Spa Water Treatment

Recommended Chemical Values

Chlorine..... 1.5 - 3.0 PPM (Parts Per Million)
pH..... 7.4 - 7.6
Total alkalinity ..... 100 - 120 PPM

It is important to maintain your spa water chemistry to the above values to ensure a healthy experience both for you as bathers and for your spa pool equipment.

PH

This is a measure of how acid or alkaline the spa water is (below 7.0 is acid, above 7.0 is alkaline). Low pH will cause corrosion of any metalwork in the water (element, thermostat pockets). High pH will cause scale formation and cloudy water.

Total Alkalinity

This is a measure of how resistant your spa water is to change of pH. A low TA (0 - 80 ppm) will allow the pH to fluctuate rapidly normally to the acid end and will make it very hard to correct the pH back to the ideal range.

Chlorine

Levels of sanitiser are important to prevent the build up of bacteria, and algae in the pool water. Chlorine is not the only sanitiser available to do this. Other sanitisers are Bromine, Ozone.

Damage to the element, thermostat pockets and associated metalwork due to the poor maintenance of water chemistry is not covered by warranty.

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SPA POWER 500A
User Guide

SPA POWER
SPA CONTROLS

SP500A Mk2 User Guide .pdf
Booklet Part Number Q916309B
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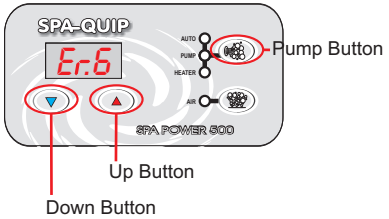
Self-Diagnostic Error Codes

The Spa Power 500A Mk2 controller has extensive self diagnostic capabilities. In the event of a problem it will indicate an error number according to the nature of the problem. The error numbers and their meanings are listed below. Note: When in an error state the alarm can be muted by pushing the AIR/AUX button.

Error 1 (H20) - Prime Failed

This is not necessarily a problem with the SP500A Mk2 itself, but indicates that no water is being detected in the heater housing. Prime failed is a special case in that it can be recovered from by pushing a button. A push of the pump button will run the pump for 10 seconds to try to get water to the heater. If successful normal operation will resume. If unsuccessful, Error 1 (H20) will be indicated on the display again.

With any Error 3-8, spa operation will stop and not continue until the controller is reset. The controller can only be reset by pushing the UP, DOWN and PUMP buttons simultaneously.
The controller will remain in an error condition even when reset at mains power, controller will only continue normal operation after the UP, DOWN and PUMP buttons are pushed simultaneously (see below).



Error 3 - Stuck Button

This error indicates that one of the buttons in the touchpad is stuck or has been held down for more than one minute. This may be caused by the pool cover pressing on the touchpad or by water getting into the touchpad or by damage to the touchpad or its cable. Try to reset the spa. If there is still a problem then contact your spa pool supplier.

Error 4 - No Water Sensor

This error indicates a problem with the optical water sensor in the heater. The problem may by caused by the sensor being disconnected or by damage to the sensor. Try to reset the spa. If there is still a problem then contact your spa pool supplier.

Error 5 - Overtemperature

This error indicates that the digital temperature sensor in the heater or pool has detected a temperature of 45°C or more. This may not be a problem with the SP500A Mk2, it may be caused by excessive pump use in hot weather, or pump failure. Turn off the spa and allow time for the water to cool. If there is still a problem then contact your spa pool supplier.

Error 6 - Thermal Cut Out Tripped

This error indicates that the safety electromechanical over temperature cut out on the heater has operated. This is not necessarily a problem with the SP500A Mk2. It may have occurred from an air lock around the element, high temperatures during shipping, or failure of the pump. This automatic cut out will only reset once the element has cooled below about 38°C. The unit must then be reset before it will resume operation. Manually push the UP, DOWN and PUMP buttons simultaneously.

Error 7 - Stuck Relay

This error indicates a problem with the heater control circuitry inside the unit. Contact your spa pool supplier.

Error 8 - No Temperature Data

This error indicates a problem with the digital temperature sensor in the heater or pool wall or that both the in heater and in pool sensors are connected. Check that only one sensor is connected and that it has not become disconnected or damaged. Try to reset the spa. If there is still a problem then contact your spa pool supplier.

My spa is too hot in Summer!

During summer months in hot climates, there may be times when the actual water temperature exceeds the desired temperature set by the user. e.g. If the spa is set to heat to 35°C , but the actual water temperature is 38°C. Please consider this - In the winter your spa gets cold because the air temperature is cold. To combat this we heat the water and keep the spa covered when not in use. If the spa is turned off and the ambient temperature is 15°C, eventually the spa water will lose heat until it too is 15°C. In the summer the same applies but in reverse - you can turn the heater down, even turn the pump off, but if the ambient daytime temperature is 35°C - 42°C then the spa water will also remain at that temperature.

Manufacturers make no attempt to supply a system that cools water. The quickest way to combat the problem is to change the water, but even this new water will eventually heat up to the air temperature. Turn the set temperature down so the heater does not come on. Reduce the minimum filtration time so the pump runs less. The less the pump runs the more the water will cool. If the nighttime temperature is low, leave the cover off the spa to let heat escape, but put it back on during the day to keep heat out. Also make sure the spa is shaded from direct sunlight.

Safety Notes

Before using ensure that the spa pool has been connected to a suitable weather protected outlet socket, equipped with a double pole isolating switch, which is of the correct rating and complies with the local wiring regulations.

When installing, refer to your local wiring code. In particular refer to ECP2 & ECP25 (AS/NZ) and EN60364-4-1 & EN60364-7-1 (EU). The system must be installed in such a way that live parts are not accessible by a person in the pool. If a supply cord is not fitted the system must be permanently connected to fixed wiring through a 30mA or less RCD.

It is recommended that the steel reinforcing in any concrete base on which the pool is sitting be equipotential bonded to the earth conductor in the supply to the spa. This is to protect against the possibility of low voltage shocks caused by differential earth voltages. Refer to AS/NZS3000:2000 Sections 5.8 & 7.2 or EN 60364.

This appliance is not intended for use by young children or infirm persons without supervision. Young children should be supervised to ensure they do not play with the appliance.

Congratulations on choosing the latest Spa Power 500A Mk2 control system. This controller makes use of the latest technology, including innovative optical and digital sensor designs. The user-friendly touchpad and reliable components provide you with the best value controller in its class.

Temperature Control

The Spa Power 500A Mk2 automatically controls the pump and heater to filter the water and maintain it at the desired temperature as set by the user (see below).The user can leave the system to look after the spa and know it will be at the correct temperature whenever he or she wants to use it.

Adjusting Set Temperature

The Spa Power 500A Mk2 gives the user direct control of the pool temperature from the poolside control panel. Holding down the Up or Down button will adjust the temperature set point as shown on the digital readout. There is a slight delay before the buttons operate to reduce the risk of accidental adjustment. The pool temperature will be maintained very close to the set temperature.

UP Increase the set temperature by 0.5°C per beep (Max = 41.5°C)

DOWN Decrease the set temperature by 0.5°C per beep (Min = 10.0°C)

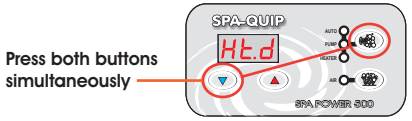
Default Display = Temperature Set Point 

Sensed Temperature

The sensed temperature (in the heater) can be checked if necessary by pressing the Up & Down buttons simultaneously. The display flashes while showing the sensed temperature.

Heating Mode Selection

In addition to the temperature setting the user can select the preferred heating mode. The two available heating modes are...
1/ Demand Heating (displayed as Ht.d).This is the default setting in which the pump and heater will come on automatically whenever the temperature drops slightly below the set point.
2/ Filtration Only Heating (displayed as Ht.F) .In this mode the pump and heater will come on automatically no more than once per hour to filter and heat the water. This mode is provided as an option for those who prefer to limit the natural cycling of the system.
To select the heating mode first press the Pump and Down buttons simultaneously to display the current heating mode, then press and hold the Up or Down buttons to change modes.



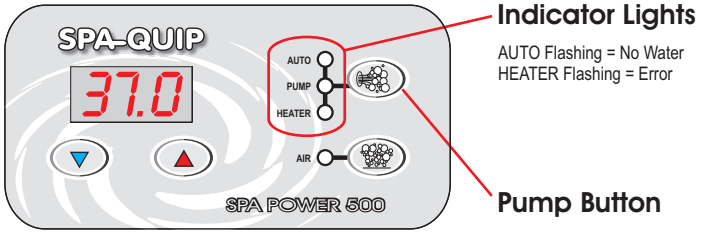
Pump Operation

The default state is Auto Mode in which the pump and heater are controlled automatically to filter the water and maintain the desired water temperature. The Pump Button allows the user to control the water pump manually as desired when using the pool.

Pump

Push 1 - Pump ON (Heater automatic)
Push 2 - Pump OFF (Heater OFF)
Push 3 - Auto Mode (Pump & Heater automatic)

Note: If the user does not set the system back into Auto mode, the system reverts to Auto Mode by itself, 90 minutes after the last push of the Pump Button.



Auto Light

The yellow or blue Auto indicator light will appear on the touch pad whenever the system is in full automatic control mode. In this mode the system automatically activates the pump and heater to filter the water and maintain the set water temperature. If this light is flashing the water sensor is not detecting any water.

Pump Light

The green Pump indicator light will appear on the touch pad whenever the pump is running, in both auto and manual use mode.

Heater Light

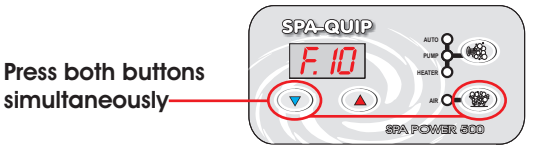
The red Heater indicator light will appear on the touchpad whenever the heater element is on. For safety the heater is always automatically controlled. Usually switching on the air blower accessory will cause the heater to switch off (loadshedding). This is in order to keep the total power load to a safe level. If this light is flashing the system has an error (see back page).

Auto Sanitising (Filtration)

The Spa Power 500A Mk2 automatically maintains the filtration/sanitation of the spa pool water. The minimum amount of filtration time is programmable by the user and can be adjusted between 0 and 15 minutes per hour (0 to 6 hours per day). In order to maintain correct filtration of the pool water, the SP500A Mk2 monitors the time for which the pump runs in normal pool operation. If the pump has only run for a short time, the system will automatically run the pump for an additional period every hour to reach the minimum filtration time set by the user.

Adjusting Minimum Filtration Time

First push the Down and Air/Aux buttons together to display the filtration time setting on the digital readout



The default setting is 10 minutes per hour (= 4 hours per day). Holding down the Up Button or Down Button will adjust the filtration time setting between 0 and 15 minutes per hour (= 0 to 6 hrs per day).

Clean Up Cycle

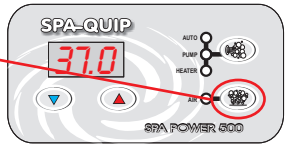
If desired, a clean up cycle can be initiated to filter the water after the spa pool has been used. This is done by simply pushing the Pump Button to leave Auto Mode and switch on the pump. This will circulate the water through the filter for 90 minutes. After 90 minutes the system will return to Auto Mode and maintain the temperature ready for the next time the spa pool is used.

Auxiliary Air Button

The Air Button controls an auxiliary air blower (or water pump). It is used to turn the blower on and off. Two pushes of the air button cycles the blower as follows:

Air Blower or Auxilary Pump

Push 1 - Blower ON
Push 2 - Blower OFF



Note: If left on, this accessory will automatically switch off after 20 minutes. If the heater element is on, switching on this accessory may cause the heater to loadshed and switch off. This is to keep the total power load to a safe level.