Catalina Spas

Owner's Manual

www.catalinaspas.com

Welcome

to the ***Catalina Spa*** Experience...

Comfort, design, engineered performance, and service. During the past 3 decades, satisfied customers have been responsible for Catalina Spas phenomenal growth and success in the spa industry. We have learned through 50 years of manufacturing experience, beginning with Catalina Boats, that customer satisfaction can only be created by combining State-Of-The-Art Manufacturing technology with the ultimate design for comfort and performance that is engineered years ahead of its time. Catalina Spas possess all these features explaining why more customers are demanding the best –

CATALINA!!!

Catalina Spas are listed by the nationally recognized safety experts. After months of rigorous testing of our spas, we meet or exceed all requirements. We are proud of the Catalina trademark. Outstanding quality with the ultimate performance built into every Catalina spa.

Our 100% filtration system will keep your spa clean when combined with regular water maintenance. The easy to clean front loading filter and skimmer has been designed to trap dirt and oil while larger floating objects are caught by the leaf basket, providing total water filtration. We have developed an insulation system like a thermos bottle to keep your water hot and energy bills low.

Our sophisticated control system allows the user to monitor and control all spa functions, including water temperature and silent air venturis, while comfortably seated in the spa. For a genuine therapy whirlpool massage, simply turn the dial and our unique whirlpool system will create the ideal relaxation. The same flow can be returned to high volume hydro jets, providing individual massage that is out of this world. Other features include low voltage lights, genuine mahogany spa cabinets, soft headrests, and a modular equipment pack available in 220 Volt, designed for simplified service.

IMPORTANT SAFTEY INSTRUCTIONS

1. **READ AND FOLLOW ALL INSTRUCTIONS.**

2. **DANGER** – Do not lay across the foot well. Always, sit in an upright position.

3. **WARNING** – To reduce the risk of injury, do no permit children to use this product unless they are closely supervised at all times.

4. **CAUTION** – Water temperature may rise when jets are operating on "high" speed for extended duration.

5. A bonding lug has been provided on the outside of the Equipment Package electrical control box. The lug permits the connection of No. 8 AWG (8.42mm^2) solid copper bonding conductor between the Equipment Module and all other electrical equipment and exposed metal in the vicinity, as may be needed to comply with local regulations.

6. **WARNING** – This unit must be hardwired only to a supply circuit that is protected by a ground fault circuit interrupter (GFCI) see diagram 1. Such a GFCI is required by most building codes and should be provided by the installer and must be tested before each use. Consult GFCI manufacturers' instructions for correct testing and operation.

7. The electrical supply for this product must include a suitable rated switch or circuit breaker to open all ungrounded supply conductors to comply with the National Electrical Codes. The disconnection means must be readily accessible to the tub occupant but installed at least 5 feet (1.5M) from spa water.

8. Spas must be installed with drainage for electrical equipment compartment.

9. Be sure the water always flows freely from the hydrotherapy jets within the spa. Any blockage or restriction of this water flow by persons or objects may damage system components, create an electrical shock hazard, and or cause water damage to the surrounding area.

10. To avoid damage to the pump(s) and heater, the Equipment must never be operated unless the spa is filled with water.

11. **DANGER** – Extreme caution must be exercised to prevent unauthorized access by children. To avoid accidents, ensure that children cannot use this spa unless they are supervised at all times.

12. **WARNINGS – WATER TEMPERATURE**. Never heat your spa water above 104 F (40 C). If you do, it could cause serious health hazards.

13. ⚠ **DANGER – RISK OF ELECTRICAL SHOCK**. Install at least 5 feet (1.5m) from all metal surfaces. (A spa may be installed within 5 feet of metal surfaces if each metal surface is permanently connected by a minimum No. 8 AWG (8.4 mm^2) solid copper conductor attached to the wire connector on the terminal box that is provided for this purpose.)

14. ⚠ **DANGER – RISK OF ELECTRICAL SHOCK**. Do not permit any electrical appliance such as a light, telephone, radio, or television within 5 feet (1.5m) of a spa.
15. The ideal temperature of your spa or hot tub should be between 95 and 104 F (35 – 40 C). This range is not only healthier but will also result in easier care of your spa.

16. 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 temperatures to 100 F or less.

17. Before entering a spa, 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 degrees.

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

19. 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.

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

21. Because occasional users of the spa may not be aware of all the potential risk associated with spa usage, they should be made aware of these Important Safety Instructions.

22. **CHEMICAL SAFETY – Play it safe with chemicals**.

23. Maintain sanitizer level of 3-5 ppm of bromine or chlorine.

24. Do not mix chemicals with each other before adding them to the water. Add only one chemical at a time.

25. Never add concentrated liquid chemicals directly to the water. Always dilute chemicals in a large plastic bucket or pail before adding them.

26. When diluting chemicals, always add them to the water. Never add water to the chemicals.

27. Always dilute the chemical slowly and evenly before adding into the water. Never add any chemical, diluted or otherwise, into any skimmer device.

28. Always store chemicals according to the manufacturer's label directions and keep them out of reach of children.

ELECTRICAL REQUIREMENTS
220 VOLT INSTALLATION

The Equipment Package is designed to operate at 220 volts, 60 Hz. Hardwired directly to the equipment pack; a 50 amp dedicated service is required.

This unit must be hardwired only to a supply circuit that is protected by a ground fault circuit interrupter (GFCI) (see Diagram 1). Such a GFCI is required by most building codes, should be provided by the installer and must be tested before each use. Consult GFCI manufacturer's instructions for correct testing and operation.

When the Equipment Package is connected to 220 volts, the Heater will provide approximately 4000 watts of heat when the Pump is operating in LOW or HIGH speed and the thermostat is calling for heat.

⚠ **IMPORTANT NOTE**: All electrical connections to the Equipment Package must be accomplished by a qualified electrician in accordance with the National Electrical Code and in accordance with any local electrical codes in effect at the time and place of installation. NOTE: Do not attempt to use a dryer, stove or other 220 volt line with the spa. A separate breaker and a dedicated line from your electrical panel is required.

All electrical connections must be made in accordance with the wiring information contained in this manual (see Diagram 1), in the electrical control box or on the back of the field wiring access panel of the Equipment Package. Failure to provide proper electrical power to your spa will void your warranty. Installation by a licensed electrician is recommended.

The Electrical supply for this product must include a suitable rated switch or circuit breaker to open ALL ungrounded supply conductors to comply with Local and National Electrical Codes. The disconnecting means must be within sight, and readily accessible to the user of the spa, but installed at least 5 feet (1.5m) from the spa.

INSTALLATION AND SURFACE PLACEMENT OF YOUR SPA

In order for your spa to function properly, it must be placed on a smooth, LEVEL, self-draining surface. The Equipment Module is installed to provide adequate drainage, and to prevent water from entering the electrical equipment area. If installing the spa indoors, the floors and structures beneath the spa must be protected against run-off.

Concrete is preferred so that rain water and water spillover may run-off and not puddle underneath the spa causing the wood to rot away over a period of time (The only requirement for concrete is that you have 1" of slope per 10' for run-off). Other options are brick, stepping stones, or blocks. You could also place it on top of a wood deck. Wood decking requires that the deck must be constructed to support 80 pounds per square foot.

It is important to note that soft surfaces, even when stepping stones are used to evenly distribute the weight of the spa, will still have a tendency to settle thus resulting in an unleveled spa. Remember, placing the spa on grass or dirt may increase the amount of debris which is inadvertently brought into the spa water from the user's feet.

When considering an installation site, always allow for access to the equipment compartment of the spa and enough clearance to pull the door out for future service if necessary. If accessory items will be installed on or around the spa (cover lift, gazebos, steps, bar, planters), allow for additional space around the spa's perimeter.

Please note that some cities and counties may require a permit for installation of electrical circuits or the construction of exterior structures (decks and gazebos). In addition, some counties may require permits for the installation of a portable spa. Check your local codes for compliance.

IMPORTANT: To ensure you will have an opportunity to use your spa soon after delivery, it is very important that you select the site prior to setting your spa in place and have a licensed electrician install the equipment if necessary.

If you have any questions or concerns, please contact your local Catalina Spas dealer first. Or you can contact us via the internet at *SpaInfo@catalinaspas.com*

(www.catalinaspas.com)

START UP PROCEDURES

FILLING UP YOUR SPA

Once you have installed your spa on its foundation and all electrical requirements have been met, you may begin the necessary steps in filling your spa.

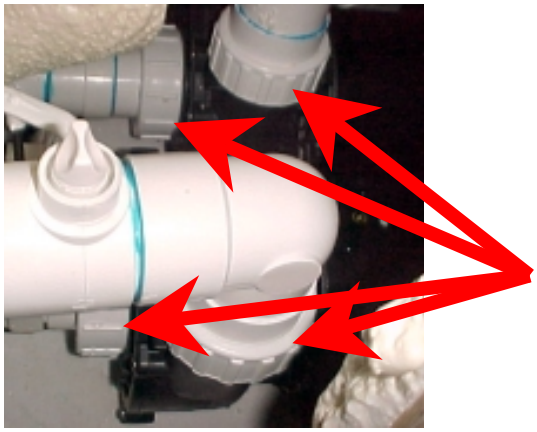
All gate valves must be OPEN. There are two twist and turn locking gate valves located under the skirt on each side of the Equipment Pack.

To open the gate valve, pull handle outward approximately 3" until it stops and snaps into place. These must be opened prior to operation to allow water to flow through the Equipment Package (2 pump models have 4 gate valves).

Make sure the filter cartridge (basket and weir, if so equipped) is in place. Fill the spa using a garden hose until the water is halfway up the "throat" of the skimmer, otherwise it will suck air, which will cause the pump motor to "run dry" and burn up. This repair would not be covered under warranty. You should check the water level of your spa each day as there is normal evaporation each day, and more often when spa is used frequently.

IMPORTANT: Purge the air out of the system

When purging air out of the system, be sure the pump(s) are turned OFF. Open valves counterclockwise to release air until water runs out. Then close the valves. There will be one relief valve per pump. So, a **two pumps** system would have **two** air relief valves. (see red arrow to locate air relief valve)



Check and tighten the PUMP UNIONS. The pump unions might have become loose during shipment. There are two pump unions per pump. So, a **two pumps** system would have **four** pump unions.

Press function button switch on. It is important that the pump's HIGH speed be operating for several minutes to assure that all the air has been removed from the system.

Check to see if all functions of the spa are operational. Low speed is used for filtering and heating. High speed is used for jet action. Additional functions may include operation of a blower and/or pump and blower together. Please refer to the Special Product Features section for specific product functions.

To avoid damage to the pump and heater, the Equipment Package MUST NEVER be operated unless the spa is filled with water.

Be sure that water always flow freely from the hydro therapy jets within the spa. Any blockage or restriction of this water flow by persons or objects may damage system components, create an electrical shock hazard, and/or cause water damage to the surrounding area.

WATER TESTING

It is recommended that you test your spa water regularly with an accurate test kit or test strips. These are available from your local Authorized Catalina Spa Dealer. Also, be sure to follow chemical manufacturer's instructions for chemical use.

pH CONTROL

All water solutions have pH, which is a measure of the acid to base relationship. A pH reading of 7.0 is neutral, a lower reading is acidic and a higher reading is basic. The proper pH for spa water is between 7.4 and 7.6 High pH (above 7.6) can reduce sanitizer efficiency, cloud the water, promote scale formation on surfaces and equipment, and interfere with filter operations. When pH is too high, add a pH decreaser. Low pH (below 7.2) is equally damaging and can cause equipment corrosion, water that is irritating, and rapid sanitizer dissipation. Add pH increaser to bring the pH higher.

OPERATION INSTRUCTIONS
for DELUXE DIGITAL CONTROL SYSTEM

Catalina CAT8000

If your spa is not fully equipped, the panel buttons on your spa control may not be laid out as shown or respond as described in this document. The pump responsible for heating and filtration (pump 1 on low speed) will be referred to simply as the pump. Timeouts refer to a preset length of time that a function is programmed to operate before shutting off automatically. Certain conditions (filters or freeze) can cause a function to operate longer, while faults can cause a function to operate for a shorter length of time. The system keeps track of timeouts regardless of other conditions occurring.

Example of one Auxiliary Panel available

Initial Start-up
When your spa is first actuated, it will go into Priming mode (after displaying some configuration information). The Priming mode will last for up to 4 minutes and then the spa will begin to heat the spa and maintain the water temperature in the Standard mode. You can exit Priming mode early by pressing "Warm" or "Cool."

Temp Set (80.0°F - 104.0°F / 26.0°C - 40.0°C)
The start-up temperature is set at 100°F/37.5°C. The last measured temperature is constantly displayed on the LCD. **Note that the last measured spa temperature displayed is current only when the pump has been running for at least 2 minutes.**

Warm / Cool
Press the "Warm" or "Cool" button once to display the set temperature. Each time either button is pressed again, the set temperature will increase or decrease depending on which button is pressed. After three seconds, the LCD will automatically display the last measured spa temperature.

Time
When time hasn't been programmed, the TIME icon flashes. To set the time, press "Time" then "Mode/Prog" and follow prompts, using the "Warm" and "Cool" buttons to adjust time. If your spa has an optional pH/Orp sensor, pressing "Time" twice will display the current pH level; pressing it three times will display the current Orp.

Invert
Press the "Invert" button to reverse the display if it appears upside down. You may also press the "Warm" or "Cool" button, followed by the "Blower" button to reverse the display.

Jets 1
Press the "Jets 1" button once to turn pump 1 on or off, and to shift between low and high speeds if equipped. If left running, the low speed turns off after 2 hours and the high speed turns off after 15 minutes. The low speed of pump 1 runs when the blower or any other pump is on. It may also activate for at least 2 minutes every 30 minutes to detect the spa temperature (polling) and then to heat to the set temperature if needed, depending upon mode. When the low speed turns on automatically, it cannot be deactivated from the panel; however, the high speed may be started.

Jets 2
Press the "Jets 2" button once to turn pump 2 on or off. If left running, the pump will turn off after 15 minutes.

Jets 3 (optional)
Press the "Jets 3" button once to turn pump 3 on or off. If left running, the pump will turn off after 15 minutes.

Light
Press the "Light" button to turn the spa light on or off. If left on, it will automatically turn off after 4 hours.

Fiber (optional)
If a fiber-optic light with wheel is installed, press the "Fiber" button once to start the light and wheel, press it again to stop the wheel, and then again to turn the light off. The fiber icon stands still when the fiber optic light is on by itself, and rotates when the color wheel is also on. Both spa light and fiber optic light can be used simultaneously. If either light is left on, it will automatically turn off after 4 hours.

Mister (optional)
Press the "Mister" button to turn the mister pump on or off.

Mode/Prog
This button is used to switch between standard, economy, and sleep modes. Press "Mode/Prog" to enter mode programming, press "Cool" to cycle through to desired mode (LCD flashes until confirmed), then press "Mode/Prog" to confirm selection.
Standard mode is programmed to maintain the desired temperature. Note that the last measured spa temperature displayed is current only when the pump has been running for at least 2 minutes. The "STANDARD" icon will display until the mode is changed.
Economy mode heats the spa to set temperature only during filter cycles. The "ECONOMY" icon will display until mode is changed. Pressing "Jets 1" while in Economy mode puts the spa in **Standard-in-Economy mode,** which operates the same as Standard Mode, then reverts to Economy Mode automatically after 1 hour. During this time, a press of the "Mode" button will revert to Economy Mode immediately.
Sleep mode heats the spa to within 20°F of the set temperature only during filter cycles. The "SLEEP" icon will display until mode is changed.

Blower (optional)
Press the "Blower" button to turn on or off. If left on, the blower will automatically turn off after 15 minutes. (**Thermal overload protection will shut blower down automatically when it gets too hot. Blower will resume normal operation after cooling off. This is the normal function of the blower**.)

Standby Mode
Pressing "Warm" or "Cool" then "Jets 2" will turn off all spa functions temporarily. This is helpful when changing a filter. Pressing any button resets the spa.

Preset Filter Cycles
There are two filter cycles per day. The start/end times of each cycle are programmable. To program start/end times, continue following prompts after setting time as instructed above, pressing "Mode/Prog" to advance to the next setting (or to exit after the last setting). The default filter cycles are as follows:
The first filter cycle is automatically activated at 8:00 AM and operates the pump until 10:00 AM. The F1 indicator light will light when filter 1 is running.
The second filter cycle is automatically activated at 8:00 PM and operates the pump until 10:00 PM. The F2 indicator light will light when filter 2 is running.
The pump and the ozone generator will run during filtration. At the start of each filter cycle, the blower will run on for 30 seconds to clean out the air channels.

Clean-up Cycle (optional)
When the pump or blower is turned on by a button press, a clean-up cycle begins 30 minutes after the pump or blower is turned off or times out. The pump and the ozone generator will run for one hour.

Ozone (optional)
The ozone generator (if installed) runs during filter cycles (except when pump 1 is operating at high speed) and during clean-up cycles.

Freeze Protection
If the temperature sensors detect a drop to 44°F within the heater, then the pumps and the blower will automatically activate to provide freeze protection. The equipment stays on until 4 minutes after the sensors detect that the spa temperature has risen to 45°F or higher. In colder climates, an optional additional freeze sensor may be added to protect against freeze conditions that may not be sensed by the standard sensors. Aux freeze sensor protection acts similarly except with the temperature thresholds determined by the switch and without a 4-minute delay in turn off. See your dealer for details.

Locking the Panel
Press "Time" "Jets 1" then "Warm" within 3 seconds. When locked, the PL indicator light will light. All buttons are frozen except the "Time" button. To unlock the panel, press "Time" "Jets 1" then "Cool."

Locking the Set Temperature
Press "Warm" or "Cool" then "Time," "Jets 1," and "Warm" within 3 seconds to activate the lock. The TL indicator light will light when the set temperature is locked. To unlock the set temperature, press "Warm" or "Cool" then "Time," "Jets 1" and "Cool."

Setting the Time
Once the spa has been properly connected the first time, notice the word "Time" flashing on the screen. Press Then . Select the hour by pressing or (each press changes the time by 1 hour). Press to enter the hour. Select the minutes by pressing or (each press changes the time by 1 minute). Press to set the time and enter into the optional filter cycle programming. **OR** press to set the time and exit.

Optional Filter Cycle Programming
You are not required to set filter cycles; however, it is an option available to you. To change the filter cycle settings:
Press within 3 seconds. You will see "SET FILTER 1" (AM cycle) and a flashing "START TIME" icon appear on the display. Press or to choose the filter start time hour. Enter the hour by pressing . Press or to choose the filter start time minutes. Enter the minutes by pressing . Each press changes the start time by 5 minutes.
Press to see "SET FILTER 1" and a flashing "END TIME" icon. Adjust the time as done above.
Press to see "SET FILTER 2" (PM cycle) and a flashing "START TIME" icon and proceed as above.
Press to see "SET FILTER 2" and a flashing "END TIME" icon. Adjust the time as done above.
If you would like to select **continuous filtration**, set the filter 1 start and end times to be the exact same time.
Pressing will enter the new filter cycle times into the system and display the current water temperature.
Pressing at any time during this programming sequence will save the values entered up to that point and exit programming.

Diagnostic Messages

Message	Meaning	Action Required
	No message on display. Power has been cut off to the spa.	The control panel will be disabled until power returns. Spa settings will be preserved for 30 days with a battery backup.
HTR TEMP LMT	"Overheat" - The spa has shut down. One of the sensors has detected 118°F at the heater.	DO NOT ENTER THE WATER. Remove the spa cover and allow water to cool. Once the heater has cooled, reset by pushing any button. If spa does not reset, shut off the power to the spa and call your dealer or service organization.

SPA TEMP LMT	"Overheat" - The spa has shut down. One of the sensors has detected that the spa water is 110°F.	DO NOT ENTER THE WATER. Remove the spa cover and allow water to cool. At 107°F, the spa should automatically reset. If spa does not reset, shut off the power to the spa and call your dealer or service organization.
FREEZE COND	"Ice" - Potential freeze condition detected.	No action required. The pumps and the blower will automatically activate regardless of spa status.
SENSOR A SERVICE RQD	Spa is shut down. The sensor that is plugged into the Sensor "A" jack is not working.	If the problem persists, contact your dealer or service organization. (May appear temporarily in an overheat situation and disappear when the heater cools.)
SENSOR B SERVICE RQD	Spa is shut down. The sensor that is plugged into the Sensor "B" jack is not working.	If the problem persists, contact your dealer or service organization. (May appear temporarily in an overheat situation and disappear when the heater cools.)
SENSOR SYNC	Sensors are out of balance. If this is the only message displaying, it may just be a temporary condition. If the display also reads "SERVICE REQ'D," the spa is shut down.	If the problem persists, contact your dealer or service organization.
HTR FLOW LOW	A substantial difference between the temperature sensors was detected. This could indicate a flow problem.	Check water level in spa. Refill if necessary. If the water level is okay, make sure the pumps have been primed. If problem persists, contact your dealer or service organization.
LOW FLOW	Persistent low flow problems. (Displays on the fifth occurrence of the "HTR FLOW LOW" message within 24 hours.) Heater is shut down, but other spa functions continue to run normally.	Follow action required for "HTR FLOW LOW" message. Heating capacity of the spa will not reset automatically; you may press any button to reset.
HEATER MAY BE DRY — WILL RETEST SHORTLY	Inadequate water detected in heater.	Check water level in spa. Refill if necessary. If the water level is okay, make sure the pumps have been primed. Press any button to reset.
HEATER DRY SERVICE RQD	Inadequate water detected in heater. (Displays on third occurrence of "HEATER MAY BE DRY - WILL RETEST SHORTLY" message.) Spa is shut down.	Follow action required for "HEATER MAY BE DRY - WILL RETEST SHORTLY" message. Spa will not automatically reset; you may press any button to reset.
PRIMING MODE TAKES 4 MIN	When your spa is first actuated, it will go into Priming mode.	See the M-7 Installation Instruction Manual for complete instructions on Power-up and Pump Priming. The Priming mode will last for up to 4 minutes and then the spa will begin to heat and maintain the water temperature in the Standard mode.
– – F or – – C	Temperature unknown.	After the pump has been running for 2 minutes, the temperature will be displayed.

- - - -	Temperature not current in Economy or Sleep mode.	In Economy or Sleep mode, the pump may be off for hours outside a filter. If you wish to see the current spa temperature, either switch to Standard mode or turn Jets1 on for at least two minutes.
BACKUP FAIL	Internal problem detected.	Repair required. Contact your dealer or service organization.
STANDBY MODE	Standby Mode has been activated by pressing a button combination on the user panel.	Press any button to leave Standby Mode and return to normal operation.
PH IS LOW RAISE PH	pH is low.	Add pH increaser according to manufacturer's instructions.
PH IS HIGH LOWER PH	pH is high.	Add pH decreaser according to manufacturer's instructions.
SANITIZER LOW	Sanitizer is low.	Add sanitizer according to manufacturer's instructions.
SANITIZER HIGH	Sanitizer is high.	Remove spa cover and allow sanitizer to dissipate.

Periodic Reminder Messages (Press the "Mode" button to reset a displayed reminder)

Message	Frequency	Action Required
CHECK PH	Every 7 days	Test and adjust chemical levels per manufacturer's instructions.
CK SANITIZER	Every 7 days	Test and adjust chemical levels per manufacturer's instructions.
CLEAN FILTER	Every 30 days	Remove, clean, and reinstall filter per manufacturer's instructions.
TEST GFCI	Every 30 days	Test & reset GFCI per manufacturer's instructions..
DRAIN WATER	Every 90 days	Drain and refill spa per manufacturer's instructions
CHANGE MINERAL CARTRIDGE	Every 90 days (fourth line blank before message repeats)	If applicable, change mineral cartridge.
CLEAN COVER	Every 180 days	Clean and condition cover per manufacturer's instructions.
TREAT WOOD	Every 180 days	Clean and condition wood per manufacturer's instructions.
NEW FILTER	Every 365 days	Install new filter.

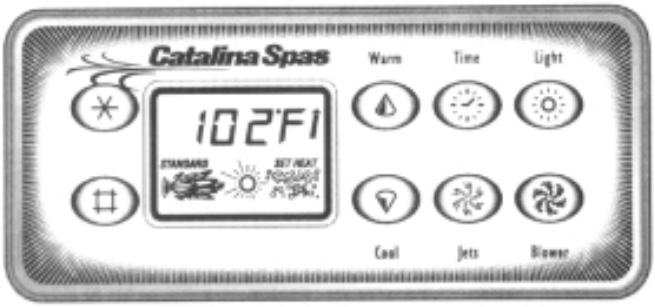
Warning! Shock Hazard! No User Serviceable Parts.

Do not attempt service of this control system. Contact your dealer or service organization for assistance. Follow all owner's manual power connection instructions. Installation must be performed by a licensed electrician and all grounding connections must be properly installed.

Catalina CAT200

Don't Panic! No Programming is Necessary!

Initial Start-up
When your spa is powered up, it begins running in an economy mode. This setting is designed for periods of little or no spa use, but the spa continues to filter twice a day to maintain water quality. Press the pad to switch the spa to standard mode which will automatically heat and maintain the water at 100°F or your desired set temperature.



Setting the Time of Day
When the spa is first powered up, the words "**SET TIME**" will flash on the display. To set the time, press , , then or . After or is pressed once, the time will begin changing in one-minute increments. Press either pad to stop the time from changing. Press to enter your correct time into the system.

Temperature Adjustment (80° F – 104° F)
Press either pad or once, and the LCD will display the set temperature. Each time either of these pads is pressed again, the set temperature will increase or decrease. After three seconds, the LCD will automatically display the current spa temperature.

Optional Filter Cycle Programming
Your spa will automatically filter itself twice each day. The low speed of the pump and the ozone generator (if installed) will run the duration of each filter cycle.

While you are not required to set filter cycles, if you want to change them, press , , within 3 seconds. "**SET START FILTER 1**" (AM cycle) will appear on the display.
Press or to reset the filter start time.
When "**SET HEAT**" is on the display, press (on) to warm the water during filtering, or press (off) to disable the heater.
Press to see "**SET STOP FILTER 1**" and adjust the time with the or pads as done above.
Press to see "**SET START FILTER 2**" (PM cycle) and proceed as above.
Pressing will enter the new filter cycle times into the system and display the current water temperature.

Locking the Panel
Press , , within 3 seconds. When locked, the display will show the temperature you have chosen, along with the lock symbol. All pads are frozen except pad.

Unlocking the Panel
Press , , within 2 seconds. The lock symbol will disappear and all panel pads will work again.

Jets
The operating sequence for the pump is low speed, high speed, then off. If left running, the low speed will automatically turn off after 4 hours; the high speed will turn off after 30 minutes. The low speed runs when the heater is turned on, when a filter cycle is activated, or when a freeze condition is detected. When the low speed turns on automatically, it cannot be deactivated from the panel; however, the high speed may be started.

Blower
This pad turns the blower on and off. If left on, the blower will automatically turn off after 30 minutes. (**Thermal overload protection will shut blower down automatically when it gets too hot. Blower will resume normal operation after cooling off. This is the normal function of the blower**.)

Light
Press this pad to control your spa light. Press once to turn on the spa light and press again to turn off the spa light. If fiber optic lighting is installed, press once to turn on lights and to rotate the color wheel. Press pad again to stop the color wheel and set it at the desired color. Press pad again to turn off.

Economy & Standard Modes
Press this pad to switch between modes. **Standard mode maintains the set temperature at all times.** Economy mode heats the water only during filter cycles. See the Optional Filter Cycle Programming section for more heater options.

Freeze Protection
If the high-limit sensor detects 40°F at the heater, then all equipment is automatically activated to provide freeze protection. This is a normal spa function; no corrective action is necessary. The equipment stays on until the sensor detects 45°F at the heater. Freeze protection is enabled regardless of the status of the spa. In colder climates, an optional additional freeze sensor may be added to protect against freeze conditions. See your dealer for details.

Diagnostic Messages

Message	Meaning	Action Required
	No message on display. Power has been cut off to the spa.	The control panel will be disabled until power returns. Spa settings will be preserved for 30 days with a battery backup.
OH	"Overheat" - The spa has shut down. Either the spa water has reached 112"F or the high-limit sensor has detected 118"F at the heater.	DO NOT ENTER THE WATER. Remove the spa cover and allow water to cool. At 110 F the spa should automatically reset. If spa does not reset, shut off the power to the spa and call your dealer or service organization.
FLO	"Flow" (Flashing) - Flow of water is inhibited. "Flow" (Not flashing)- A pressure switch has malfunctioned.	Check and open flow valves. Check for correct water level. Clean filter. Contact dealer or service organization.
COOL	"Cool" - Water temperature is 20"F or more below the temperature you last set.	No action required. Spa is functioning properly.
ICE	"Ice" - Potential freeze condition is detected.	If freeze sensor is installed, no action required. The pump will automatically activate regardless of spa status.
Sn1	"Sensor 1" - Spa is shut down. High-limit sensor is not working.	Contact your dealer or service organization.
Sn3	"Sensor 3" - Spa is shut down. Water temperature sensor is not working.	Contact your dealer or service organization.

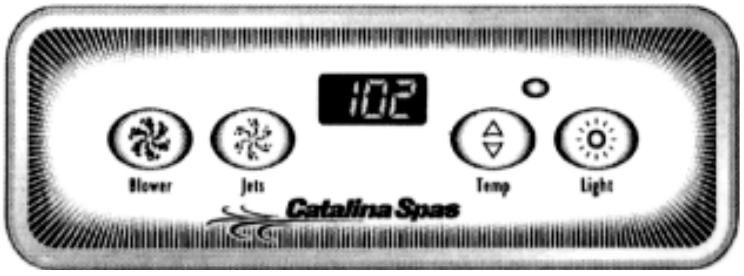
Warning! Shock Hazard! No User Serviceable Parts.

Do not attempt service of this control system. Contact your dealer or service organization for assistance. Follow all owner's manual power connection instructions. Installation must be performed by a licensed electrician and all grounding connections must be properly installed.

The SUPERDUP CONTROL SYSTEM

Catalina CAT100 / CAT 75

Initial Start Up
Your spa control has been specifically designed so that by simply connecting the spa to its properly grounded source, the spa will automatically heat and maintain 100 F. Until you change the set temperature.



Temperature Adjustment (Range: 80°F-104°F)
Temperature adjustment is controlled by pushing the (**Temp**) pad. The display shows the actual water temperature unless the pad is pressed. When the pad is pressed, the display will show the set temperature. Pressing the pad a second time will cause the set temperature to increase or decrease depending on what direction was last chosen. Each press to follow will change the set temperature in the same direction.

If the opposite direction is desired, release the pad and let the display revert to the actual water temperature. Press the pad to display the set temperature, and again to make the temperature change in the desired direction.

Jets
Press the pad to turn on the low speed of the pump. Press the pad again to turn on the high speed of the pump. (If the spa has a 2nd pump, press the pad again to turn on the high speed of both pumps. Then, press the pad again for pump 2 only.) Press the pad a final time to turn off the pump(s). Due to Automatic Spa Control, the low speed of the pump will start automatically when the heater is turned on, when a filter cycle is activated, or when a freeze condition is detected. If the low speed of the pump is on under Automatic Spa Control, it cannot be deactivated from the panel; however, the high speed of the pump(s) may be started. If left on, the low speed of the pump will automatically turn off after 4 hours; the high speed will turn off after 30 minutes.

Blower
Press the pad to turn the blower on or off. The blower will automatically turn itself off after 30 minutes

Light
Press the pad to turn the spa light on or off. The light will automatically turn off after 4 hours.

Preset Filter Cycles
Your spa will automatically filter itself twice each day. The first filter cycle will begin 1 minute after the spa is energized. The second filter cycle will begin 12 hours after the start of the first filter cycle. Filter duration is programmable at the topside panel for 2, 4, 6, or 8 hours. The default filter time is 2 hours. To program, press the  pad, then the  pad. Press the  pad to select the filter duration. Press the  pad again to exit the programming mode. During filtration, the low speed of the pump will run. To clean out the air channel, the blower will run for 30 seconds and the high speed of pump 2 will run for 5 minutes at the start of the first filter cycle. The ozone generator will be disabled for 1 hour when any function button is pressed, then turns on for 4 hours with the low speed of the pump to clean the spa.

Freeze Protection
If the high-limit sensor detects 40°F at the heater, then the pump(s) automatically activates to provide freeze protection. This is a normal spa function; no corrective action is necessary. The equipment stays on until the sensor detects 45°F at the heater. Freeze protection is enabled regardless of the spa's status.

Diagnostic Messages

 **Overheat Protection (Spa is deactivated)**

DO NOT ENTER THE WATER. If the spa water has reached 112°F, remove the spa cover to cool the water. Overheating may occur if the tilter cycle is set too long. At 110°F, the spa should reset itself. If the high-limit sensor detects 118°F at the heater, the spa will shut down. When the heater cools to 110°F, press any button to reset the spa. If the spa will not reset, then shut off power to the spa and call your dealer or service organization.

 **Flow Switch Detection**

A pressure switch is not working. Call your dealer or service organization.

 ***5n*** **Sensor (Spa is deactivated)**

The high-limit sensor or water temperature sensor is not working. Call your dealer or service organization.

Warning! Shock Hazard! No User Serviceable Parts.

Do not attempt service of this control system. Contact your dealer or service organization for assistance. Follow all owners manual power connection instructions. Installation must be performed by a licensed electrician and all grounding connections must be properly installed.

GENERAL MAINTENANCE

Every two to five months, drain your spa, clean with spa multi-purpose cleaner (found in your chemical maintenance kit) and then polish with a silicone sealant polish.

To temporarily remove foam, apply anti foaming agent to foamy areas. To correct the condition, be sure the water is balanced. Add dirt neutralizer and a sanitizer.

Be sure to add a metal build up inhibitor each time you are refilling your spa. Shock treat the water with a non-chlorine shock each week.

It is important to use scale and stain inhibitor weekly to prevent calcium deposits from damaging your spa and equipment. If this happens, it could void the warranty. Refer to your chemical handbook for further information on water chemistry and troubleshooting.

DRAINING THE WATER

Locate drain hose near or around the equipment. Remove cap and attach garden hose. Open the black valve on hose bib to drain spa.

FILTER MAINTENANCE

At least once a week, check and clean the skimmer basket and weir to insure proper filter flow. Remove leaves, foreign matter and debris when present. It is very important to maintain your spa filter cartridge clean and free of particles that can obstruct water flow. A clean filter will permit the hydrotherapy system to function properly and also allows more efficient filtering. Depending on how frequently your spa is used, we recommend cleaning the spa filter cartridge every four to six weeks. If this is not done, the filter may clog and restrict water flow, which causes inadequate filtration and poor jet performance.

Filter Sizes

Type	Total Square Feet	Catalina Part #
Sapphire Model (Single)	15 sq.ft	046
Set of Two	35 sq.ft	050
Set of Two	50 sq.ft.	054
Set of Two	120 sq.ft.	058

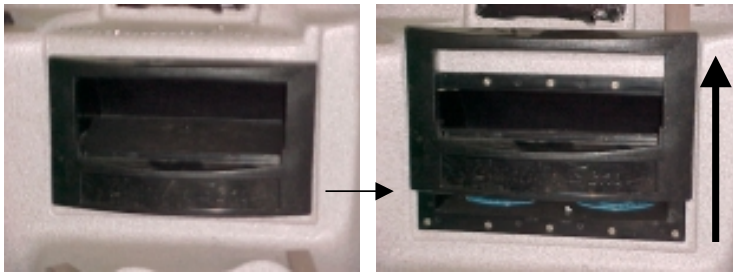
CLEANING THE FILTER

Turn filter basket clockwise to unlock and pull basket and weir out. Carefully pull up the filter cartridge and bring it our of the spa. Rinse cartridge using a garden hose. Rotate and separate filter pleats while spraying water to remove all debris possible. Let the filter dry and look for calcium deposits (scaling) or an oil film. If you find these, you will need to deep clean your filter cartridge with a "spa filter cleaning" solution to break down and remove mineral deposits and oils.

REMOVAL OF LARGE SIDE BY SIDE FILTER

Step 1:

To remove weir gate assembly or skimmer door, pull it up towards you and lift out.

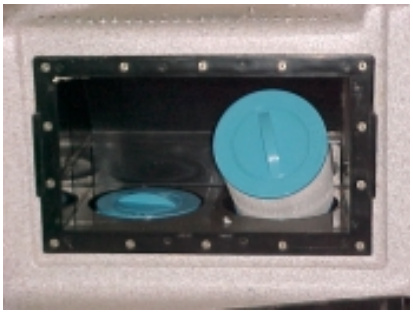


Step 2:

To remove basket assembly, slide out, lift away and remove the basket.

Step 3:

To remove the 2 – filter cartridges, turn it counter-clockwise to unthread and lift up and out.



Step 4:

To reinstall, reverse the process.

REMOVAL OF OTHER FILTER TYPES

Step 1: Reach in and pull skimmer door toward you.

Step 2: Reach in and turn leaf basket, pull up and lift out.

Step 3: Reach in and remove the spacer plug.

Step 4: Reach in and remove the filter cartridge(s).

Step 5: To reinstall, reverse the process.

MAHOGANY CABINET MAINTENANCE

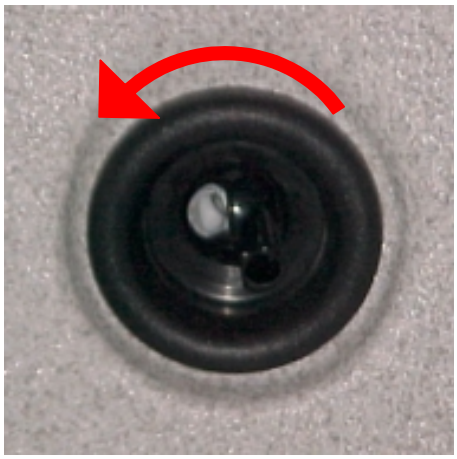
The mahogany wood cabinet must be refinish with SUPERDECK DUCKBACK OIL every six months to keep the mahogany wood looking new and lasting. The SUPERDECK DUCKBACK OIL can be purchased at your local Catalina Spas dealer.

SPA LIGHT LENS INSTALLATION

Colored lenses may be included with the spa light. To install or remove lenses, simply push ON or pull OFF of the spa light.

JET REMOVAL

Turn jet counter-clockwise to loosen.



Then slide out to remove jet.

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SPECIAL PRODUCTS FEATURES

AIR CONTROL VALVES

To adjust the amount of air in the jet stream, turn the air control valves. For maximum hydrotherapy, open the air control valves by turning counterclockwise. To close, turn clockwise. When the valves are closed, the water only circulates. When heating and ozonating, make sure the air control valves are closed. When using the air blower, make sure all air control valves are opened.

WATER CONTROL VALVES

The water control valves direct the flow from one jet system to another. It is used to operate different sets of jets. ie. neck jets, waterfall, massaging pillows, etc.

TOPSIDE STEREO CONTROL

Easy access water proof remote stereo control for controlling of stereo without getting out of the water.

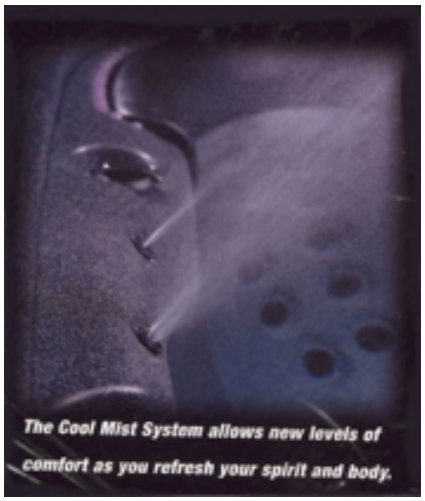
FIBER OPTIC LIGHTING

Gives your spa its unique highlights and flair.

ENTERTAINMENT SYSTEM

For added luxury, you can equip certain spas with Flat Panel TV, AM/FM CD Stereo, VCP, and/or DVD Player

COOL MIST SYSTEM

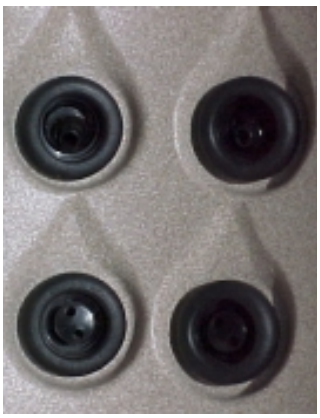


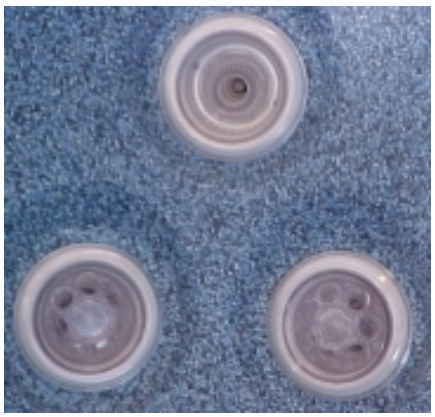
MASSAGING PILLOWS

For an even more relaxing dip in the spa to comfort those stressed muscles.

JET VARIETIES

Directional, Oscillating, Flow control

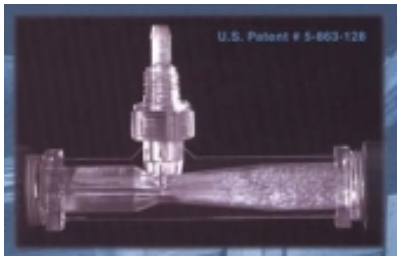




OZONE BENEFITS

First discovered in the 1840's, ozone has had been used to treat drinking water for more than 90 years. Then in 1937, the Mohawk Cruiser Swim & Tennis Club in Bryam, N.J. became the first commercial swimming pool in the United States to utilize an ozone-only oxidation and disinfecting system. Despite its long history of use as a drinking water oxidizer and sanitizer, ozone has only seen significant use in pools and spas in the U.S in the last 15 to 20 years.

Note: Catalina Spas uses the most energy efficient ozone generator from DEL Industries in combination with the Mazzei Ozone Injector, the most effective ozone injector. (ozone information below is obtained from DEL Industries)



Advanced Solid State, Reliable, Low Maintenance, Energy Efficient Ozonator System

What Is Ozone?

- Ozone is "active oxygen", nature's special element. (Each ozone molecule consists of three oxygen atoms.)
- Ozone is a natural purifier.
- Ozone is created in nature by the combination of oxygen in air and the ultraviolet rays of the sun or by the corona discharge during a lightning storm.
- Ozone has a clean, fresh scent noticed after a rainstorm.
- Ozone is the most powerful oxidizer safely used.
- Ozone is the alternative water purifier to traditional chemicals such as chlorine and bromine.

What Does Ozone Do?

- The Ozone layer in the atmosphere protects the earth from deadly radiation.
- Ozone destroys bacteria, viruses, mold, and mildew.
- Ozone eliminates spores, cysts, yeast, and fungus.
- Ozone oxidizes iron, sulfur, manganese and hydrogen sulfate.
- Ozone eliminates oils and other contaminants in water.
- Ozone eliminates odors in air, such as smoke.
- Ozone keeps water clean and sparkling clear.
- Ozone keeps water fresh.

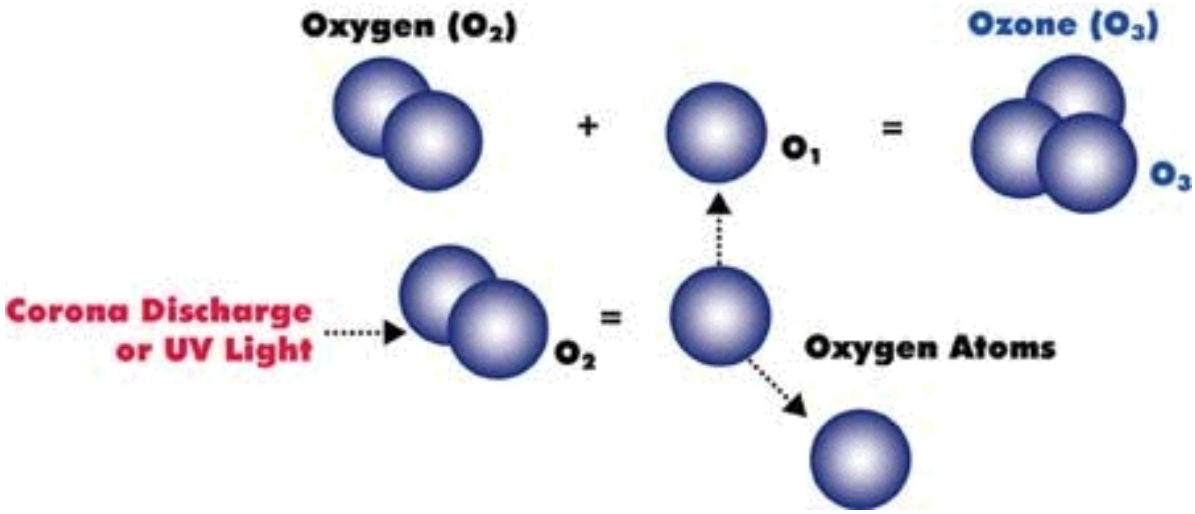
Ozone Is Healthy

- Ozone leaves no chemical by-products in water.
- Ozone leaves no chemical taste or smell.
- Ozone will not burn eyes or make them red or irritated.
- Ozone will not irritate or dry out skin, nose, or ears.
- Ozone will not leave a chemical film on material or skin.
- Ozone will not discolor or damage hair or clothing.
- Ozone adds no contaminants or by-products to water.
- Ozone rids water and air of unhealthy microorganisms.
- Ozone is NOT a carcinogen.

Where Is Ozone Used?

- In 1906, Nice, France built the first water purification plant to use ozone.
- Los Angeles, California has the largest ozone drinking water treatment plant in the world.
- Most bottled water is purified by ozone.
- Ozone is used to clean waste water and toxic waste.
- Ozone purifies water in well and home drinking water systems.
- Ozone systems have brought life back to "dead" contaminated lakes and pools.
- Ozone is used to purify air in hotel rooms, boats, RVs, cars, and smoke/fire damaged structures.
- Ozone is used in thousands of residential and commercial pools and spas all over the world.

How Is Ozone Made?



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Ozone Is Safe for the Environment as well as Equipment

- Ozone will not explode.
- Ozone is not a fire hazard.
- In the dose required for excellent purification, ozone does not produce harmful fumes.
- Ozone will not damage plumbing fittings or pipes.

Ozone Is Convenient in Pools and Spas

- Ozone does not have to be purchased or stored. Ozone is generated on site and is introduced into the water or air automatically.
- Ozone does not affect the pH balance of water, thus minimizing pH adjustments.
- Ozone helps reduce total dissolved solids in water so that the water does not have to be changed as often.
- Ozone eliminates much of the routine maintenance because it does such an effective job keeping the water clean.

Information About Chloramines

When any type of chlorine is added to water, it usually forms hypochlorous acid (HOCl - the most powerful killing form of chlorine in water) and hypochlorite ion (OCl^-), a relatively weak form of chlorine in water. The percentage of HOCl and OCl- is determined by the pH of the water. As the pH goes up, less of the chlorine is in the killing form and more of the chlorine is in the weaker form. The total of HOCl and OCl^- is the free available chlorine.

Chlorine can combine with ammonia and nitrogen compounds in the water to form chloramines, sometimes called combined chlorine. By combining with ammonia and nitrogen, free chlorine in the water is disabled. Chloramines are 60 to 80 times less effective than free chlorine. Chloramines are formed any time ammonia and nitrogen are in the water. Some of the ammonia and nitrogen compounds are introduced into the water by swimmers and bathers in the form of perspiration, urine, saliva, sputum and fecal matter. An active swimmer sweats one pint per hour. The average person sweats three pints per hour in a heated spa. Ammonia and nitrogen compounds are also introduced into the water by rain. Each drop of rain has some dissolved nitrogen from our atmosphere and from automobile emissions.

Chloramines smell bad. This is the smell most often associated with pools and spas in health clubs and YMCAs. Chloramines are eye and skin irritants, and they cloud the water.

Chloramines can be removed from the water by the following three methods:

1. By adding a mega-dose of chlorine. Usually 3 to 6 times more chlorine than a normal dose is added to the water, or the level of chlorine is raised to 5 to 10 ppm and held there for 4 hours. This is called superchlorination. To remove chloramines, the ratio of chlorine to ammonia must be at least 7.6 to 1. If this ratio is not obtained, then more chloramines will be produced. Swimmers and bathers should not enter the water until the level of chlorine has dropped to 3 ppm or less.

2. By adding a non-chlorine shock to the water. The most common chemical used for this is potassium peroxymonosulfate. This "shocking" requires the addition of one pound of shock for each 10,000 gallons of pool water.

3. By adding ozone to the water. If an ozone generator is installed on a pool or spa, then oxidation of the ammonia and nitrogen compounds will take place whenever the ozone system is operating. The longer the system operates, the more the ozone can destroy the ammonia and nitrogen. Although most ozone systems operate only when the pool or spa pump is operating, there are 24-hour systems available which will continously oxidize ammonia and nitrogen as they enter the water.

Ozone oxidizes soap, deodorant, hair spray, cologne, makeup, perfume, body lotion, hand cream, sun tan lotion, saliva and urine. In addition, ozone kills all pathogenic bacteria, germs and viruses. Ozone takes care of the big job of oxidizing all these organic contaminants. Ozone frees up the combined chlorine, thus leaving the chlorine free to provide a residual. Ozone ultimately enhances the performance of chlorine and bromine.

Less chlorine or bromine will be needed to maintain a residual. Commonly, ozone reduces chlorine or bromine use by 60-90 percent. The quality of water will be dramatically better with the combination of ozone and chlorine or the combination of ozone and bromine than with chlorine and bromine alone.

Frequently Asked Questions About Ozone

1. **What is Ozone?**
   Ozone is active oxygen, O_3. It occurs naturally in the earth's atmosphere to protect us from the sun's harmful rays.

2. **What are some uses of ozone?**
   Some common uses are: pool and spa water purification, drinking water purification, waste water purification, and air freshening.

3. **How long has ozone been used to purify water?**
   Since the late 1800's.

4. **How long has ozone been used to purify pool and spa water and remove odors from the air?**
   Over 50 years.

5. **How does the ozone used for water purification affect the air we breathe?**
   The amount of ozone produced by an ozone generator is insignificant to the normal atmosphere we live in. When dissolved in water, ozone is extremely safe. Excess ozone quickly converts back to oxygen. Note: do not breathe concentrated ozone gas.

6. **Is ozone the same as "SMOG"?**
   No! "Smog" is air pollution created by combustion polluters. While smog contains small amounts of ozone, it is largely composed of harmful chemicals such as carbon monoxide. In fact, smog and other pollutants may contribute to the damage of the ozone layer.

7. **If I use ozone in my pool or spa, will I help replenish the ozone layer?**
   No. Because ozone reacts so quickly with contaminants in water and air, it converts back to oxygen within minutes or even seconds. Any ozone molecules that break free from the pool or spa water will convert to oxygen and never reach the atmosphere.

8. **Will ozone hurt me?**
   No! In the quantities necessary to be effective, ozone is very gentle to humans and equipment in the water. However, you should never breathe concentrated ozone gas.

9. **Does ozone have an odor?**
   Yes. Depending on the concentration, the odor ranges from slightly sweet to moderately antiseptic.

10. **Will ozone kill bacteria?**
    Yes. It is one of the most effective, complete bactericides of all earth’s measurable elements.

11. **Will ozone kill viruses?**
    Yes. Ozone kills virtually all known $_{30}$forms of viruses in water and air.

12. **How is ozone different from chlorine?**
    In the quantities needed for water purification, it has no noticeable odor, taste or color. It is not irritating to humans or equipment. Ozone purifies water and air very quickly and efficiently, 3,000 times faster than chlorine. Ozone leaves no by-products except pure oxygen. In contrast, chlorine leaves a chemical by-product called hypochloric acid and additional salts in water applications.

13. **Will Ozone reduce scum lines and foaming in spas?**
    Yes. With proper filtration it should completely eliminate them.

14. **How is ozone produced?**
    Ozone can be produced by ultraviolet (UV) light or by corona discharge (CD).

15. **How does ultraviolet light ozone generation work?**
    A special lamp gives off a specific wavelength of ultraviolet light which converts oxygen (O_2) molecules into ozone (O_3) molecules by splitting the oxygen molecules into individual oxygen atoms (O_1) which then recombine with oxygen molecules to form ozone. This all occurs instantly inside the ozone chamber in the ozone generator.

16. **How does Corona Discharge Ozone Generation work?**
    Ozone is produced by passing air through a high voltage electrical discharge, or corona. A minimum of 5,000 volts of electricity is necessary to create the corona. Air or concentrated oxygen dried to a minimum of -60°C dewpoint passes through the corona which causes the O_2 bond to split, freeing two O_1 atoms which then collide with other O_2 molecules to create ozone. The ozone/gas mixture discharged from the CD ozone generator normally contains from 1% to 3% ozone when using dry air, and from 3% to 6% ozone when using high purity oxygen as the feed gas.

17. **Can ozone damage my pool or spa equipment?**
    No. In fact, it is very gentle to spas, pools, and equipment. Applied properly, ozone is more gentle than any other water purifier in existence.

18. **Can the ozone in my pool irritate skin or eyes like chlorine in pools?**
    No! Ozone is very gentle to skin and eyes.

19. **How long will ozone last in my pool or spa water?**
    Scientific theory states that Ozone has a half life of about 22 minutes in water. In residential applications, ozone reverts back to oxygen in minutes (ozone breaks down faster in warmer water).

20. **Will water temperature affect ozone?**
    Wide variations in pool water temperature will affect how well ozone works. An ozone generator should be designed and sized for maximum water temperatures and bather load.

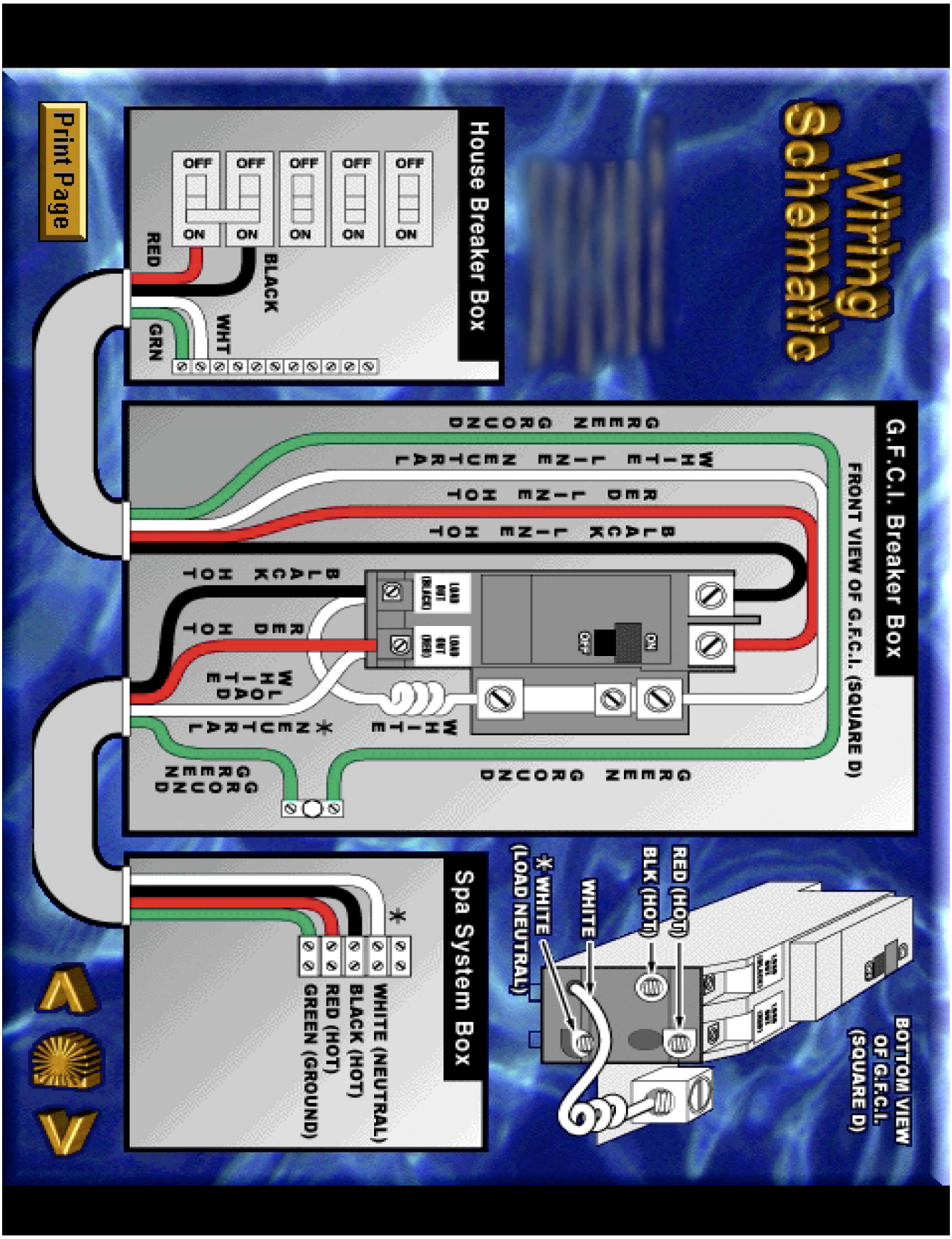
21. **Will ozone affect my pH?**
    Ozone is pH neutral. It will not adversely affect the pH.

22. **Do I still have to filter the water as often?**
    Yes. Because impurities are constantly being introduced into the water and the ozone is constantly destroying them, the microscopic remains will need to be filtered out of the water.

TROUBLESHOOTING

SYMPTOM	PROBABLE CAUSE	SOLUTIONS
Motor will not function	• House circuit breaker tripped or in OFF position	• Reset circuit breaker
	• Defective start switch inside motor	• Contact your dealer
	• Motor overload condition	• Let cool for one hour. Motor overload will reset automatically. If problem persists, contact your dealer.
	• Mode switch failure	• Contact your dealer
	• Damaged electrical cord	• Contact your dealer
	• Pump cord not plugged in	• Plug pump cord into red receptacle
	• GFCI tripped or in OFF position	• Reset GFCI
Noisy Pump or Motor	• Clogged floor suction or skimmer	• Clean floor suction or skimmer
	• Leakage of air into suction line	• Locate and repair leak
	• Low water level	• Add water to normal level
	• Debris inside pump	• Contact your dealer
	• Gate valves closed	• Open gate valves
	• Damaged or worn motor bearings	• Contact your dealer
	• Improper or defective wiring	• Contact your dealer
Spa not Heating Properly	• Temperature set too low	• Set control panel to a higher temperature
		• Contact your dealer
	• Improper electrical service	• Clean filter cartridge
	• Dirty filter cartridge	• Open gate valves
	• Gate valves closed	• Align spa cover
	• Spa cover improperly positioned	• Add water to normal level
	• Improper water level	• Allow the spa to cool to below 110F. Press the cool pad to reset
	• High temperature safety switch tripped	
Pump motor runs, but improper water flow	• Clogged or blocked suction or skimmer	• Clean suction or skimmer
	• Dirty filter cartridge	• Clean filter cartridge
	• Suction or discharge line partially plugged	• Contact your dealer
	• Gate valves partially or fully closed	• Open gate valves
	• Spa jets improperly adjusted	
	• Air control valve closed or blocked	• Adjust jets for desired output
	• Low water Level	• Open and clean air valves
	• Improper or defective wiring	• Add water to normal level
	• Jet blocked	• Contact your dealer
	• Air trapped in pump	• Reseat the jets or replace
		• With pump operating, loosen the pump inlet union to release air. Then tighten union securely.
Water not clean	• Insufficient filtering time	• Increase filtering time
	• Dirty filter cartridge	• Clean or replace filter cartridge
	• Clogged or blocked suction or skimmer	• Check main drain or skimmer and remove debris
	• Improper water chemistry maintenance	• Refer to your water chemistry manual
	• High content of solids in water	• Use a water clarifier or drain and refill spa

Diagram 1
Balboa Instruments, Inc.



DANGER RISK OF PERSONAL INJURY OR DEATH!

Never operate the spa if a suction fitting, suction cover filter, filter lid or skimmer assembly are broken, damaged or missing

RISK OF SEVERE INJURY OR DROWNING!!!!!!!

Hair Entrapment: May occur if hair is entangled, knotted or snagged in a drain suction or skimmer assembly. This has been reported in persons who, when submerge themselves underwater, allowing hair to come close and/or within the reach of the suction fittings, suction covers or skimmer assembly.

*Keep hair away from suction fittings, suction covers, filter, filter lid or skimmer assembly.

DO NOT BLOCK THIS PUMP SUCTION BREAK AWAY FITTING FOR ANY REASON!!! **COMPLIES WITH VGB 2008**