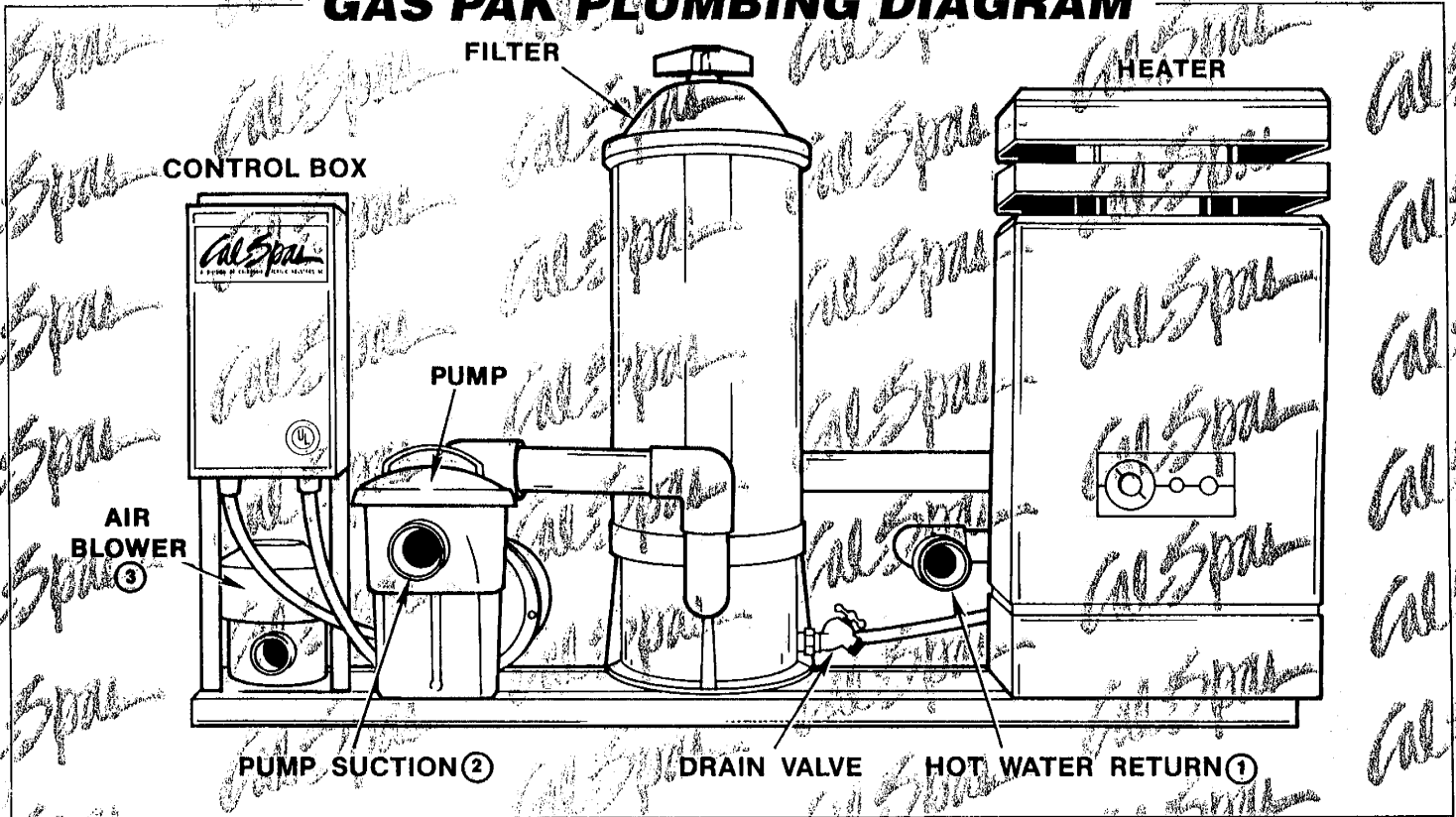
The spa should be pre-plumbed and "water-tested" before setting it into the hole. Without enough people to help carefully set this spa into the hole, pipes and fitting can be knocked loose. Be sure to have plenty of help at this critical time.

# WARNING

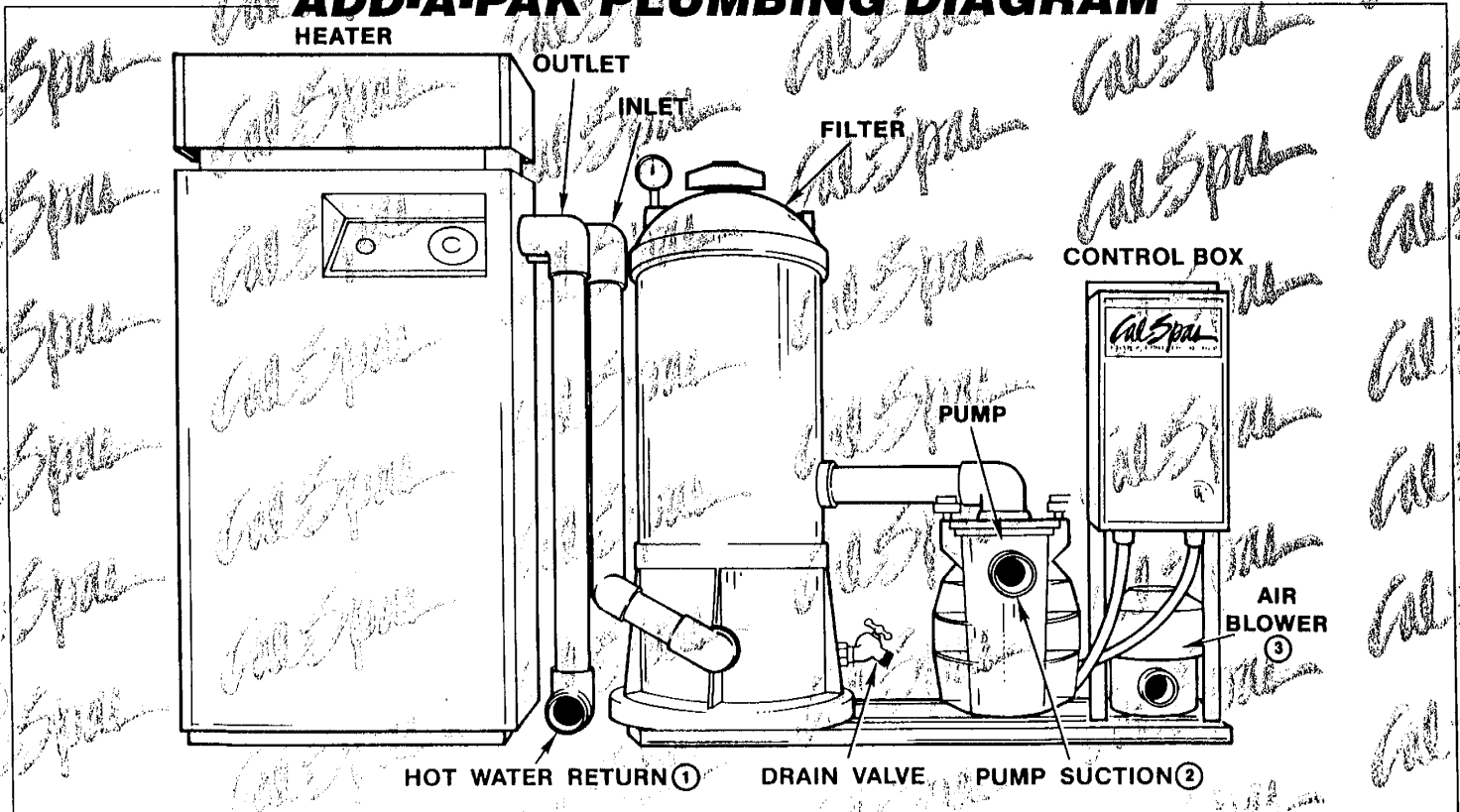
Do Not Exceed 104°  
Excessive Temperature Voids Warranty

# SPA INSTALLATIONS

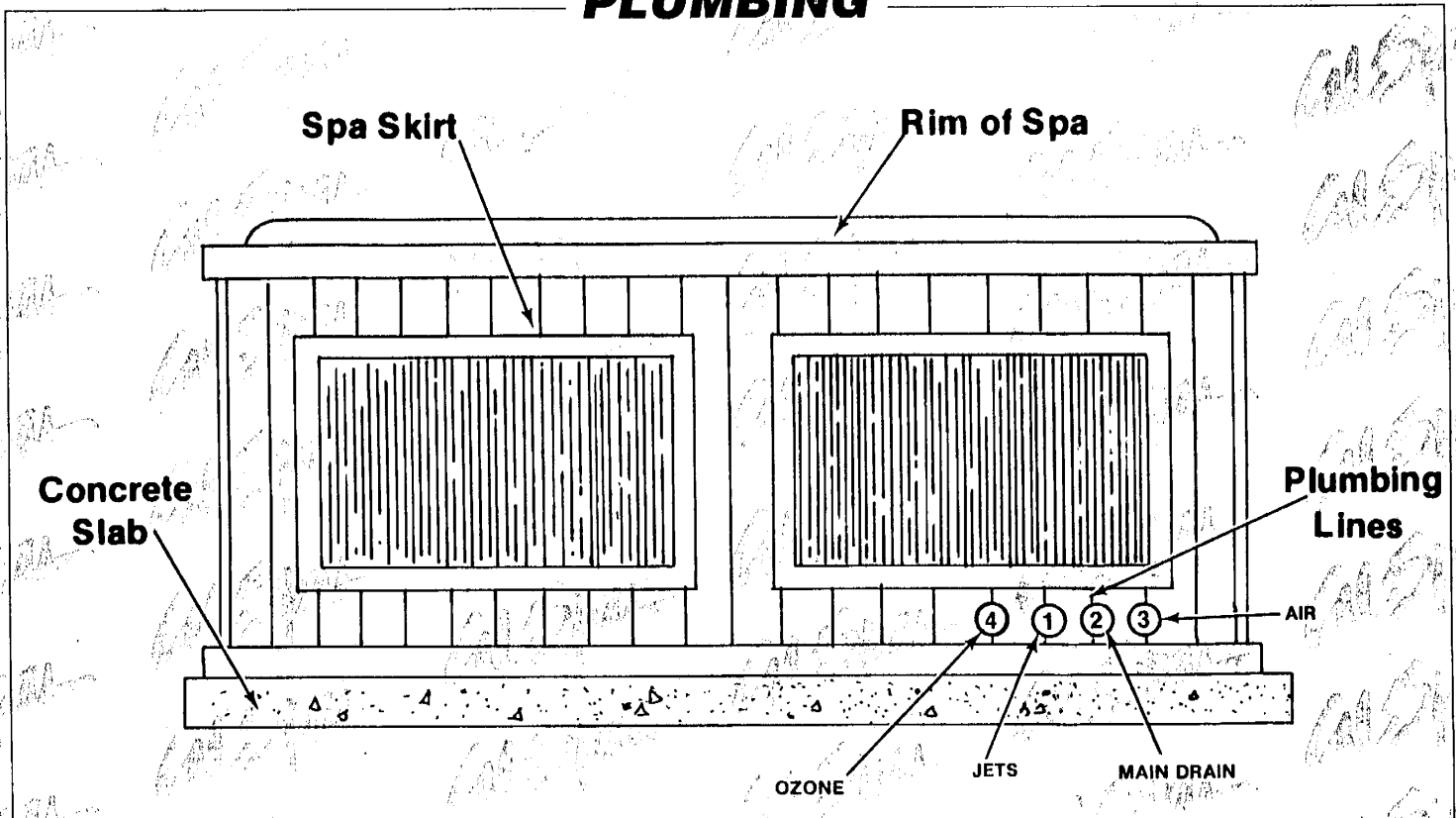
## GAS PAK PLUMBING DIAGRAM



## ADD-A-PAK PLUMBING DIAGRAM



# PLUMBING



## Portable Spa Gas Pack Hook-up.

The hook-up lines are located on the back side of your portable spa. Facing the back side the hook-ups are generally located in the lower right-hand portion of the spa.

Line #1 illustrated above is the water inlet, which connects to the hot water return line of the heater.

Line #2 illustrated is the suction line which connects to the front side of the water pump.

Line #3 is the air inlet which connects to the air blower of your equipment pack. (Note: be sure to loop plumbing a minimum of 18" above the water level of your spa. See page 19.)

A quick method to verify the location of each line is to:

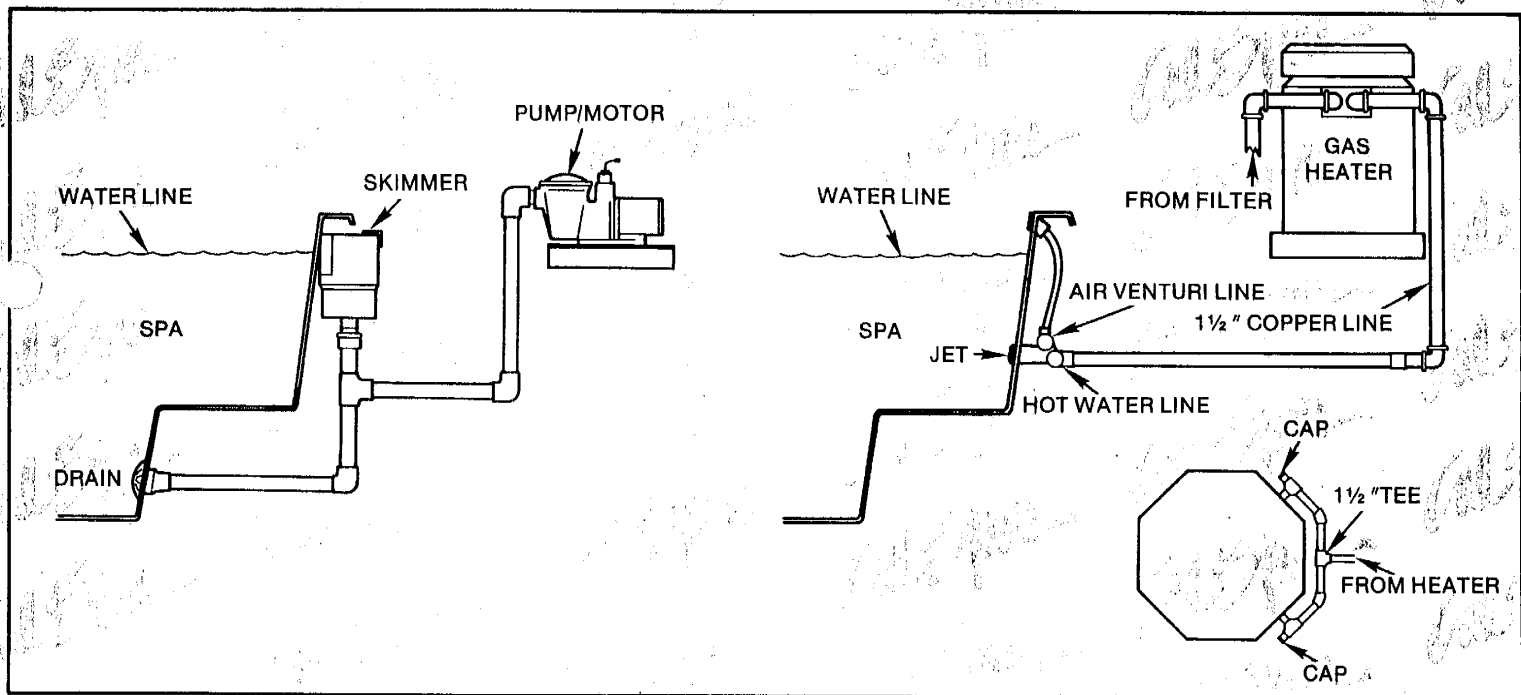
- (A) Set the Air Control Diverter Valve to the Air Channel Position.
- (B) Set the Water Control Diverter Valve to the Jet position.
- (C) From the back side of your spa, place a garden hose into one of the lines. Wrap a cloth around the hose and the line so that water will not back out of the line.
- (D) Turn on the garden hose and watch for water spurting into your spa. If water is spurting through the air channel, this would indicate the air inlet line. If water is entering through the jets, this would indicate the water inlet line.

# PLUMBING

After it has been decided where the jets are to be installed and marked, the holes can be cut in the spa wall. A standard hole saw of the proper size can be used. Next, the thru-wall fittings and the jets can be installed. Depending on the fitting manufacturer and how the assembly of the jet is accomplished, it is recommended that a fine bead of clear silicone be placed on the inner flange flush to the spa wall. If you are working with a spa that has a tight radius, it may be necessary to place the gasket to the inside of the spa wall and possibly use two gaskets.

When tightening the jet to the wall fitting, never overtighten. A good rule is approximately one and one-half turns beyond tight.

Prior to plumbing the spa, it should be predetermined at which point on the spa it should be stubbed out. The plumbing should be stubbed out to line up with all piping that goes to the equipment.



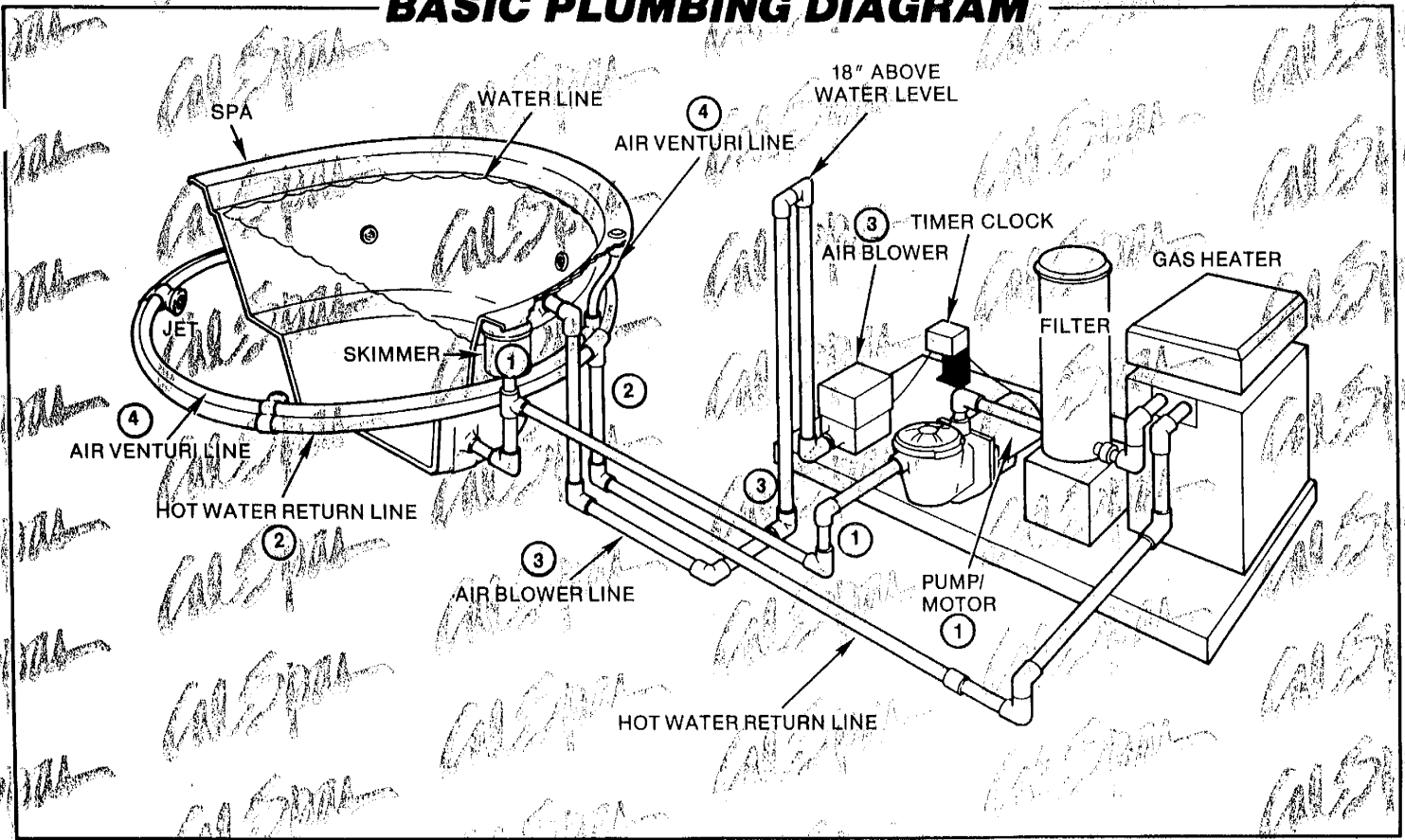
# PLUMBING

The manifold piping around the spa can now be completed. The jets that have been installed in the spa can now be joined together through common plumbing. It isn't necessary to completely loop the plumbing to all the jets to get equal flow. It is, however, necessary that the inlet from the pump be split equally among the jets. The line that supplies the air to the venturi should also be plumbed in the same manner. This air line should be brought up to the highest point possible on the water much faster than if it is plumbed at a lower depth.

The main drain can be installed in the same manner as the jets using a hole saw or a jigsaw to cut the hole, and silicone to insure a proper seal. The main drain plumbing should be interconnected with the skimmer plumbing by the way of a "T" fitting. The line from this "T" to the pump should be 1-1/2" inches. The main drain should be equipped with an approved anti-vortex cover or other safety device.

The main lines that run from the equipment to the spa should never be reduced in size from that recommended by the manufacturer. Any reduction in size could dramatically impair the performance. Straight runs of pipe, eliminating turns and 90° ells, will also improve performance. Several diagrams are included in this booklet that should be helpful in pre-plumbing and setting up the equipment.

## BASIC PLUMBING DIAGRAM



# INGROUND INSTALLATION

Water test spa above ground prior to placing in ground. Also, install no decking around spa until spa has operated for an adequate amount of time to assure all parties that there are no leaks.

Mound 8" of wet sand in bottom of excavation for spa to rest on.

Before lowering spa into excavation, be sure that the finished rim elevation is established in relation to ground level.

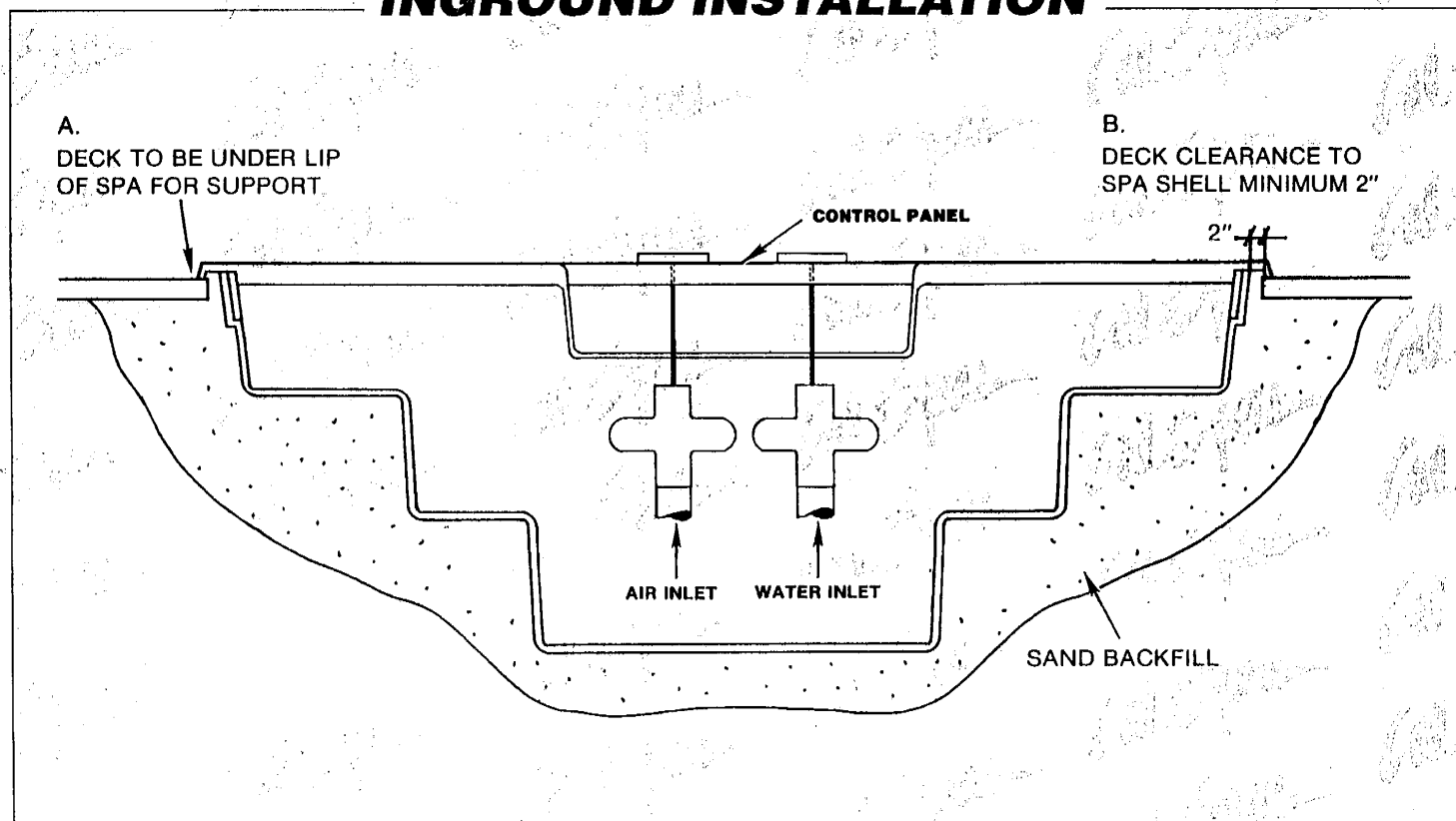
Carefully lower spa into excavation centering on the mound of sand. With a downward force and slightly rotating back and forth, work spa into measured level. Pack sand around main drain and under bottom of spa, leaving no voids.

Set 2 x 4 on rim of spa with level, then rotate 2 x 4 checking level in all directions. Make sure that sand is filling all voids under bottom.

Prior to backfilling the remainder, fill the footwell area of the spa with water to assist in leveling. During the backfilling, fill all voids under bottom.

Backfill in one foot increments. After each level, use a water hose to swirl water in and around backfill, being careful not to flood the excavation. This process will ensure that all the sand is formed around the sides of the spa leaving no voids after the water has drained through. Do not backfill sand around jet plumbing of the spa until spa has been completely hooked to the equipment and run to check for possible leaks.

## INGROUND INSTALLATION

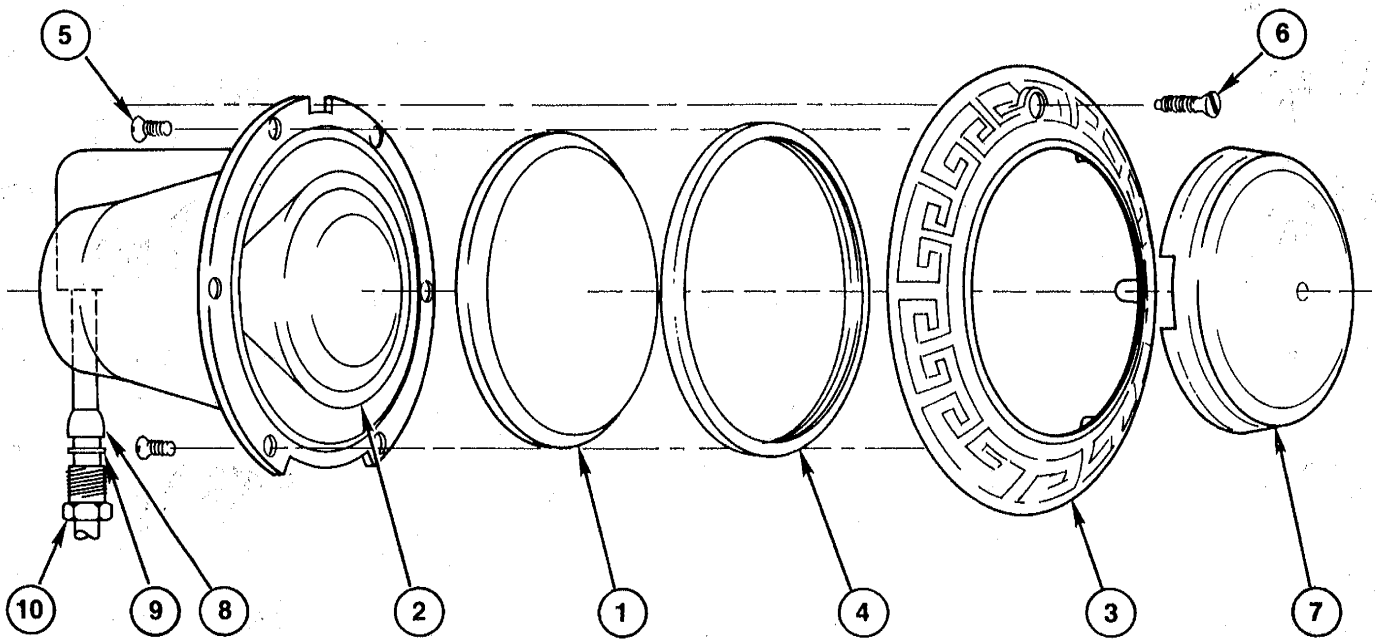


## WARNING

Do Not Exceed 104°  
Excessive Temperature Voids Warranty

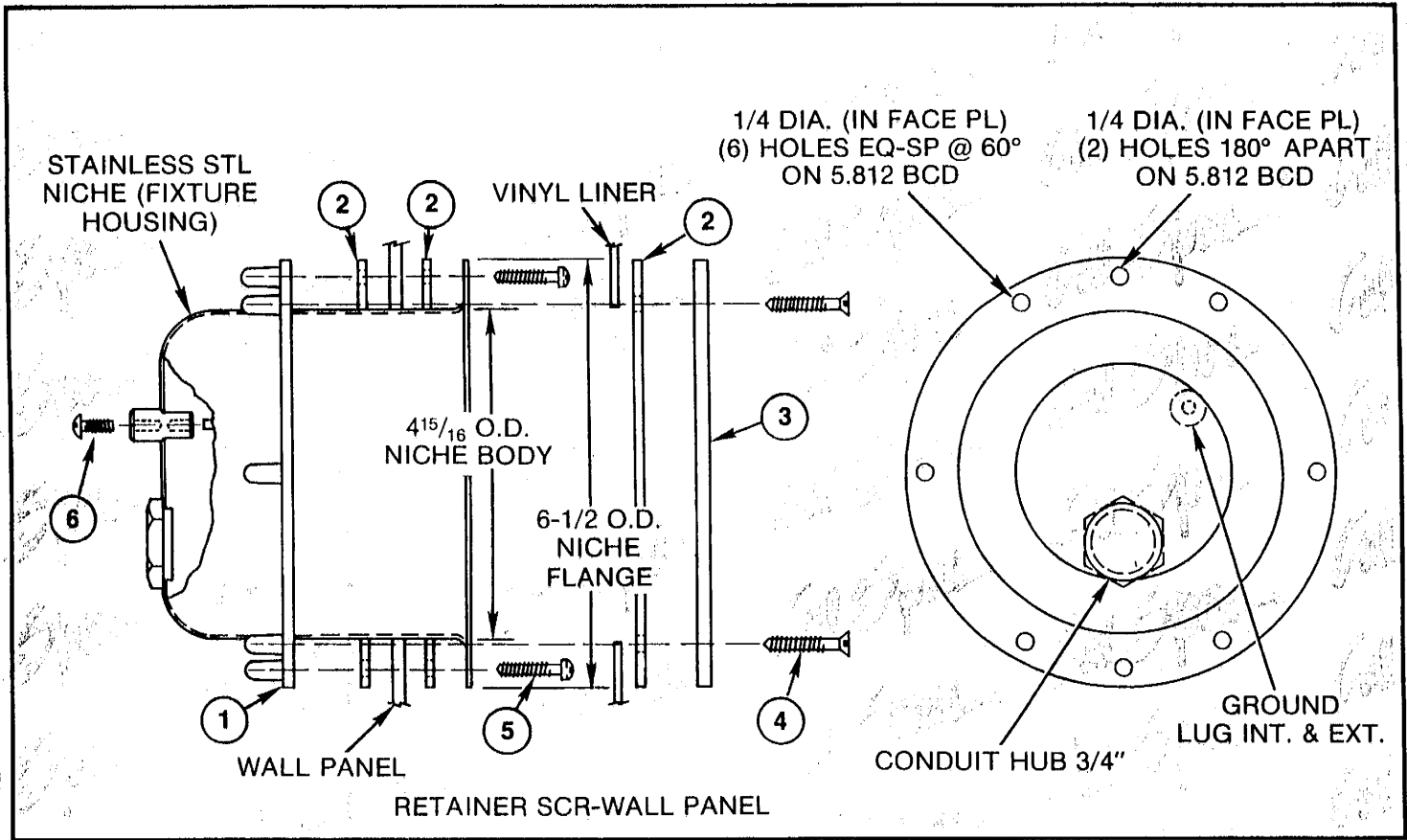


# INGROUND SPA LIGHT UNIT



1. Lens clear, 4" diameter, tempered
2. Floodlamp, medium base, 100 watt 120 volt
2. Floodlamp, medium base, 100 watt 12 volt
3. Face ring, brass-chrome
4. Gasket for 4" diameter lens
5. Screw, stainless steel 10-24 x 1/2" (6 required)
6. Pilot screw captive gum washer
7. Kwik-change color lens, red
7. Kwik-change color lens, blue
8. Grommet, 1/2"
9. Friction ring, 1/2"
10. Compression plug

# INGROUND SPA LIGHT NICHE



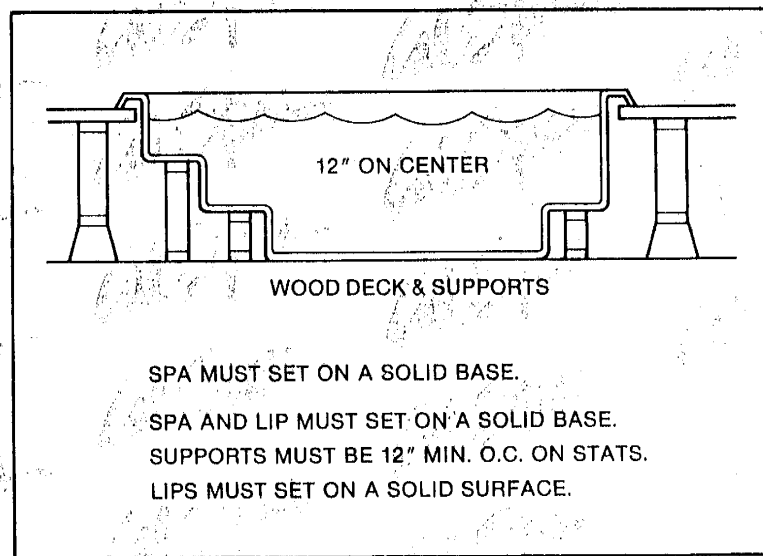
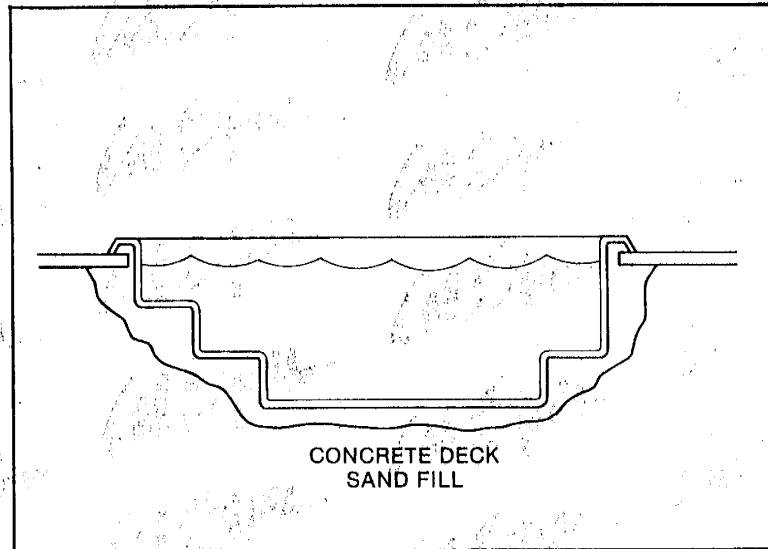
1. Back-up ring, brass, for niche
2. Gasket, each, for niche (3 required)
3. Sealing ring, brass-chrome for niche
4. Sealing screw, each, 10-24" x 1-1/8" flat head, stainless steel for niche (6 required)  
Mounting ring, brass
5. Screw, retainer, fillister head, 12-24" x 3/4"
6. Screw, grounding 10-24" x 1/2"

## WARNING

Do Not Exceed 104°  
Excessive Temperature Voids Warranty

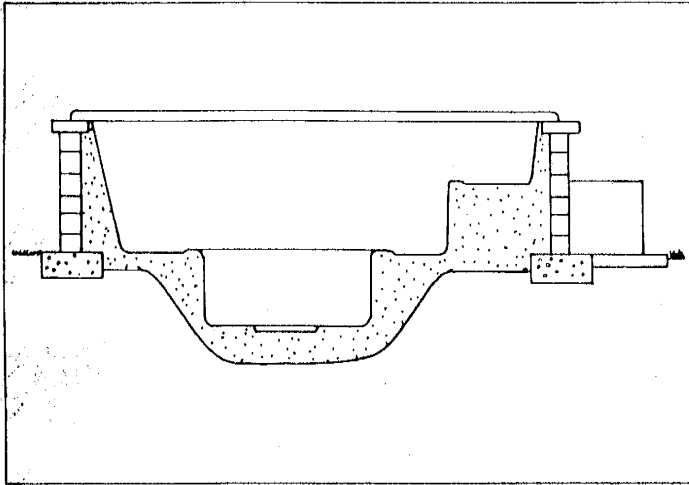
# INGROUND SPA DECK REQUIREMENTS

- A) Deck must go under lip of spa uniformly for proper lip support. Lip is not to bear any weight from spa. Deck is only to stop lip from flexing when stepped or sat on.
- B) Deck must not be poured up against spa, since cement expands and contracts as temperature changes. Leave a gap of 2" from shell for proper structure protection.

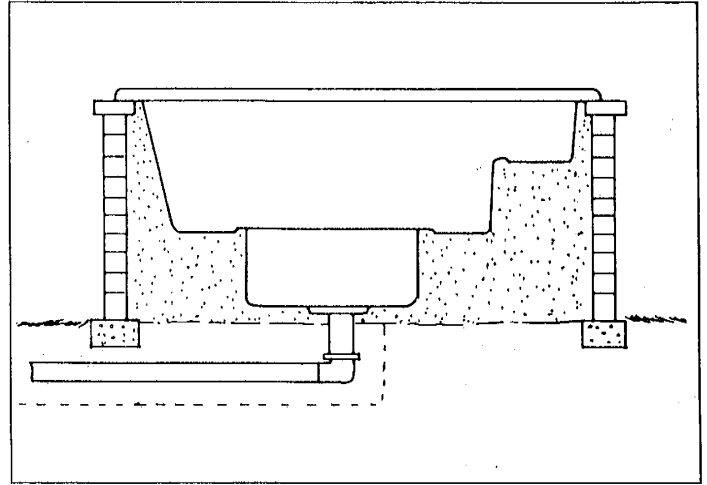


**WARNING**  
Do Not Exceed 104°  
Excessive Temperature Voids Warranty

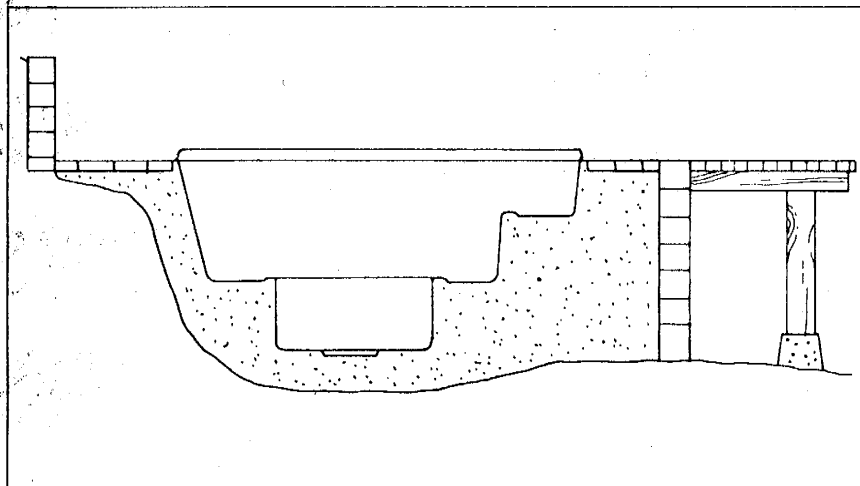
# INSTALLATION TECHNIQUES



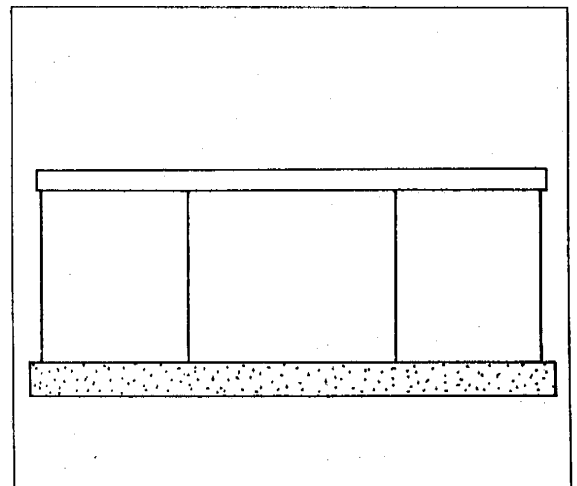
LEFT: Excavation for partially above-ground spa will depend on how deep you want to set it. In this example, excavation is required for the footwell area of the spa and for concrete footings for retainer walls.



RIGHT: Above ground spas require a trench under wall footings for plumbing. Walls can be brick, concrete block or poured concrete.



On a steep hillside, retainer walls are used on both the uphill and downhill sides of the spa excavation. In some situations, this method may be easier than trying to level a large area around the spa.



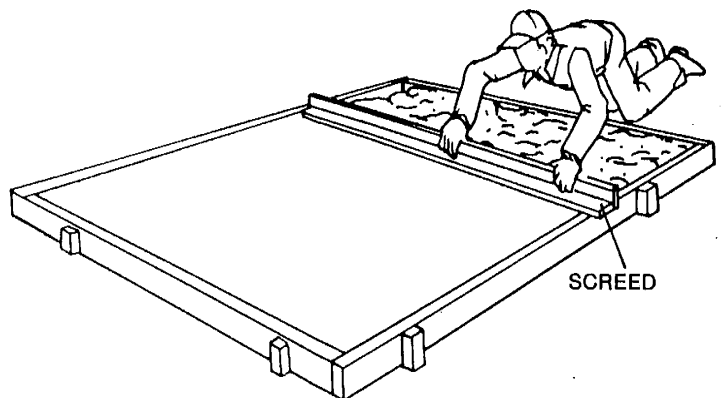
Hillside tub must have a retainer wall on uphill side only. This installation requires a minimum of decking. Deck should have safety railing.

Build concrete form of 2x4s and 1x2 stakes as shown. Excavate 2 inches below bottom of forms and fill with clean sand.

Lay a 1-foot-square grid of 1/2 inch reinforcing rods over leveled sand bed. Tie rods together with bailing wire. Mix concrete and pour it in the form. Spread concrete evenly with a sturdy steel rake.

Level concrete with a screed built from 1x4s as shown. Pull the screed toward you with a side-topside zigzag motion. When concrete is leveled, smooth out with a large mason's float. Allow concrete to cure at least two days before setting tub.

SKIRTED SPA FOUNDATION.



**SECTION IV**

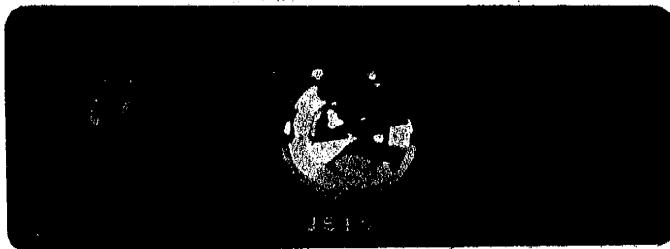
**QUICK CONTROL PANEL GUIDES**



*Affordable Luxury in Spas...*

# CONO-LINE

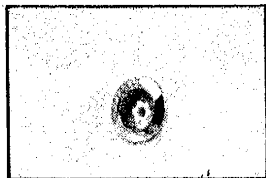
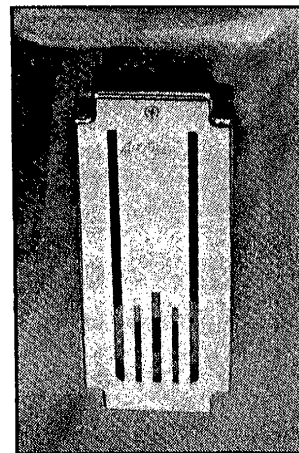
Cal Spas introduces the Econo-Line portable spa, where luxury meets with affordable prices. Cal Spas has been the leader in the evolution of portable spas for years with innovative designs, and unsurpassed quality in both materials and craftsmanship.



### Standard Features

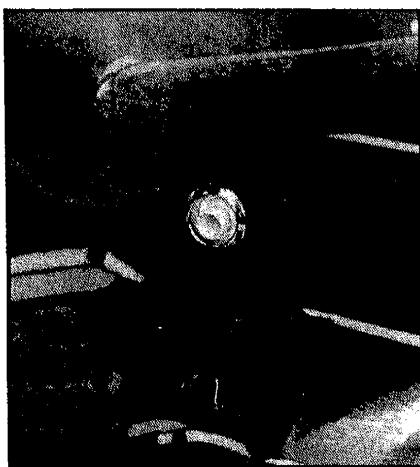
Although the Econo-Line spas are not a lot of money, that doesn't mean we cut corners on quality. All Econo-Line models are constructed with the same careful assembly by our skilled craftsman who build all our other fine lines of Cal Spas. The Econo-Line spa features Cal Spas' beautiful clear heat, vertical grain 5/8" thick Redwood cabinet and hand stained for durability and beauty. All 4 models also feature 4 individual adjustable hydrotherapy jets, chrome wall skimmer and floor drain. An inline 50 sq. ft. filter keeps your water clean. All Econo-Line spas use full foam insulation (a dense, heavy-duty polyurethane) for energy efficient, heat retention and additional structural reinforcement. Each Spa includes a floating spa cover.

For your equipment pack, choose from our time-tested 220v or 110v packs, depending on your preference.

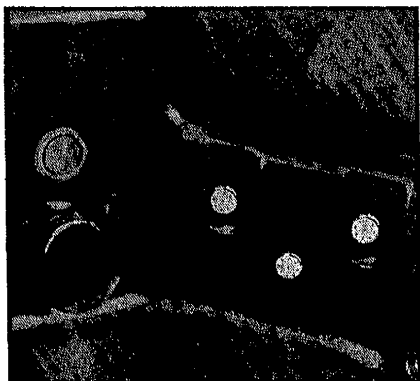


# PREMIER

The Premier control panel below is used on our electric equipment packs. This unit like all other Cal Spas' control panels have been engineered to the consumers ease of operation. These few basic explanations will guide you.



Whirlpool Jet provides a swirling, overall therapeutic effect similar to what doctors recommend for treatment of sore or damaged muscles.



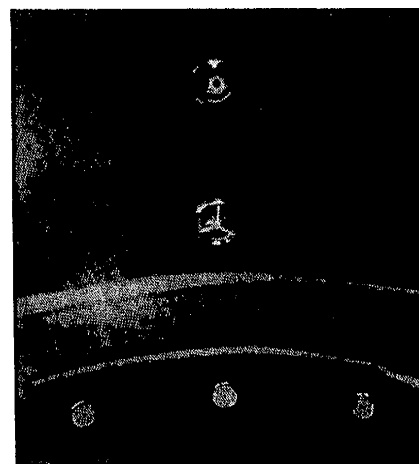
The Premier Line also features a bottom suction drain and an underwater light. Note: lowered injector is for the pre-plumbed Ozonator system.



Activates the  
Water Pump

Activates the  
Spa Light

Activates the  
Air Blower

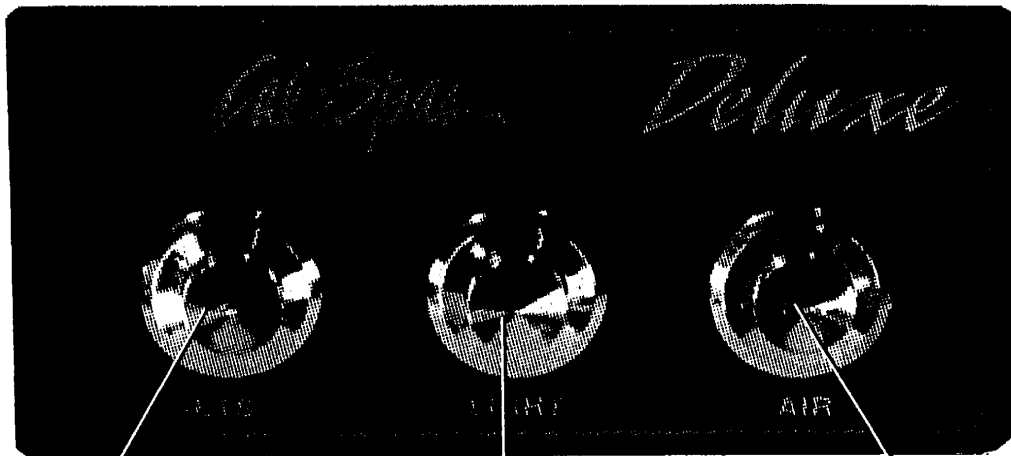


Every Premier model features a "Piggy-Back" Jet seat with our wonderful Hydro Swirl Jet and a Cal Therapy Jet. Air injectors provide a bubbling sensation.

# DELUXE · SERIES

S P A S

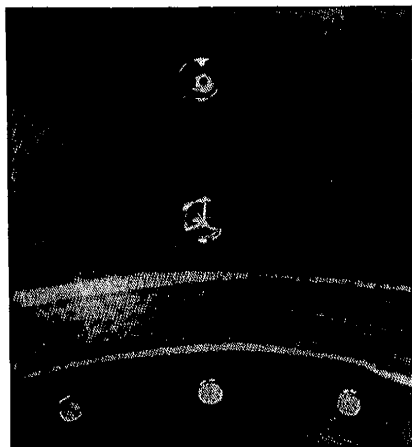
The Deluxe spa control panel shown below is used on electric equipment packs only. This unit like all other Cal Spa control panels have been designed to the consumers ease of operation. These few basic steps will guide you.



Activates the Water Pump

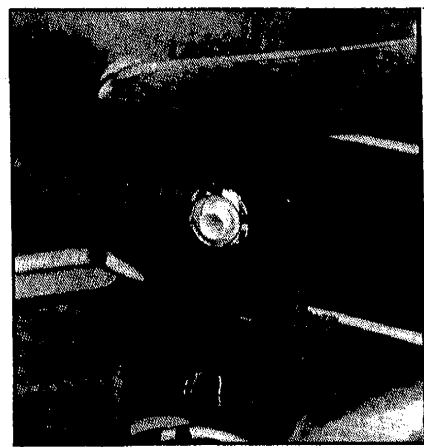
Activates the Spa light

Activates the Air Injection thru the Air Channel



The Deluxe model spa features a "Piggy-Back" Jet seat with our wonderful Cal therapy jet and Hydro-Swirl Jet (a rotating jet that provides a continuous circular massage), along with air injectors that provides a bubbling sensation.

**Absolute Satisfaction.**



The diverter valve located on the top-side of your spa shuts off the five standard jets and diverts the entire water flow through the powerful Whirlpool Jet, creating a whirl action similar to what professional athletes use.

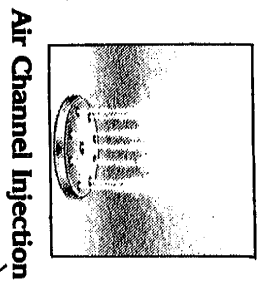


# SUPRA

S E R I E S

The Supra Spa control panel below is used on our electric equipment packs only. This unit like all other Cal Spas' control panels are carefully designed and engineered for the consumers ease of operation. These few basic explanations will guide you to complete control.

This particular unit has three (3) large knobs. The left knob controls your air functions. The center knob controls your temperature and the right knob controls your water functions.



**Air Channel Injection**

**Left Side**

**Air Control Diverter Valve**

**Diverts air to three places:**

- 1 - Air Channel
- 2 - Supercharged Jets
- 3 - Rejuvenator Seat

Spa Jets are Supercharged when the valve is in this position

**Right Side**

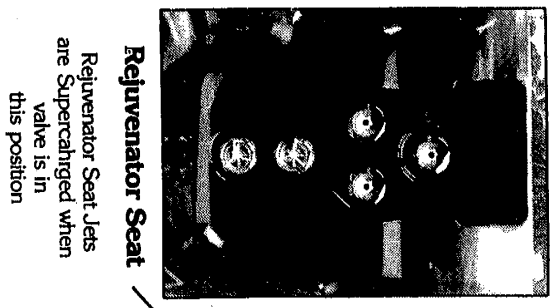
**Water Control Diverter Valve**

**Diverts water to three places:**

- 1 - Whirlpool Jet
- 2 - Jets
- 3 - Rejuvenator Seat

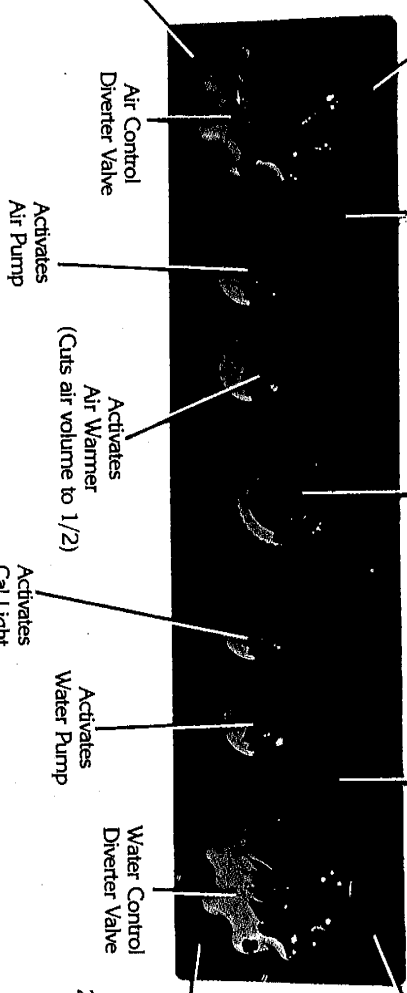
Activates the Therapy and Swirl Jets not located in the Rejuvenator Seat

Whirlpool Jet is activated when valve is in this position



**Rejuvenator Seat**

Rejuvenator Seat Jets are Supercharged when valve is in this position



Air Control Diverter Valve

Activates Air Pump

Activates Air Warmer (Cuts air volume to 1/2)

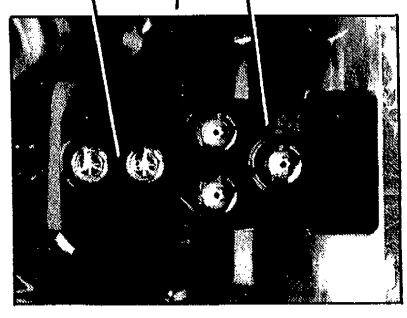
Activates Cal Light

Activates Water Pump

Water Control Diverter Valve

2-Swirl Jets

3-Therapy Jets



**Rejuvenator Seat**

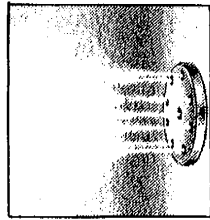
**ELECTRIC PACK CONTROL PANEL**

# Supra

S E R I E S

The Supra control panel shown below is used on our gas packs only. This unit like all other Cal Spas' control panels have been carefully engineered and designed for the consumers ease of operation. These few basic explanations will guide you.

This particular control panel has three (3) large knobs. The left side controls your air functions. The center knob controls your air venturi and the right knob controls your water functions.



**Air Channel Injection**

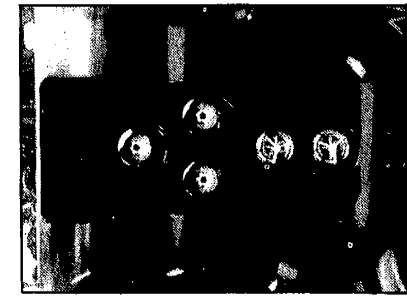
### Left Side

#### Air Control Diverter Valve

**Diverts air to three places:**

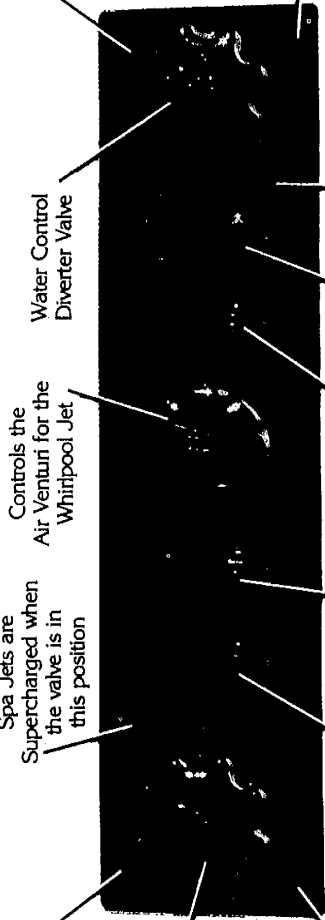
- 1 - Air Channel
- 2 - Supercharged Jets
- 3 - Rejuvenator Seat

Spa Jets are Supercharged when the valve is in this position



**Rejuvenator Seat**

Rejuvenator Seat Jets are supercharged when valve is in this position



Controls the Air Venturi for the Whirlpool Jet

- 1 - Whirlpool Jet
- 2 - Jets
- 3 - Rejuvenator Seat

### Right Side

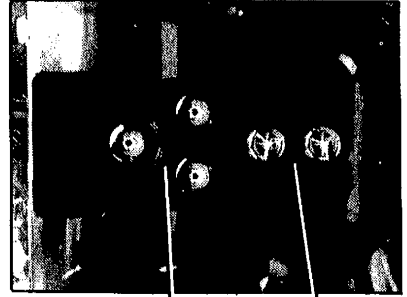
#### Water Control Diverter Valve

**Diverts water to three places:**

Whirlpool Jet is activated when valve is in this position

Air Control Diverter Valve

Water Control Diverter Valve



**Rejuvenator Seat**

3-Therapy Jets

2-Swirl Jets

Activates the Therapy and Swirl Jets not located in the Rejuvenator Seat

Activates Cal Light

Activates Water Pump

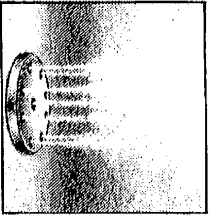
Activates Air Pump

Activates Air Warmer (Cuts air volume to 1/2)

# CALSAFORNIA

The new Classic Spa control panel shown below is used on our electric equipment packs only. This unit like all other Cal Spas' control panels have been engineered to the consumers ease of operation. These few basic explanations will guide you.

This particular control panel has (3) large knobs. The left side controls your air functions, the center controls the temperature, the right controls the water.



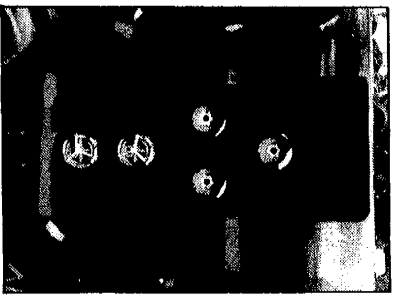
**Air Channel Injection**

**Left Side**  
**Air Control Diverter Valve**  
**Diverts air to three places:**

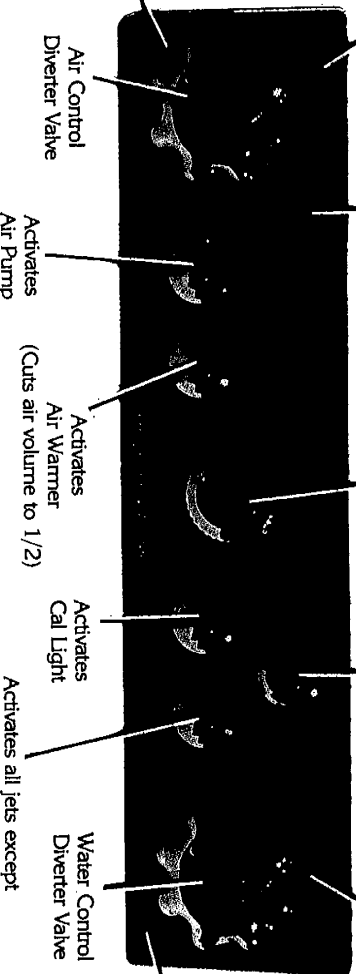
1. Air Channel
2. Supercharged Jets
3. Rejuvenator Seat

**Right Side**  
**Water Control Diverter Valve**  
**Diverts Water to two places:**

1. Whirlpool Jets
2. Rejuvenator Seat



**Rejuvenator Seat**  
 Rejuvenator Seat Jets are supercharged when valve is in this position



Spa Jets are supercharged when the valve is in this position

Controls Temperature

The Heat Pump activates the water flow thru the heater. It goes to the water control diverter valve to either the Whirlpool Jet or the Rejuvenator Seat

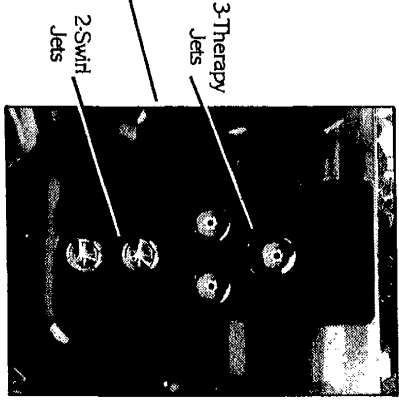
Whirlpool Jet is activated when valve is in this position

Activates Air Pump

Activates Air Warmer (Cuts air volume to 1/2)

Activates Call Light

Activates all jets except those located in the Rejuvenator Seat



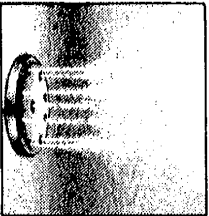
**Rejuvenator Seat**

**ELECTRIC PACK CONTROL PANEL**

# CALIFORNIA

The Classic spa control panel shown below is used on our Gas Packs only. This unit like all other Cal Spas' control panels have been engineered to the consumers ease of operation. These few basic explanations will guide you.

This particular control panel has (2) large knobs. The left side controls your air functions. The right side controls your water functions.



**Air Channel Injection**

### Left Side Air Control Diverter Valve

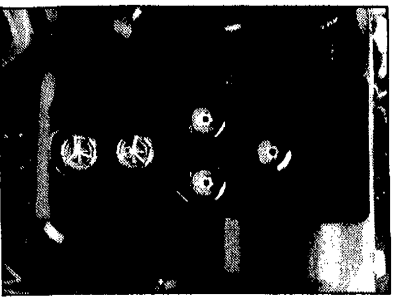
**Diverts water to two places:**

1. Super Charged Air Jets
2. Super Charged Rejuvenator Seat

### Right Side Water Control Diverter Valve

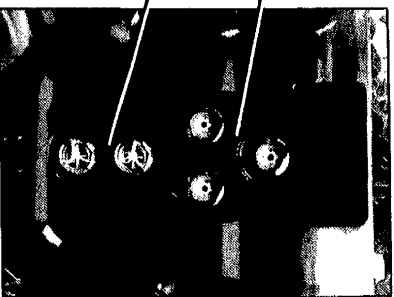
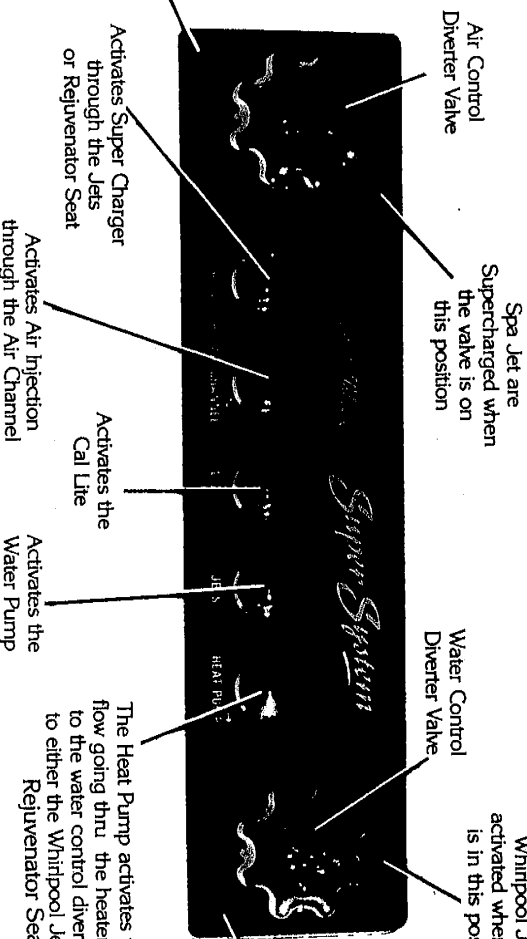
**Diverts Air to two places:**

1. Whirlpool Jets
2. Rejuvenator Seat



**Rejuvenator Seat**

Rejuvenator Seat Jets are supercharged when valve is in this position



**Rejuvenator Seat**

# Tropical Waterfall Spa 8'x10'

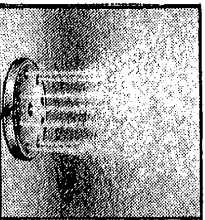
This beautiful waterfall control panel is used on our electric equipment packs only. Like all other Cal Spas' control panels this unit has been designed for the consumers ease of operation. These few basic explanations will put you in complete control.

## Water Control Diverter Valve

1. Waterfall
2. Spa Jets

Spa Jets are Supercharged when the valve is in this position

## Air Channel Injection



## Water Control Diverter Valve

1. Whirlpool Jet
2. Rejuvenator Seat

Whirlpool Jet is activated when valve is in this position

Activates the Waterfall when valve is in this position

Activates the spa jets when valve is in this position

Activates all jets except those located in the Rejuvenator Seat

Activates Cal Light

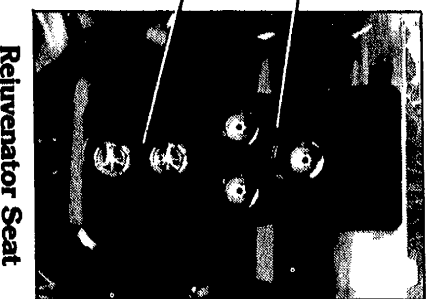
Activates Air Warmer

Activates Air Blower On High Speed

## Air Control Diverter Valve

1. Air Channel
2. Super Charged Jets
3. Rejuvenator Seat

- 3-Therapy Jets
- 2-Swirl Jets



**Rejuvenator Seat**  
Rejuvenator Seat Jets are Supercharged when the valve is in this position

# Tropical Waterfall Spa 12' X 18'

## #1 Water Control Diverter Valve

- 1 - Rejuvenator Seat
- 2 - Spa Jets

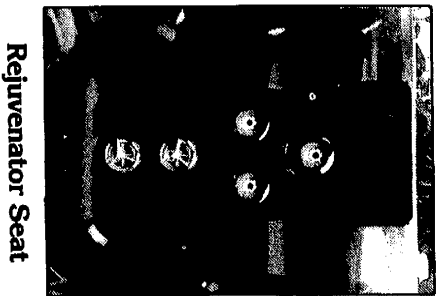
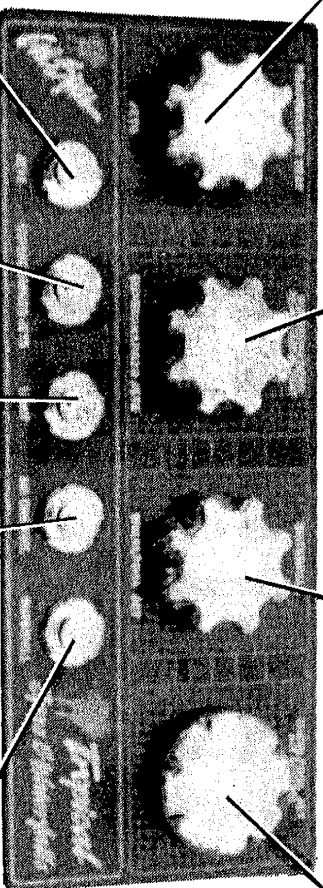
## #2 Air Control Diverter Valve

- 1 - Supercharged Rejuvenator Seat
- 2 - Supercharged Jets

## #3 Water Control Diverter Valve

- 1 - Waterfall
- 2 - Whirlpool Jet

**Air Venturi Valve**  
Allows Air Into Whirlpool



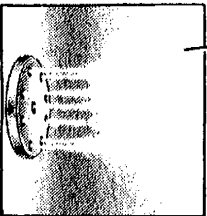
**Rejuvenator Seat**

Activates  
All Jets Except  
Those Located  
In Rejuvenator Seat  
When Diverter Valve  
#1 Is In Jet  
Position

Activates  
Supercharger  
Through Jets Or  
Rejuvenator Seat

Activates  
Call Light

Activates Water Pump  
For Waterfall  
When Knob #3 Is  
In That Position

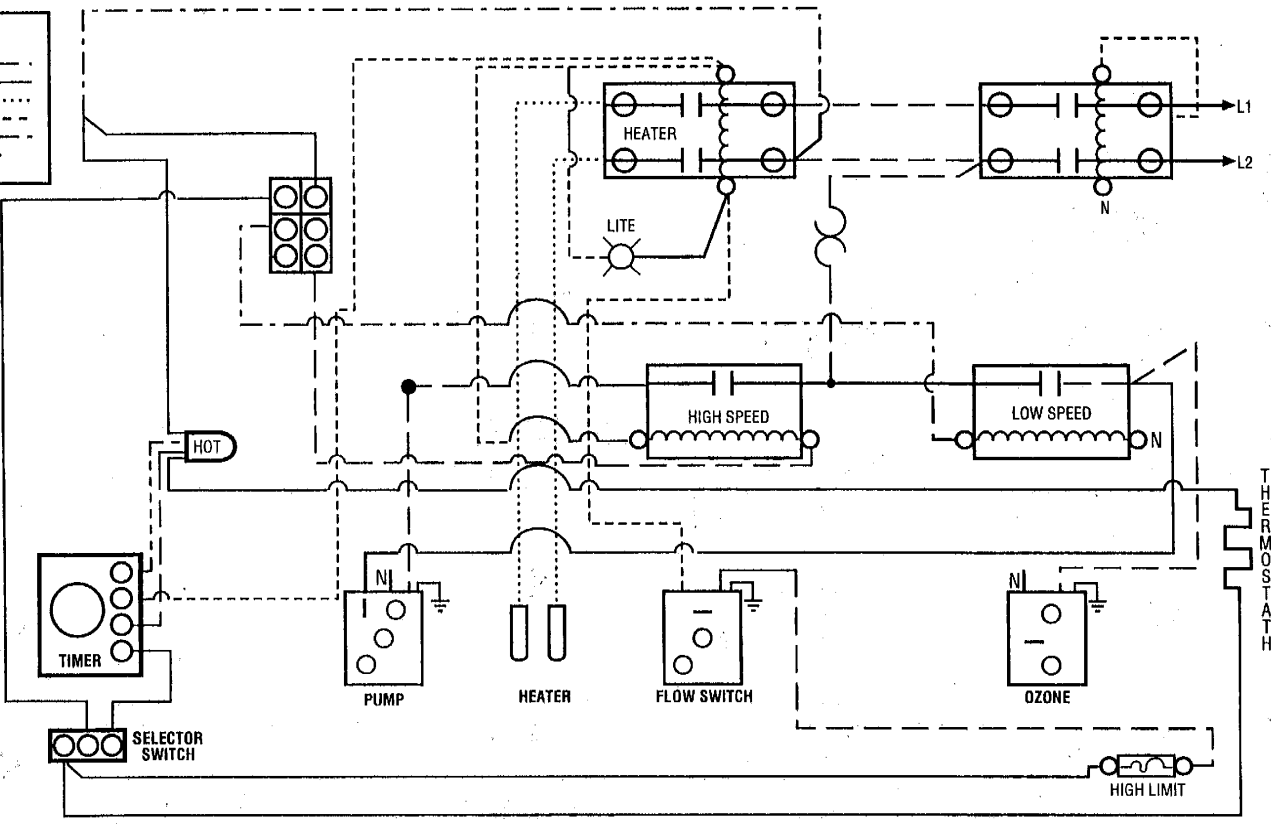


**Air Channel Injection**  
Activates Air Blower

## **SECTION V**

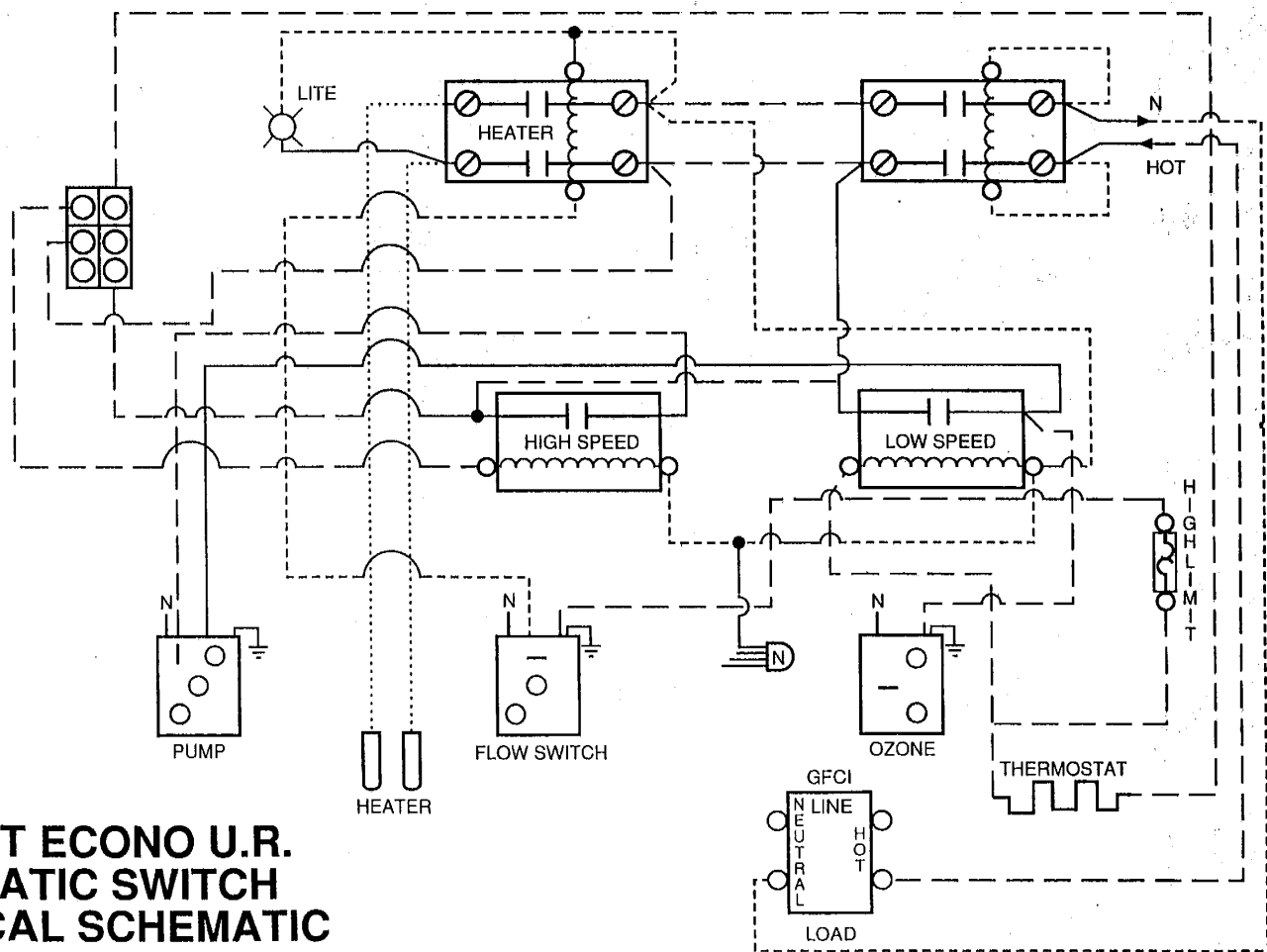
# **ELECTRICAL SCHEMATICS**

**LEGEND**  
 BLACK ---  
 RED ---  
 YELLOW .....  
 WHITE - - - -  
 BLUE - - - -  
 GREEN ---



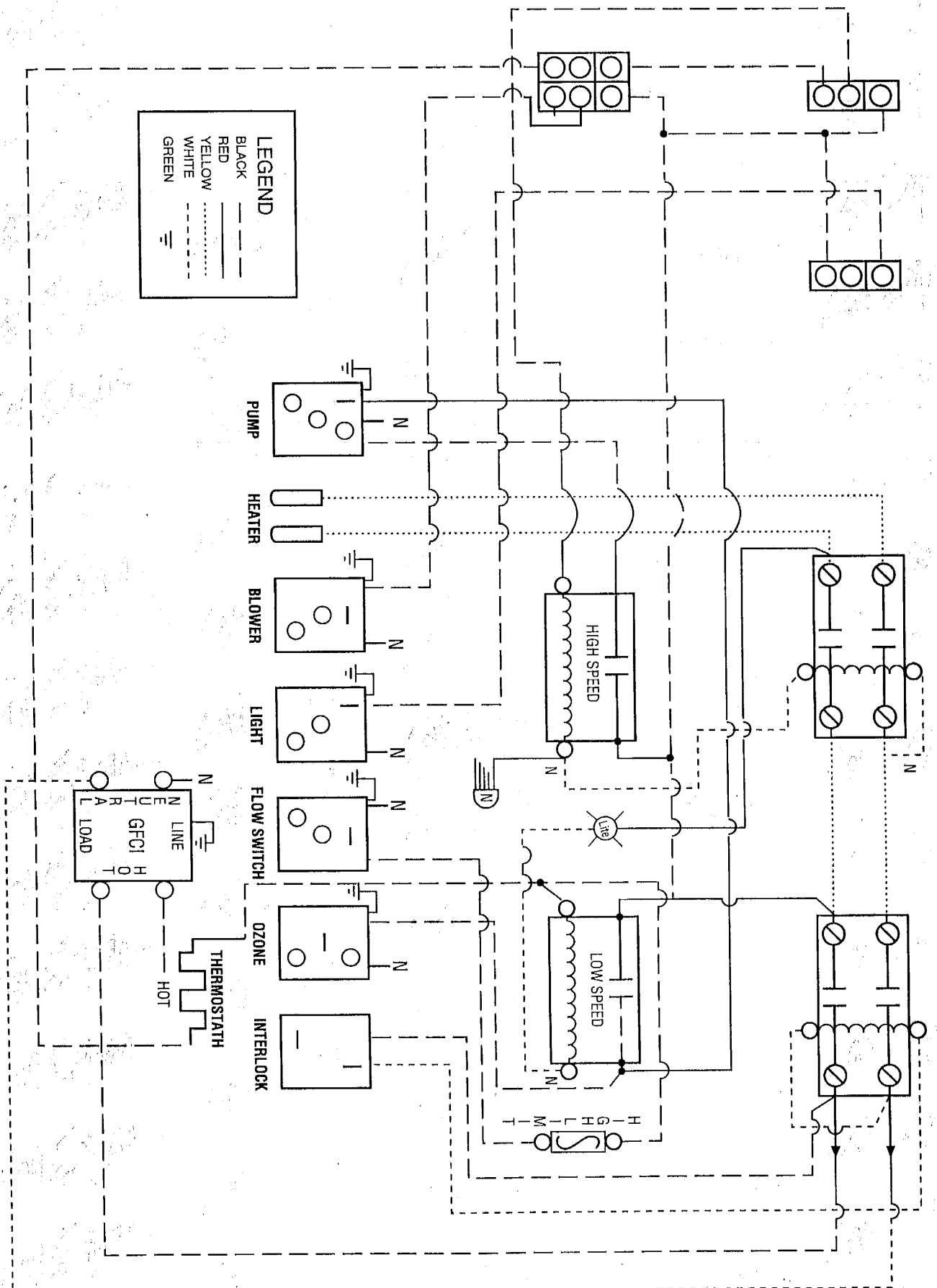
**220 VOLT ECONO U.R.  
 PNEUMATIC SWITCH  
 ELECTRICAL SCHEMATIC**

**LEGEND**  
 BLACK ---  
 RED ---  
 YELLOW .....  
 WHITE - - - -  
 GREEN ---



**110 VOLT ECONO U.R.  
 PNEUMATIC SWITCH  
 ELECTRICAL SCHEMATIC**

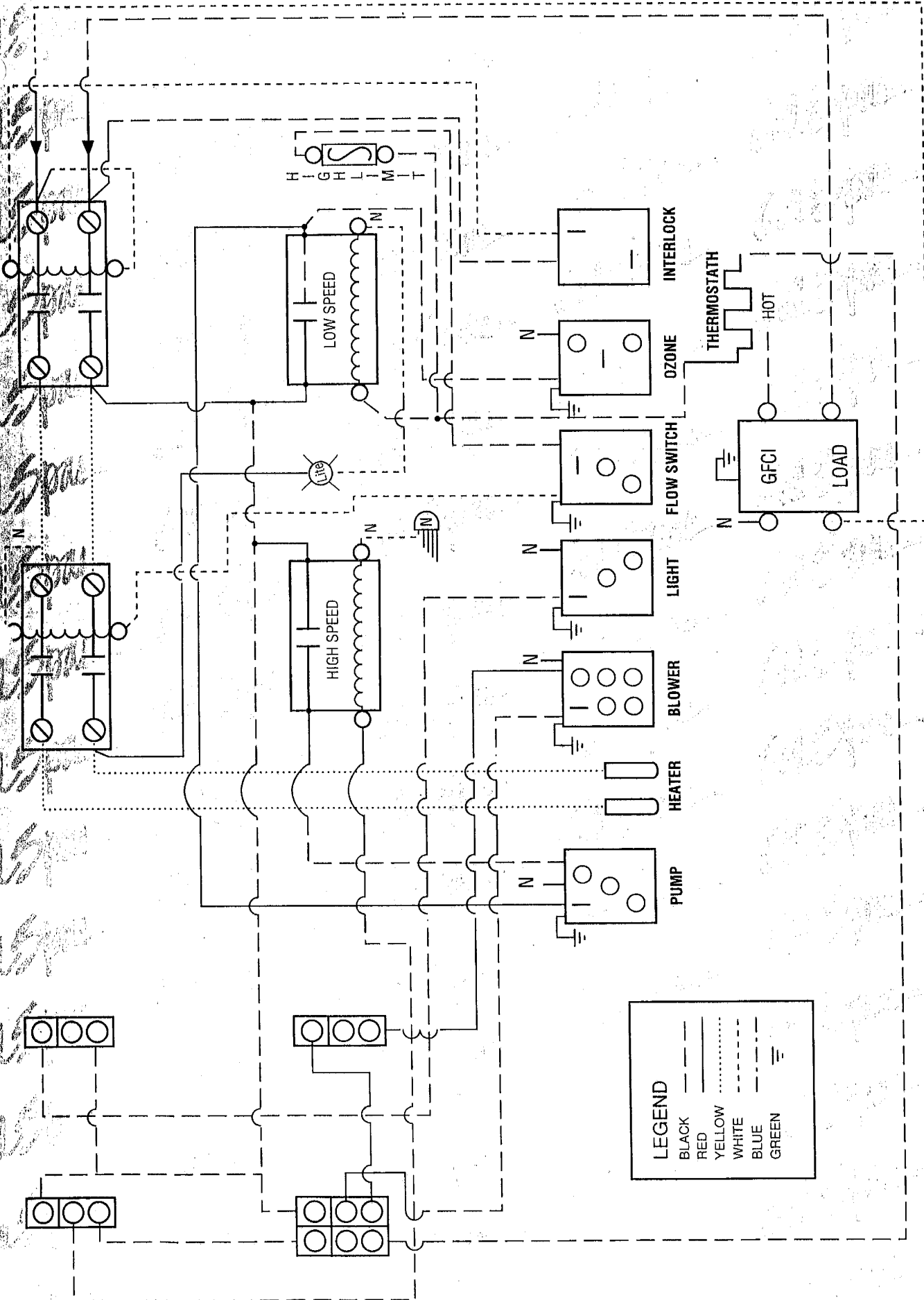




**LEGEND**  
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 YELLOW  
 WHITE  
 GREEN

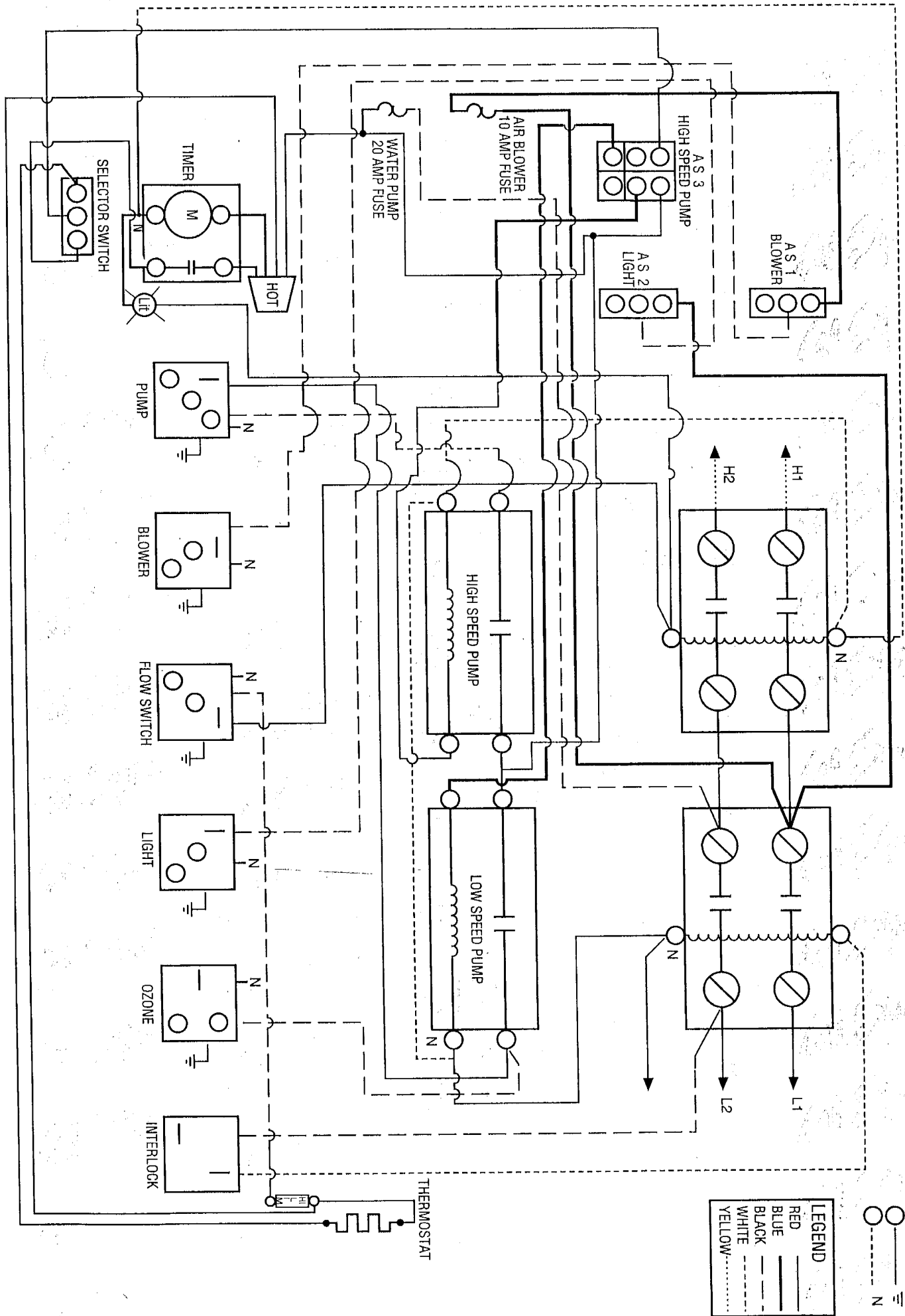
**110 VOLT PREMIER U.R.  
 PNEUMATIC SWITCH  
 ELECTRICAL SCHEMATIC**

**110 VOLT SUPRA U.R.  
PNEUMATIC SWITCH  
ELECTRICAL SCHEMATIC**



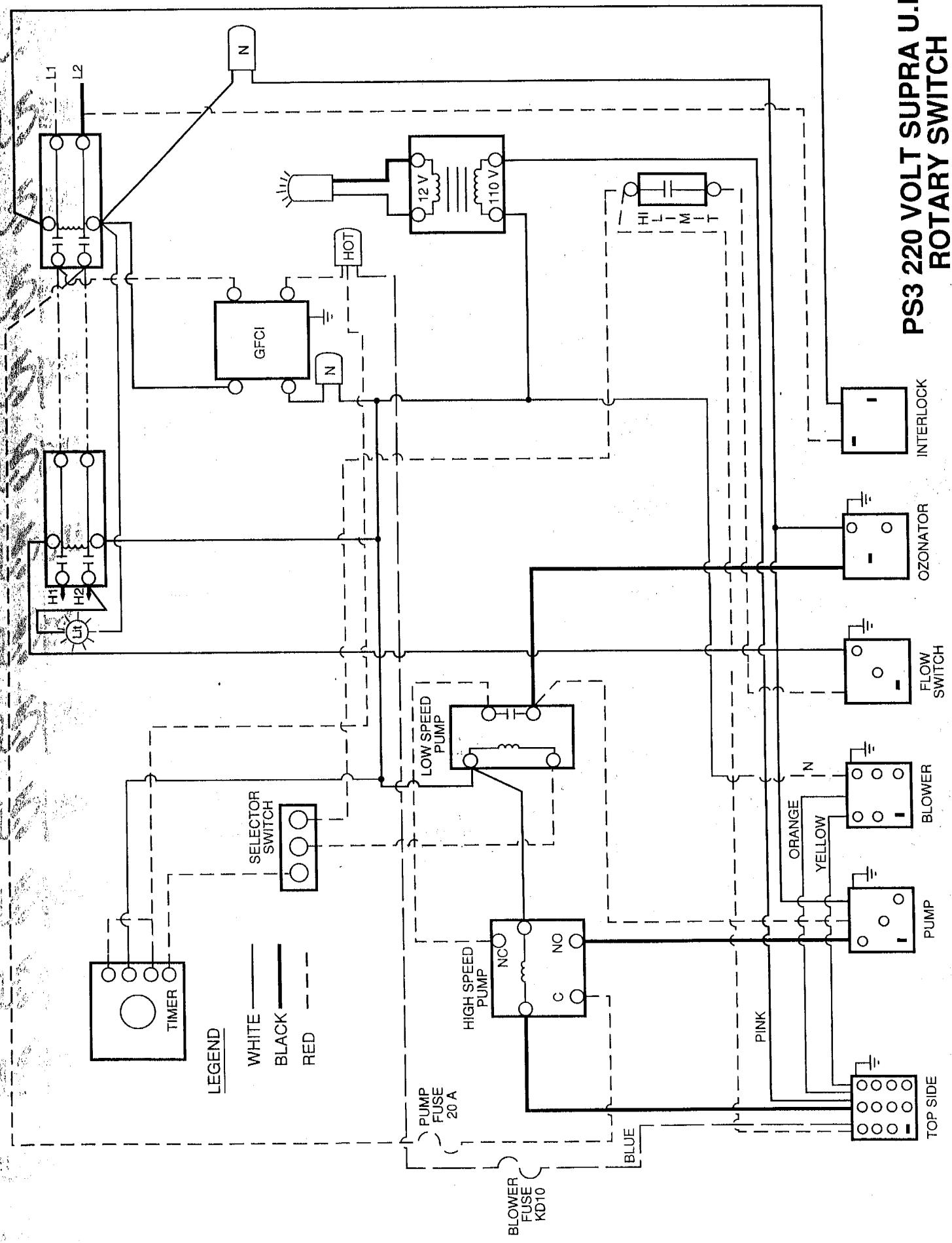
**LEGEND**

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YELLOW	---
WHITE	---
BLUE	---
GREEN	---
	⊥

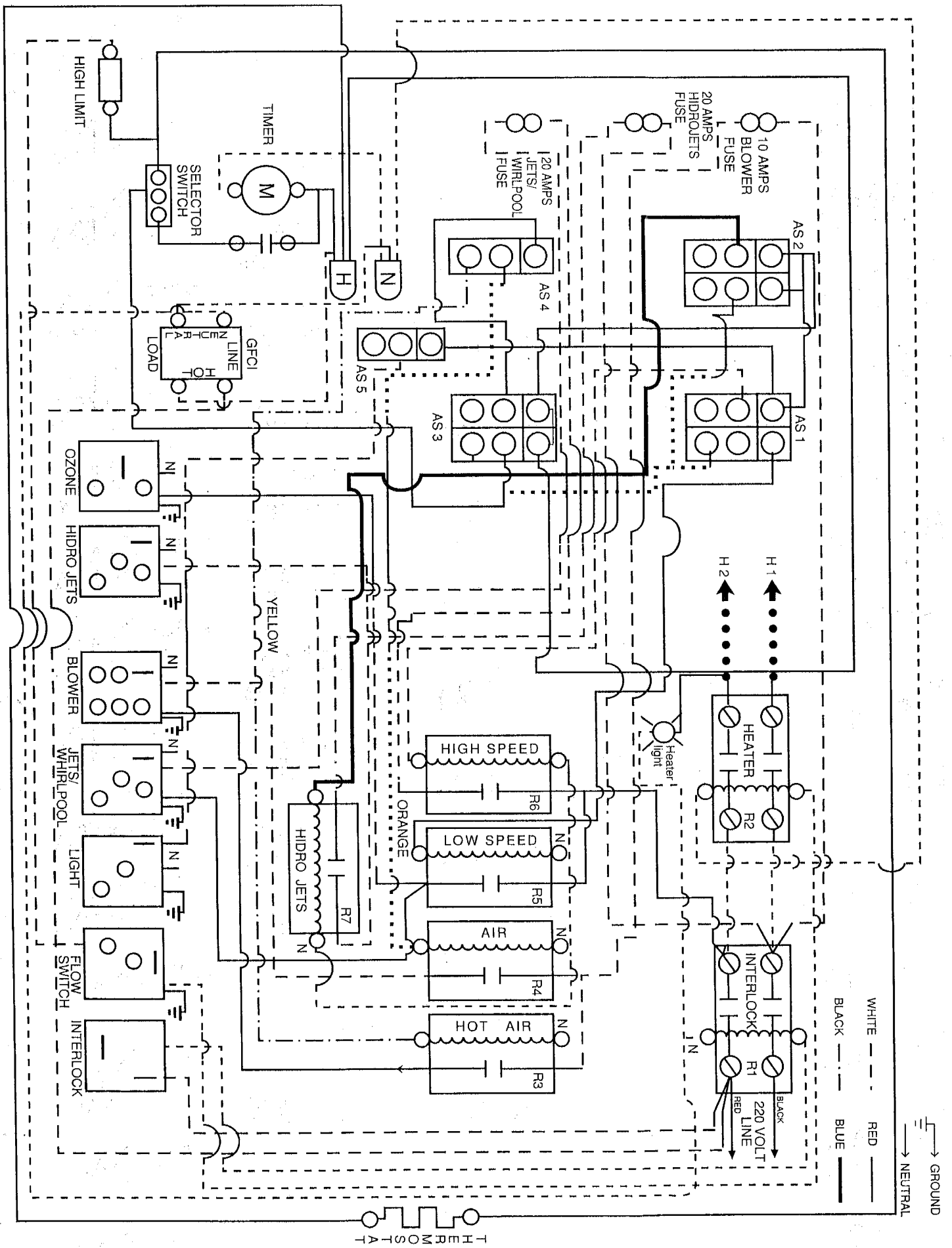


**220 VOLT PREMIER U.R.  
PNEUMATIC SWITCH  
ELECTRICAL SCHEMATIC**

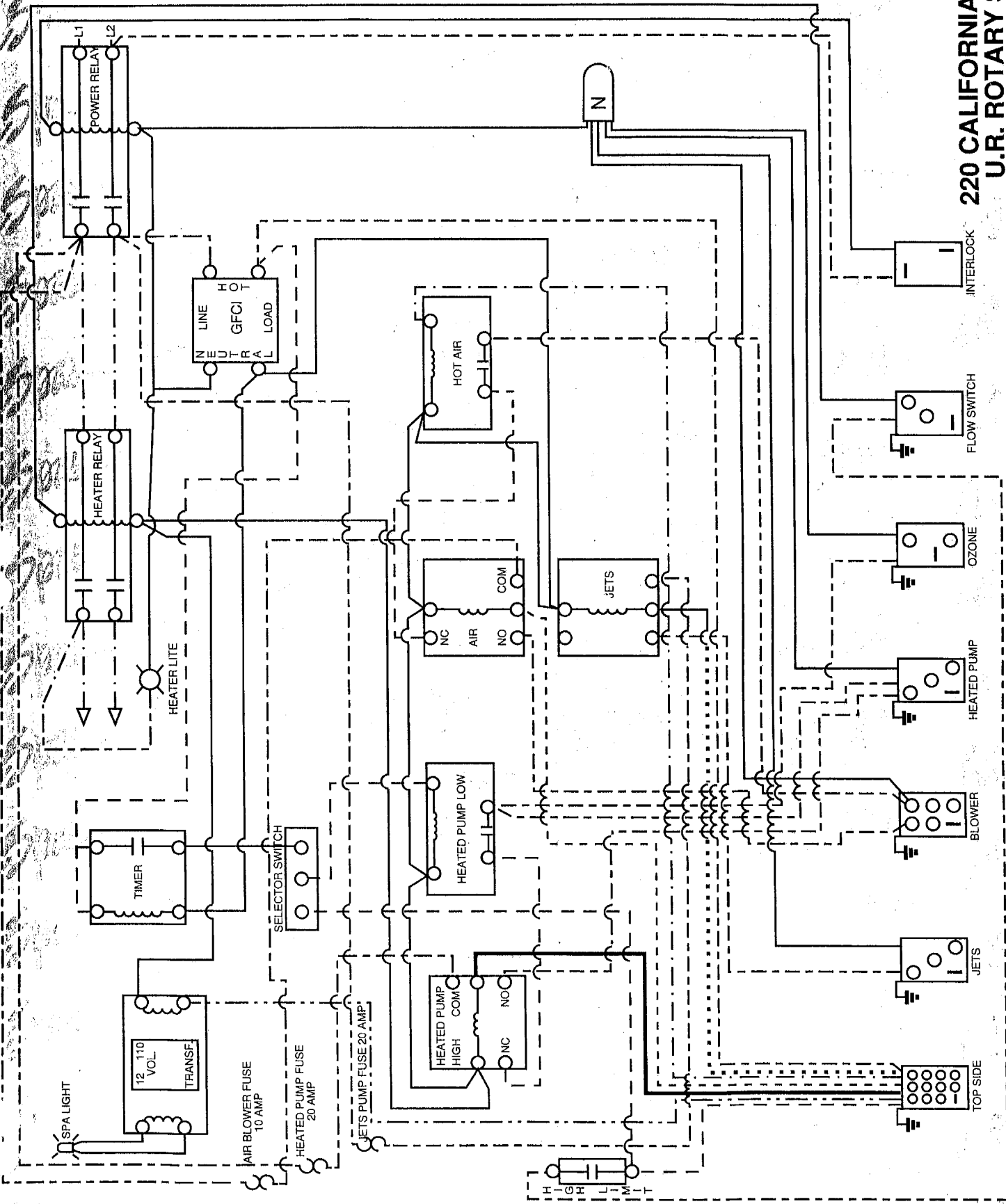
# PS3 220 VOLT SUPRA U.R. ROTARY SWITCH ELECTRICAL SCHEMATIC



# 20 VOLT CALIFORNIA CLASSIC PNEU MATIC SWITCH ELECTRICAL SCHEMATIC

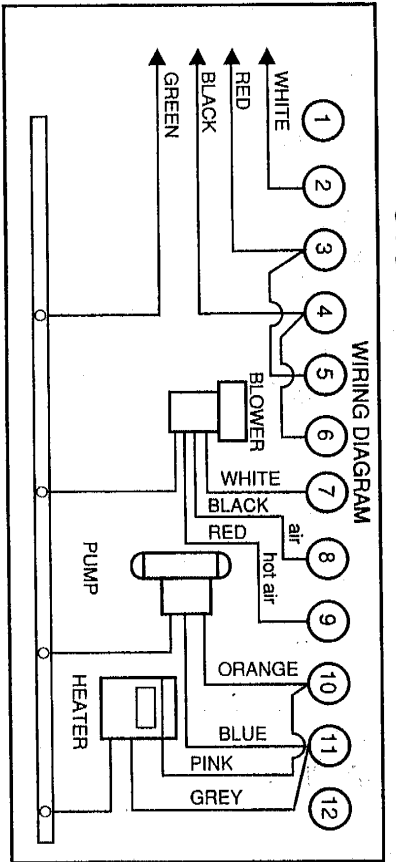


**220 CALIFORNIA CLASSIC  
U.R. ROTARY SWITCH  
ELECTRICAL SCHEMATIC**

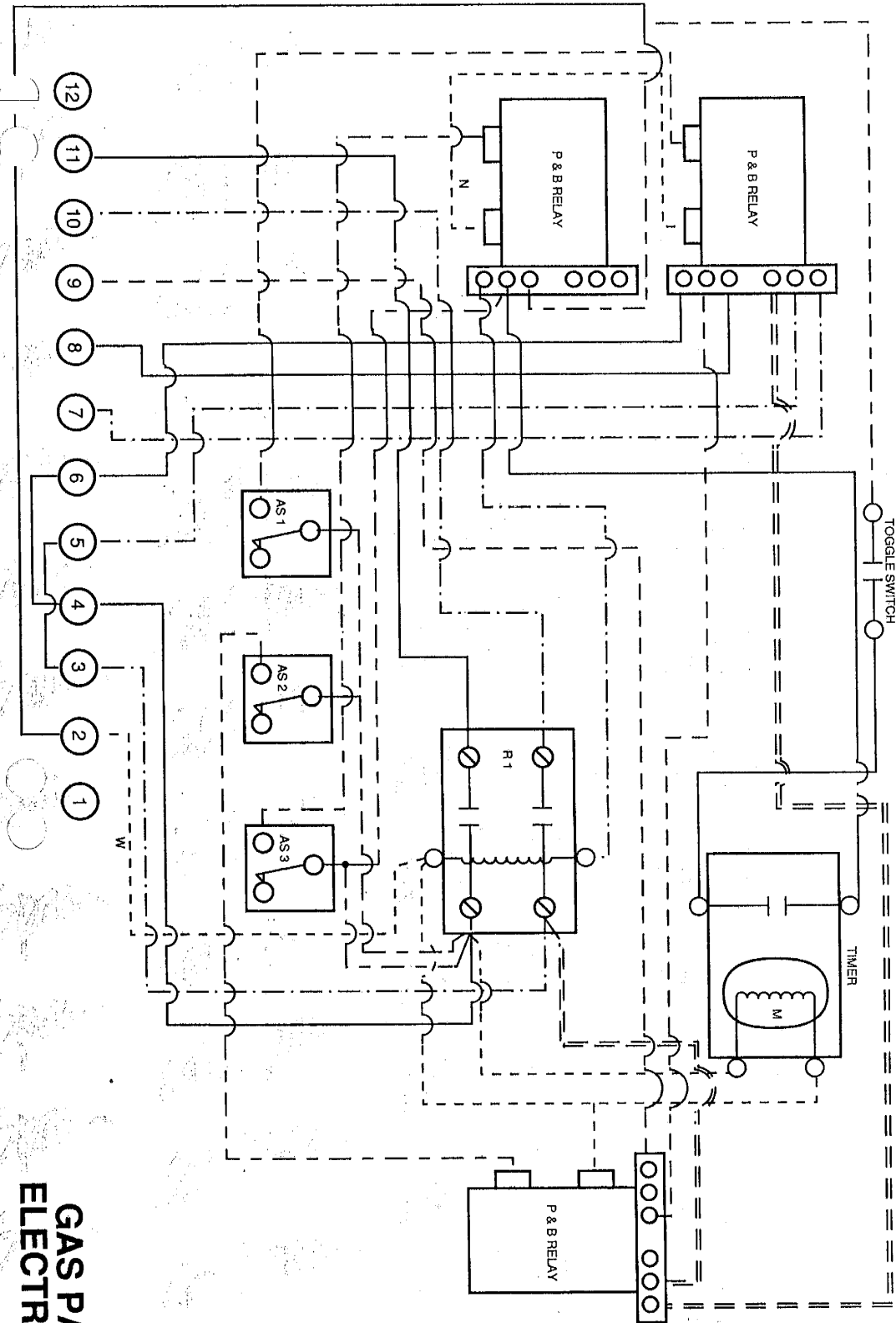
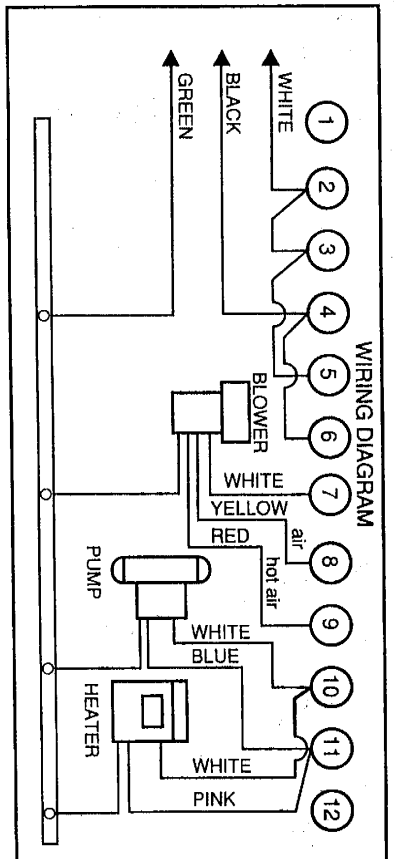


Handwritten notes on the left margin, including "220V", "110V", and "12V".

CTC - 221 220 VOLT SUPRA



CTC - 221 110 VOLT SUPRA

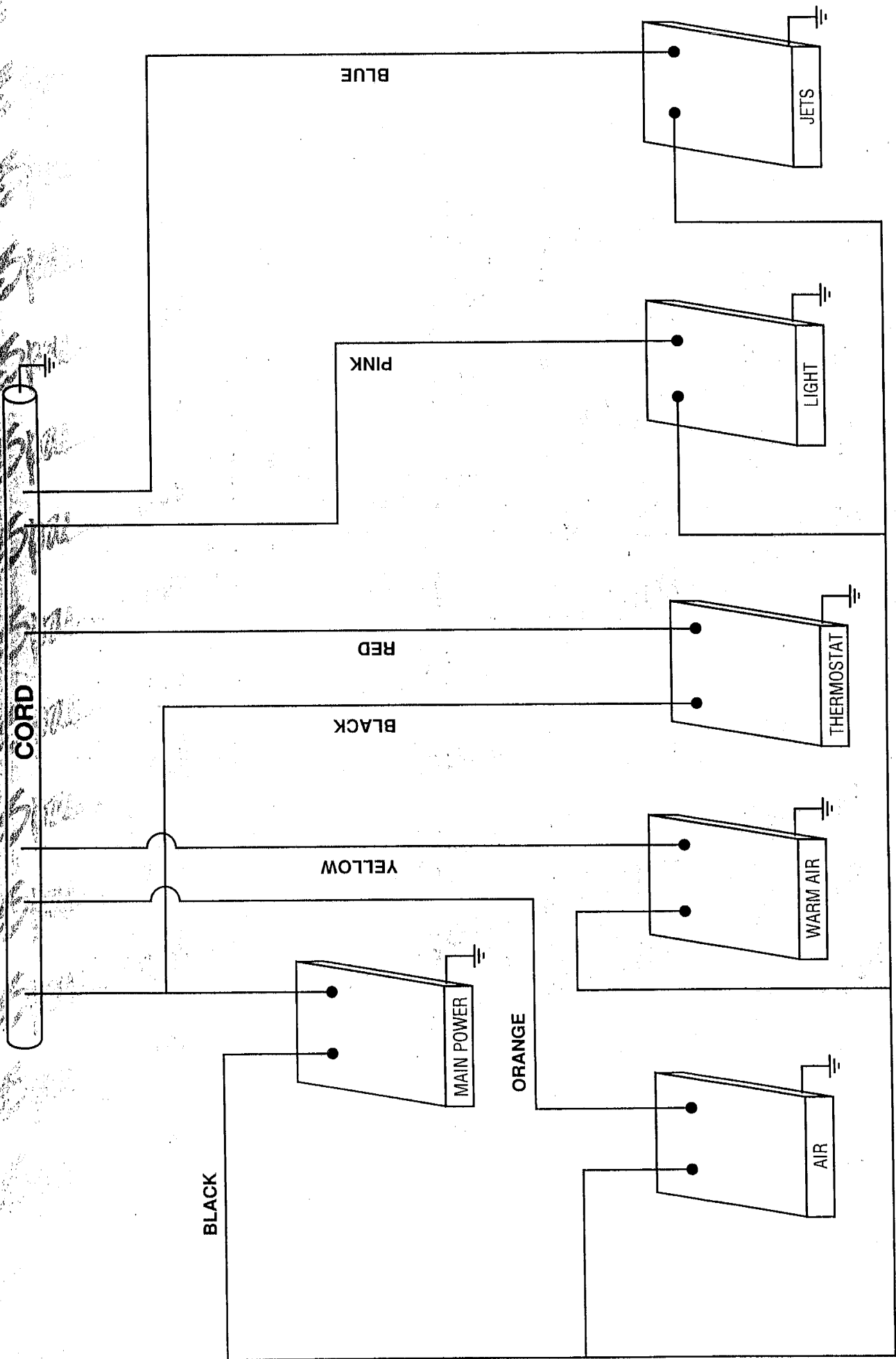


**LEGEND**

WHITE	---
BLACK	---
RED	---
BLUE	---
ORANGE	---
GREY	---
GREEN	---

**GAS PACK SUPRA U.R.  
ELECTRICALS FOMATIC**

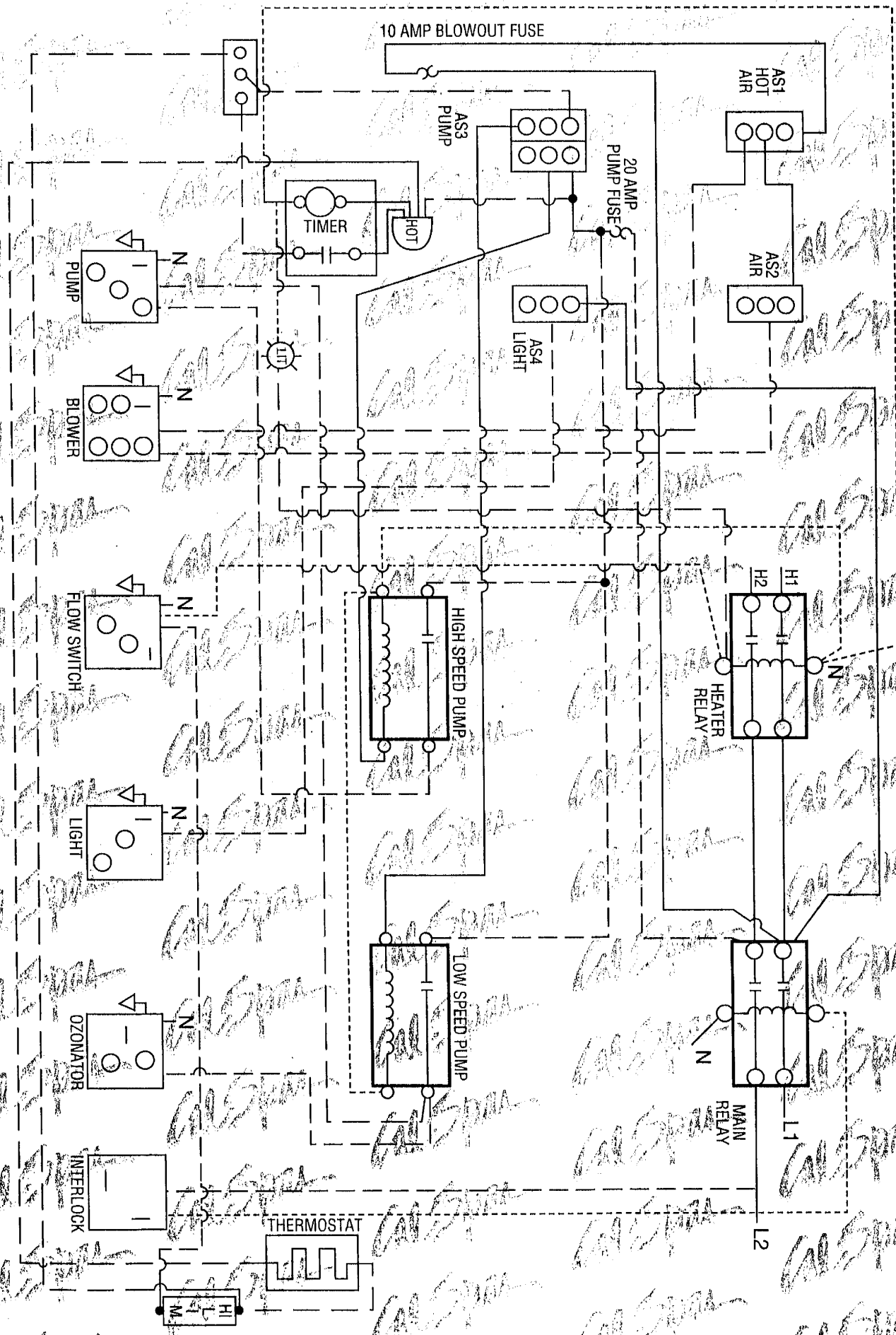
# SUPRA TOP SIDE CONTROL PANEL ELECTRICAL SCHEMATIC





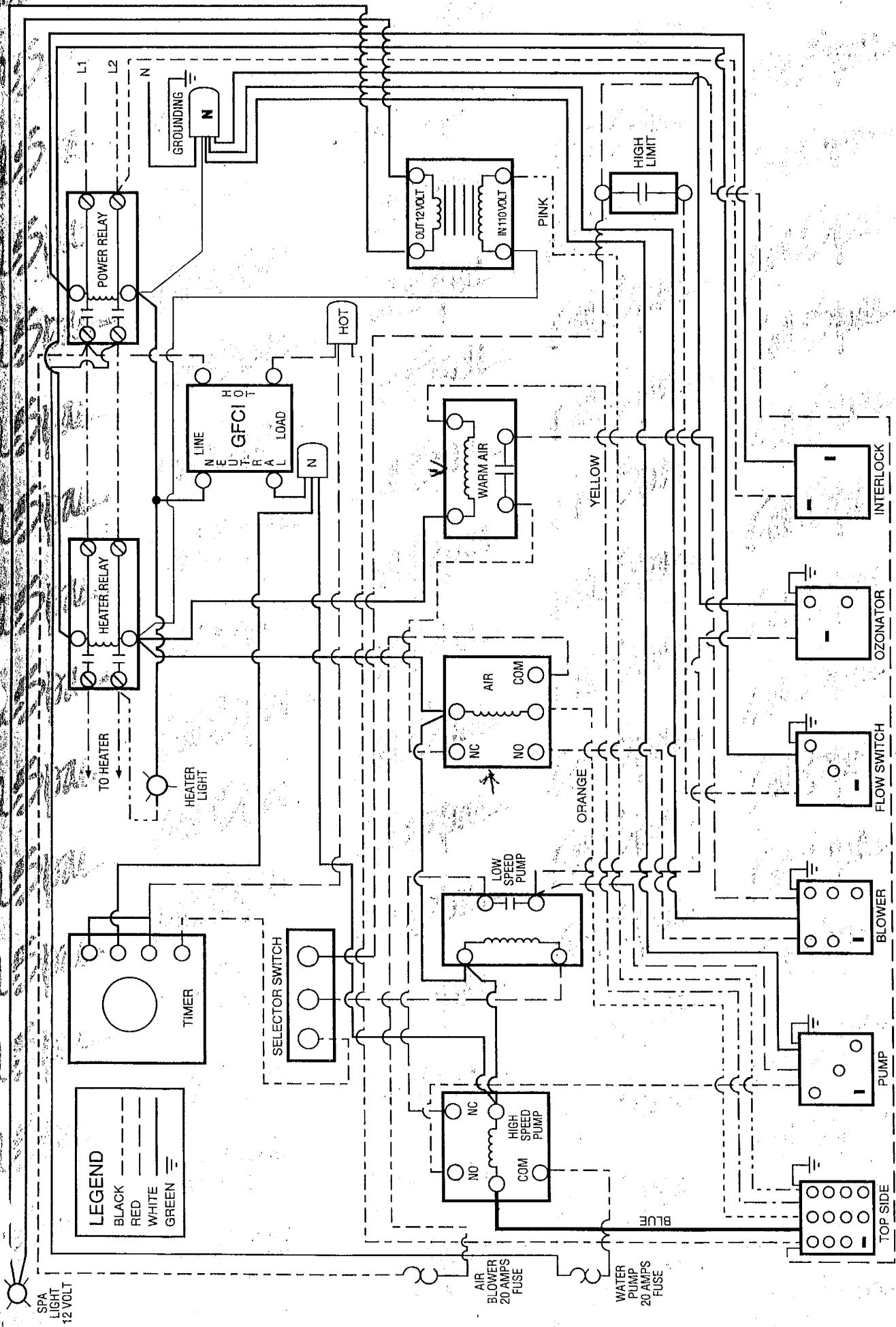
**LEGEND**

RED	---
BLK	---
WHITE	---
BLU	---



**220 VOLT SUPRA U.R.  
PNEUMATIC SWITCH  
ELECTRICAL SCHEMATIC**

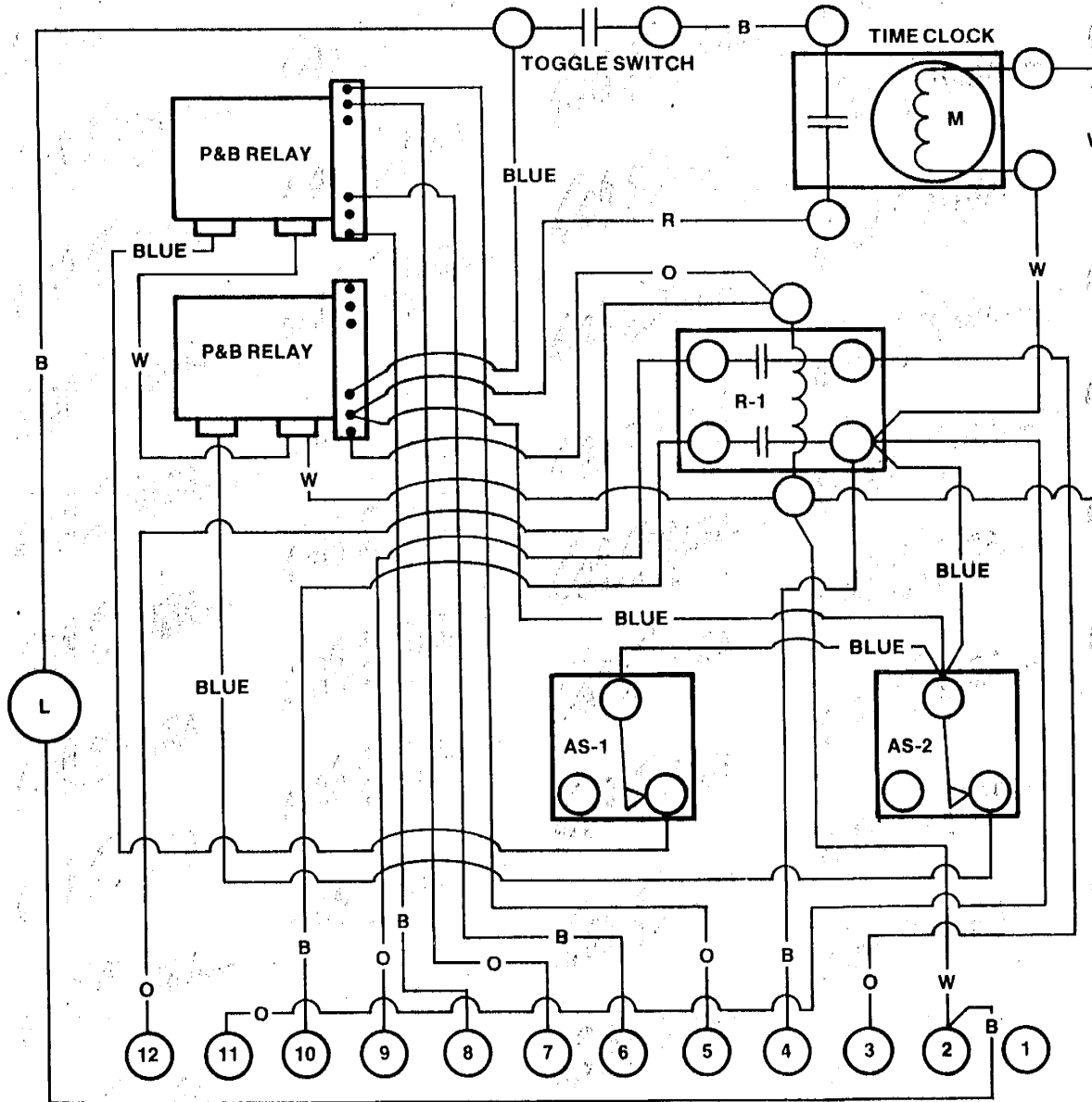
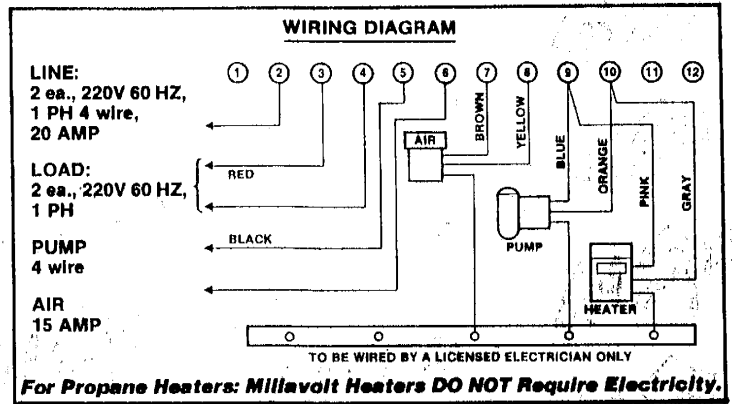
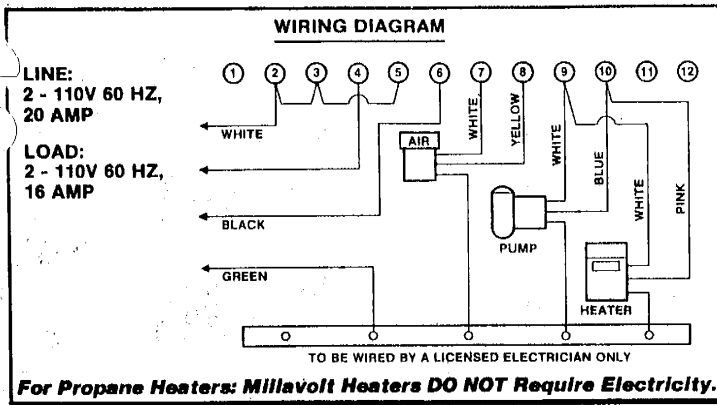
**PS3 220 VOLT SUPRA U.R.  
ROTARY SWITCH  
ELECTRICAL SCHEMATIC**



# Gas Paks

## CTC-221 110 Volt U.L.

## CTC-221 220 Volt U.L.



**CTC-221 110V**  
**LINE: 2-110 Volt**  
**60 HZ 20 Amp Circuits**

**LOAD: 2-110 Volt**  
**60 HZ 16 Amp Circuits**

**CTC-221 220V**  
**LINE: 2 each 220 Volt**  
**60 HZ 1 PH**  
**4 Wire 20 Amp Circuit**

**LOAD: 2 each 220 Volt**  
**60 HZ 1 PH**  
**4 Wire 15 Amp Circuit**

**SECTION VI**

**TROUBLESHOOTING GUIDE**

# TROUBLESHOOTING GUIDE

## SYMPTOMS

## PROBABLE CAUSE

## RECOMMENDED ACTION

No heat or heat too low

Breaker at house off.

Reset breaker at the house. Breaker can appear to be on & one pole can be off.

Thermostat not on Max. temp

Turn thermostat all the way up. Thermostat (depending on model) will either be located on the control box or on the control panel. If you have a top mounted thermostat cable, follow the cable from the top, down to the control box, loosen the set screw, turn thermostat knob clockwise until it stops, and reconnect. This will ensure both are set on maximum setting.

Heater not plugged in.

Check heater plug, making sure it is pushed in all the way in receptacle.

Inadequate water flow due to dirty filter.

Clean filter cartridge(s). (See page 7.)

Highlimit "popped out".

Reset **Red Button** on control box.

Pump not primed.

Refer to pump priming. (See page 6.)

Improper line voltage.

Have **LICENSED ELECTRICIAN** check line voltage.

Spa cover left off.

Heat spa with cover on.

Temperature knob set too low.

Loosen set screw at temperature knob and increase as desired, retighten set screw.

Operation spa with doors open.

Doors must be closed all the way because of the door interlock safety system.

Pump plug not in all the way.

Check pump plug, making sure it's pushed in all the way in receptacle.

Pump not primed.

Refer to pump priming. (See page 6.)

Air tubing disconnected.

Check air line tubing to see if disconnected at either end of the tubes.

Gate valves closed.

Check to see if both gate valves are in the up positions. (See page 11.)

Jets come on by themselves.

Pressure buildup in the air lines.

Pressure builds up in the air lines and you need to install a small air relief hole in the air tubing. Simply puncture air lines with a hot safety pin in the air lines coming out of control box.

Spa light won't come on.

GFI popped out.

Reset GFI on box.

Light bulb burnt out.

Replace bulb. (See page 10.)

Dirty connection.

Check to see if there is anything covering the connection on the housing that holds the light bulb.

Light plug not in all the way.

Check plug, making sure it's pushed in all the way into receptacle.

Blower comes on by itself.  
(Gas Pak Units)

Pressure builds up in the air lines.

Pressure builds up in the air lines and you need to install a small air relief hole in the air tubing. Simply puncture air lines with a hot safety pin in the air lines coming out of control box.

Blower will not come on.

Blower plug not plugged in.

Check plug, making sure it's plugged into receptacle.

Air tubing disconnected.

Check air tubing at either end to see if disconnected.

Blower comes on when jet button is pushed.

Lines crossed.

Reverse air lines at the control box.

Spa is leaking.

Loose connection.

Hand tighten all quick disconnects & fittings. Check gaskets and O-rings.

# TROUBLESHOOTING GUIDE

## AIR BLOWER ASSEMBLY

### SYMPTOMS

Air Blower will not operate.

### PROBABLE CAUSE

Improper setting of air button control switches.

Blower not plugged in.

Air tubing disconnected.

### RECOMMENDED ACTION

Air button sequencer is on air position.

Plug Blower in.

Connect air tubing.

### For Gas Paks Only:

NOTE: Air lines require small relief holes to keep pressure from building in air lines which could cause equipment to stay on or come on by itself. To correct this, puncture air lines with a hot safety pin where noted in diagram.

Simple solutions to small problems as this can and should be learned by owner, as this will be considered a maintenance call and not a warranty call. A trip charge could result if the service department is called out on this account.

**Equipment Warranty  
Limited Warranty**

CAL SPAS (seller), warrants each of the designated pumps, filters, heaters, air blowers and Cal control boxes against defects in materials and workmanship for a period of one year on parts and 90 days on labor from the date of original purchase. If any component fails to perform in normal use during the warranty period, the parts that prove to be defective will either be repaired or replaced at Seller's option. The right is reserved by the Seller to replace the whole product in lieu thereof. The Seller will warrant the replacement or repair for only the unexpired portion of the original warranty. Should repair become necessary during the warranty period, return the component, postage or freight, prepaid, to the Seller's factory.

**EXCLUSIONS.** This contract does not cover services made necessary as a result of fire, theft, vandalism, acts of God, accidental damage, abuse, neglect (dirt or lack of routine recommended maintenance), unauthorized alterations, or any other cause originating outside the product(s) covered, including failures or inadequacies in customer's water, gas, or electric supply. Also excluded from coverage are all parts exterior to the equipment pak including but not limited to the plumbing.

**IMPORTANT.** CAL SPAS warrants its products against defective materials and workmanship, not against failure due to improper installation techniques. It is the responsibility of the purchaser to assure that those installing this equipment are well trained in correct and proper installation techniques.

**SERVICE AND/OR REPAIR.** Should your equipment require service following the warranty period, or should it require service and/or repair for non-warranty failure, return it to the factory, freight prepaid. In writing, indicate the problem you are experiencing with your component. A reasonable charge will be made for labor and material, if any.

ALL LIABILITY FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, TIME CHARGES OR ANY OTHER LOSSES INCURRED IN CONNECTION WITH THE PURCHASE, INSTALLATION, REPLACEMENT OR REPAIR OF THE SELLER'S PRODUCT IS DISCLAIMED AND EXCLUDED HEREFROM.

**ASSIGNMENT.** This contract is personal to and for the sole benefit of the original purchaser at the original site of purchase and, except with the consent in writing of California Acrylic Industries, Inc., is not assignable.

Some states do not allow limitations on how long an implied warranty lasts, or the exclusion or limitation of incidental or consequential damages so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

**HOMEOWNER-COMplete AND RETAIN FOR YOUR RECORDS**

EQUIPMENT MODEL # \_\_\_\_\_ SERIAL # \_\_\_\_\_

DATE OF PURCHASE \_\_\_\_\_

BUILDER/DEALER \_\_\_\_\_

HOMEOWNER'S NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

TELEPHONE# (     ) \_\_\_\_\_ DATE OF START UP \_\_\_\_\_

**The World's Largest  
Spa Manufacturer**

**CalSpas**<sup>®</sup>  
A DIVISION OF CALIFORNIA ACRYLIC INDUSTRIES, INC.

**California Acrylic Industries, Inc.**

1462 E. Ninth St., Pomona, CA 91766

(714) 623-8781

CALIFORNIA ACRYLIC INDUSTRIES, INC.

LIMITED WARRANTY

THIS IS TO CERTIFY that the  portable  in-ground SPA, MODEL \_\_\_\_\_, SERIAL NUMBER \_\_\_\_\_, is hereby registered to:

NAME: \_\_\_\_\_  
ADDRESS: \_\_\_\_\_  
CITY: \_\_\_\_\_  
STATE: \_\_\_\_\_ ZIP: \_\_\_\_\_  
TELEPHONE: ( ) \_\_\_\_\_

and is warranted to be free of all defects in material and workmanship for the following periods from this date of registration, the \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_\_. **TO THE ORIGINAL PURCHASER AND THE ORIGINAL PURCHASER ONLY AT THE ORIGINAL SITE OF DELIVERY:**

**FIVE (5) YEARS:** The spa shell, excluding its finish and factory installed accessories and pre-plumbing. In the event of a defect in material and/or workmanship within the said period, the spa shell shall be repaired or replaced, at the option of the manufacturer, and shall assume as its warranty period only the remaining time under this original five (5) year warranty.

**ONE (1) YEAR:** The acrylic finish applied to the interior surface of the spa shell. In the event of a defect in material and/or workmanship within said period, the spa finish shall be repaired or replaced, at the option of the manufacturer, and shall assume as its warranty period only the remaining time under this original one (1) year warranty.

**THREE (3) MONTH:** Pre-plumbing and factory installed accessories, including air jets, skimmer, suction fittings, tile, air-switch, and skirting. In the event of a defect in material and/or workmanship within said period, the defective item shall be repaired or replaced, at the option of the manufacturer, and shall assume as its warranty period only the remaining time under this original three (3) month warranty.

**EQUIPMENT:** Any and all equipment sold in conjunction with the above identified spa is excluded from this Limited Warranty. All such equipment, if expressly warranted, is in accordance with its manufacturer's warranty, a copy of which is provided with each piece of equipment sold herewith. Buyer is instructed to comply with and follow the instructions contained in said warranties for service in the event of a claimed defect.

**THIS WARRANTY DOES NOT APPLY** to any defects caused by negligence, misuse, accidents or intentional vandalism. Examples of the more common act of negligence which will invalidate this warranty is (1) the use of acid or acid products in said spa. **NO ACID OR ACID PRODUCT MAY BE UTILIZED IN THIS SPA.** Please refer to your owner's manual for instructions on properly maintaining the required chemical balance; (2) failure to adequately protect your spa from the extremes in temperature; spa covers and other accessories are available to assist you in this regard; and (3) improper installation by Buyer's who either install or personally arrange installation on their spa. **AS SPECIFIED IN YOUR OWNER'S MANUAL, YOUR SPA MUST BE INSTALLED ON A LEVEL SURFACE, IF PORTABLE, OR ADEQUATELY BACKFILLED WITH SAND IF INSTALLED IN-GROUND.** Failure to follow these simple precautions will result in excessive stress in areas of your spa with resulting cracking.

Within the above specified periods, **CALIFORNIA ACRYLIC INDUSTRIES, INC.** is obliged to repair or replace any specified part proving defective in material and/or workmanship. Buyer is instructed to contact directly the Dealer from whom he or she had purchased the spa who will arrange warranty service. **IN THE EVENT THE BUYER SHOULD BE UNABLE, FOR ANY REASON, TO EITHER OBTAIN SUCH SERVICE OR OBTAIN SATISFACTORY SERVICE, HE OR SHE IS INSTRUCTED TO CONTACT MANUFACTURER'S SERVICE CENTER, CUSTOMER SERVICE DEPARTMENT, LOCATED AT: 1481 E. NINTH ST., POMONA, CA 91766, TELEPHONE (714) 623-9975, (800) 822-SPAS. THIS WILL IMMEDIATELY TAKE STEPS TO PROVIDE ALL SERVICE TO WHICH BUYER MAY BE ENTITLED UNDER THIS WARRANTY.** All expenses related to replacing or repairing a defective spa, finish, or part under this warranty shall be assumed by the manufacturer, **EXCEPT THAT BUYER SHALL ASSUME AND BE RESPONSIBLE FOR ANY AND ALL EXPENSES INCURRED IN TRANSPORTATION COSTS, OR IN OBTAINING ACCESS TO SAID SPA, FINISH OR PART FOR ITS REPAIR OR REMOVAL AND/OR REPLACEMENT.**

**BUYER MUST NOTIFY** manufacturer of any defect, malfunction, or nonconformity promptly upon discovery. Notification by Buyer to his or her selling Dealer will satisfy this requirement. Within **TWENTY (20)** days after giving notice to said Dealer, Dealer will commence and diligently pursue warranty service to completion or Buyer is advised to contact manufacturer as specified hereinabove.

Manufacturer neither assumes nor authorizes any Dealer or other representative or person to assume for it any other liability in connection with the sale or shipment of the above specified products. Manufacturer reserves the right to make changes or improvements in our products without incurring any obligation to similarly alter products previously purchased.

**THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.** The Buyer has the right to bring any action at law or equity to resolve disputes concerning the provisions of this warranty.

CALIFORNIA ACRYLIC  
INDUSTRIES,  
1462 East Ninth  
Pomona, CA 91766  
(714) 623-8781

EFFECTIVE DATE: 8/90



Happiness is  
a Warm Spa  
by

# CAL SPA

A DIVISION OF CALIFORNIA ACRYLIC INDUSTRIES INC.  
14621/5 Ninth St. • Pomona, California 91766  
Corporate Office (714) 623-8781

## Owners Information

Dealer \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

Phone \_\_\_\_\_

Installer \_\_\_\_\_

Company \_\_\_\_\_

Lic. # \_\_\_\_\_

Address \_\_\_\_\_

Phone \_\_\_\_\_

Spa # \_\_\_\_\_

Equipment Pak # \_\_\_\_\_

Date of Delivery: \_\_\_\_\_

Signature of Sales Representative \_\_\_\_\_