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Catalina Spas

THE MOST POPULAR LINE OF SPAS IN THE WORLD.

*Owner's
Manual*



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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 SAFETY 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 not 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 (8.42mm²) 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 mm²) 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 unlevelled 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 Info@catalinaspas.org

(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.

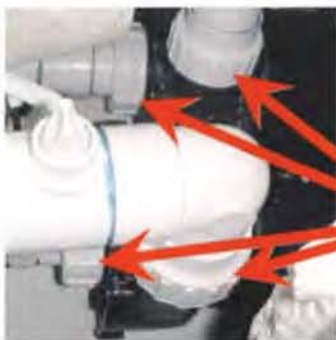
To open the gate valve, pull handle outward approximately 3" until it stops and snaps into place. These must be opened prior to operation to allow water to flow through the Equipment Package (2 pump models have 4 gate valves).



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.

EQUIPMENT RESET

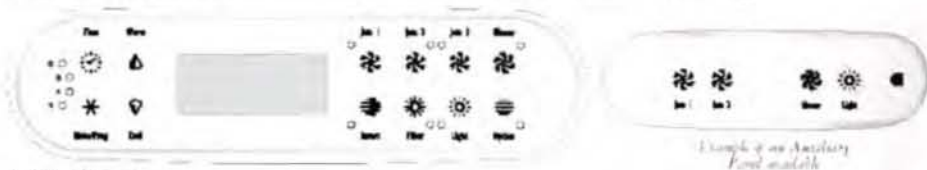
Resetting the Balboa digital control pack is not covered under warranty. The EL8000 equipment control pack can malfunction when an electrical spike occurs. To reset it, you will need to disconnect electricity to the spa. Remove the stainless steel cover plate of the equipment pack. On the backside of that cover plate is a diagram of the circuit board and descriptions of "DIP" switch settings. Locate switch bank 1 (S1) and switch pin #12 to the "ON" position. Leave it there for 1 minute before switching it back to "OFF". Replace the cover plate and restore electricity to the spa.



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.



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.

<i>SPA TEMP LMT</i>	"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.
<i>FREEZE COND</i>	"Ice" - Potential freeze condition detected.	If freeze sensor is installed, no action required. The pump will automatically activate regardless of spa status.
<i>SENSOR A SERVICE RQD</i>	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.)
<i>SENSOR B SERVICE RQD</i>	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.)
<i>SENSOR SYNC</i>	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.
<i>HTR FLOW LOW</i>	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.
<i>LOW FLOW</i>	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.
<i>HEATER MAY BE DRY - WILL RETEST SHORTLY</i>	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.
<i>HEATER DRY SERVICE RQD</i>	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.
<i>PRIMING MODE TAKES 4 MIN</i>	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.
<i>-- F or -- C</i>	Temperature unknown.	After the pump has been running for 2 minutes, the temperature will be displayed.

<i>---</i>	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.
<i>BACKUP FAIL</i>	Internal problem detected.	Repair required. Contact your dealer or service organization.
<i>STANDBY MODE</i>	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.
<i>PH IS LOW RAISE PH</i>	pH is low.	Add pH increaser according to manufacturer's instructions.
<i>PH IS HIGH LOWER PH</i>	pH is high.	Add pH decreaser according to manufacturer's instructions.
<i>SANITIZER LOW</i>	Sanitizer is low.	Add sanitizer according to manufacturer's instructions.
<i>SANITIZER HIGH</i>	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
<i>CHECK PH</i>	Every 7 days	Test and adjust chemical levels per manufacturer's instructions.
<i>CK SANITIZER</i>	Every 7 days	Test and adjust chemical levels per manufacturer's instructions.
<i>CLEAN FILTER</i>	Every 30 days	Remove, clean, and reinstall filter per manufacturer's instructions.
<i>TEST GFCI</i>	Every 30 days	Test & reset GFCI per manufacturer's instructions.
<i>DRAIN WATER</i>	Every 90 days	Drain and refill spa per manufacturer's instructions
<i>CHANGE MINERAL CARTRIDGE</i>	Every 90 days (fourth line blank before message repeats)	If applicable, change mineral cartridge.
<i>CLEAN COVER</i>	Every 180 days	Clean and condition cover per manufacturer's instructions.
<i>TREAT WOOD</i>	Every 180 days	Clean and condition wood per manufacturer's instructions.
<i>NEW FILTER</i>	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.
	"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.
	"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" - Water temperature is 20°F or more below the temperature you last set.	No action required. Spa is functioning properly.
	"Ice" - Potential freeze condition is detected.	If freeze sensor is installed, no action required. The pump will automatically activate regardless of spa status.
	"Sensor 1" - Spa is shut down. High-limit sensor is not working.	Contact your dealer or service organization.
	"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.

** Vacation Care:

You can leave your spa unattended for up to two weeks if you follow these instructions.

ALWAYS lock your cover using the cover locks if you plan to be away from home and the spa is filled with water.

1. Set the spa to Sleep Mode
2. Following the water quality instructions, adjust the pH.
3. Shock the water (add your preferred sanitizer)
4. When you return, check and adjust the pH and shock the water.

If you will not be using your spa for longer than 14 days and a spa maintenance service is not available, we strongly recommend you drain or winterize your spa.

** Winterizing (Cold Climate Draining)

In many areas of the country, the temperature drops below 32 F° (0 C). We recommend that you always have your spa full of water and running at normal spa temperatures (80 F° to 100 F°, 26.7 C° to 37.8 C°). This helps reduce the risk of freezing in your spa and your spa's equipment.

**** Warning: If you find the need to drain your spa, please be aware of the potential of freezing in your spas equipment and plumbing. Even if the directions below are followed perfectly, there is no guarantee that your spa will not suffer freeze damage. Freeze damage is not covered by your warranty.**



1. Open all filter covers.
2. Remove the filter baskets and filters.
3. Drain your spa completely as described
4. Vacuum water from the spa's main drain fitting with a wet/dry vacuum.
5. Remove drain plugs from the front of the pumps.
6. Disconnect the unions from both sides of the pump.
7. Blow any remaining water out of the jets and equipment area with the wet/dry vacuum.
8. Cover your spa with a good spa cover and an all-weather tarp to ensure that neither rain nor snow enters the spa.

Sanitation

After you fill your spa, you need to decide which chemical sanitizer you wish to use. Consult your dealer for the right decision with regards to your lifestyle and spa usage.

WE recommend either **bromine** or **chlorine** as your sanitizer. Both work well when maintained regularly.

**** Sanitizers kill bacteria and other organic waste by breaking them down to non-harmful levels and are filtered out.**

** Using Bromine as a Sanitizer:

Bromine is a very effective sanitizer that produces low chemical odors. Unlike chlorine, it can break down bacteria and other impurities to a safe level with a low burn -out rate. Bromine is available in both granulated and tablet form. Use granulated bromine to establish your bromine base. Use tablets to maintain it. Do not use floater.

- When you begin with fresh water, add 2 ounces of bromine.
- Open all of the jets and run the spa at high speed.
- This is your base bromine level as the tablets will take a while to dissolve.
- Add two ounces of oxidizer shock.
- Open all of the jets and run on high speed with the cover half open for at least 30 minutes.
- Place three or four bromine tablets in the chamber inside the filter cartridge.

** Using Chlorine as a Sanitizer

If you choose to use chlorine as a sanitizer, only use granulated chlorine, not liquid chlorine.

- Once a week, check the chlorine level using either a test strip or a reagent kit.
- Add one or two tablespoons of granulated chlorine to the spa water weekly. Note that chlorine dissipation rate will be faster at higher water temperatures and slower at lower temperatures.
- When you add chlorine, open all of the jets and run the spa at high speed with the cover open for at least 30 minutes.

** Disposal of Spa Water

Disposal of your spa water must be done accordingly to your local and state regulations.

Balancing the pH

The pH level is the measure of the balance between acidity and alkalinity. If the pH is too low, it can cause corrosion of metal fixtures and the heating element. Low pH can be corrected by adding pH-Alkalinity Up. If the pH is too high, it can cause scaling by allowing metal or metals or minerals to form deposits and stain spa surfaces. High pH can be corrected by adding pH-Alkalinity Down.

Too alkaline, causes scaling	8.2
	8
	7.8
Ideal Balance	7.6
	7.4
	7.2
Too Acidic, causes corrosion	7
	6.8
	6.6

TESTING FOR:	IDEAL RANGE (ppm)		CHEMICALS TO USE	
	Min.	Max.	To Raise	To Lower
Total Alkalinity	80	120	pH-Alkalinity up	pH Alkalinity down
Calcium Hardness	150	200	Liquid Hardness Increaser	Stain and Scale Defense
pH	7.4	7.6	pH-Alkalinity up	pH Alkalinity down
Chlorine level				
Without Ozonator	3	5	Chlorination Granules	
With Ozonator	2	4		
Bromine level				
Without Ozonator	6.7	11	Go Bromine	
With Ozonator	5.7	10		

Spa Water Maintenance Trouble-Shooting Guide

PROBLEM	POSSIBLE CAUSES	HOW TO FIX IT
Chlorine/Bromine Odor	*Excessive Chlorine or Bromine level *Low pH	*Shock water with non-chlorine shock treatment *Adjust pH if necessary
Water Odor	*Levels of sanitizer *pH out of range *Bacteria or algae growth	*Shock water with non-chlorine shock treatment or adjust sanitizer levels *Adjust pH level if necessary *Adjust sanitizer if necessary
Cloudy Water	*Dirty Filters or inadequate filtration *Water chemistry not balanced *Suspended particles or organic materials *Old Water	*Clean filters and adjust filtration *Adjust chemistry levels *Add spa clarifier *Change spa water
Foaming	*High levels of body oils, lotions, soap, etc.	*Add small amount of defoamer
Eye/Skin Irritation	*Unsanitary Water *Free chlorine level above 5ppm *Poor sanitizer/pH levels	*Shock spa with non-chlorine shock *Allow level to drop below 5ppm *Adjust according to spa test strip results
Scum Ring Around spa	*Build up of oils, dirt and organic elements	*Wipe off with clean towel

RECOMMENDED LEVELS OF CHEMICALS

Chlorine	pH	Total Alkalinity	Calcium Hardness
1.0 - 3.0 ppm	7.2 - 7.8	80 - 150 ppm	180 - 250 ppm

Cleaning your Spa

Spa Shell:

Each time you drain your spas, before you refill it you should clean your spa shell with acrylic all-purpose cleaner. All-purpose cleaner is a low detergent, non-abrasive cleaner specifically formulated to clean the spa with out damaging its acrylic finish. Acrylic Cleaner is a non-oil based was that is specifically formulated to protect the spa's finish from the chemicals and minerals associated with normal spa use.

1. Spray Acrylic Multi-Purpose Cleaner directly to the spa's finish.
2. Wipe clean with a soft cloth.
3. Repeat on heavily calcified areas.
4. Wipe spa thoroughly with a wet sponge, rinsing often in at bucket of clean water.
5. Allow the spa to dry completely.
6. Apply a coat of Fast Sheen to the spa's entire finish with a soft cloth or sponge.
7. Allow Fast Sheen to dry until white and powdery.
8. Buff Clean with a soft cloth, rotating frequently.

**** IMPORTANT:** Do not use any of these products on spas full of water. Only apply to clean, cool, dry surfaces.

Incorrect product usage may cause water clarity issues.

Spa Cover and Pillows:

Due to constant punishment your spa cover and pillow receive, you should protect them by applying a vinyl and leather cleaner as part of your monthly maintenance plan. Make sure you use a product that is specifically designed to protect spa covers and pillow from chemical and ultraviolet light damage. Those special cleaners will accomplish this without leaving an oily residue behind.

**** WARNING: DO NOT use automotive vinyl protectants on spa covers or pillows. These products are generally oil-based and will cause severe water clarity issues that are difficult to correct.**

Serial Standard Digital Control System

Quick reference card



Start-up

Your spa control has been specifically designed so that by simply connecting the spa to its properly grounded source, the spa will function properly and safely at 100°F (38°C). When your spa is first actuated, the LCD will alternately flash **ERROR**, the current spa temperature, and **COOL** until the spa water is less than 15°F (8°C) cooler than the set temperature. During each filter cycle, the spa will heat to the set temperature.


CAT2000 Control System



Temperature Adjustment

The current temperature is constantly displayed on the LCD. Press either  or  once to display the set temperature. (The set temperature is designated by a triangle in the upper left corner.) Each time either pad is pressed again, the set temperature will increase or decrease depending upon which pad is pressed. After three seconds, the LCD will automatically display the current spa temperature.


Jets 1

Touch the  pad once to activate the low speed and again for the high speed of the pump. Press the "Jets" pad again to turn off the pump. The low-speed pump runs when the spa is heating, when a filter cycle is activated, or when a freezing condition is detected. If automatically activated, the low-speed pump cannot be disabled from the front panel; however, the high-speed pump may be started. The pump will automatically turn off after a preset time period.


Jets 2 (if equipped)

Press this button to turn pump on. Press again to turn pump off.


Blower

Touch the  pad to turn the blower on and off. The blower will turn off automatically.

Light

Press the  pad to turn the spa light on and off. After a preset amount of time, the light will automatically turn off.

Standard and Economy Mode

Press  to switch between modes. Economy mode only heats water during filter cycles. Standard mode maintains the desired temperature at all times.

(over)

Preset Filter Cycles

The first filter cycle begins 1 minute after the spa is energized. The second filter cycle begins 12 hours later. Filter duration is programmable at the topside panel for 2, 5, or 12 hours. To program, press the "Warm" or "Cool" pad, then the "Jets" pad. The default filter time is 2 hours (FILC = 12 hours). Continue pressing the "Warm" or "Cool" pad to cycle through the rest of the filter time options. Press the "Jets" pad again to exit programming. The blower will run briefly at the start of each filter cycle. The low-speed pump constantly runs during the filter times (unless the high-speed pump is on) and the heater and ozone generator (if installed) will be enabled.

Freeze Protection

If the high-limit sensor detects 40°F (4°C) at the heater, then the pumps automatically activate to provide freeze protection. The equipment stays on until the sensor detects 45°F (7°C) at the heater. Freeze protection is enabled regardless of spa status. In colder climates, an optional additional freeze sensor may be added to protect against freeze conditions. See your dealer for details.

Diagnostic Messages

Econ "Economy"

The spa is in economy mode. *Econ* is flashed alternately with the current spa temperature and *COOL* until the spa water is 15°F (8°C) cooler than the set temperature.

OH "Overheat" (Spa is deactivated)

DO NOT ENTER THE WATER. If the spa water has reached 112°F (45°C), remove the spa cover to cool the water. Overheating may occur if the filter cycle is set too long. At 110°F (43°C), the spa should reset itself. If the high-limit sensor detects 118°F (48°C) at the heater, the spa will shut down. When the heater cools to 110°F (43°C), 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.

FLO "Flow" (Flashing alternately with temperature)

The filter may need cleaning. The water level may be low. Be sure flow valves are open.

FLO "Flow" (Not flashing)

A pressure switch has malfunctioned. Contact your dealer or service organization.

COOL "Cool"

The spa water is more than 20°F (11°C) cooler than the temperature last set. No action is required. Spa is functioning properly.

ICE "Ice" (Freeze protection)

If freeze sensor is installed, no action required. The pump will automatically activate regardless of spa status.

Sni "Sensor 1" (Spa is shut down)

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

Sn3 "Sensor 3" (Spa is shut down)

The main sensor is not working. Call your dealer or service organization.

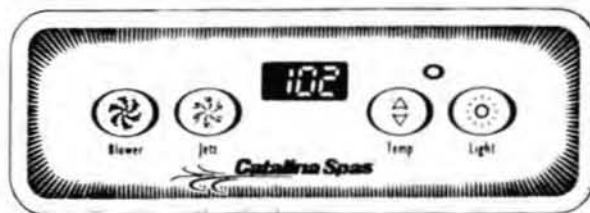


Catalina Spas CAT100/102/105 Control System

Quick reference card

Initial Start-up

When your spa is first powered up, it will automatically heat and maintain 100°F (38°C) until you change the set temperature.



Temperature Adjustment (60°F - 104°F or 16°C - 40°C)

Temperature adjustment is controlled by pushing the \oplus 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 by 1°F (1°C) depending on what direction was last chosen. Each press will change the set temperature in the same direction. From 60°F - 80°F (16°C - 26°C), the temperature changes in increments of 5°F (2°C). 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.

Standard and Economy Mode

Press the \oplus pad then the \odot pad to switch between Standard and Economy mode. Standard mode maintains the desired temperature at all times. When in Standard mode the temperature is displayed. Economy mode only heats water during filter cycles. When in Economy mode the temperature and *EC* alternate on the display.

Jets

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


Blower

Press the \otimes pad to turn the blower on and off. The blower will automatically turn itself off after 15 minutes.

Spa Light

Press the \odot pad to turn the spa light on and off. The light will automatically turn off after 4 hours.

Fiber-optic Light (Optional)

Press the  pad to turn on the fiber-optic light and color wheel. The color wheel will cycle through all available colors. Press the pad again and the color wheel will stop. Press the pad a third time and the light will turn off. The light will automatically turn off after 4 hours.

Freeze Protection

If the high-limit sensor detects 40°F (4°C) at the heater, then the pump(s) automatically activate to provide freeze protection. The equipment stays on until the sensor detects 45°F (7°C) at the heater. Freeze protection is enabled regardless of spa status. In colder climates, an optional additional freeze sensor may be added to protect against freeze conditions. See your dealer for details.

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 "Temp" pad, then the "Jets" pad. Press the "Temp" pad to select the filter duration. Press the "Jets" pad again to exit the programming mode. During filtration, the pump's low speed and the ozone generator (if installed) will run. The mister will clean out for 5 seconds when each filter cycle begins. The blower will activate for 30 seconds at the start of the first filter cycle to clean out the air channel.

Auxiliary Panel (Optional)

If installed, the mister feature can be turned on and off from an auxiliary panel. If left on, it will turn off after 15 minutes. The mister will purge twice a day for 5 seconds.

Diagnostic Messages

- OH** Overheat Protection (Spa is deactivated)
DO NOT ENTER THE WATER. The spa has shut down. Either the water has reached 112°F (44°C), or the high limit sensor has detected 118°F (48°C) at the heater. Remove the spa cover and allow the water to cool. At 110°F (43°C), the spa should automatically reset. If the spa does not reset, then shut off power to the spa and call your dealer or service organization.
- FL** Flow Switch Detection
A pressure switch is not working. Call your dealer or service organization.
- Sn** Sensor (Spa is deactivated)
The high-limit sensor or water temperature sensor is not working. Call your dealer or service organization.
- Ec** Economy Mode
Display alternates temperature and **Ec** when in Economy mode.

Warning! Shock Hazard! No User Serviceable Parts.

Do not attempt service of this control. 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.



P/N 50029 Rev. A 07/29/2004

Balboa 500Z-Series Operation Guide

Initial Start-up

Your spa will enter Priming Mode (Pr) when it is energized. During Priming Mode, press "Jets" button(s) repeatedly and be sure all pumps are free of air. Priming Mode lasts less than 5 minutes. Press "Temp" to exit. After Priming Mode, the spa will run in Standard Mode (see Mode section). Some panels may not have a "Temp" button. On these panels the "Set," "Warm," or "Cool" buttons are used. The pump responsible for heating and filtration (pump 1 low-speed on non-circ system, or the circ pump on circ systems) will be referred to simply as the pump. In multi-button sequences, if the buttons are pressed too quickly in sequence, they may not register.

Temp Control (80°F - 104°F / 26°C - 40°C)

The last measured water temperature is constantly displayed. The water temperature displayed is current only when the pump has been running for at least 2 minutes. On panels with a single "Temp" or "Set" button, to display the set temperature, press the button once. To change the set temperature, press the button a second time before the display stops flashing. Each press of the button will continue to either raise or lower the set temperature. If the opposite direction is desired, allow the display to revert to the current water temperature. Press the button to display the set temperature, and again to make the temperature change in the desired direction. On panels with "Warm" and "Cool" buttons, to display the set temperature, press "Warm" or "Cool" once. To change the set temperature, press a temperature button again before the display stops flashing. Each press of "Warm" or "Cool" will adjust the set temperature. After three seconds, the display will stop flashing and begin to display the current spa temperature.

Jets 1

Press "Jets 1" to turn pump 1 on or off, and to shift between low and high speeds (if equipped). The low-speed will turn off after 4 hours. High-speed will turn off after 15 minutes. Low-speed may run automatically at times, during which it cannot be deactivated from the panel, but high-speed may be operated.

Jets 2/Jets 3/Blower (If equipped)

Press the corresponding button once to turn the device on or off. The device will turn off after 15 minutes. Pump 2 may be two-speed on some systems. Some systems use this one button to control two devices. The first button press will activate one device. Press again to have both devices active. Press again to turn off the first device only. Press one more time to turn both devices off.



This document covers VS and GS systems 500Z through 521Z with Balboa Panels VI-200 through VI-406. www.balboa-instruments.com

CAT500 Control System



Button shapes and labels may vary.

Light

Press "Light" to operate the spa light. Turns off after 4 hours.

Mode

Depending on system configuration, mode changing may not be available and will be locked in Standard Mode.

Mode is changed by pressing "Temp," then "Light." Standard Mode maintains set temperature. **Sc** will be displayed momentarily when you switch into Standard Mode.

Economy Mode heats the spa to the set temperature only during filter cycles. **Ec** will display when water temp is not current, and will alternate with water temp when the pump is running.

Sleep Mode heats the spa to within 20°F/10°C of the set temperature only during filter cycles. **Sz** will display when water temp is not current, and will alternate with water temp when the pump is running.

Preset Filter Cycles

The first preset filter cycle begins 6 minutes after the spa is energized. The second preset filter cycle begins 12 hours later. Filter duration is programmable for 2, 4, 6, or 8 hours or for continuous filtration (indicated by **Fc**). The default filter time is 2 hours for non-circ systems and 4 hours for circ-systems.

To program, press "Temp," then "Jets 1." Press "Temp" to adjust. Press "Jets 1" to exit programming.

For non-circ systems, low-speed pump 1 and the ozone generator (if installed) run during filtration.

For circulation systems, the circ pump and the ozone generator (if installed) run 24 hours. In hot environments, the circ pump may turn off for 30 minute periods, except during filter cycles. At the beginning of each filter cycle all other equipment will run briefly to purge the plumbing.

BALBOA
water group

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 until next power up.
--	Temperature unknown.	After the pump has been running for 2 minutes, the current water temperature will be displayed.
HH	"Overheat" - The spa has shut down. * One of the sensors has detected 118°F/47.8°C 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.
OH	"Overheat" - The spa has shut down. * One of the sensors has detected that the spa water is 110°F/43.5°C.	DO NOT ENTER THE WATER. Remove the spa cover and allow water to cool. At 107°F/41.7°C, the spa should automatically reset. If spa does not reset, shut off the power to the spa and call your dealer or service organization.
SA	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 condition.)
Sb	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 condition.)
Sn	Sensors are out of balance. If alternating with spa temperature, it may just be a temporary condition. If flashing by itself, spa is shut down.*	If the problem persists, contact your dealer or service organization.
HL	A significant difference between temperature sensors has been detected. This could indicate a flow problem.	If the water level is normal, make sure all pumps have been primed. If problem persists, contact your dealer or service organization.
LF	Persistent low flow problems. (Displays on the fifth occurrence of HL message within 24 hours.) Heater is shut down, but other spa functions continue to run normally.	Follow action required for HL message. Heating capability of the spa will not reset automatically; you may press any button to reset.
dr	Possible inadequate water, poor flow, or air bubbles detected in the heater. Spa is shut down for 15 minutes.	If water level is normal, make sure all pumps have been primed. Press any button to reset. This message will reset within 15 minutes. If problem persists, contact your dealer or service organization.
dy	Inadequate water detected in heater. (Displays on third occurrence of dr message.) Spa is shut down.*	Follow action required for dr message. Spa will not automatically reset. Press any button to reset manually.
IC	"Ice" - Potential freeze condition detected.	If freeze sensor is installed, no action required. The pump will automatically activate regardless of spa status.

* - Even when spa is shut down, some equipment will turn on if freeze protection is needed.

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.

BALBECA
water group

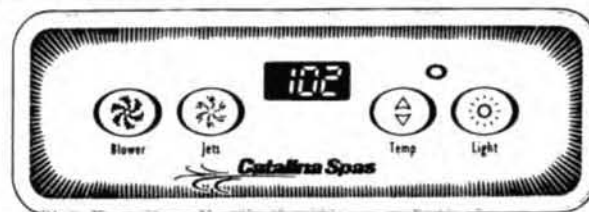
P/N 40789_13 12/19/2007

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

Light

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

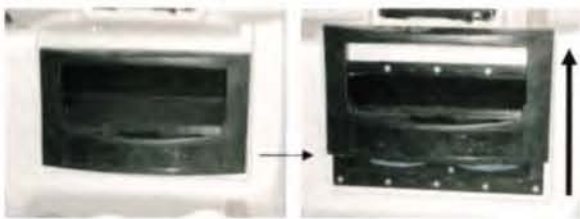
CLEANING THE FILTER

Turn filter basket clockwise to unlock and pull basket and weir out. Carefully pull up the filter cartridge and bring it out 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.

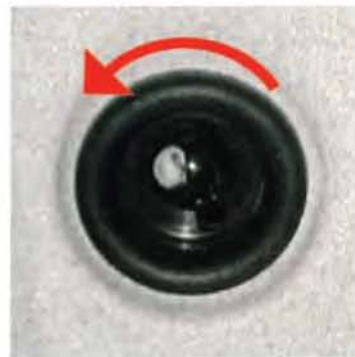
SPA LIGHT LENS INSTALLATION

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.



SPECIAL PRODUCT 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/DIVERTER VALVE DO NOT TURN HANDLES WHEN PUMP IS ON

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.



Note: Waterfall(s) equipped spa must leave the on/off valve 1/4 turn opened to allow the plumbing to drain when spa is not in use.



L.E.D. LIGHTING

Gives your spa its unique highlights and flair.



TOPSIDE STEREO CONTROL

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

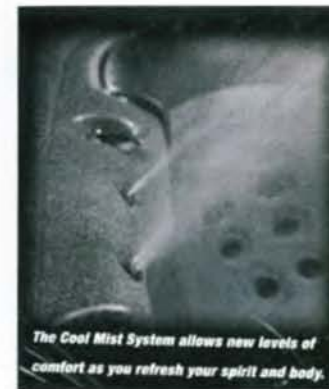


ENTERTAINMENT SYSTEM

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



COOL MIST SYSTEM



SPA JETS

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.

Ozone Is Convenient in Pools and Spas

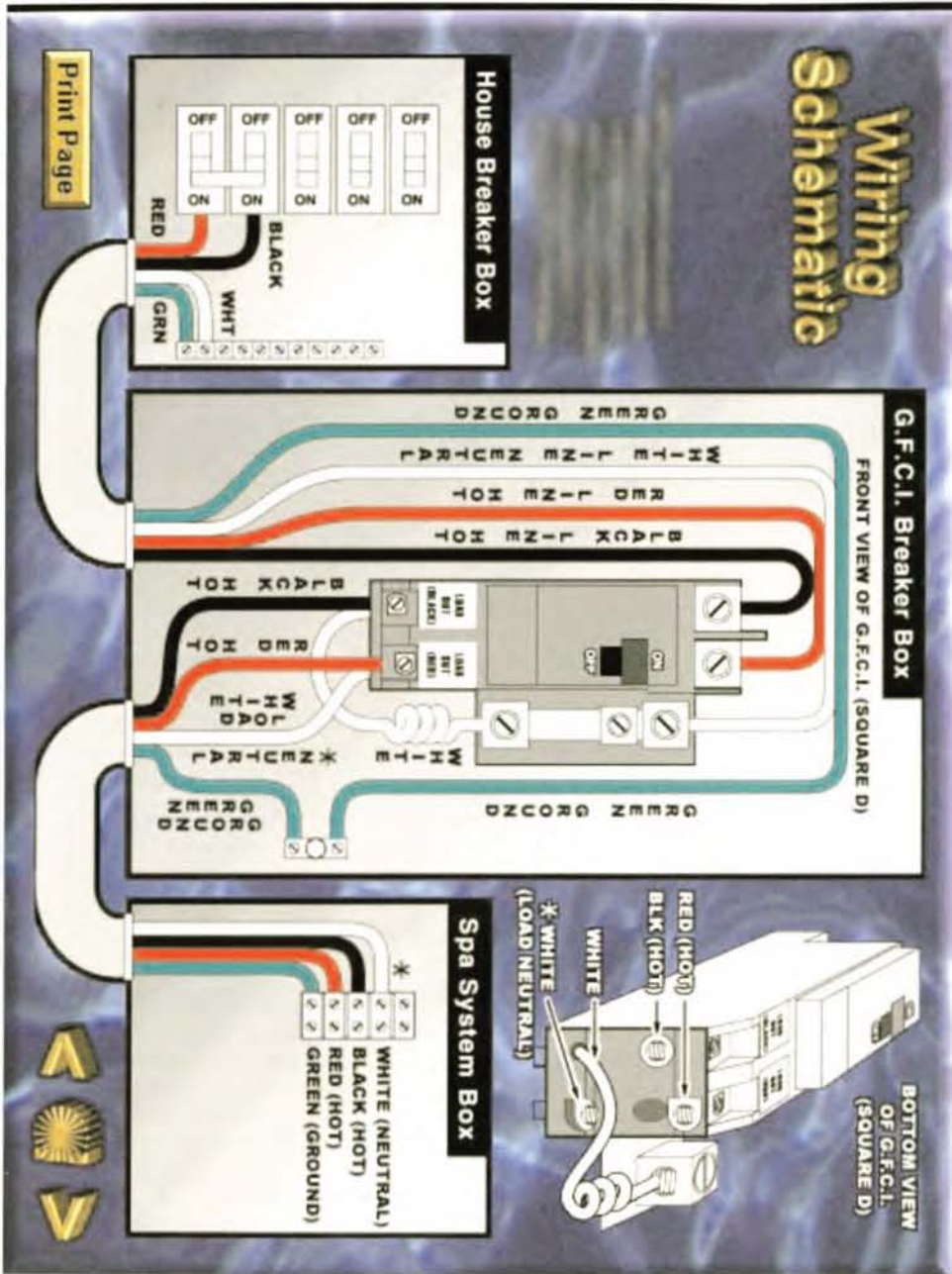
- Ozone does not have to be purchased or stored. Ozone is generated on site and is introduced into the water or air automatically.
- Ozone does not affect the pH balance of water, thus minimizing pH adjustments.
- Ozone helps reduce total dissolved solids in water so that the water does not have to be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

TROUBLESHOOTING

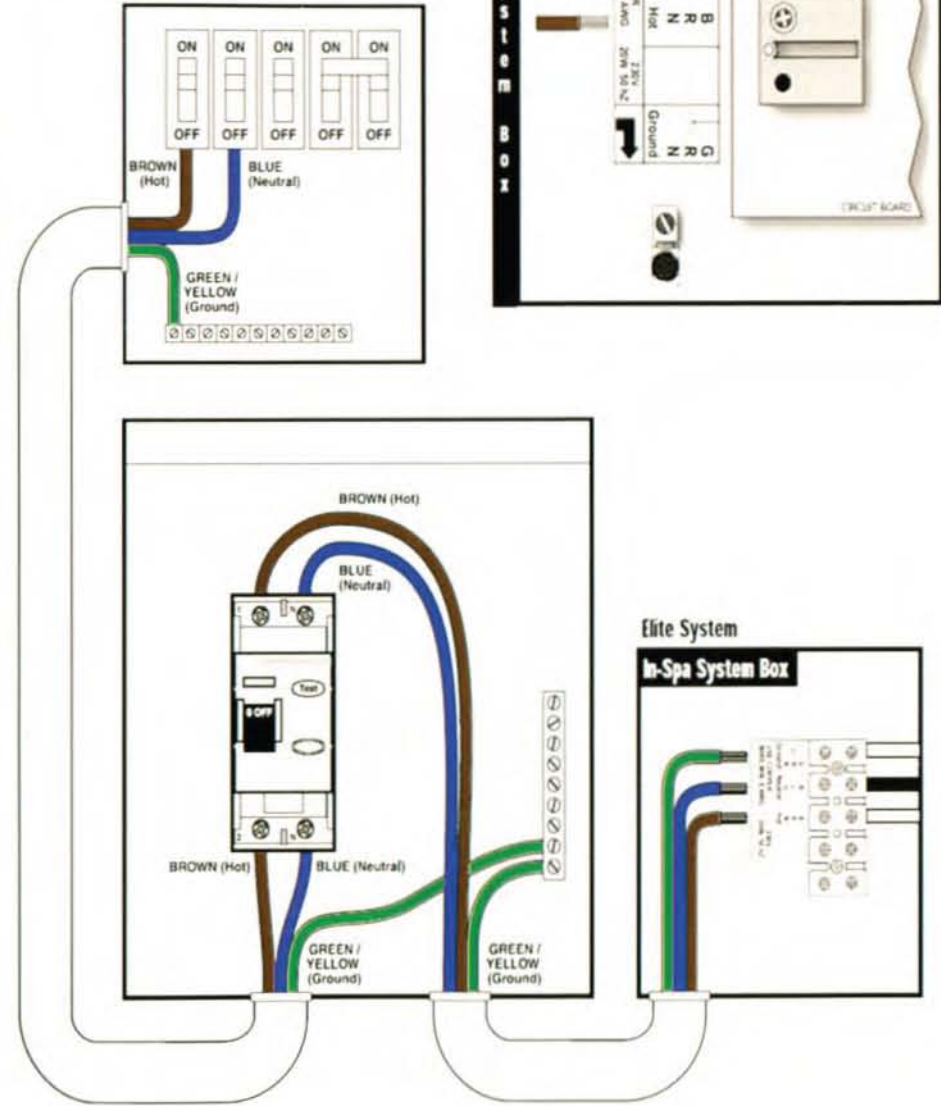
SYMPTOM	PROBABLE CAUSE	SOLUTIONS
Motor will not function	<ul style="list-style-type: none"> • House circuit breaker tripped or in OFF position • Defective start switch inside motor • Motor overload condition • Mode switch failure • Damaged electrical cord • Pump cord not plugged in • GFCI tripped or in OFF position 	<ul style="list-style-type: none"> • Reset circuit breaker • Contact your dealer • Let cool for one hour. Motor overload will reset automatically. If problem persists, contact your dealer. • Contact your dealer • Contact your dealer • Plug pump cord into red receptacle • Reset GFCI
Noisy Pump or Motor	<ul style="list-style-type: none"> • Clogged floor suction or skimmer • Leakage of air into suction line • Low water level • Debris inside pump • Gate valves closed • Damaged or worn motor bearings • Improper or defective wiring 	<ul style="list-style-type: none"> • Clean floor suction or skimmer • Locate and repair leak • Add water to normal level • Contact your dealer • Open gate valves • Contact your dealer • Contact your dealer
Spa not Heating Properly	<ul style="list-style-type: none"> • Temperature set too low • Improper electrical service • Dirty filter cartridge • Gate valves closed • Spa cover improperly positioned • Improper water level • High temperature safety switch tripped 	<ul style="list-style-type: none"> • Set control panel to a higher temperature • Contact your dealer • Clean filter cartridge • Open gate valves • Align spa cover • Add water to normal level • Allow the spa to cool to below 110F. Press the cool pad to reset
Pump motor runs, but improper water flow	<ul style="list-style-type: none"> • Clogged or blocked suction or skimmer • Dirty filter cartridge • Suction or discharge line partially plugged • Gate valves partially or fully closed • Spa jets improperly adjusted • Air control valve closed or blocked • Low water Level • Improper or defective wiring • Jet blocked • Air trapped in pump 	<ul style="list-style-type: none"> • Clean suction or skimmer • Clean filter cartridge • Contact your dealer • Open gate valves • Adjust jets for desired output • Open and clean air valves • Add water to normal level • Contact your dealer • Reseat the jets or replace • With pump operating, loosen the pump inlet union to release air. Then tighten union securely.
Water not clean	<ul style="list-style-type: none"> • Insufficient filtering time • Dirty filter cartridge • Clogged or blocked suction or skimmer • Improper water chemistry maintenance • High content of solids in water 	<ul style="list-style-type: none"> • Increase filtering time • Clean or replace filter cartridge • Check main drain or skimmer and remove debris • Refer to your water chemistry manual • Use a water clarifier or drain and refill spa

Diagram 1

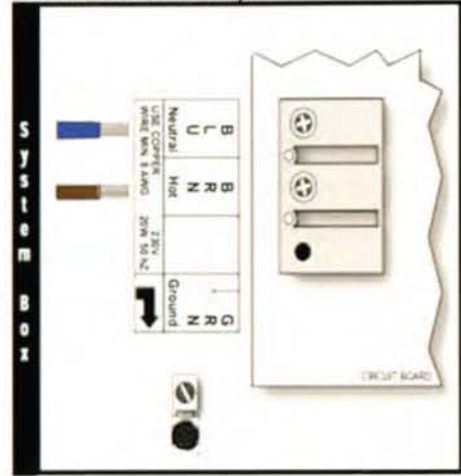
Balboa Instruments, Inc.



RCD WIRING
DIAGRAM - EUROPE



Value M-7 and 2000LE M-7 System



Make sure to prepare a Good Foundation:

Damage caused by inadequate or improper foundation support is not covered by the warranty.

It is the responsibility of the spa owner to provide a proper foundation for the spa

WE strongly recommended that you have a qualified, licensed contractor prepare the foundation for your spa.

Place the spa on a level foundation (preferably a 4" concrete slab). If you are installing the spa indoors, pay close attention to the flooring beneath it. Choose flooring that will not be damaged or stained. Make sure spa slab has adequate drainage to deal with overflow water. There is no warranty on floor surface damage. If you are installing your spa on an elevated wood deck or other structure, consult a structural engineer or a contractor to ensure the structure will support the weight of 150 pounds per square foot.

Installation Instructions

ALL ELECTRIC COMPONENTS IN THIS HOT TUB ARE FIXED TO THE INSIDE OF HOT TUB.
DO NOT ALTER OR REMOVE ANY OF THE ELECTRIC COMPONENTS.

Electrical Installation -- Europe

230 Volt Electrical Installation

All 230V spas must be permanently connected (hardwired) to the power supply. These instructions describe the only acceptable electrical wiring procedure. Spas wired in any other way will void your warranty and may result in serious injury.

This is the only acceptable electrical wiring procedure. Spas wired in any other way will void your warranty. Refer to (RCD Wiring Diagram)

** The electrical wiring of this spa must meet the requirements of any applicable local, state, and federal codes.

** The electrical circuit must be installed by an electrical contractor and approved by a local building/ electrical inspector.

RCD Wiring Requirements

The power supplied to the spa must be on a dedicated RCD protected circuit with no other appliances or lights sharing the power. RCD having a rated residual operating current not exceeding 30ma.

Use copper wire with THHN insulation. Do not use aluminum wire.

When wires larger than #6 AWG are required, install a junction box near the spa and use #6 AWG wire between the junction box and the spa.

** Testing the RCD Breaker

Test the RCD Breaker prior to first use and periodically when the spa is powered. To test the RCD breaker follow these instructions (spa should be operating):

1. Press the TEST button on the RCD, The RCD will trip and the spa will shut off.
2. Reset the RCD Breaker by switching the breaker to the full OFF position, wait a moment, then turn the breaker back on. The spa should have power again.

! When removing and or disconnecting your spa you must turn RCD breaker off and remove wires.
Check your local, state, and federal codes.

SPA COVER USAGE AND INSTALLATION INSTRUCTIONS:

Important! Keep the spa covered when not in use!

- Covered spas will use less electricity in maintaining your set temperature.
- Covering your spa will protect your spa's finish from the sun's ultraviolet rays.
- Covering your spa helps prevent children from drowning in the spa.

In addition, while the spa cover is rigid, it is not designed to support any weight. Therefore, as a safety precaution and to preserve the life of your cover, you must not sit, stand, or lie on it, nor should you place objects of any kind on top of it.

Follow the below steps for installation:

1. Attach buckle housing to spa skirt using 3#6 wood screws provided. Pre-Drill Holes into the wood to prevent splitting.
2. Place spa cover on spa with straps in place. Insert locking buckle into housing until it clicks.
3. Slide key into the bottom of the "spa safe" locking system housing. Press firmly to release lock.



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.



DANGER

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

Hair Entrapment: May occur if hair is entangle, 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

*Children are at risk for hair entrapment if swimming under water.

*Never allow children to play or get near the suction fittings, suction covers, filter, filter lid or skimmer assembly.



DANGER

DO NOT BLOCK THIS PUMP SUCTION BREAK AWAY FITTING FOR ANY REASON!!!

COMPLIES WITH VGB 2008*

