

Davey® Repair or Replacement Guarantee

In the unlikely event in Australia or New Zealand that this Davey product develops any malfunction within two years of the date of original purchase due to faulty materials or manufacture, Davey will at our option repair or replace it for you free of charge, subject to the conditions below.

Should you experience any difficulties with your Davey product, we suggest in the first instance that you contact the Davey Dealer from which you purchased the Davey product. Alternatively you can phone our Customer Service line on 1300 367 866 in Australia, or 0800 654 333 in New Zealand, or send a written letter to Davey at the address listed below. On receipt of your claim, Davey will seek to resolve your difficulties or, if the product is faulty or defective, advise you on how to have your Davey product repaired, obtain a replacement or a refund.

Your Davey Two Year Guarantee naturally does not cover normal wear or tear, replacement of product consumables (i.e. mechanical seals, bearings or capacitors), loss or damage resulting from misuse or negligent handling, improper use for which the product was not designed or advertised, failure to properly follow the provided installation and operating instructions, failure to carry out maintenance, corrosive or abrasive water or other liquid, lightning or high voltage spikes, or unauthorized persons attempting repairs. Where applicable, your Davey product must only be connected to the voltage shown on the nameplate.

Your Davey Two Year Guarantee does not cover freight or any other costs incurred in making a claim. Please retain your receipt as proof of purchase; you **MUST** provide evidence of the date of original purchase when claiming under the Davey Two Year Guarantee.

Davey shall not be liable for any loss of profits or any consequential, indirect or special loss, damage or injury of any kind whatsoever arising directly or indirectly from Davey products. This limitation does not apply to any liability of Davey for failure to comply with a consumer guarantee applicable to your Davey product under the Australian or New Zealand legislation and does not affect any rights or remedies that may be available to you under the Australian or New Zealand Consumer Legislation.

In Australia, you are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Should your Davey product require repair or service after the guarantee period; contact your nearest Davey Dealer or phone the Davey Customer Service Centre on the number listed below.

For a complete list of Davey Dealers visit our website (davey.com.au) or call:



AUSTRALIA

Customer Service Centre
6 Lakeview Drive,
Scoresby, Australia 3179
Ph: 1300 367 866
Fax: 1300 369 119
Website: davey.com.au

NEW ZEALAND

Customer Service Centre
7 Rockridge Avenue,
Penrose, Auckland 1061
Ph: 0800 654 333
Fax: 09 527 7654
Website: daveynz.co.nz

Davey Water Products Pty Ltd
Member of the GUD Group
ABN 18 066 327 517

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P/N Q916332-3 supersedes P/N Q916332-2

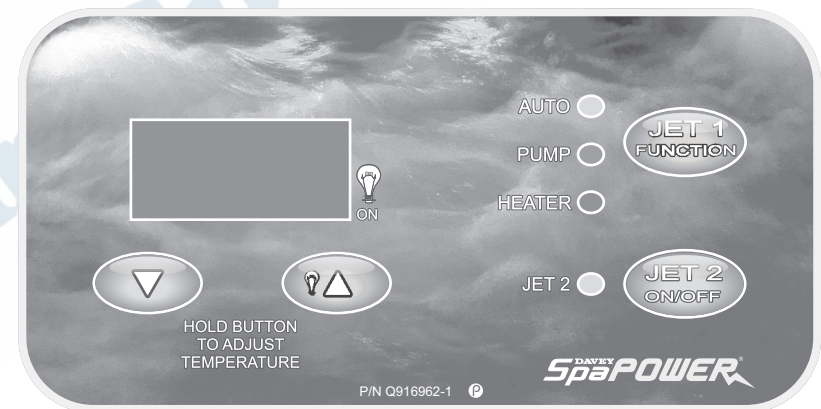
* Installation and operating instructions are included with the product when purchased new. They may also be found on our website.

DEPEND ON
DAVEY

WATER PRODUCTS

Xcelsior® Spa Pool System

DAVEY
SpaPOWER



USER GUIDE

DAVEY Xcelsior SPA POOL SYSTEM QX350P10 (10A), QX350P15 (15A)



NOTE: The Xcelsior Spa Pool system requires a technical installation that should be carried out by an experienced spa pump installer. Refer to the Xcelsior installation manual provided with this product for further information.

Please pass these instructions on to the owner of this equipment.

Your Davey Xcelsior Spa Pool System

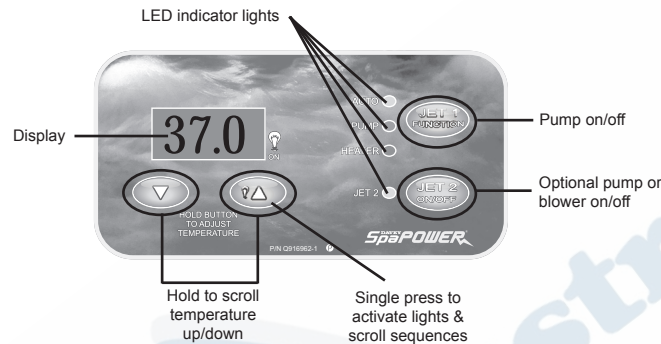
Congratulations on your purchase of a quality product from the Davey range of Pool and Spa Equipment. You are assured of many years of reliable and efficient performance from your Davey product backed by Davey's two year guarantee.

The Davey Xcelsior Spa Pool System has been specially designed to offer optimum performance and ample jet pressure in spa pools. It incorporates a thermostatically controlled heater element that ensures that the spa pool temperature set by the user is maintained with digital accuracy. It should not be used for any other purpose without first consulting your Davey Dealer or Davey Customer Service Centre.

The Xcelsior spa pool system is designed for use in spa pools only and is suitable for use in both chlorine and salt water spa pools. For models designed for spa bath applications, please consult your Davey Customer Service Centre or authorised Davey Water Products Dealer.

At Davey we design and build our own electric motors especially for our pumps. The matched motor and pump are designed to provide quiet operation while delivering optimum water flow. Davey's totally enclosed motor incorporates "auto-start" overload protection with a built-in automatic thermostat designed to protect the motor from overheating. The excess heat from the motor is captured by the water, for a more energy efficient spa experience.

Operating Instructions



- **AUTO LED** - The orange 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 LED** - The green Pump indicator light will appear on the touch pad whenever the pump is running, in both auto and manual modes.
- **HEATER LED** - The red Heater indicator light will appear on the touch pad whenever the heater element is on, in both auto and manual modes. For safety the heater is always automatically controlled. Usually switching on the Jet 2 accessory will cause the heater to switch off (load shedding). This is in order to keep the total power load to a safe level. If this light is flashing the system has detected an error.
- **JET 2 LED**
The Jet 2 indicator LED will appear on the touch pad whenever the Jet 2 output is turned on. Note: If the spa does not have a Jet 2 load connected the LED will not operate.

Error 6

This error indicates that the safety over temperature cut out on the pump has operated. This is not necessarily a problem with the Xcelsior pump. It may have occurred from an air lock in the pump or high temperatures during shipping. This cut out can only be reset once the pump has cooled. The unit must then be manually reset by pushing the UP, DOWN and JET1 buttons simultaneously, before it will resume operation. Note: It is possible to reset the safety electromechanical latching cutout when the pump has cooled, without resuming normal operation, by pushing the Down button only. This may be useful for fault diagnosis.

Error 7

This error indicates a possible issue with the heater control relay inside the unit. Try to reset the spa. If there is still a problem then contact your spa pool supplier.

Error 8

This error indicates a problem with the digital temperature sensor in the pump front. This may be caused by the sensor becoming disconnected or by damage to the sensor or its cable. Try to reset the spa. If there is still a problem then contact your spa pool supplier.

Error 9

This error indicates a problem with the heater control circuitry inside the unit. Try to reset the spa. If there is still a problem then contact your spa pool supplier.

Spa Water Treatment

Recommended Chemical Values

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

Pump Operation

Ensure that water level exceeds the level of the pool jets. Activate the pump by pressing Jet 1 on the touchpad. For detailed instructions on use and features of the Xcelsior, please refer to the user guide included with this instruction.

CAUTION

To operate efficiently and prevent pump damage there must be a free flow of water to and from the pump. Ensure that any valves are appropriately positioned and there is nothing else preventing the flow of water through the system.

Avoid foreign objects such as tissues or large amounts of hair entering the pool water as they may be drawn into the pump causing it to jam.

Self Diagnostics

The Xcelsior pump has extensive diagnostic capabilities. In the event of a problem it will indicate an error number on the touchpad to show what problem has been detected. The error numbers and their meanings are explained below. Note: When in an error state the alarm can be muted or un-muted by pushing the JET2 button.

Error 1 (H20 / CHE)

This indicates that no water is being detected in the pump housing or the water is too pure e.g. clean rainwater. A push of the pump button will run the pump for 10 seconds to try to push water through the pump. If successful, normal operation will resume. If unsuccessful, the pump will stop and Error 1 (H20/CHE) will be indicated on the display again. If water is present but undetected this normally means that the water is too pure and that normal pool chemicals need to be added.

With Errors 3-9, spa operation will stop and not continue until the controller is manually reset. The controller can only be reset by pushing the UP, DOWN and JET 1 buttons simultaneously. The pump will remain in an error condition even when turned off and on at the mains power. The controller will only continue normal operation after the UP, DOWN and JET 1 buttons are pushed simultaneously. The dot lights up when the safety latching electromechanical thermal cutout has operated (See Error 6). This can be reset when the pump has cooled, by manually pushing the Down button.

Error 3

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

Error 5

This error indicates that the digital temperature sensor in the pump has detected a temperature of 45 C or more when the pump is running. This may not be a problem with the Xcelsior pump. It may be caused by excessive pump use in hot weather. Turn off the spa and allow time for the water to cool before pushing the UP, DOWN and JET1 buttons to reset the system. If there is still a problem then contact your spa pool supplier.

Temperature Control

The Xcelsior system automatically controls its pump and heater to circulate the water and maintain it at the desired temperature (see below). You can leave the system to look after the spa and know it will be at the correct temperature whenever you want to use it.

Adjusting Set Temperature

The Xcelsior pump gives you direct control of the pool temperature from the pool side 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)
Note : Default is 37°C - recommended range is 35-39°C.



DOWN Decrease the set temperature by 0.5°C per beep (Min = 5.0°C). Low temperature may be used as winter freeze protection.

Displaying Actual Temperature Reading

The actual water temperature reading can be checked if necessary by pressing the Up & Down buttons simultaneously.

Note: The actual water temperature can only be checked whilst the pump is running and the reading will only be accurate after a few minutes of running.

37.0

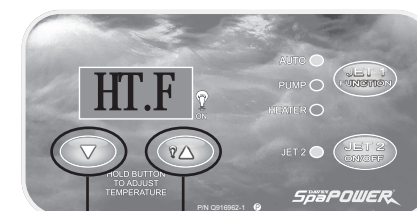
Heating Mode Selection

In addition to the temperature setting you can select the preferred heating mode.

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 Jet 1 and Down button simultaneously to display the current heating mode, then press and hold the Up or Down buttons to change modes.



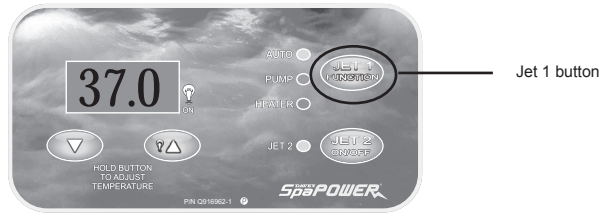
Press simultaneously to display current heating mode



Press up or down button to toggle between heating modes

Pump Operation

The Xcelsior's integrated pump is controlled by just one touch pad button. Pushing the Jet 1 button three times cycles its operation through three modes; Automatic, Manual and Standby. When the spa is running in automatic mode, pressing the JET 1 button will deactivate auto mode and set the pump running in Manual Mode. The auto LED is orange when auto mode is enabled and off when in Manual Mode. When the pump is in standby mode all indicator LED's are off.



Push 1 (Manual mode)



Push 2 (Standby mode)



Push 3 (Auto mode)



Note:

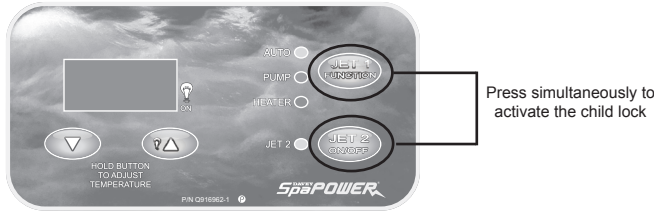
1. If pump 1 is left in "Manual" or "Standby" modes, it will automatically revert to "Auto" mode after 45 minutes.
2. There is no direct user control of the heater. The heater may come on automatically whenever the pump is on and water heating is required.

Installation & Safety Notes

1. When installing the Xcelsior Pool System, refer to the appropriate local wiring rules. In particular refer to AS/NZS 3000:2007 (AS /NZ) and EN60364-4-1 & EN60364-7-1 (EU).
2. 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 the appropriate local wiring rules, e.g. AS/NZS3000:2007 Sections 5.6 & 6.3 or EN 60364.
3. Parts containing live parts must be inaccessible to a person in the spa, except parts supplied with safety extra-low voltage not exceeding 12V (e.g. touch pads and LED lights).
4. The appliance must be supplied through a residual current device (RCD) having a rated residual current not exceeding 30mA.
5. If a supply plug is not fitted or if the system is installed in Europe then the system must be permanently connected to fixed wiring. Means for disconnection must be provided in the fixed wiring in accordance with the wiring rules.
6. If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
7. This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.
8. In order to avoid the possibility of hyperthermia (heat stress) occurring, it is recommended that the average temperature of spa pool water should not exceed 40°C.
9. The maximum total head for the QX350P10 & QX350P15 is 11m.
10. The floor or base on which the pool is installed has to be capable of supporting the expected load.
11. Precautions should be taken to ensure that spa pool water is disposed of appropriately.
12. An adequate drainage system should be provided to deal with overflow water.
13. Precautions should be taken to avoid damage due to water freezing in the pipes and fittings.
14. Precautions should be taken to avoid damage when the pool is left empty for an extended period.

Touch pad Child Lock

When the Xcelsior child lock is enabled all of the touch pad buttons are disabled. If a button is pushed while the child lock is enabled the beeper will sound and the indicator LEDs will light up for a short period.



To enable the child lock press and hold the Jet 1 & Jet 2 buttons simultaneously for 2 seconds, when the child lock is enabled the beeper will beep twice and the indicator LEDs will flash on and off.

To disable the child lock, hold the Jet 1 & Jet 2 buttons simultaneously for 2 seconds.

My Spa Is Too Hot In Summer!

During warm periods of the year 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 hotter than 35°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 night time 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.

Jet 2 Auxiliary Operation

The Jet 2 Button usually controls an auxiliary air blower or pump. It is used to turn the blower/pump on and off, and select different operating modes if a Spa Power Variable-Speed Blower (SPVSB) has been fitted.

Note: In some applications a pool light or other accessory may be fitted instead of a blower or a pump.

Note: In some applications no equipment may be fitted to this output and therefore it will be disabled.

Note: In some applications an ozonator may be fitted and controlled automatically. In this case the LED will illuminate green but the button will not function.

Standard Air Blower or Pump



- Push 1 - ON - LED RED
- Push 2 - OFF - LED OFF

Spa Power Variable-Speed Blower (SPVSB) (if fitted)



- Push 1 - Blower ON - RED LED (Full Speed)
- Push 2 - Blower ADJUSTABLE - ORANGE LED (Adjustable Speed)
- Push 3 - Blower OSCILLATING - GREEN LED (Oscillating Speed)
- Push 4 - Blower OFF (Default State) - NO LIGHTS

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 load shed and switch off. This is to keep the total power load to a safe level.

Adjustable Speed Mode (SPVSB only)

If a Spa Power Variable-Speed Blower is fitted, the spa user has the ability to adjust the blower speed to any desired setting. The Up and Down buttons are used to set the desired blower speed. Note: If the blower is in Full Speed or Oscillating modes then pushing the Up or Down button will put it into Adjustable Speed mode and then adjust the speed. The blower speed that is set in the Adjustable Speed Mode will be remembered each time it is changed and reapplied next time adjustable speed mode is used.

Step 1) Press Jet 2 Button twice to set Adjustable Speed Mode.  - ORANGE LED

Step 2) Press Up  to increase speed of blower

Step 3) Press Down  to decrease speed of blower

Automatic Purge


The system may be configured to automatically purge the plumbing associated with this accessory. If so it will come on for 15 seconds approximately every 24 hours (from system power on/reset) but will wait for 35 minutes after any buttons have been pushed. It will warn of the impending purge by flashing the Jet 2 LED green for 1 minute.

Light Operation



Your spa may have been fitted with either of two different LED lights; a Spa Power Coloured Light (SPCL) or a Spa Power Variable Coloured Light (SPVCL). The Spa Power Coloured Light is a single coloured light that is either on or off. The Spa Power Variable Coloured Light is a light that has the ability to change between 12 different colours and white (see below for user instructions).

NOTE: *Not to be used with Daisy Chain light systems with multiple point LED's.*


The multi-function Light Button  is used to turn the light on and off (SPCL) and select through the different operating modes of the Spa Power Variable Colour Light. Two short presses of the button will turn the Spa Power Coloured Light on and off or five short presses of the button will cycle the Spa Power Variable Coloured Light as follows:

- Push 1 - Light ON (SPCL - On) (SPVCL Colour - White)
- Push 2 - Light ADJUST (SPCL - Off) (SPVCL Adjustable Colour Mode)
- Push 3 - Light CYCLE SLOW (SPVCL Cycle through colours - slowly)
- Push 4 - Light CYCLE FAST (SPVCL Cycle through colours - quickly)
- Push 5 - Light OFF (Default State)

Note: This is a multi-function button which performs the following -

- 1) Short presses of this button activate the light functions as detailed above.
- 2) Holding this button will begin to increase the set temperature of the spa.
- 3) When a Spa Power Variable Speed Blower is fitted and is turned on this button increases the blower speed.

Adjustable Colour Mode (SPVCL only)

When the light is on, short presses of the Down button  will put the light into adjustable colour mode and then sequentially select through all the available colours. The last colour set in this mode will be remembered the next time the light is used.

Indicator Light

A small red dot in the bottom corner of the digital readout indicates when the light is turned on.



If left on the light will automatically switch off after 30 minutes.


Auto Sanitising (Filtration)

The Xcelisior pump automatically maintains the filtration/sanitising of the spa pool water. The minimum amount of filtration time is programmable by the user and can be adjusted up to 15 minutes per hour (6 hours per day). In order to maintain correct filtration of the pool water, the controller 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

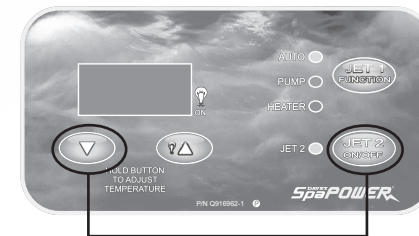
First push the Down  and Jet 2  buttons together to display the filtration time setting on the digital readout.

The default setting is 10 minutes per hour (= 4 hours per day).

Holding down the Up Button 

or Down Button 

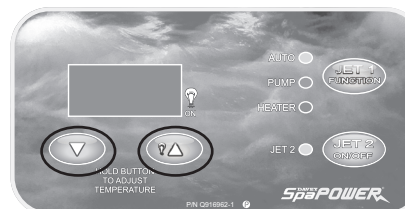
will adjust the filtration time setting between 0 and 15 minutes per hour in demand heating mode, or 3 and 15 minutes in Filtration only heating mode.



Press both buttons simultaneously

Adaptive Filtration Mode

Adaptive Filtration Mode is useful in high ambient temperatures where ambient heat adds to the spa water temperature. In Adaptive Filtration Mode the spa will reduce the filtration time to suit the temperature of the water. If the water temperature is climbing due to ambient heat, the filtration times will be reduced accordingly.



To enable Adaptive Filtration Mode enter into the Adjust Minimum Filtration Time mode as described above, then press and hold the up button until F.Ad is displayed.

To disable Adaptive Filtration Mode enter into the Adjust Minimum Filtration Time mode then press and hold the down button until you reach the desired filtration time.

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 Jet 1 Button to leave auto mode and switch on the pump. This will circulate the water through the filter for 45 minutes. After 45 minutes the system will return to auto mode and maintain the temperature ready for the next time the spa pool is used.