

## Troubleshooting Davey Spa Power Controllers

Applicable to SP400, SP54500, SP500A MKI/MKII, SP600, SP601, SP750, SP800, SP1000, SP1200 and Xcelsior Spa Pool System

*For more extensive assistance with specific Error Codes, please see the document Error Codes Explained for All Models.*

### Touchpad Buttons Don't Work – All Models

- Check the touch pad ribbon cable for the SP400, 500A MKI/MKII, SP600/601, SP750 and Xcelsior Spa Pool System to see if it has been damaged, and if so, replace the touch pad.
- With the SP800 and SP1200 check for a crushed cable or to see if there is any damage to the cable at the touch pad end, as just because the power wires aren't damaged, the data wires maybe damaged and this will cause the buttons not to work.
- Check to see if the overlay has any small cracks in it, if any are found then check for water ingress. If water ingress is found, replace the touch pad.
- The SP800, SP1200 controllers and Xcelsior Spa Pool System, have a key lock function which may possibly be applied inadvertently. If this happens, the touchpad buttons do not work and the display shows "KEYS LOCKED" on the SP800 & SP1200 and all lights will illuminate on the Xcelsior Spa Pool System touch pad when a button is pushed. The user can disengage the key lock on the SP800 & SP1200 by pressing the button sequence; Down, Scroll, Down, Up, Scroll. To disable on Xcelsior Spa Pool System press and hold the Jet1 and Jet2 buttons simultaneously for 2 seconds. See SP800 or SP1200 User's Guide section 8.3 and Xcelsior Spa Pool System User's Guide section Touch Pad Child Lock.

### H2O/CHE or Error 1 – All Models

- Check that all of the air has been bled from the system.
- Make sure that the circ/filtration pump is operational.
- Make sure that you have the minimum chemical levels in the water for the controller or Xcelsior Spa Pool System.

### The Thermal Cut-Out Keeps Operating – All Models

- Check that the plumbing is clear and that there is adequate water flowing through the heater tube.
- Check that filters are clean, water valves are open and jets are open.
- Check the thermal cut-out in the circulation pump. If the pump stops the controller cut-out will operate.
- Check the circulation pump is well ventilated and cannot overheat.
- Check the circulation pump is securely plugged in and connected.
- Check the motor start capacitor(s) in the circulation pump is the correct value and in good condition.
- Turn the power supply to the unit off and allow the unit to cool. Turn the power back on.
- Check no pumps are running continuously. A large pump will heat the pool until the cut-out operates or the power to it is cut.
- If a small circulation pump is in use check there is enough flow through the heater tube and that air is not collecting in the heater tube. Try to measure the

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flow from the circ pump outlet jet. This can be done by holding a hose on the jet's outlet and timing how long it takes to fill a bucket. Aim for more than 50 L/m. i.e. it should take no longer than 24 seconds to fill a 20 litre bucket.

- Check for overheated or burnt wires from the relays to the thermal overloads and onto the element posts that may have occurred due to low voltage supplied to the controller.
- Check the thermal overloads and make sure that they are not visually damaged and that they are still electrically connected and not open circuit.
- If all else fails the controller may be faulty and need to be returned for service.

### The Unit Won't Power Up – All Models

- Check there is power to the unit and that the touchpad is plugged in correctly.
- Check the touchpad for damage or corrosion. Try another touchpad.
- Check all connections are correct, tight and clean.
- Check the RCD/Circuit Breaker and have it renewed if necessary.
- Return the unit for service.

### The Unit Leaks – All Models

- First ascertain where the leak is. Check that nearby glued plumbing joints are well made.
- Check that the mac-unions are tight, have O-rings fitted, are well aligned and not distorted.
- Inspect the water sensor body for cracks and O-ring location. Replace if necessary. Do NOT over tighten as there is a risk of cracking the body. Hand tighten only and then back off ¼ turn.
- Inspect the element boss screws and tighten if necessary to compress the O-ring.
- Check and make sure that the boss O-ring is not twisted or damaged and replace if necessary.
- Check for cracks in the top of the heater tube and replace the heater tube if necessary.

### The RCD Keeps Tripping Out – All Models

- Check for shorts to earth and damaged wiring. Check the element earth leakage. Try disconnecting equipment piece by piece until you can identify what is causing the fault.
- Check that other household equipment is not causing the tripping. Any equipment connected through the RCD could contribute to it tripping. Try a dedicated RCD circuit for the spa.
- Check that the RCD is not also an over-current circuit breaker. If it is, make sure it is rated for motor start up surges and is not overloaded.
- Make sure the unit is not drawing too much current from the supply – see loading calculations.
- Check for damage to wiring, pumps, blowers, and lights.
- Check for water ingress or leaks onto live parts or into the supply conduit.
- Check Earth connections.

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- Check Neutral connections.
- Check the supply is wired correctly. In the case of multiple phased houses, make sure that phases are balanced.
- Some older switchboard RCDs are not compatible with EMC filtered equipment and must be replaced.
- The RCD may be faulty and require replacement.

### My Pool is Getting Too Hot – All Models

- Check that another source of heat is not heating the pool excessively. Look at pumps operating for long durations, solar heating, heat pumps, lighting etc.
- In extreme climatic conditions where there is a high ambient temperature the normal operation of the unit and water pump may cause the water to overheat. To counter this, remove the pool cover over night to allow the pool to cool. Be sure the pool is safe to leave uncovered. Consider access by children, animals etc.
- To reduce pump run times increase the sleep time and minimise the filtration time.
- In extreme heat consider adding cold water or ice to cool the pool.

### Sometimes I Get Tingles From My Pool! – All Models

Low voltage ‘tingles’ or micro shocks, are usually caused by poor or overloaded connections in the power supply wiring to the house or a nearby house. When this happens, small but significant voltage differences can occur in the earth/neutral wiring network so that the water in the pool and the ground around the pool might be at slightly different voltages. This can result in tingles or micro shocks, especially when stepping out of the pool wet. This can be a dangerous situation as the tingles may hurt the user directly or indirectly through falls. Any pool which gives tingles should be isolated at the main supply and not used until a professional electrician has corrected the problem. This may well require the involvement of the local supply authorities. Current model Davey Spa Power controllers are supplied with a “Recommended Pre-Installation Supply Checks” sheet (part no. Q916333) also available on request, which details the electrical tests required to identify a problem supply situation (for Multiple Earthed Neutral Supplies as used in Australia and New Zealand only). Ensure that this check sheet is passed to any investigating electrician. Note that this situation is not peculiar to Davey Spa Power controllers but can occur on any pool with any model/brand of controller.

### Touchpad Works but Pumps Won’t Come On – SP800 and SP1200

The controllers have a demonstration mode, which can be entered by pressing the up button when in the Error 1 “PRIME FAILED” condition. This mode allows the controller to operate on a pool without water in it for demonstration purposes, without turning on the pumps etc. This mode may result in a service call if demo mode is entered inadvertently when trying to operate the spa normally. To fix this

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problem the power should be cycled off and on again so the controller restarts and primes normally.

### Controller Behaves Unusually – SP800 and SP1200

The controllers have a lot of configuration settings which can be adjusted on the touchpad. If an inexperienced (or malicious) user sets unsuitable values there is potential to make the controller behave unusually, leading to service calls. E.g. Pool temperature setting, Clock setting, Sleep time settings, Filtration time settings and other more minor settings could be corrupted. In order to ensure that no unsuitable setting has been made on a system it may be desirable to reload the factory default settings. This can be done by the user through the display menu system. See SP800 or SP1200 User's Guide section 7.10.

### Touchpad LCD is Too Light/Dark – SP800 and SP1200

The touchpad display may appear too dark or too light for clear visibility, especially in extreme temperature conditions. If so then the user can correct the display contrast by holding down the top left light button, and either the up or down buttons, until the display looks correct. See SP800 or SP1200 User's Guide section 8.4.

### Touchpad Shows a Foreign Language – SP800 and SP1200

The SP800 and SP1200 controllers are intended for an international market and have the ability to display the LCD user interface text in several different languages. The user can select their preferred language from the following choices: English, French, German, Dutch, Japanese, Spanish or Portuguese. This is done by first holding the down button for four seconds to enter the language selection menu, then selecting the desired language using the up and down buttons and finally setting this language by pressing the scroll button. See SP800 or SP1200 User's Guide section 8.6.

### Temp Sensor Fault Message – SP800 and SP1200

The SP800 and SP1200 controllers are capable of having two temp sensors connected at the same time. With this, the In-Pool temp sensor is considered the main sensor and is the one that is displayed on the touch pad LCD as the current water temperature. Should the In-Pool temp sensor fail, a message will be displayed on the LCD saying "Service Reqd:" "Temp Snsr Fault". The unit will continue to operate, as it is now using the temp sensor in the element. Replace the In-Pool temp sensor. If the In-Pool temp sensor is not to be replaced, reloading the controllers default settings will remove the In-Pool temp sensor from the controllers' memory. See SP800 or SP1200 User's Guide section 7.10.

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### Service Availability – All Models

Davey Water Products Pty Ltd has service centres located in Victoria, Queensland, New South Wales and Western Australia. The Davey staff members located in each service centre are fully trained in the diagnostic analysis of your Davey Spa Power products and are readily available to provide technical assistance in the form of phone support, warranty analysis or quote for repair on your Davey Spa Power products.