spanet™

SV
ADVANCED SPA CONTROL
variable heater

SYSTEM OVERVIEW MANUAL

Table of Contents

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WARNINGS

Please read the following before installing or connecting this appliance

- All electrical connections must be performed by a licensed electrician and must confirm to all national, state and local electrical codes in effect at the time of installation.

- The appliance should be supplied through a residual current device (RCD) having a rated residual operating current not exceeding 30mA.

- The appliance must be connected to a suitable rated and weather protected power supply. The supply line should be a dedicated power circuit and means for disconnection must be incorporated in the fixed wiring in accordance with your local wiring regulations. Means for disconnection from the supply mains should have a contact separation in all poles that provide full disconnection under over voltage Category III conditions.

- Earthed appliances must be permanently connected to fixed wiring (European models only).

- The appliance contains no serviceable parts. Do not attempt service of this control pack. Contact your dealer or authorized service agent for assistance.

- Turn the mains power OFF before servicing appliance or modifying any cable connection

- Suitable for indoor use only or when installed under a weatherproof spa skirt. The appliance should be installed in an enclosure such that all electrical connections cannot be accessible to the user without the use of a tool.

- Low voltage or improper wiring may cause damage to this appliance. Read and follow all wiring instructions when connecting to power supply.

- Any damaged cable must be replaced immediately.

- To prevent electric shock hazard and/or water damage to this appliance, all unused receptacles must have a water proof seal in place.

- Parts incorporating electrical components must be located or fixed so that they cannot fall into the bath or spa.

- Parts containing live parts, except parts supplied with safety extra-low voltage not exceeding 12V must be inaccessible to a person in the bath or spa.

- This appliance must not be installed in proximity to highly flammable materials.

- Water temperature in excess of 38°C may cause hyperthermia (heat stress).

- It is the spa manufacturer's and/or installer's responsibility to select suitable loads and configure load shed settings (if required) to ensure the system does not exceed its rated maximum total load.

- It is the installer's responsibility to ensure the floor is capable of supporting the expected load of the bath or spa and an adequate drainage system has to be provided to deal with overflow water.

- A whirlpool spa should incorporate a water filtration system where the required level of water purity can be achieved.

- An adequate drainage system has to be provided if the equipment is to be installed in a pit.

STOP

SET THE DATE AND TIME BEFORE USING SPA

Be sure to set the date and time before operating the spa (refer to page 30). Vital functions such as filtration, sanitisation cycles and power saving settings depend on the time and date being set correctly.

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SV2.T Keypad Overview

Buttons and indicator LEDs

Up
Button

Auto Mode ON indicator

AUTO

Heater ON indicator

Sanitiser ON indicator

O₃/ UV

Sleep Time ON indicator

zZz

Sanitise Button

OK

OK Button

Water Temp / Time
Toggle Button

SV-2T

Pump A
Button

Pump B
Button

Blower
Button

Light
Button

Down
Button

SV3.T Keypad Overview

Buttons and indicator LEDs

Up Button

Light (on/off) Button

Light (mode) Button

OK Button

Light (Speed/Colour) Button

Down Button

Auto Mode ON indicator

Heater ON indicator

Sanitiser ON indicator

Sleep Time ON indicator

Flip screen (180°) Button

Pump A Button

Pump B Button

Pump C Button

Blower Button

Sanitise Button

SV4.T Keypad Overview

Buttons and indicator LEDs

Up Button

Light (on/off) Button

Auto Mode ON indicator

Heater ON indicator

Sanitiser ON indicator

Sleep Time ON indicator

Light (Spd/Clr) Button

OK Button

Flip screen (180°) Button

Down Button

Pump A Button

Pump B Button

Pump C Button

Pump D Button

Blower Button

Sanitise Button

Water Priming Mode

Purge air from plumbing system

💡 **TIPS ON FILLING SPA**

- Before filling remove spa skirt and be sure that all valves in the plumbing system are fully open to maximise the amount of air that can escape the pipe work during filling

- Remove filter cartridge(s) before filling and be sure to fill the spa through the filter itself to flood the pipe work with water and minimise the chance of air pockets forming in the plumbing during the filling process.

- DO NOT fill spa by placing hose in the foot well. Filling a spa this way will create a large number of air pockets in the pipe work and may cause difficulty when priming. Always fill spa through the filter.

- Once the spa is filled to the correct level attempt to power up the spa with the filter cartridges still removed. Verify that the spa controller completes its priming sequence and begins normal operation. Once normal operation has been verified turn mains power off, re-install filter cartridge(s) and restart spa.

⚠️ **WARNING**

Restriction of water flow due to dirty filter cartridges is the most common cause of ER-3 faults. If the spa pool has been operating normally then intermittent ER-3 faults start to occur the filter cartridge(s) will require servicing.

Depending on type of filter cartridge(s) installed the filters will either require cleaning, soaking in a filter cartridge degreaser solution or replacing. Refer to spa reseller/manufacturer for details on type of cartridge installed and recommended cleaning frequency & methods.

Every time the power is turned on the SV controller will initiate a water priming sequence on start up. During a priming sequence the filtration pump will run for up to 20 seconds at a time in an attempt to purge air from the plumbing. The keypad display will scroll PRIMING during this sequence.

If the spa controller is successful in clearing all of the air from the heater tube the system will begin normal operation. However if air is still detected the spa controller will shut down and latch on fault code (ER3-Water Prime).
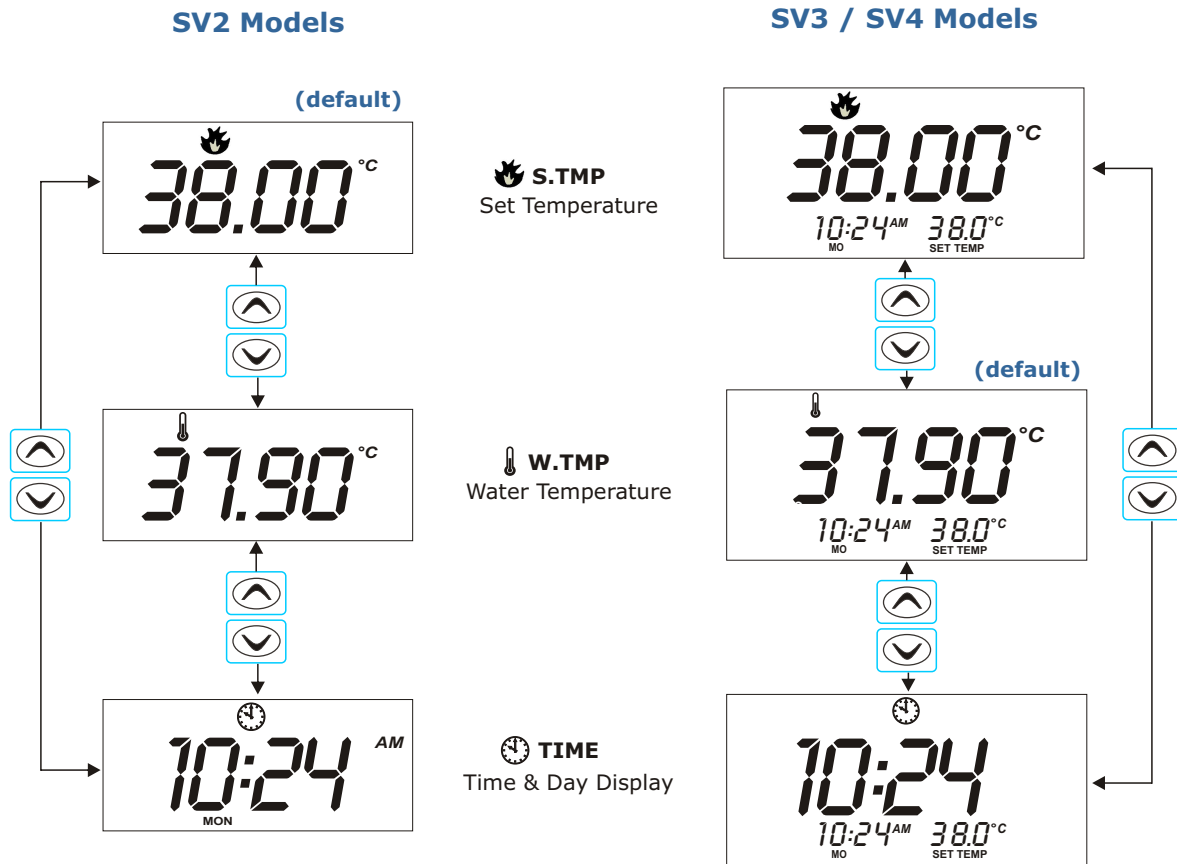
ⓘ **How do I solve ER-3 WATER PRIME:**

▶ Press Pump A 🔘 button to retry water priming sequence

▶ Check spa is filled to correct operating level as advised by spa manufacturer (refill if necessary)

▶ Remove filter cartridge(s) and retry water prime

▶ Bleed airlock from pipe work by slightly loosening couplings on front of filtration pump and allowing air to escape

▶ With filter cartridge(s) removed use hose to flush water down pipe work in an attempt to clear the air pockets from the plumbing

ⓘ **IMPORTANT NOTES**

- Do not allow the filtration pump to continue to run after five (5) x failed priming attempts. Operating a pump without water for extended periods may cause damage to the pump. Turns power off, wait ten (10) minutes and then try again later.

- The in-heater optical water sensor constantly monitors the presence of water in the heater tube. If at any time air bubbles are detected the spa controller will automatically cancel all current operations and force a water priming sequence to begin. This will occur whether the spa is in automatic mode or manual use. If the priming sequence is successful in clearing the air pockets from the plumbing normal spa operation will resume in automatic mode. If unsuccessful the spa controller will shut down and latch on fault code ER-3 Water Prime.

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Display Modes

Water Temperature / Set Temperature / Time

The SV keypads feature three different display modes to select from:

Mode	Icon	Description
W.TMP	🌡	Water Temperature
S.TMP	🔥	Set Temperature
TIME	🕐	Clock (Time & Day)

Default display mode for SV2 models is S.TMP Set Temperature. Default display mode for SV3/SV4 models is W.TMP Water Temperature.

Press ⌃ or ⌄ to navigate through the different display modes (refer illustrations aside).

The purpose of the different display modes is to allow the user to check the set temperature and time on SV2 models, and to allow set temperature point and clock adjustment on all SV2/SV3/SV4 models.
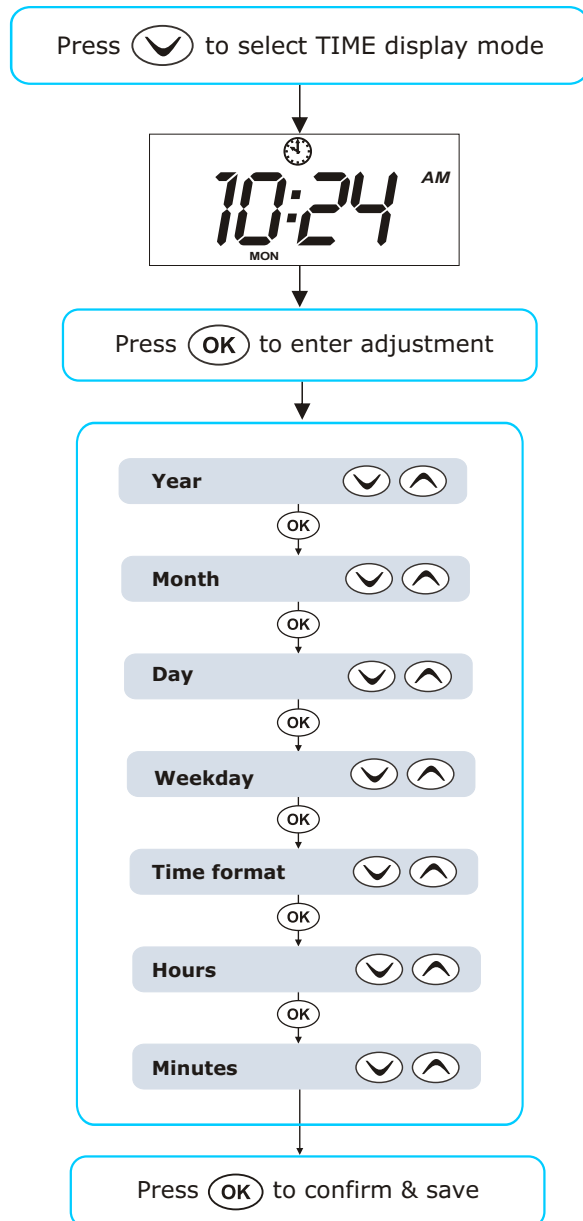
Please note the display mode icon at the top of the screen. These icons denote what display mode is currently being viewed.

SV2 Models

(default)

38.00 °C

🔥 **S.TMP**
Set Temperature

37.90 °C

🌡 **W.TMP**
Water Temperature

10:24 AM
MON

🕐 **TIME**
Time & Day Display

SV3 / SV4 Models

38.00 °C
10:24 AM 38.0 °C
MO   SET TEMP

(default)

37.90 °C
10:24 AM 38.0 °C
MO   SET TEMP

10:24
10:24 AM 38.0 °C
MO   SET TEMP

Other Display Icons

♻ Filtration Cycle
The spa is performing a filtration cycle

🔄 Sanitise Cycle
The spa is performing an automatic or manual sanitisation cycle

🔒 Keypad Locked
The keypad has been locked

⚒ System Error
A fault has been detected. The system has halted operation so that corrective action can be taken. Take note of scrolling error code and consult trouble shooting section of this manual.

ⓘ **IMPORTANT NOTES**

- A ten (10) second idle time out period exists on non-default display modes. If the display mode is changed the screen will time out and return to the default display once ten seconds of idle activity has elapsed (ie no button presses).

- If desired the default display mode can be changed to either W.TMP / S.TMP / TIME (refer to Setup Menu section of this manual for further details).

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Setting the Date and Time

How to program the clock

Press ⌄ to select TIME display mode

`10:24 AM`
MON

Press (OK) to enter adjustment

Year ⌄ ⌃
(OK)
Month ⌄ ⌃
(OK)
Day ⌄ ⌃
(OK)
Weekday ⌄ ⌃
(OK)
Time format ⌄ ⌃
(OK)
Hours ⌄ ⌃
(OK)
Minutes ⌄ ⌃

Press (OK) to confirm & save

Be sure to set the date and time before operating the spa. Vital functions such as filtration, sanitisation cycles and power saving settings depend on the time and date being set correctly.

▶ Press the ⌄ button to change display mode to TIME

▶ Press (OK) to enter clock adjustment

▶ The settings appear in the following order:

Date
- Year   (yyyy)
- Month   (mm)
- Day   (dd)
- Weekday   (mon - sun)

Time
- Format   (24 hr / 12 hr)
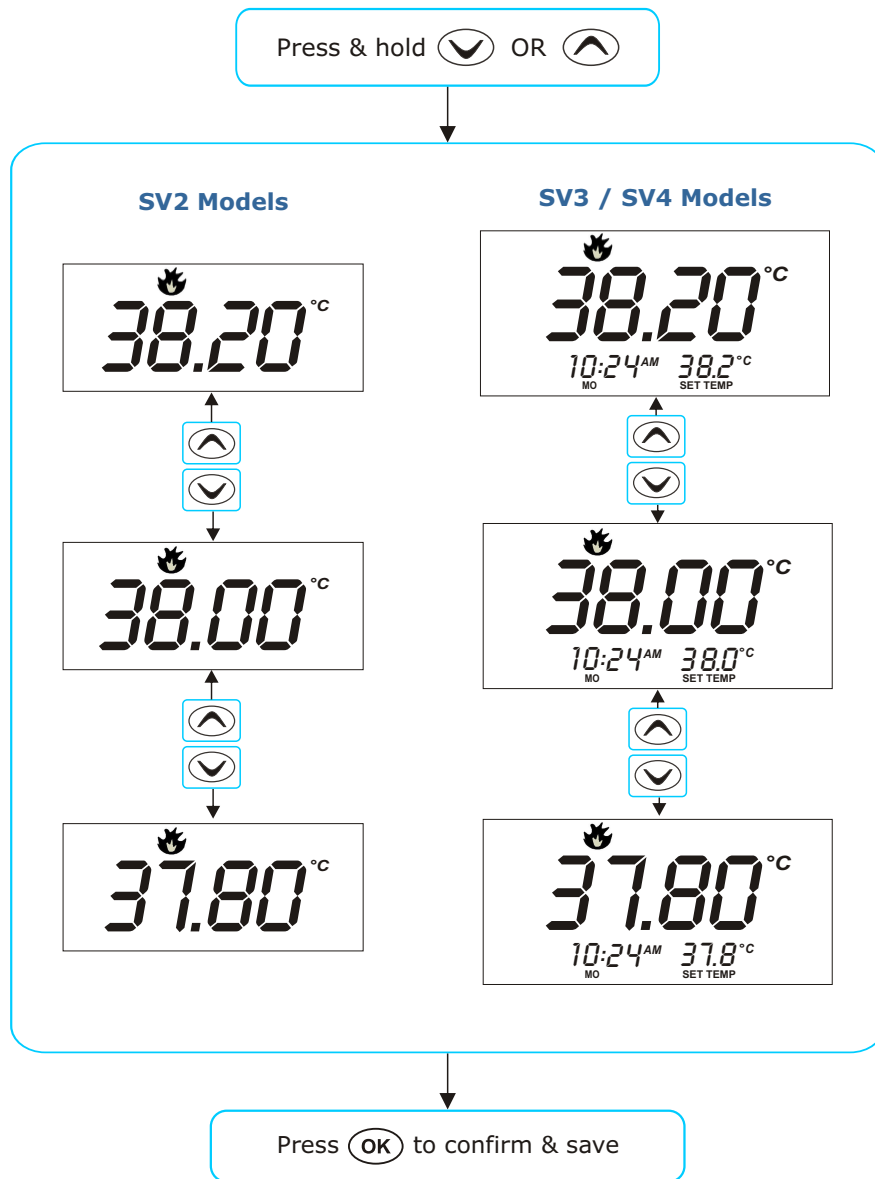- Hours   (xx:00)
- Minutes   (00:xx)

▶ Press the ⌄ or ⌃ button

- to change between 24-hour format and 12-hour format
- to set year, month, day, hours and minutes

▶ Press the (OK) button to save each setting and move to the next setting

ⓘ **IMPORTANT NOTES**

- Leap years are taken into account
- A capacitor backup power supply is provided for the real time clock to continue operation when mains power is off.

Adjusting Set Temperature Point

How to program the desired water temperature

Press & hold ∨ OR ∧

SV2 Models

38.20 °C

38.00 °C

37.80 °C

SV3 / SV4 Models

38.20 °C
10:24 AM   38.2 °C
MO   SET TEMP

38.00 °C
10:24 AM   38.0 °C
MO   SET TEMP

37.80 °C
10:24 AM   37.8 °C
MO   SET TEMP

Press OK to confirm & save

The SV series spa controllers have been designed with simplicity in mind. The intelligent software constantly monitors the spa water, automatically controlling the heater and filtration pump to ensure the desired set water temperature is maintained and required level of daily filtration achieved.

With set-and-forget technology, the spa user simply selects their desired water temperature (Range: 5°C - 41°C; Default: 38°C) and thereafter the SV controller will automatically heat to and maintain that selected water temperature. This is called demand heating - the filtration pump and heater will be activated as required to maintain the set water temperature. The time spent heating the pool and running the pump under normal operation will be taken into account and where required the filtration pump will run for additional periods throughout the day to maintain the minimum level of daily filtration.

Dependant on the amount of normal spa use, set water temperature, daily filtration times, and climatic conditions being experienced, the SV controller will engage the heater and/or filtration pump for differing periods of time, at differing times of day. The advanced software constantly monitors and recalculates after each heating / filtration cycle to ensure the correct daily filtration time is achieved and desired set water temperature is maintained.

Unless adjusted the SV controller will automatically heat to and maintain the default temperature of 38°C. The water temperature set point can be adjusted from 5°C to 41°C in steps of 0.2°C increments.
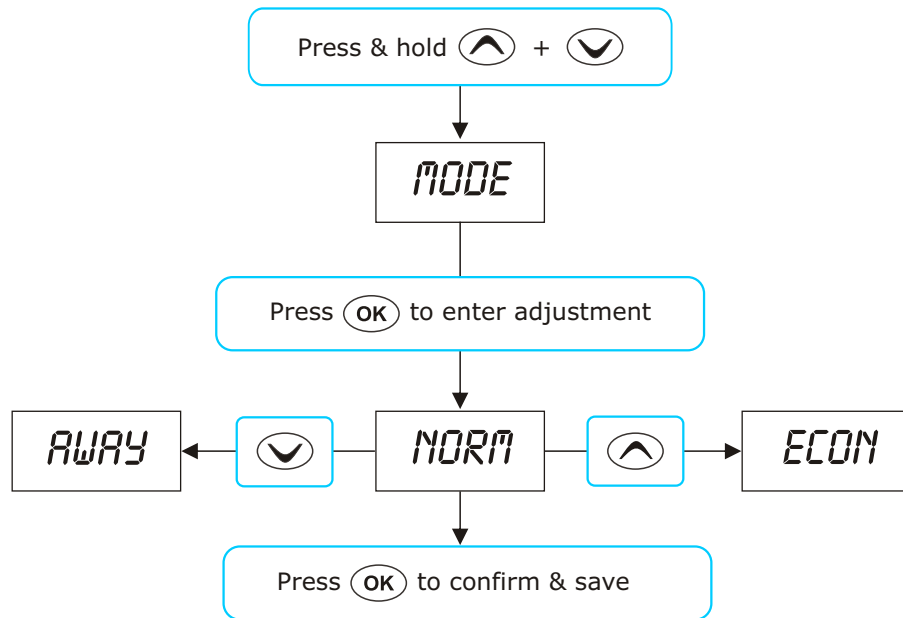
▶ Press and hold ∨ or ∧ to begin set temperature point adjustment

- The keypad numbers will flash during temperature adjustment

▶ Once desired set temperature point has been selected press OK to confirm

ⓘ IMPORTANT NOTES

- To avoid the possibility of hyperthermia (heat stress) occurring it is recommended that the average temperature of the spa pool should not exceed 40°C.

- During a heating cycle he SV controller will raise the water temperature up to 0.5°C above set temperature point to provide an average water temperature of set point at most times.

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Heater Operation Modes

Normal / Economy / Away Modes

Press & hold ⌃ + ⌄

MODE

Press OK to enter adjustment

AWAY ← ⌄ NORM ⌃ → ECON

Press OK to confirm & save

ⓘ IMPORTANT NOTES

- A fast heat up cycle can be cancelled by manually forcing the filtration pump to OFF via the keypad.

- For new spas or when a spa has just been refilled it is common for spa owners to test the operation of each pump when the power is first turned on. This process will effectively cancel the fast heat up cycle. After completing testing of spa functions remember to reset mains power if you wish to reactivate the fast heat up cycle.

Heater Operation Mode

The SV controllers feature three different operating modes that effect demand heating and filtration behaviour (refer table below).

Item	Mode	Notes
NORM	Normal	Normal operation for demand heating and filtration
ECON	Economy	Demand heating can only occur during filtration cycles
AWAY	Away	Demand heating is DISABLED. Filtration is fixed at 1 hour per day (the keypad will scroll "AWAY MODE" every 60 secs)

- ▶ Press and hold ⌃ and ⌄ buttons together until [MODE] is displayed

- ▶ Press OK button to enter operating mode (MODE) adjustment

- ▶ Press ⌃ or ⌄ to select desired operating mode

- ▶ Press OK button to confirm and save setting

ⓘ IMPORTANT NOTE

- If Economy mode is selected and daily filtration time is set too low the spa water may not have sufficient heating time to reach set temperature point.

Fast Heat Up Cycle

After initial mains power on the SV controller will perform a fast heat up cycle that enables continuous demand heating regardless of programmed sleep times and whether Economy (ECON) or Normal (NORM) modes are in use. Once the set temperature has been reached the fast heat up cycle is cancelled and normal operation resumes.

The purpose of a fast heat up cycle is to help the spa reach set temperature as soon as possible after it has been powered up. For new spas or spas refilled with cold water it is desirable not to have sleep time or economy mode delay the spa reaching set temperature otherwise it may take days to get to temperature.

Note: AWAY mode disables a fast heat up cycle.

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Heating Control Protection

Freeze and overheat protection

Freeze Protection

Freeze protection will be activated whenever the water temperature drops below 4°C. It runs back to back 10 minute sanitise cycles and displays "WARM" on the LCD. It also runs each spa accessory (ie. jet pumps and blower) in sequence to run water through the pipe work whilst running the filtration pump and heater. During the "WARM" cycle it will attempt to heat to the set temperature however load shedding may occur depending on settings.

At the end of each 10 minute "WARM" cycle the water temperature is checked. If it is above 4°C freeze protection stops and the controller returns to what it was doing (auto mode / sleep etc). If the temperature is not above 4°'C another cycle will run.

Freeze protection overrides sleep time or power save times – when the temperature drops below 4°C and the controller is asleep it will wake up. So even if high amounts of sleep time, power save time and low set temperatures have been programmed, the SV controller will always keep the water temperature at least above 4°C.

Overheat Protection

All SV controllers feature a three tiered overheat protection system:

▶ If sensed water temperature exceeds 42°C filtration is cancelled (for the day) to prevent heat rise from pump operation

▶ If sensed water temperature exceeds 45°C the controller will shut down and latch fault code (Er5 - Pool too hot). Normal operation will not resume until mains power is reset

▶ Two electromechanical thermal cut out devices are fitted to the heater. One rated to 45°C (+/-2°C) monitored by the software of the controller. The second rated to 47°C (+/-3°C) connected to the main power circuit of the heater. In the event of an overheat condition the thermal cut out devices will operate causing the software to shut down controller operation and latch fault code (Er4 - Thermal Trip).

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Pump Operation

Keypad pump button assignments

PUMP CONFIGURATIONS

MODEL	CIRC	PUMP1	PUMP2	PUMP3	PUMP4
SV2	no	1 spd	-	-	-
SV2	no	2 spd	-	-	-
SV2	yes	1 spd	-	-	-
SV2	yes	2 spd	-	-	-
SV3	no	1 spd	1 spd	-	-
SV3	no	1 spd	1 spd	1 spd	-
SV3	no	2 spd	n/a	1 spd	-
SV3	yes	1 spd	1 spd	-	-
SV3	yes	1 spd	1 spd	1 spd	-
SV3	yes	2 spd	n/a	1 spd	-
SV4	no	1 spd	1 spd	1 spd	1 spd
SV4	no	2 spd	n/a	1 spd	1 spd
SV4	no	2 spd	n/a	2 spd	n/a
SV4	yes	1 spd	1 spd	1 spd	1 spd
SV4	yes	2 spd	n/a	1 spd	1 spd
SV4	yes	2 spd	n/a	2 spd	n/a

BUTTON ASSIGNMENTS

PUMP A	PUMP B	PUMP C	PUMP D
pump1 (on/off/auto)	-	-	-
pump1 (low/off/auto)	pump1 (high/low)	-	-
circ pump (on/off/auto)	pump1 (low/high/off)	-	-
circ pump (on/off/auto)	pump1 (on/off)	-	-
pump1 (on/off/auto)	pump2 (on/off)	-	-
pump1 (on/off/auto)	pump2 (on/off)	pump3 (on/off)	-
pump1 (low/off/auto)	pump1 (high/low)	pump3 (on/off)	-
circ pump (on/off/auto)	pump1 (on/off)	pump2 (on/off)	-
pump1 (on/off)	pump2 (on/off)	pump3 (on/off)	-
circ pump (on/off/auto)	pump1 (low/high/off)	pump3 (on/off)	-
pump1 (on/off/auto)	pump2 (on/off)	pump3 (on/off)	pump4 (on/off)
pump1 (low/off/auto)	pump1 (high/low)	pump3 (on/off)	pump4 (on/off)
pump1 (low/off/auto)	pump1 (high/low)	pump3 (low/off)	pump3 (high/low)
pump1 (on/off)	pump2 (on/off)	pump3 (on/off)	pump4 (on/off)
circ pump (on/off/auto)	pump1 (low/high/off)	pump3 (on/off)	pump4 (on/off)
circ pump (on/off/auto)	pump1 (low/high/off)	pump3 (low/high/off)	-

IMPORTANT NOTE: In some configurations if heater is ON, activating multiple pumps may cause the heater to load shed and turn OFF, or reduce element power (model dependent). This is to keep the system within its maximum current limit. The heater will be re-engaged or returned to full capacity as soon as the number of pumps running is reduced.

Pump Buttons

The jet pumps and/or filtration pump are controlled via the pump buttons on the keypad. The functions of the pump buttons change depending on pump configuration, however Pump-A button is mostly used to control the filtration pump.

The intention is to make best possible use of these buttons for all possible pump configurations. For every press of a pump button the display will temporarily show the selected pump state:

ON / OFF / LOW / HIGH / AUTO

and then revert to the default display mode. The most common pump configurations and button assignments are referenced in the table aside.
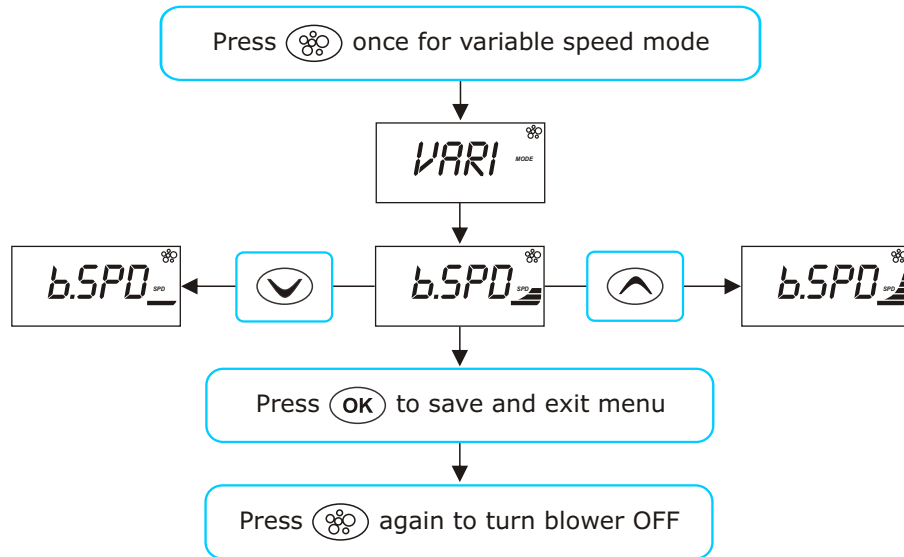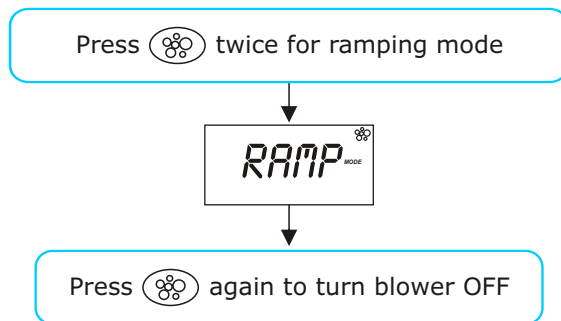
IMPORTANT NOTES

- In configurations where a pump button controls the filtration pump and the heater is ON and pump is to be turned OFF; the pump will turn OFF after a 5 second delay to allow the heater to cool down.

- If left running, pumps will turn off after a 30 minute time out period. Time out period can be adjusted from 10 to 60 minutes via the Setup Menu item T.OUT (refer pg 39).

- If after manual spa use filtration pump is left OFF, controller will revert to automatic mode 15 minutes after the expiry of the T.OUT period.

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Air Blower Operation

Blower button functions

Variable Speed Mode

Press 🌀 once for variable speed mode

↓

VARI MODE

↓

b.SPD _ ← ⌄ ← b.SPD → ⌃ → b.SPD

↓

Press **OK** to save and exit menu

↓

Press 🌀 again to turn blower OFF

Ramping Mode

Press 🌀 twice for ramping mode

↓

RAMP MODE

↓

Press 🌀 again to turn blower OFF

🌀 Blower Button

The blower button is used to toggle the air blower ON/OFF and allow adjustment of the blower speed. The selected speed is saved and will be restored the next time the blower is turned on, for future ON/OFF use. Two modes of operation are provided:

Variable Speed Mode

In this mode the blower speed can be manually adjusted to one of five (5) x different speed settings.

▶ Press 🌀 button **once** to activate blower in variable speed mode

▶ Display will flash VARI mode then present b.SPD (blower speed) adjustment menu (refer illustration aside)

▶ Press ⌃ or ⌄ buttons to increase or decrease the blower speed (note: bar graph segments adjust with blower speed)

▶ Press **OK** button to exit menu or wait for 10 second display time out

▶ Press 🌀 button a second time to turn blower off

Ramping Mode

In this mode the blower speed gradually increases and decreases through the blower speed range in a ramping manner.
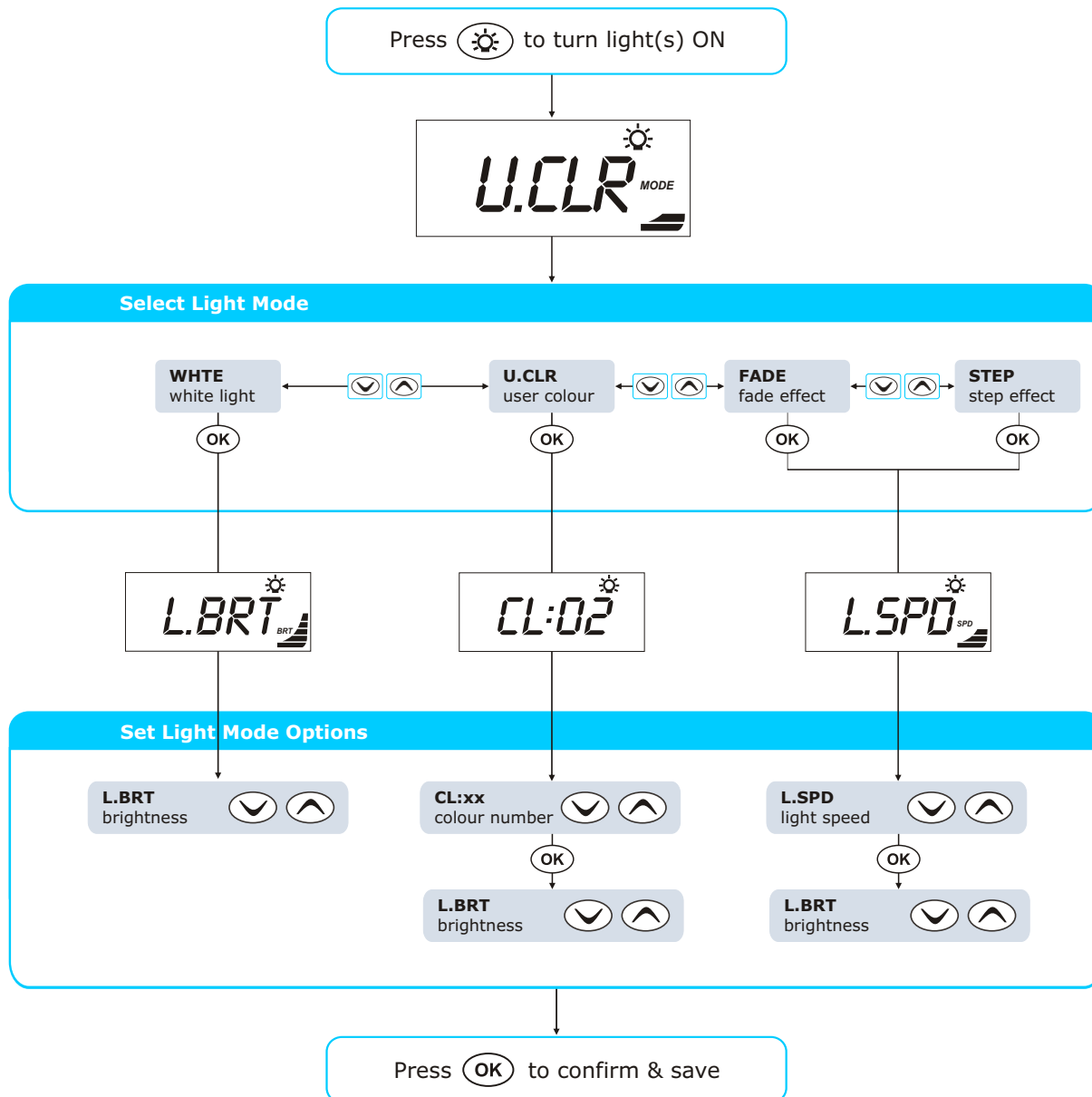
▶ Press 🌀 button **twice** to activate blower in ramping mode

▶ Display will flash RAMP mode and blower operates in a ramping manner

▶ Press 🌀 button a second time to turn blower off

ⓘ IMPORTANT NOTES

● When blower is turned on it runs at maximum speed for 3-4 seconds before changing to preset speed (this is normal)

● If left running, blower will turn off after a 30 minute time out period. Time out period can be adjusted from 10 to 60 minutes via the Setup Menu item T.OUT (refer pg 39).

Spa Light Operation (SV2.T models)

Multi-colour LED lighting effect modes

Press ☼ to turn light(s) ON

$U.CLR$ MODE

Select Light Mode

WHTE white light	← ⌄ ⌃ →	U.CLR user colour	← ⌄ ⌃ →	FADE fade effect	← ⌄ ⌃ →	STEP step effect
OK		OK		OK		OK

$L.BRT$ BRT

$CL:02$

$L.SPD$ SPD

Set Light Mode Options

L.BRT brightness	⌄ ⌃

CL:xx colour number	⌄ ⌃

OK

L.BRT brightness	⌄ ⌃

L.SPD light speed	⌄ ⌃

OK

L.BRT brightness	⌄ ⌃

Press OK to confirm & save

☀ **Light Button**

The light button is used to toggle the spa light(s) ON / OFF and to access the light mode menus. The features that can be adjusted are the light colour, light effect mode, light effect transition speed, and light brightness. All light settings are saved and will be restored the next time the light is turned ON, for future ON / OFF use.

▶ Press ☼ button to turn light(s) on / off

▶ When light is turned on keypad will display light mode menu showing current light mode in use (refer illustration aside)

▶ Press ⌃ or ⌄ button to navigate through choice of light modes:

     WHTE   White Light
     UCLR   User Colour
     FADE   Fade Effect
     STEP   Step Effect

▶ Press OK button to confirm light mode selection

▶ Dependant on light mode selected the keypad will then display one of three light mode option screens (refer aside)

     L.BRT   Light Brightness
     CL:xx   User Colour Number (CL:00 - CL:20)
     L.SPD   Light Effect Transition Speed

▶ Press ⌃ or ⌄ button to adjust each setting

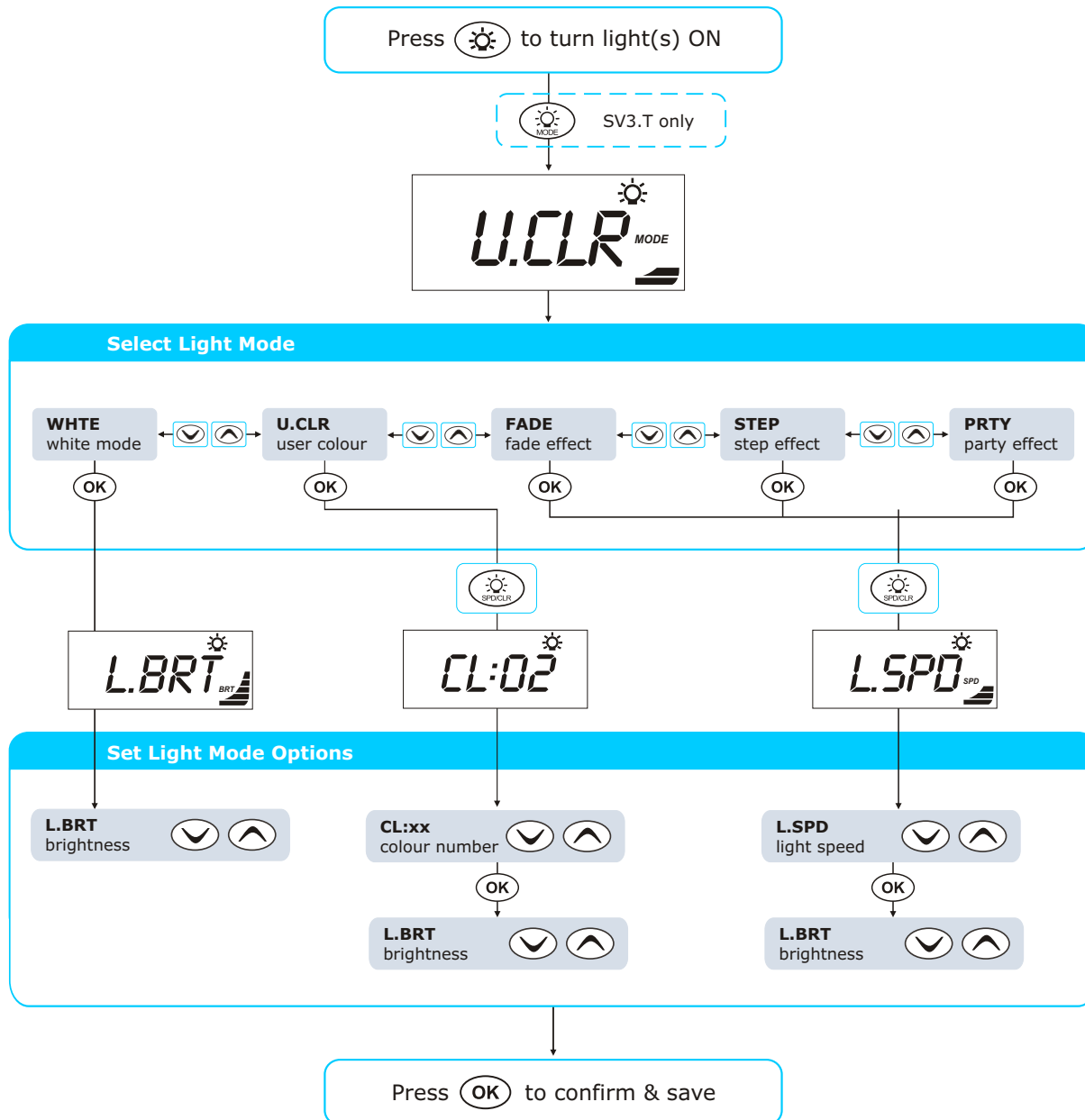▶ Press OK button to save each setting and move to the next setting

ⓘ **IMPORTANT NOTES**

● If left running, light(s) will turn off 15 minutes after the expiry of the pump/blower time out periods.

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Spa Light Operation (SV3.T / SV4.T models)

Multi-colour LED lighting effect modes

Press ☼ to turn light(s) ON

☼ MODE   SV3.T only

U.CLR MODE

Select Light Mode

WHTE white mode	U.CLR user colour	FADE fade effect	STEP step effect	PRTY party effect

OK   OK   OK   OK   OK

SPD/CLR   SPD/CLR

L.BRT BRT   CL:02   L.SPD SPD

Set Light Mode Options

L.BRT brightness ⌄ ⌃	CL:xx colour number ⌄ ⌃	L.SPD light speed ⌄ ⌃
	OK	OK
	L.BRT brightness ⌄ ⌃	L.BRT brightness ⌄ ⌃

Press OK to confirm & save

☼ Light Buttons

The light buttons are used to toggle the spa light(s) ON / OFF and to access the light mode menus. The features that can be adjusted are the light colour, light effect mode, light effect transition speed, and light brightness. All light settings are saved and will be restored the next time the light is turned ON, for future ON / OFF use.

▶ Press ☼ button to turn light(s) on / off

▶ SV4.T models go straight to next step
SV3.T models => press ☼ MODE to access light mode menu

▶ When light is turned on keypad will display light mode menu showing current light mode in use (refer illustration aside)

▶ Press ⌃ or ⌄ button to navigate through choice of light modes:

WHTE   White Light
UCLR   User Colour
FADE   Fade Effect
STEP   Step Effect
PRTY   Party Effect (disco)

▶ Press OK button to confirm light mode selection

▶ Press ☼ SPD/CLR to access light speed / colour menu

▶ Dependant on light mode selected the keypad will display one of three light mode option screens (refer aside)

L.BRT   Light Brightness
CL:xx   User Colour Number (CL:00 - CL:20)
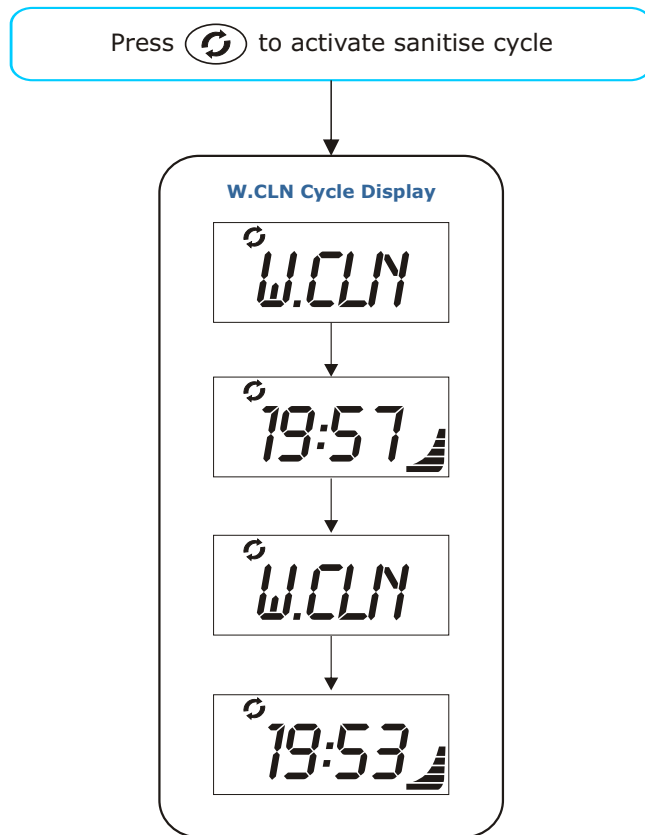L.SPD   Light Effect Transition Speed

▶ Press ⌃ or ⌄ button to adjust each setting

▶ Press OK button to save each setting and move to the next setting

ⓘ IMPORTANT NOTES

• If left running, light(s) will turn off 15 minutes after the expiry of the pump/blower time out periods.

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Sanitise Cycles

Automatic and manual water clean cycles

Press 🔄 to activate sanitise cycle

W.CLN Cycle Display

🔄 `W.CLN`

↓

🔄 `19:57`

↓

🔄 `W.CLN`

↓

🔄 `19:53`

Whilst the cycle is running the display alternates between the W.CLN (water clean) title screen and the minutes remaining in the cycle (refer above).

🔄 **Sanitise Button**

The sanitise button activates a twenty (20) minute sanitisation cycle that runs the filtration pump and ozone / uv (if fitted) to filter the pool water to restore and refresh water quality. With circ pump systems jet pump1 will also run for the full 20 minute cycle. Where 2-speed filtration pumps are used the pump will run in high speed for the duration of the cycle. In addition, at the start and end of the cycle, the controller will sequentially (one at a time) run any additional pumps (pump2, pump3, pump4 if fitted) and the blower for one minute each to purge the plumbing and clear any unfiltered water trapped in those lines.

▶ Press 🔄 button to activate a 20 minute sanitise cycle

▶ Press 🔄 button again to cancel cycle (if desired)

ⓘ **IMPORTANT NOTES**

- When the cycle is started automatic mode is enabled and if running any additional jet pumps and the blower are turned off.

- If the controller falls within a designated sleep or power save period during a sanitise cycle, the controller will not sleep until the sanitise cycle is finished.

Automatic Daily Sanitise Cycle

The controller will automatically run a 10 minute sanitise cycle every day at a user adjustable time (Default = 9:00am). The automatic sanitise cycle works in the same manner as a manual sanitise excepting that the cycle only runs for 10 minutes. This feature cannot be disabled – only the time may be changed via the Setup Menu item W.CLN (refer page 39).

ⓘ **IMPORTANT NOTES**

- If the controller is in a sleep period at the specified automatic sanitise cycle time, it will wait until the sleep period ends before the sanitise cycle runs.

- If the spa pool is in manual use at the time the automatic sanitise cycle is set to run the cycle will be cancelled for that day (ie. the loads have not timed out and the spa has not returned to auto mode).

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Special Function Buttons

Model specific function buttons

Water Temperature   Time & Day

Normal Orientation   Inverted Orientation
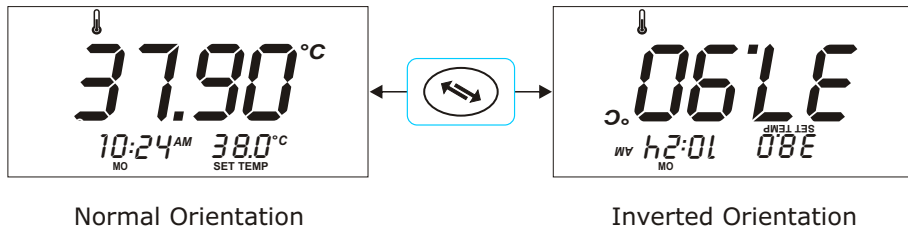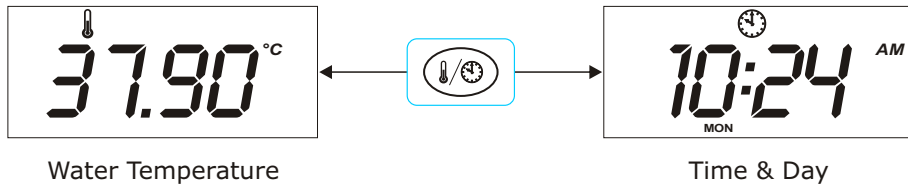
SV2 Models

 Water Temp / Time Toggle Button

Featured on SV2 models only, this button is a shortcut key designed to quickly toggle the display mode between [W.TMP] Water Temperature or [TIME] Time & Day display modes.

SV3 / SV4 Models

 Invert Display

On SV3 and SV4 model controllers the orientation of the keypad display can be inverted (flipped 180°) for easy reading in and out of the spa.

Press button to invert display orientation

 IMPORTANT NOTES

- The operation of the and buttons also reverse to match the current display orientation.

- If the display is left in the inverted orientation, the display will change back to the default direction 15 minutes after the pump/blower time out period has elapsed and controller returns to automatic mode.

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Keylock Function

How to set full or partial keylock

Full Lock

up + down + pump **a**

LOCK

ALL buttons disabled

Partial Lock

up + down + pump **b**

LOCK

Buttons work OK   Buttons disabled

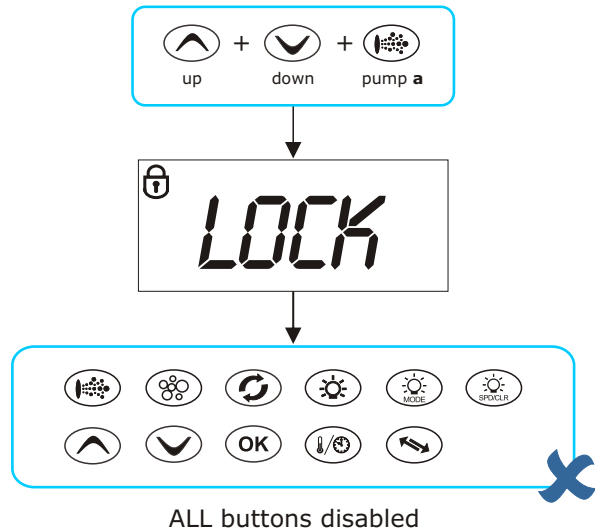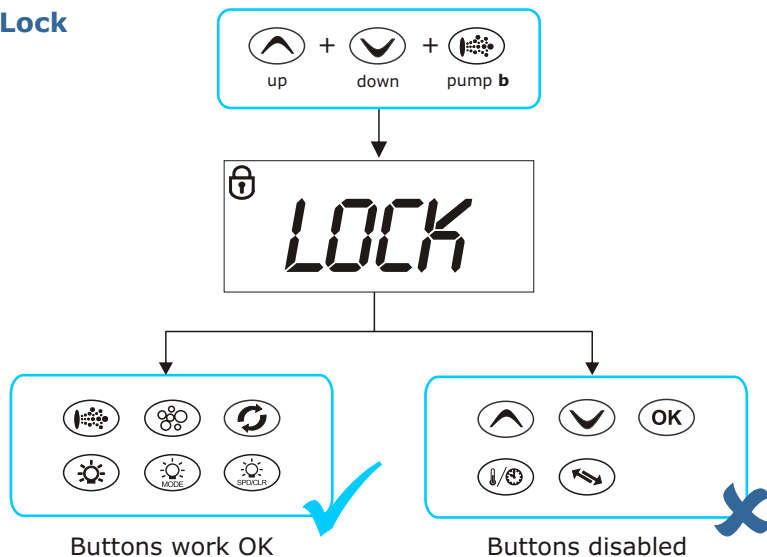The keypad buttons can be locked to prevent accidental key presses or to limit access to certain controller functions. This feature is particularly helpful when spa covers are used or where children are present.

There are two types of keylock:

- Full Lock   all buttons are disabled

- Partial Lock   allows use of pumps, blower, light and sanitise buttons however prevents adjustment of set temperature and other programmable settings

Full Lock

▶ Press and hold up + down + pump **a** until LOCK appears on the display

▶ Once locked if any button is pressed the key stroke will be ignored and display will show LOCK (refer aside).

▶ To unlock keypad press and hold up + down + pump **a**

Partial Lock

▶ Press and hold up + down + pump **b** until LOCK appears on the display

▶ Once locked only pumps, blower, light and sanitise buttons can be used. Access to all other settings is disabled

▶ To exit partial lock mode press and hold up + down + pump **b**

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Setup Menu

How to program advanced configuration settings

Press & hold (∧) + (∨)

↓

EXIT ← (∨) ← MODE → (∧) → FILT

Press (OK) to enter adjustment

↓

AWAY ← (∨) ← NORM → (∧) → ECON

Press (OK) to confirm & save
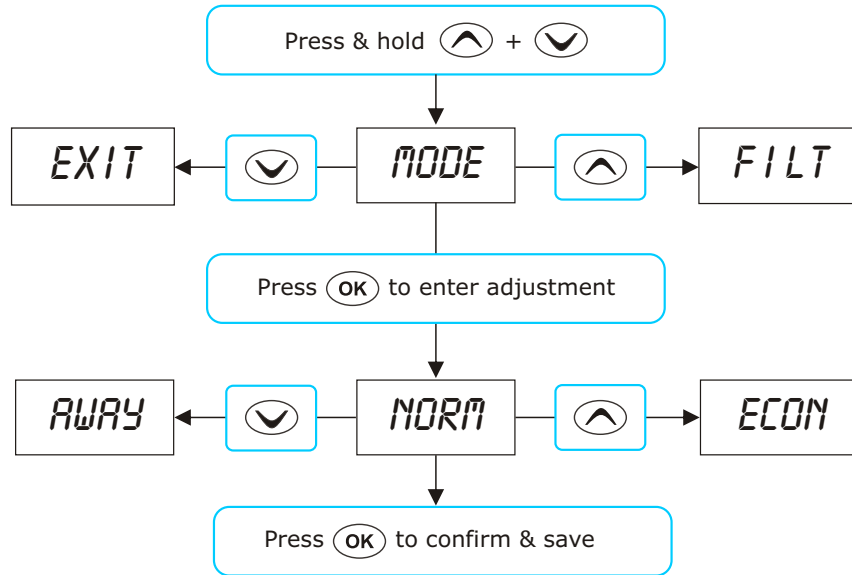
ℹ **IMPORTANT NOTES**

- The setup menu item settings are stored in non volatile memory (EEPROM) and are remembered when power is turned off. No need to reprogram settings when power is restored.

- A ten (10) second idle menu time out period exists. If a button press is not detected for 10 seconds the menu will time out and the screen will return to the default display mode.

The SV controllers feature an advanced setup menu which allows customisation of the adjustable controller settings. Menu item options are detailed in the list below.

▶ To enter menu press and hold (∧) and (∨) buttons until [MODE] is displayed

▶ Press (∧) or (∨) to navigate through menu item list

▶ Press (OK) to enter menu item adjustment

▶ Press (∧) or (∨) to adjust setting

▶ Press (OK) to confirm setting and exit menu

Menu Item	Setting	Notes
MODE	Operating mode	Normal, Economy, Away
FILT	Hours of filtration per day	1 to 24 hrs
SNZE	Sleep time menu	
1.SNZ	Sleep timer 1	[DAY] Days of week, [BGN] Begin Time, [END] End Time
2.SNZ	Sleep timer 2	[DAY] Days of week, [BGN] Begin Time, [END] End Time
R.SET	Reset sleep timers	Reset sleep timers to factory defaults
EXIT	Exit sleep time submenu	
P.SAV	Power save settings	Off, Low (filtration only), High (filtration and heating)
W.CLN	Automatic sanitise time	Daily run time of automatic sanitise cycle (00:00 - 23:59)
D.DIS	Default display mode	W.TMP, S.TMP or TIME
T.OUT	Load time out	Pump / blower time out period (10 to 60 minutes)
EXIT	Exit menu	

Setup Menu

Setup menu item details

MODE   Operating Mode

The SV controllers feature three different operating modes that effect demand heating and filtration behaviour. The setting choices are:

Mode	Name	Notes
NORM	Normal	Normal operation for demand heating and filtration
ECON	Economy	Demand heating can only occur during filtration cycles
AWAY	Away	Demand heating is DISABLED. Filtration = 1 hr per day

Default Setting = NORM

FILT   Filtration (hours per day)

Automatic filtration is provided to ensure that the pool water is filtered for at least a minimum time each day after considering how often the pool has had manual use or how long the pump runs for water temperature maintenance. All time spent running the filtration pump under normal operation (manual use, water temperature maintenance, sanitisation cycles) will be taken into account and where required the pump will run for additional periods throughout the day to maintain the minimum level of daily filtration as specified by the user.

This feature is especially useful in warmer climates where very little automatic heating is necessary to keep the pool water at the set temperature. In these circumstances the automatic filtration steps in to ensure the minimum daily filtration limits are met. (Note: filtration is disabled if water temp exceed 43°C)

SV controllers support two different types of pump for heating and filtration:
1) Small Circulation Pumps (2A or less)
2) Larger Jet Pumps (2 speed or 1 speed)

The default filtration time and adjustment limits differ for each pump type as follows:

	Small circ pump	Jet pump
Minimum filtration hrs p/day	1	1
Maximum filtration hrs p/day	24	8
Default filtration hrs p/day	4	3

SNZE   Sleep Timers

Programable feature to disable automatic heating and filtration to stop all spa activity during certain times of day or night. Refer detailed notes on page 41.

P.SAV   Power Save Setting (off peak filtration and heating)

Reduce energy usage during peak power priced periods by limiting filtration only (low) or both filtration and heating (high) to occur outside peak power periods. The setting choices are: OFF / LOW / HIGH (Default = OFF) Refer detailed notes on page 42 for further information.

W.CLN   Automatic Daily Sanitise Cycle Run Time

The SV controllers are automatically programmed to run a 10 minute daily sanitisation cycle at a given time, where each pump/blower is operated to purge pipe work whilst operating the filtration pump. This setting allows adjustment of the start time of the automatic daily sanitise cycle.

Setting ranges from 00:00 to 23:59
Default = 09:00 (9AM)

D.DIS   Default Display Mode

This setting allows adjustment of the default display mode. The setting choices are:

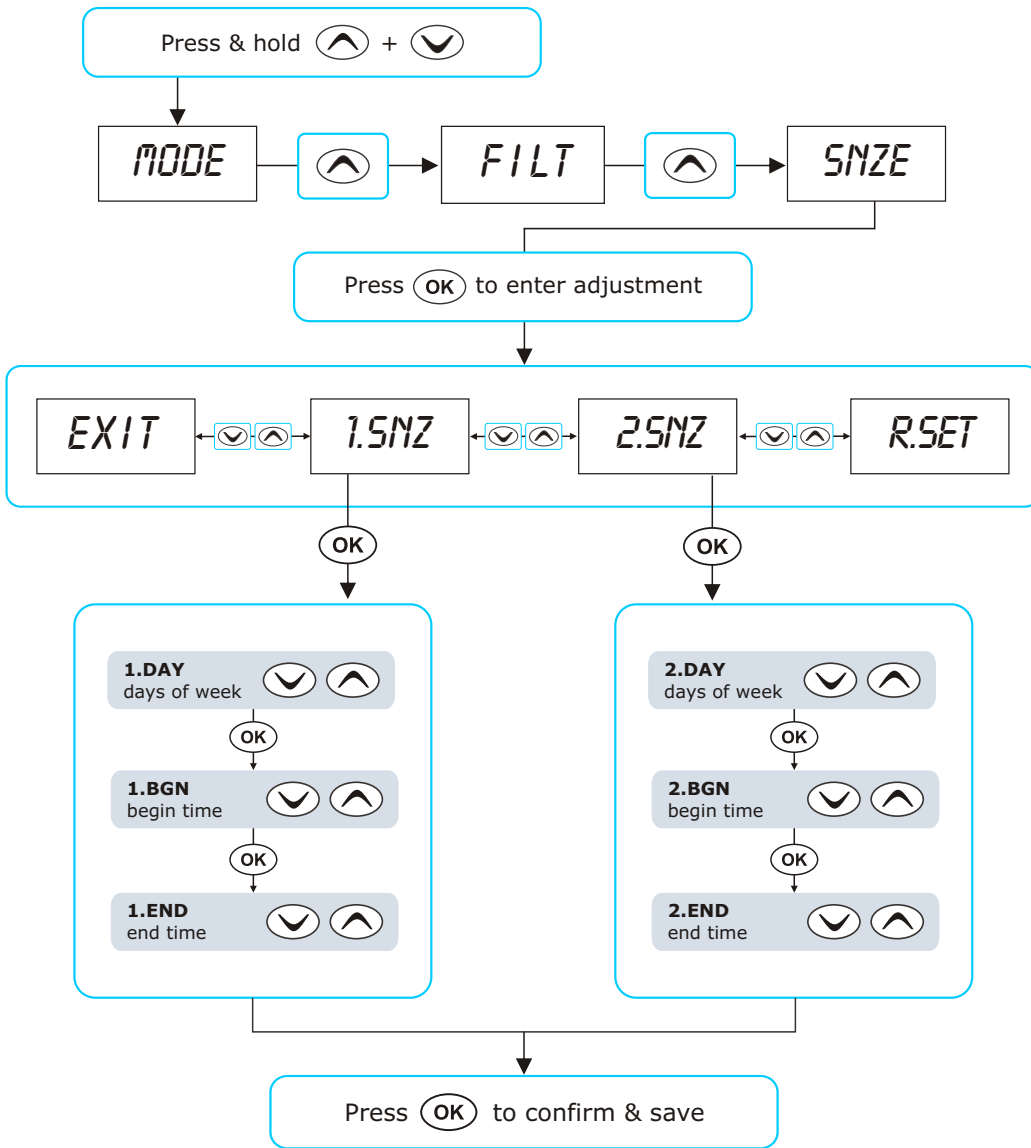| W.TMP	Water temperature	(Default on SV3/SV4 models)
S.TMP	Set Temperature	(Default on SV2 models)
TIME	Time & Day	

T.OUT   Adjustable Load Time Out

All accessory loads (ie. pumps and/or blower) automatically turn off after a time out period has elapsed. Fifteen (15) minutes later the lights will switch off and the pool will return to automatic mode. This setting allows the length of the time out period to be adjusted.

The T.OUT setting ranges from: 10 to 60 minutes
Default = 30 minutes

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[SNZE] Sleep Timers

How to program sleep timers

Press & hold ⋀ + ⋁

MODE → ⋀ → FILT → ⋀ → SNZE

Press OK to enter adjustment

EXIT ← ⋁⋀ → 1.SNZ ← ⋁⋀ → 2.SNZ ← ⋁⋀ → R.SET

OK   OK

1.DAY days of week ⋁ ⋀
OK
1.BGN begin time ⋁ ⋀
OK
1.END end time ⋁ ⋀

2.DAY days of week ⋁ ⋀
OK
2.BGN begin time ⋁ ⋀
OK
2.END end time ⋁ ⋀

Press OK to confirm & save

Accessed via the Setup Menu, Sleep timers are a very handy feature that enable the user to stop all spa activity during certain times of day or night. While the controller is asleep NO automatic heating or filtration maintenance will occur, however the spa can still be operated by manual use without the need to adjust sleep time settings.

There are two individual sleep times that can be set, each of which can operate on one or more specified weekdays. This enables the user to program different sleep times for different days (ie. weekdays vs weekends), as well as custom settings on a particular day/time where the user may want the spa silenced.

▶ Press and hold ⋀ and ⋁ buttons together until [MODE] is displayed

▶ Press ⋀ button until [SNZE] is displayed

▶ Press OK button to enter sleep timers (SNZE) adjustment

▶ Press ⋀ or ⋁ to select from [1.SNZ] Sleep Timer 1; [2.SNZ] Sleep Timer 2; [R.SET] Reset sleep times to default [EXIT] Exit sleep menu

▶ Press OK button to confirm and move to the next setting

Each sleep time setting consists of a week day setting, start time and stop time (refer table below).

Item	Description	Notes
#.DAY	Selected day of operation	Sat / Sun / Mon / Tue / Wed / Thu / Fri Sat-Sun / Mon-Fri / Sat-Fri / : Default = Sat-Fri (Note: : = disabled)
#.BGN	Begin Time Sleep time period begins	Adjustable: 00:00 - 23:59 Default = 22:00 (10PM)
#.END	End Time Sleep time period ends	Adjustable: 00:00 - 23:59 Default = 07:00 (7AM)

▶ Press ⋀ or ⋁ to adjust each setting

▶ Press OK button to confirm setting and move to the next setting

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[P.SAV] Power Save Settings

How to program power save times

Press & hold ⌃ + ⌄

MODE → FILT → SNZE → P.SAV

Press OK to enter adjustment

OFF ← LOW ← HIGH

OK (under LOW)   OK (under HIGH)

BGN begin time ⌄ ⌃
OK
END end time ⌄ ⌃

BGN begin time ⌄ ⌃
OK
END end time ⌄ ⌃

Press OK to confirm & save
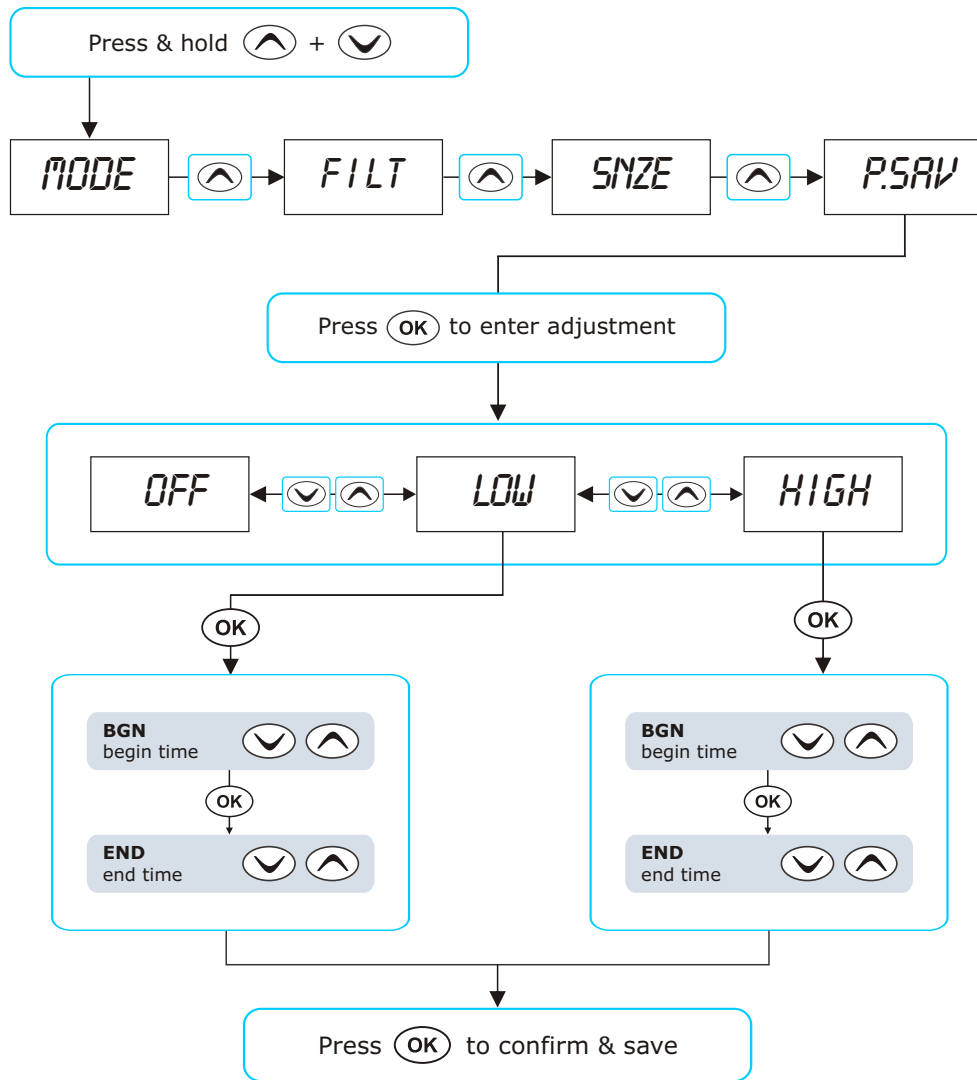
Power utilities in some regions offer household power meters that can track power usage during different times of the day. This allows the utilities to offer very competitive power pricing during off peak power times. The Power Save (P.SAV) function allows the user to program in the peak power period so the spa control knows not to perform filtration and/or heating during those expensive hours. Instead the controller will take advantage of the competitively priced off peak hours, and run the filtration and/or heating during the off peak hours.

▶ Press and hold ⌃ and ⌄ buttons together until [MODE] is displayed

▶ Press ⌃ button until [P.SAV] is displayed

▶ Press OK button to enter power save (P.SAV) adjustment

The power save setting consists of a choice of mode, peak power period start time and peak power period end time (refer table below).

Item	Description	Notes
P.SAV	Power save mode Functions disabled during peak power periods	Off = disabled Low = filtration disabled High = filtration and heating disabled
#.BGN	Begin Time Peak power period begins	Adjustable: 00:00 - 23:59 Default = 14:00 (2PM)
#.END	End Time Peak power period ends	Adjustable: 00:00 - 23:59 Default = 20:00 (8PM)

▶ Press ⌃ or ⌄ to adjust each setting

▶ Press OK button to confirm each setting and move to the next setting

ⓘ **IMPORTANT NOTE**

● If P.SAV set to HIGH and water temperature drops by more than 2°C the heater will be re-engaged until the set temperature point has been reached. Thereafter the heater will return to being disabled for the remaining power save period.

Error Codes

How to trouble shoot spa problems

SV spa controllers feature self diagnostics and scrolling error messages to quickly troubleshoot possible problems. Should the spa control encounter a problem the error code / message will scroll across the topside panel screen until the problem is resolved. If an error condition is experienced all spa functions are shut down and the spa should not be used until the error condition has been resolved. A list of error codes with descriptions of problems and possible solutions has been detailed below for your reference.

(i) **IMPORTANT NOTE**

- **For most error codes mains power to the spa control must be turned OFF and then back ON before the error condition will be cleared.**

Heartbeat LED

All SV model spa packs feature a red flashing heartbeat LED light. The heartbeat LED is located on the front right hand side of the spa pack itself (installed underneath the spa skirt).

The heartbeat LED flashes to indicate the current health/status of the spa pack. When the spa pack is functioning correctly with no errors to report the heartbeat LED emits a single flash in a constant pulse much like a heartbeat (ON, OFF, ON, OFF). If the spa pack encounters a fault the heartbeat LED will begin flashing in sequence with the error code number being experienced (ie. ER2 = ON,ON; OFF ON,ON; OFF).

If the keypad display is ever blank a spa user can still determine the health / status of the SV controller by removing a panel from the spa skirt and checking the heartbeat LED on the front of the spa pack itself.

ER-2 HEATER PLUG

Problem: Heater sensor lead is not connected inside spa pack

Cause: Heater sensor lead is not connected to spa pack or cable damaged

Solutions: • Turn mains power OFF, wait 5 minutes then restart spa

• Contact spa reseller

ER-3 WATER PRIME

Problem: Water prime failed – air detected in heater tube

Cause: Airlock in pipe work, low water level, dirty filter cartridges

Solutions: • Press Pump A button to retry water prime

• Check spa water level (refill if necessary)

• Remove filter cartridges and press Pump A button to retry prime

• Bleed airlock from pipe work by slightly loosening couplings on front of filtration pump

• Remove filter cartridges and flush water down pipe work with a garden hose

ER-4 THERMAL TRIP

Problem: Heater thermal trip activated. Heater has been active and has had insufficient water flow over the element. Low or no water flow has caused the heater temperature to exceed approximately 47°C and the spa control has shut down operation to prevent any damage to the heater unit.

Cause: Low water level, airlock in pipe work, closed shut-off valves, dirty filter cartridges, filtration pump failed or operation intermittent

Solutions: • Turn mains power OFF and wait 20-30 minutes for element to cool and thermal cut-out device to reset. Then turn power back ON

• Check spa water level (refill if necessary)

• Remove filters and clean by soaking in hot water and filter degreasing solution or replace cartridges if required

• Check under spa cabinet to ensure all shut-off valves are in the OPEN position

• Bleed airlock from pipe work by slightly loosening couplings on front of filtration pump or by removing filters and flushing pipe work with water from a garden hose.

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Error Codes

How to trouble shoot spa problems

ER-5 POOL TOO HOT

Problem: Pool over temperature. Temperature sensor reading ≥ 45°C

Cause: High ambient temperatures (especially in summer months) have caused water temperature to rise above set temp point, Excessive filtration time, Jet pumps have been operating for extended periods with the spa cover still on

Solutions: ● Turn mains power OFF, remove spa cover, allow spa to cool then turn power back ON

            ● Check daily filtration time (refer filtration section) and reduce daily filtration time if required

            ● Check spa cover is not resting on topside panel buttons causing jet pumps to start when cover is on. Use keylock function to lock keypad buttons when spa not in use.

ER-6 12V OVERLOAD

Problem: 12V (port) current draw over 1A limit

Cause: Total 12V current drawn by keypad(s), light(s), expansion ports and in pool temp sensor is excessive, 12V power supply is overloaded, too many LED light bulbs installed, faulty LED light

Solutions: ● Turn mains power OFF and restart spa to see if problem reoccurs

            ● Reduce number of LED lights being installed

            ● Systematically unplug lights, in pool temp sensor, keypads and expansion port loads from spa pack (one by one) to identify faulty part

            ● Contact your spa reseller if problem persists

ER-8 CTRL FAULT HVS

Problem: Element relay is on when it should be off

Cause: Power surge, periods of low or high voltage, water on spa pack terminal block, relay problem

Solutions: ● Turn mains power OFF and back ON again to see if spa control recovers from ER8 fault

            ● Inspect under spa cabinet for evidence of water leaking onto spa control. If water present, turn mains power OFF and isolate, then resolve leak, dry up excess water, and allow spa control to dry out before restoring power.

            ● Contact your spa reseller if problem persists

ER-10 OVER CURRENT

Problem: Mains (230V) current draw above current limit (C.LMT) detected

Cause: Accessory devices current draw is too large for the C.LMT setting, faulty jet pump or air blower drawing excessive current, Current Limit (C.LMT) settings are not configured to match circuit breaker rating, load shed (L.SHD) and/or load limit (L.LMT) settings incorrect

Solutions: ● Turn mains power OFF and back ON again

            ● Check operation of each pump => attempt to identify problematic pump or blower causing ER10 to occur

            ● Contact your reseller to check controller settings are configured to match available power and circuit breaker rating

Contact Us

Spa Net Pty Ltd

Unit 4
103 Railway Road North
Mulgrave NSW 2756
Australia

Phone: +61 2 4587 7766
Fax: +61 2 4587 8766

www.spanet.com.au

service@spanet.com.au   Technical Support & Service

accounts@spanet.com.au   Accounts Department

sales@spanet.com.au   Sales Department

spanet