



SH-001
SOLAR HOT WATER SYSTEM
USER MANUAL



www.solarharvest.co.za

Tel...011 763 1944 Fax... 011 760 2667
Address... 100 Main Reef Rd, Technicon, Roodepoort, 1725
Postal... P.O.Box 1136, Florida
Registration... 2005 0009 9988

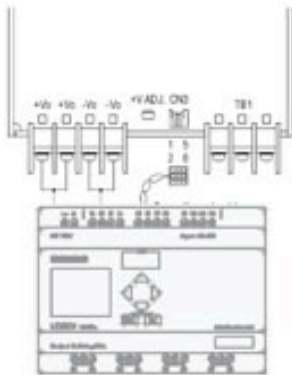
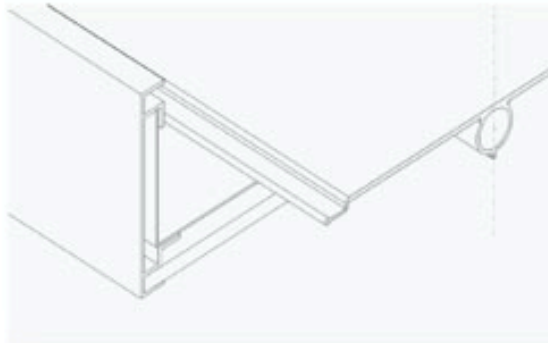
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Specification Sheet

Unit SH-001

Flat Plate Collector

Aluminium Risers and Frame
Selective Coatings
Insulated all Round
Hail Resistant Glazing
Collector Panels Tested to SANS 1307

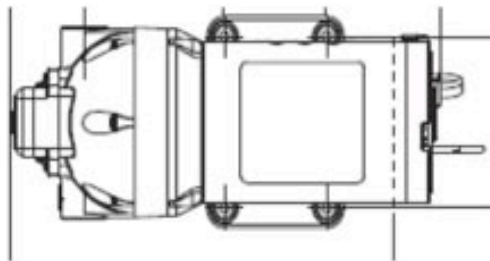


Electronics

Differential Control
Freeze Protection
Overheating Protection
Geyser Element Control
Holiday Mode

Pump

12v Brushless Motor
Long Life
Low Wattage
Maintenance Free
Photovoltaic Driven Option
5 Litre per Minute Flow Rate





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Data Sheet

Solar Storage Tank	
Tank Model	Any SABS approved geyser
No. of Panels	1 per 200 litres

Solar Collector			
Aperture		m ²	1.75
Dimensions	length	mm	2100
	width	mm	860
	height	mm	80
Working Pressure		Kpa	1000Kpa
Capacity		litres	3.5
weight	empty	kg	35
	full	kg	38.5
Absorber material	Aluminium		
Riser Material	Aluminium Piping		
Absorber Surface	Black Selective Coating		
Number of Risers	5		
Frame Material	1mm extruded aluminium		
Insulation Material	Sisulation Insulation		
Glass	4mm Tempered		

Collector Installation				
No. of Panels			1	2
Roof area Dimensions	length	mm	2300	2300
	width	mm	860	1850

Connections	
inlet	1/2" BSP (male)
outlet	1/2" BSP (male)





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Description

The Solar Harvest SH-001 is a system tested and passed by the SABS. This SOLAR HARVEST™ hot water system consists of a SOLAR HARVEST™ collector panel, 12 V DC pump and electronic control system.

The SOLAR HARVEST™ hot water system consists of a flat type collector panel, which works on the direct heating system. The system is a closed coupled system; the system is designed to operate with a collector cover. The SOLAR HARVEST™ hot water system is designed to operate at a working pressure of 600 Kpa or less. The collector is designed to be hail resistant.

The SOLAR HARVEST™ panel is coupled directly onto your existing SABS approved geyser or a new SABS geyser. The electronic systems senses when your collector panel is at a higher temperature than your household geyser , it then powers the 12v pump to circulate the water through the collector panel, thus absorbing the suns energy.

If it is a cold or over cloudy day and electronics sense that the panel is not heating up your water to the desired temperature, it will then turn on your geysers element (if wanted by the user). By using this system you are guaranteed hot water.

Thus by using this system you will maximize the use of free energy and increase the amount of energy saved in your household.

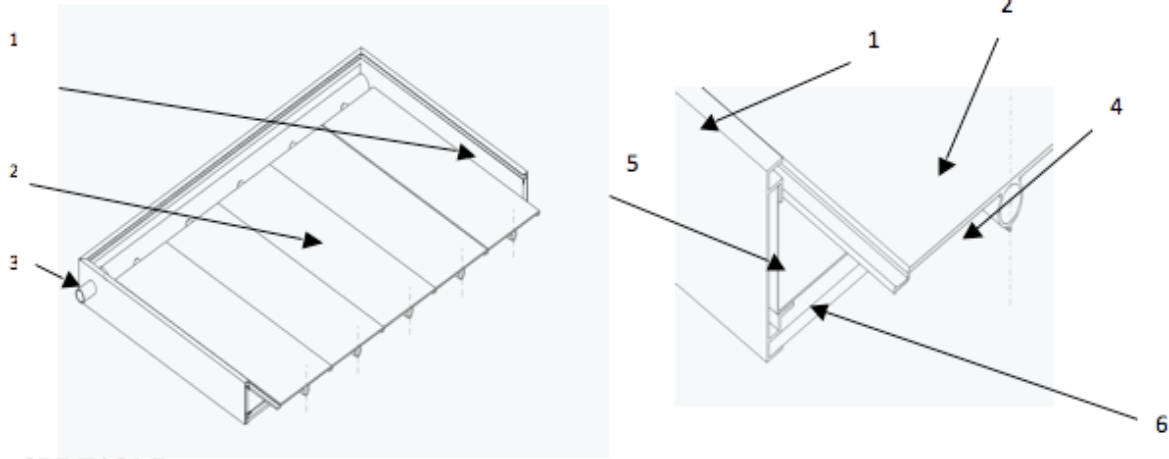


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MAJOR COMPONENTS (COLLECTOR PANEL)



see Table 1

Table 1

1	Aluminum Frame
2	Collector Panel
3	3/4" Pipe fitting with vacuum breaker
4	Glazing
5	Insulation
6	Collector Panel Base



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Electronics

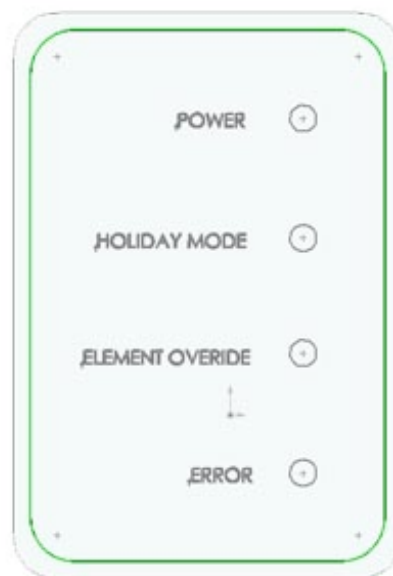
The SOLAR HARVEST™ control system is the brains of the system. It controls the pump and back up element in your geyser. The SOLAR HARVEST™ control system also prevents the collector panel from freezing and in doing so prevents freeze damage of the collector panel.

The SOLAR HARVEST™ control system controls the element. In the event of a rainy or overly cloudy day the element will turn on in the afternoon ensuring hot water. The user can specify if they would like hot water available in the morning.

The SOLAR HARVEST comes with 2 electronics boxes. The main control box is installed in the ceiling and the sub control box is installed in the house for the users use.

It comes with the following functions:

Control Box Inside Your House



The "Power" light should be on at all times this indicates that the unit has power. User must at all times ensure that the geyser is switched on at the mains. If the user switches this off, the batteries will eventually run flat and the system could be damaged. Damage can be caused by freezing or over heating. If the mains have been switched off by the user all guarantees will fall away.



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The Solar Harvest "Holiday Mode" is a standard function that comes with the SH-001. This should be turned on if the user is going away for a period of longer than a few days. This will stop your back-up element function from using unnecessary electricity. Using this function will still keep the freeze and panel protection operational.

The SOLAR HARVEST "Element Override" function is available to the user if they require hot water at periods where the backup element function may not be running. (The backup element operates after 3 pm if the weather has not allowed the geyser to heat sufficiently.) If the weather is insufficient to heat the water at a period in which the user would like hot water (eg 10am). Then the user may turn on the "Element Override" switch for the period they require hot water.

The "Error" function is there to indicate if there are any malfunctions within the system. The light will indicate different pulses showing different errors within the system, these light signals can be used to determine what the error is.

Light on Permanently	Pump Malfunction
Slow Flash (1 second on & off)	Panel Sensor Error
Fast Flash	Geyser Sensor Error

**This function is an optional extra to the SOLAR HARVEST SH-001 system
 Emergency Backup Lights

The SOLAR HARVEST SH-001 has an optional Emergency backup lighting system. This system will turn on a few emergency lights in the event of a power failure. The emergency lights are fitted in standard 60mm down light fitting. The system ranges from 3-10 down lights. The lights are installed with a light switch which allows the user to switch off the emergency lights if they are not needed at the time.

Once the power is restored the lights automatically switch off.



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This system is an optional extra to the SOLAR HARVEST SH-001 electronics system



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Maintenance

- On a monthly basis the user should ensure that the collectors glazing cover is free from dirt and dust, as this will severely affect the efficiency of your hot water system.
- Using a hose pipe wash the collector cover using a high pressure nozzle, or if it is too dirty a competent person should wash the glazing using soapy water.
- The pump should be serviced by a SOLAR HARVEST™ technician, every 4500 hours of use which is about every 18 months of use.

Please ensure that you as the user complete the maintenance log book at the back of this booklet. Adhering to the scheduled maintenance periods will prolong the life of your system.

Guarantees

The guarantee form in the back of the booklet should be filled out and faxed to SOLAR HARVEST within 14 days of installation. Failure to do so will lead to the guarantee being forfeited!

Warranty Statement

At SOLAR HARVEST we pride ourselves in supplying quality products and service. However there are occasions where products fail and fall short of their expected life span. We do everything in our power to keep our customers satisfied and therefore provide this comprehensive backup and warranty service. Should a product that is no longer within warranty fail or need replacing we will replace the item at a discounted rate, no questions asked.



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Terms & Conditions

1. LIMITED WARRANTY

Solar Harvest warrants the product designated "Solar Collector" to be free of manufacturing defects in material and workmanship, subject to the conditions hereinafter set forth, for a period of five (5) years from the date of installation by an accredited installer, excepting electronics and pump which are warranted for three (3) years. The installation itself is valid for twelve months and covers the fitting and plumbing.

2. CONDITIONS

This Warranty is subject to the following conditions and limitations. The Warranty is void and inapplicable if the product has been used or handled other than in accordance with the instructions in the owner's manual, abused, or misused, damaged by accident or neglect or in being transported, or the defect is due to the product being repaired or tampered with by anyone other than authorised SOLAR HARVEST technicians or an authorised SOLAR HARVEST repair company. The warranty card must have been signed and returned on date of installation for the warranty to be valid. A FAULTY PRODUCT CLAIM MUST BE MADE IN WRITING AND INCLUDE A DESCRIPTION OF THE DEFECT AND A PHOTOCOPY OF THE ORIGINAL PURCHASE RECEIPT. This receipt must clearly list model and serial number, the date of purchase, the name and address of the purchaser and authorised installer and the price paid by the purchaser. Solar Harvest reserves the right to modify the design of any product without obligation to purchasers of previously manufactured products and to change the prices or specifications of any product without notice or obligation to any person.

3. REMEDY

In the event the above product fails to meet the above Warranty and the above conditions have been met, Solar Harvest will rectify the fault without charge for parts or labour, and should a complete replacement be required, a complete unit will be installed within a 30 day period of receipt of the claim. We ourselves, must without delay be permitted to inspect the defect and its potential causes on site, or to have another party do so on our behalf.

4. DURATION OF WARRANTY

This Warranty expires on the fifth anniversary of the date of purchase for the "Solar Collector" or third anniversary of the date of purchase of the electronic and pump assemblies.

5. MISCELLANEOUS

Solar Harvest reserves the right to make a reasonable charge for inspection and testing of products that are subject to a warranty claim. If it is found that the warranty claim is justified then the charge will be refunded in full. Any charges will be at the discretion of Solar Harvest. ANY IMPLIED WARRANTIES RELATING TO THE ABOVE PRODUCT SHALL BE LIMITED TO THE DURATION OF THIS WARRANTY. THE WARRANTY DOES NOT EXTEND TO ANY INCIDENTAL OR CONSEQUENTIAL COSTS OR DAMAGES TO THE PURCHASER. None of these conditions or limitations affects your statutory legal rights.

6. WARRANTOR

Inquiries regarding the above Limited Warranty may be sent to the following address: Solar Harvest: 100 Main Reef Road, Technikon, Roodepoort, 1710



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Emergency Shut Off Methods

- In the event of an emergency the following methods should be taken.
- Turn the circuit breaker labelled GEYSER on your main circuit board OFF.
- In the event of a water leak turn the water mains off situated near the perimeter of your property or the close the "gate-valve" on the geyser inlet.
- Depending on the emergency call a plumber or for electrical failure call an electrician or SOLAR HARVEST™ technician.

Troubleshooting:

Problem	Solution
No hot water available in the morning	<ul style="list-style-type: none"> • Morning element backup is not activated, call technician. Check power light, if off call a technician.
No hot water in the evening	<ul style="list-style-type: none"> • If there has been clear sunlight during the day call SOLAR HARVEST™ technician to test the element and software. Check for POWER light
Electronics panel shows water is not heating up on a sunny day	<ul style="list-style-type: none"> • Check error light on electronics Check for POWER light on electronics, if off check mains board, if this is on call technician.
Temperature readings on the panel show error or 0° readings when sunny day.	The control sensors may be faulty check ERROR light and call a SOLAR HARVEST™ technician.
Panel shows high temperature but geyser temperature is staying constant	<ul style="list-style-type: none"> • Pump may not be working call a SOLAR HARVEST™ technician. Check ERROR light
Screen on electronics is blank No POWER light	Battery back-up is flat; power may have been off longer than 72 hours. Power on DB board may be on off position.
Screen on electronics is blank and no hot water in evening. No POWER light	<ul style="list-style-type: none"> • Check that the main switch on the DB board is on the ON position and that earth leakage has not tripped. Call technician



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Maintenance Log Book

	Purchase Date:	
	Supplier	
	Serial Number	
	Next Service date	
Supplier stamp / details		
	Service Date:	
	Technician	
	Serial Number	
	Next Service date	
Remarks / Notes		
Technician Stamp / details		



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	Service Date:	
	Technician	
	Serial Number	
	Next Service date	
Remarks / Notes		
Technician Stamp / details		
	Service Date:	
	Technician	
	Serial Number	
	Next Service date	
Remarks / Notes		
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	Service Date:	
	Technician	
	Serial Number	
Customer Name		
Customer Tel		
Customer Fax		
Customer Email		
Postal Address		
Supplier details / stamp		
Supplier signature		
Customer signature		

COMPLETED FORM MUST BE FAXED TO SOLAR HARVEST FOR GUARANTEES TO BE VALID.