

FOR DISCUSSION

SGHOA Pool Control System – Proposed re-wiring

The current layout and physical functionality of the swimming pool and spa control system has the following issues:

- Pool pumps and Spa are all on separate mechanical timers
 - There are a variety of different timer mechanisms used
 - Pumps lose synchronicity with one another very easily
 - There is no 'Real Time' clock in the system. Any loss of electrical supply means timers stop, and start only when supply is re-established
 - Over time pumps have been operating during peak times rather than shoulder/off-peak, resulting in higher than necessary operating costs
- Spa controls are in different places
 - Spa pump and chlorinator are controlled from the pump supply
 - Spa heater is controlled from a switch panel in the Clubhouse outside the toilet door
 - Spa Blower is controlled from a manual timer push-button switch inside the pool area, above the water tap
 - To operate the spa, blower and heater requires two switches located in different areas
 - Spa pump stops when the heater stops, allowing hot water from heater to remain in the pump line at the end of a cycle
- The pool control wiring is haphazard with no schematic or connection diagrams available
- Switches controlling the pump and heater supplies are under rated
- Modifications to operating functionality is uncontrolled

To address these issues, the following modifications are proposed:

- ❖ Install modern, Real Time Clock (RTC) based timers to ensure continued synchronicity between pump operations and AEST
- ❖ Install contactors to control pumps and heater, and bring load current ratings to within specification
- ❖ Install modern pushbutton, manually operated timer switches to control the spa pump/heater/blower combination
- ❖ Locate Spa/Blower manually operated timer switches in one easily accessed location
- ❖ Re-wire pool and spa controls in one secure enclosure

Proposed New Operating Sequence

Three Pool pumps – Controlled by RTC timers. Two pumps running simultaneously (likely Shoulder or off peak) for two turnover periods – 6 hours (as per 'Pool Guy' advice). Third pump running to the same program in winter, with a different program for summer. This pump also sanitises the 'toddler' pool section, so it demands a different routine. To be set by the 'Pool Guy'.

Spa Pump – Sanitation cycle controlled by RTC timer. In winter it can be two hours off peak – which is six turnover periods. Similar program in Summer, although this is likely to be modified using 'Pool Guy's' experience.

Spa Pump and Blower – In this configuration the pump and blower are controlled by a manually operated timer switch, with an adjustable running time. Can be run at any time, on demand.

Spa Pump, Blower and Heater - In this configuration the pump, blower and heater are controlled by a second manually operated timer switch with an adjustable running time. Can be run at any time, on demand. Additional run-on time function is required for the spa pump in this mode, to purge hot water from pool pump lines to avoid damage to the PVC pump lines (requested by the 'Pool Guy').

Costs and Time to Complete

If agreeable, the work can be completed during the winter period, thus avoiding unnecessary impact on pool/spa use. Estimated costs are:

Item	Description	Cost	Total
1	Contactors CJX2-D1810-U7 25A 240V	\$22.00	\$44.00
2	Pushbutton Time Delay switches LSTDER-L	\$82.50	\$165.00
3	Time Clock Blue Tooth Single Channel TCBT1	\$132.00	\$132.00
4	Time Clock Blue Tooth Double Channel TCBT2	\$179.00	\$179.00
5	DIN Rail Enclosure 300mm x 300mm x 200mm	\$130.00	\$130.00
6	Labour – 16 hours	Nil	\$00.00
	Total		\$ 650.00

Estimated time to complete is 2 days. All work will be in accordance with AS3000 and completed by a licensed Electrician.

Let me know what you think.

Cheers

KenW