

Supreme Heating User Guide

Heatseeker Maxi (Heat Pipe) Solar Pool Heating



**Supreme
Heating**

Specialists in heating for homes & pools



Solar Pool Heating

Accessing Supreme Heating Technical Support

For assistance with the installation or ongoing use of your **solar pool heating system** please contact Supreme Heating for technical support.

Supreme Heating	Monday - Friday	8.30am - 5.00pm
Phone: 1300 787 978		(Melbourne Time)

For assistance with the installation or ongoing use of your **solar controller**, in the first instance please contact Supreme Heating for technical support. Alternatively, please contact the manufacturer.

Dontek Electronic Manufacturing	Monday - Friday	8.30am - 5.00pm
Phone: (03) 9762 8800		(Melbourne Time)

For assistance with the installation or ongoing use of your **solar pump**, in the first instance please contact Supreme Heating for technical support. Alternatively, please contact the manufacturer.

Astral Pool Australia (Hurlcon)	Monday - Friday	8.30am - 5.00pm
Phone: 1300 727 116		(Melbourne Time)

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This manual contains information about the operation and warranty terms and conditions of our Heatseeker Maxi (Heat Pipe) evacuated tube solar pool heating system. Also included is advice on how to maintain and diagnose problems with your solar pool heating.

Please read operating instructions carefully before using appliances. The equipment is not intended for use by young children or infirm persons without supervision. Please ensure young children are supervised to ensure they do not play with the equipment.

Overview

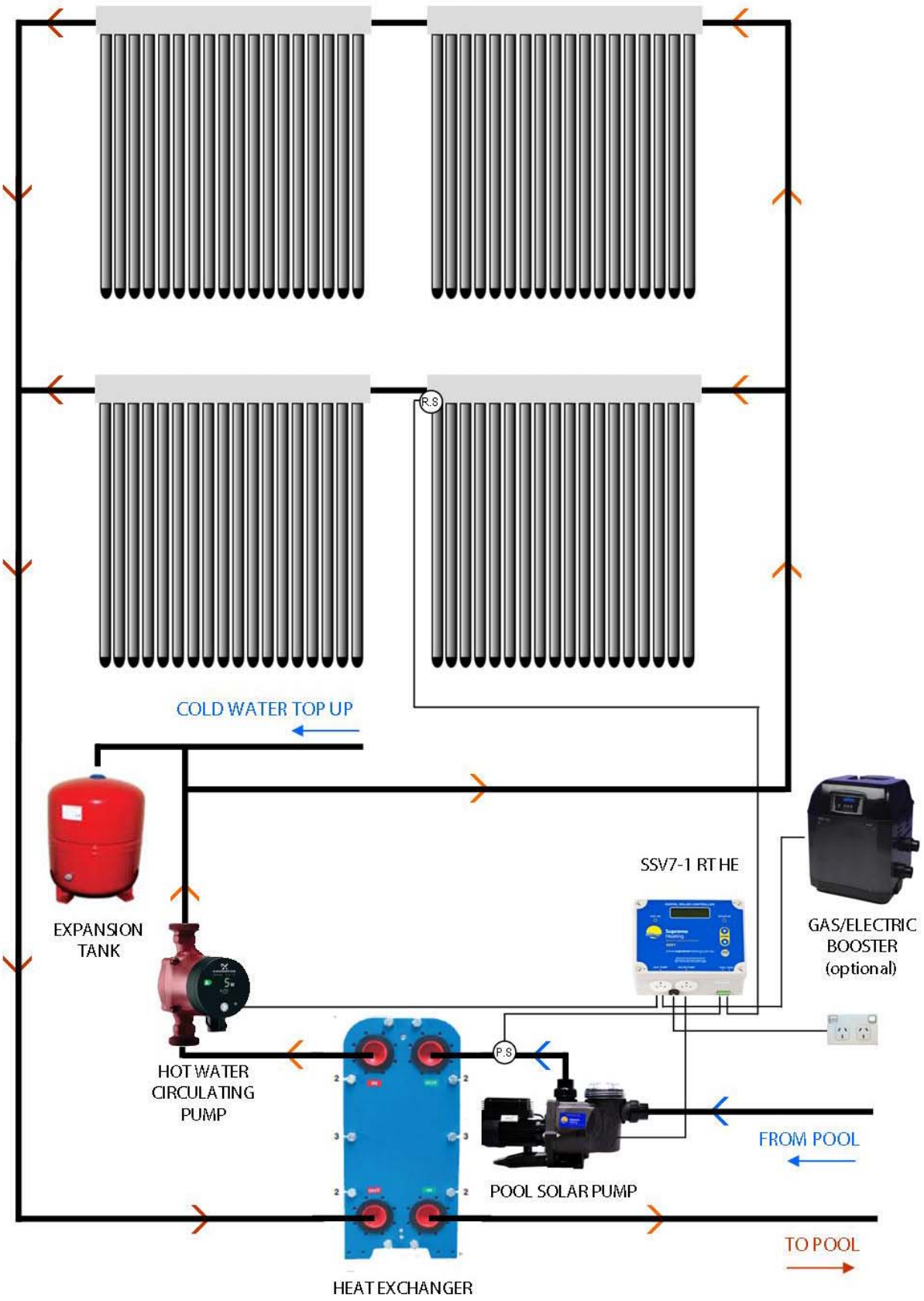
Heatseeker Maxi (Heat Pipe) solar heating systems will give you maximum heat input. This can be year round depending on your requirements and where you are situated.

The pool is heated by circulating water via a heat exchanger through the solar collector where it absorbs the suns energy. Solar systems normally incorporate a separate pump and automatic controller to maximise heat gain and can be fitted to existing pools.

With proper maintenance your solar pool heating system should provide many years of trouble-free service.

Features

- Higher efficiency to allow optimum heat gain with minimal roof space
- Quality products for added strength and durability
- Innovative products to achieve maximum aesthetic appeal and to maintain property value
- Easy operation and low maintenance



Maintenance

Important - System Operation

Commissioning of the Heatseeker Maxi (Heat Pipe) system must be carried out by a qualified and authorised Supreme Heating representative.



The Heatseeker Maxi (Heat Pipe) is a high performance system and requires the owner to adhere to the following:-

- Any 'works' to be carried out that will affect power or water supply to the Heatseeker Maxi system will require consultation with Supreme Heating prior to the works being carried out.
- Backwashing of the filter pump must be done before or after solar running time. This applies when you are only using one pump.

It is recommended that a yearly inspection be carried out by Supreme Heating to ensure the efficient and continued operation of all fittings. Certain fittings may need to be cleaned or replaced and these would be subject to a cost to the owner.

Failure to adhere to the above instructions will void associated warranties.

General Maintenance

The solar panels and associated pipe work and valves should be inspected once a month for any leaks or signs of damage. Any problems should be immediately reported to Supreme Heating.

The glass tubes are self cleaning in normal weather conditions and can be cleaned with water or 'Windex' if local conditions are unfavourable.

Solar Pumps

The SS series solar pumps are designed to operate for extended periods without any attention or maintenance. Following are the periodic maintenance requirements:

1. Keep lint basket clean - empty it regularly. Blocked lint basket or suction pipe and no water flow can cause overheating with consequent pipe and pump components failure and meltdown.
2. Apply suitable waterproof grease to the lint pot 'O' ring to ensure positive seal.
3. Ensure electrical passage for cooling airflow to prevent fusing or shock hazards.
4. Maintain a clear passage for cooling airflow to prevent overheating of motor.
5. Maintain water in good chemical balance.

6. Do not allow quantities of sand or grit to continuously pass through pump to prevent “sand blasting” erosions (use filter sock in lint basket if sand, etc. is being picked up by vacuum.)
7. Do not over tighten strainer lid. Never use a tool or handle to tighten lid.
8. Do not add pool salt, chlorine, acid or other chemicals directly to your skimmer. This may result in damage to your pump and could void your warranty.

Hot Water Circulating Pumps

The Grundfos hot water circulating pumps are designed to operate for extended periods without any attention or maintenance.

Automatic Solar Controller

Supreme Heating has combined the latest technology, together with user-friendly concepts in the development of our SSV7-1 RT HE automatic solar controller. Our controller is digitally controlled and is used to control the heating of your pool and/or spa from your solar collector.

SSV7-1 RT HE Operating Instructions

The SSV7-1 RT HE is a swimming pool controller that heats the water by the use of evacuated tube solar collectors via a heat exchanger; an auxiliary heater can also be controlled.



SSV7-1 RT HE

The optional auxiliary heater function (gas or heat pump) has a separate temperature limit setting (AUX LIMIT), the pool will be heated to this limit by the auxiliary heater.

The auxiliary heater run time is controlled by heat demand settings, which can be set to on/off and set to run between start and end times, note that if the start & end time are set to the same values the auxiliary heater will run for 24 hours to achieve temperature limit.

If solar gain is available the solar system will heat the pool to the solar limit (SOL LIMIT), and the auxiliary heater will be switched off to save energy. Solar has a time lockout that prevents heating outside of the time set (default 08:00 - 19:00). Note that solar heating is given priority over the system and that the AUXILIARY pump socket will be powered whenever heat demand calls for heat or if solar heating becomes active. The solar collector circulator pump plugs into the right hand side 240VAC socket, the pool pump or solar pool pump (for independent systems) plugs into the AUXILIARY socket. The aux heater is controlled by the heater interlock cable which is plugged into the RELAY1 NO/C connections (if fitted).

NOTE: Note that the maximum combined rated current is 10 Amps (2400W at 240VAC.)

Settings Menu

To enter the SETTINGS MENU push either the UP or DOWN buttons and the following will be displayed;

SETTINGS MENU

1) MANUAL MODE

Use UP/DOWN buttons to scroll to the option you wish to change. Press the ENTER button to select the currently displayed menu item.

All menu items are shown below;

SETTINGS MENU

1) MANUAL MODE

2) FILTER TIMER

3) TEMPERATURE

4) HEAT DEMAND

5) MODE

6) CLOCK (24h)

7) SAVE & EXIT

1) Manual Mode

MANUAL PUMP MODE

UP=ON DOWN=OFF

MANUAL MODE allows you to manually set the AUXILIARY pump to 'on' by pressing the UP button or 'off' by pressing the DOWN button.

Pressing ENTER will return you to the SETTINGS MENU. You can also keep pressing ENTER to toggle the AUXILIARY pump from 'on' to 'off' and vice versa.

MANUAL MODE will time out after 24 hours and the controller will return to automatic operation.

2) Filter Timer

FILTER TIMER

(ON/OFF)

FILTER TIMER can be set to ON or OFF, this controls the power out of the left hand 240VAC AUXILIARY socket, if OFF is selected the left hand socket will be switched on for solar gain or heat demand

automatically. When the FILTER TIMER is set to ON the left hand AUXILIARY socket runs a filter pump on a timer with the following settings;

SINGLE CYCLE

DUAL CYCLE

Single cycle sub menu

SINGLE CYCLE	SINGLE CYCLE
START TIME X:XX	END TIME X:XX

Dual cycle sub menus

FILTER CYCLE	FILTER CYCLE	2nd FILTER CYCLE	2nd FILTER CYCLE
START TIME X:XX	END TIME X:XX	START TIME X:XX	END TIME X:XX

When you enter the FILTER SETUP menu you will need to select SINGLE CYCLE or DUAL CYCLE, the selected option will be flashing, you can use the UP/DOWN buttons to change to the selected option, once you select the required cycle by pressing SELECT you will be prompted to set the cycle START TIME and END TIME, modify these by pressing the UP/DOWN buttons, press SELECT to accept the setting. SINGLE CYCLE will run the filter pump once per day. DUAL CYCLE will run the filter pump twice per day. When DUAL CYCLE is selected, care must be taken to ensure that cycle 2 times do not overlap cycle 1 times.

Note 1: If 24 hour filtration is required then set the start and end time the same (e.g. 12:00-12:00)

Note 2: Any solar gain during the daytime will run the AUXILIARY socket for 3 minutes before starting the solar pump, and will also run for 3 minutes after the solar pump has stopped.

**Factory Default is FILTER TIMER OFF

3) Temperature

TEMPERATURE
SOL LIMIT XX.X°

When you enter the TEMPERATURE menu you may change the solar heater temperature limit setting (SOL LIMIT) by pressing the UP/DOWN buttons, if no change is required simply push ENTER.

Heating will stop and sample waiting begins once the solar temperature limit is reached.

**Factory default for SOL LIMIT is 30°C.

TEMPERATURE

AUX LIMIT XX.X°

AUX LIMIT sets the temperature the auxiliary heater will heat the swimming pool to you can use UP/DOWN buttons to change the selected temperature, press ENTER to accept.

Heating will stop and sample waiting begins once the aux temperature limit is reached, the sample wait period may be cancelled if the temperature is below the solar limit and solar gain becomes available.

Note 1: AUX LIMIT setting will only be shown if heat demand is turned on.

Note 2: For maximum efficiency it is advisable that the solar limit (SOL LIMIT) be set higher than the auxiliary limit (AUX LIMIT).

**Factory default for AUX LIMIT is 25°C

4) Heat Demand (only set to ON if auxiliary heating fitted and required)

HEAT DEMAND

ON/OFF

When you enter the HEAT DEMAND you will need to select ON or OFF, the selected option will be flashing, you can use UP/DOWN buttons to change the selected option, ENTER to accept.

If OFF is selected you will return to the menu, If ON is selected you will be prompted for START and END time, modify values by using the UP/DOWN buttons, use ENTER to accept the values.

**Factory default is 'heat demand off'

HEAT DEMAND TIME HEAT DEMAND TIME

START TIME X:XX END TIME X:XX

Note: If a 24 hour continuous run time is required then set the start time and end time to the same value. (e.g. Start 12:00, End 12:00)

IF LIMIT ACTIVE

SAMPLE AT XXXX

Sets the sampling period once the pool has reached the auxiliary temperature limit, options are 15 min, 30 min, 1 hour, 2 hours. Once the pool reaches the auxiliary temperature limit and the filter pump is turned off it will not be turned on until the sample period expires, the filter pump will then run for a minimum period of 3 mins so that water can flow past the pool temperature sensor and obtain an accurate reading. Should heating be required the filter pump will remain on to heat the pool.

Note: The sample period also applies to a pool that has reached solar limit.

**Factory default for HEAT DEMAND is OFF (06:00 to 22:00, sample @ 1 hour)

5) Mode

MODE

SUMMER MODE/WINTER MODE

You can use UP/DOWN to change the selected option, ENTER to accept.

SUMMER Mode is the normal operation of heating the swimming pool.

WINTER Mode, when selected you will be prompted to select the start month and end month of winter (inclusive), this assists in the systems off-season maintenance and saves energy as solar gain may be available but swimming temperature cannot be achieved. If heat demand is set to OFF a 3 minute flush of the solar collectors occurs between 10:00 and 16:00 providing the roof temperature is equal or greater than the pool, but if that condition does not occur a solar system flush will be forced to occur at 16:00.

If heat demand is ON the system operates similar to normal mode but solar pump activity is monitored and will force a 3 minute flush if solar has not been active for seven days, note the unit may flush if winter mode is selected on the day of install.

6) Clock (24hr)

When you enter the CLOCK menu you will be prompted to change the day of the week, adjust by pressing the UP/DOWN buttons to accept the value press ENTER, repeat for day of the month, month of the year, year, hour of the day (24h format), minutes of the hour. Seconds are automatically set to zero.

5) Save & Exit

When this menu is selected, push ENTER to save ALL settings, the unit will return to normal operation automatically.

Note: If any of the menu items are left unattended for 3-4 minutes the menu will time out and automatically save all settings and return to automatic operation.

The *Enter* button

FOR MANUAL MODE

PRESS ENTER NOW

Pressing the ENTER button once will display the above message for approximately 3 seconds, simply wait and the unit will return to normal operation.

If ENTER is pressed for a second time within a 3 second period, the display will indicate you have entered Manual mode, operation is the same as manual mode in the menu with the only difference being the timeout value is 4 hours.

Notes

1. If a sensor fault is detected the SSV7-1 RT HE will display which sensor and what the fault is.
2. Should power be interrupted for any reason, the SSV7-1 TR HE will resume normal operation when power is restored, all information will have been kept.
3. Temperature sensors used with this unit are digital and are accurate to 0.5°C, no calibration is required.
4. The sensor cable with the thin trace is the positive and is fitted to the right hand side of the green plug; incorrect polarity will be displayed.
5. If auxiliary heater interlock switching is used the maximum load is 5A at 32Vac max.
6. Solar parameters may be changed by holding the UP button while power is applied, or by holding the UP button immediately after executing 'save and exit'. These parameters are solar start, solar end, solar gain start differential and solar gain end differential (pool temp versus roof temp + diff). This is provided for installers and experienced users only.

**Default time the solar pump is allowed to operate is from 07:00 to 19:00, default differentials are 15° to start, 4° to stop.

SSV7-1 RT HE Trouble Shooting

No display or lights - check power, maybe blown fuse (house or internal to controller), maybe dislodged ribbon cable (internal).

"POOL SENSOR" or "ROOF SENSOR"

"OPEN CIRCUIT"

Pool or roof sensor missing or a broken wire, maybe a faulty sensor or controller.

"POOL SENSOR" or "ROOF SENSOR"

"SHORT CIRCUIT"

Pool or roof sensor wired in reverse polarity, wires touching, faulty sensor or controller.

"SOLAR LOCKED OUT"

Solar programmed not to run, check that the clock is set correctly and the solar lockout times are at the desired times.

"WAITING"

"TO SAMPLE TEMP"

This is not a fault, this occurs because the water has reached the desired temperature and is now in an energy saving mode. The pump will start after 3 hours (only if solar gain is available) to sample the pool temperature to determine if more heating is required.

"SOLAR PUMP ON"

"TO COOL SYSTEM"

This is not a fault, after a heater turns off or if a heat exchanger is fitted then the pump will run for 3 minutes to remove any excessive residual heat.

Pumps

At Supreme Heating we use Astral Pool Australia (formerly Hurlcon) and Grundfos pumps for our solar installations.

SS Series Solar Pump

A high performance, high head pump ideally suited for solar applications. The SS series pump is Supreme Heating's premier pump designed to operate at high pressures when high pressure is desired.

Features

- Continuous duty rated motor
- Precision reinforced moulded high head impeller, giving extra performance
- Single piece moulded body for added strength and longer life
- Rapid priming diffuser quickly corrects loss of water flow
- Quick and easy disassembly for servicing
- Large capacity basket with easily removed ramp on lid

Operation

1. Prime pump if hair and lint pot is dry as follows:
 - Close off valve on suction line if present.
 - Remove lint pot lid.
 - Fill lint pot and chamber with water.
 - Replace and secure lint pot lid and seal.
2. Open all valves, allowing fluid to flow through pump.
3. Switch on power to pump, motor to start.
4. If some flow of water does not establish within on half a minute, switch off and prime pump again. If pump does not prime within three attempts, check all suction connections for sealing. If these are satisfactory, a check or foot valve is required to hold water for prime.
5. If the water flow through pump is always tedious to obtain at start-up after cleaning the lint basket, then an examination of the system to establish a reason and correct the cause is recommended. eg. Check valve, air leaks, faulty seal, cracked lint pot lid, etc.
6. The non-return valve is supplied loose in the basket of pump. To install, place between the outlet barrel union tail and the discharge of the pump. The non-return valve should be located so that the flap can swing upwards into the union tail. The non-return valve should be installed on spas equipped with cartridge filters, any time multiple pumps are operating off one suction or return line or any installation where a back flow of water may occur when the pump is shut down. The non-return valve will reduce the performance of the pump slightly.

Note: To avoid a safety hazard, the supply cord if damaged, must only be replaced by Astra Pool Australia (Hurlcon), or its service agent or a suitably qualified person.

Grundfos Hot Water Circulating Pump

Grundfos pumps are designed to circulate liquids in heating and hot water systems. The multi-speed circulator pumps are capable of operating at three different speeds and the design has been optimised with a view to reducing energy consumption and making the product as smart as possible.

Features

- Maintenance free
- Low noise
- Low energy
- Available with corrosion resistant stainless steel or bronze pump housing

Operation

Grundfos circulating pumps installed properly and sized for correct performance, will operate quietly and efficiently and provide years of service.

Under no circumstances should the pump be operated without water circulation or without the minimum required inlet pressure for prolonged periods of time. This could result in motor or pump damage.

The circulating pumps are multi-speed, and the speed can be changed by a speed selector switch located on the front of the terminal box. **Supreme Heating will set the required speed for correct performance and under no circumstances should this be changed without consultation with Supreme Heating.**

Note: To avoid a safety hazard, the supply cord if damaged, must only be replaced by a Grundfos service agent or a suitably qualified person.

Warranty Agreement

Definitions

- 1 All capitalised expressions used in this warranty are defined in paragraph 18.

Warranty

- 2 Supreme Solar Pty Ltd warrants that its services in installing the Product will be carried out with due care and skill and subject to clauses 3, 4, 5, 6 and 7, that the installed Product will be free from defects in workmanship for a period of twenty four (24) months after installation (warranty includes in field labour costs.) The warranty is given subject to the terms of this warranty agreement.
- 3 The Solar Collector included in the Product carries:
 - (a) in the case of a Strip Collector, a ten (10) year limited warranty from Procom Plastics Extrusions Pty Ltd, 38 McGregors Drive, Keilor Park, Victoria, 3042 (Phone: (03) 9331 7589, Email: sales@procomplastics.com.au); or
 - (b) in the case of an Evacuated Tube Collector, a ten (10) year limited warranty from Supreme Solar Pty Ltd, 9 Lucknow Crescent, Thomastown, Victoria, 3074 (Phone: (03) 9460 4200, Email: info@supremeheating.com.au);and is the only warranty given in respect of that part of the Product.
- 4 The Automatic Controller included in the Product carries:
 - (a) in the case of a SSV or Aqua-Gen 3 Series of Automatic Controllers, a three (3) year limited warranty (temperature sensors not covered) from Dontek Electronics Pty Ltd, 19 Melrich Road, Bayswater, Victoria, 3153 (Phone: (03) 9762 8800, Email: service@dontekelectronics.com.au); or
 - (b) in the case of a Aqua-Gen 2 Automatic Controller, a two (2) year limited warranty (temperature sensors not covered) from Dontek Electronics Pty Ltd, 19 Melrich Road, Bayswater, Victoria, 3153 (Phone: (03) 9762 8800, Email: service@dontekelectronics.com.au);and is the only warranty given in respect of that part of the Product.
- 5 The Solar Pump included in the Product carries a three (3) year limited warranty (six (6) months for commercial installations) from Astral Pool Australia Pty Ltd, 48 Hanna Street, Noble Park, Victoria, 3174 (Phone: (03) 9554 2200, Email: melbourne@astralpool.com.au) and is the only warranty given in respect of that part of the Product.

In field labour warranty is applicable in Capital City Metropolitan areas or within a 20km radius of an Authorised Astra Pool Australia Service Agent.

- 6 The Circulating Pump included in the Product carries a two (2) year limited warranty from GRUNDFOS Pumps Pty Ltd, Unit 2, 18-22 Lexia Place, Mulgrave, Victoria, 3170 (Phone: (03) 9544 3655, Email: contact-au@grundfos.com) and is the only warranty giving in respect of that part of the Product.
- 7 All other components supplied by Supreme Solar Pty Ltd carry a twelve (12) month limited warranty and is the only warranty given in respect of these components of the Product.

Exclusions

- 8 Supreme Solar Pty Ltd will not be liable under this warranty where Supreme Solar Pty Ltd's reasonable opinion a defect is caused by:
 - (a) fair wear and tear;
 - (b) negligent, careless or improper use or handling;
 - (c) non-adherence to operating, cleaning or maintenance instructions;
 - (d) harsh or adverse Pool/Spa water conditions;
 - (e) repair to or alteration of any parts of the system by any person who has not been authorised by Supreme Solar Pty Ltd to perform such a repair or alteration;
 - (f) act of God, riot, fire or other occurrence outside normal working conditions; or
 - (g) by other abuse or misuse caused by the Purchaser or a third party.
- 9 Subject to clause 10, any condition or warranty which would otherwise be implied in this agreement or in relation to the Product is hereby excluded.
- 10 Where legislation implies in this agreement or in relation to the Product any condition or warranty, and that legislation avoids or prohibits provisions in a contract excluding or modifying the application of or exercise of or liability under such condition or warranty, the condition or warranty shall be deemed to be included in this agreement. However, the liability of Supreme Solar Pty Ltd for any breach of such condition or warranty shall be subject to clause 15 and any other applicable exclusions set out in this agreement, be limited, at the option of Supreme Solar Pty Ltd, to one or more of the following:
 - (a) if the breach relates to goods:
 - (i) the replacement of the goods or the supply of equivalent goods;
 - (ii) the repair of such goods;

- (iii) the payment of the cost of having the goods repaired; and
- (b) if the breach relates to services:
 - (i) the supplying of the services again; or
 - (ii) the payment of the cost of having the services supplied again.

What Supreme Solar Pty Ltd will do

- 11 For defects relating to installation of the Product, Supreme Solar Pty Ltd will, in its absolute discretion:
- (a) repair the Product or pay for the cost of having the Product repaired; or
 - (b) replace the Product or supply an equivalent Product; or
 - (c) pay for the cost of replacing the Product or acquiring an equivalent Product;
- if the terms and conditions of this warranty are satisfied. Supreme Solar Pty Ltd will not be liable for any other loss or damage (including consequential or indirect damages).
- 12 Supreme Solar Pty Ltd reserves the right to charge the Purchaser, at Supreme Solar Pty Ltd's current hourly rate, for the cost of examining the Product if such examination by Supreme Solar Pty Ltd reveals that the Product:
- (a) is not defective; or
 - (b) is defective as a result of any of the events specified in paragraph 8.

What the Purchaser must do

- 13 Any claim under this warranty must be made at the earliest stage that the defect becomes obvious to enable prompt action and to avoid further damage and must be made no later than one (1) month of the defect becoming obvious.
- 14 Any claim for warranty must be accompanied by appropriate documentation which stipulates the date of installation, the invoice number, the details of the alleged defect and any other information reasonably required by Supreme Solar Pty Ltd.
- 15 Purchaser agrees to pursue any claims in relation to defective parts against the manufacturers or suppliers referred to in clause 3, 4, 5 and 6.

Whole agreement

- 16 This warranty and any warranties implied by law which are not capable of being excluded or modified from the whole warranty agreement between Supreme Solar Pty Ltd and the Purchaser

and all other warranties, express or implied, whether arising by statute or otherwise, are excluded and cancelled.

Governing law

17 This warranty is governed by the laws of the State specified in paragraph 18(c).

Defined terms

- 18 (a) **Purchaser:** The person who has purchased the Product and is able to produce proof of such purchase
- (b) **Product:** Supreme Solar Pty Ltd solar pool heating system
- (c) **Governing law**
(paragraph 17): Victoria, Australia

Consumer guarantee

19 This warranty is provided in addition to consumer guarantees and does not alter, limit or replace them.