

Solar Water Heater Kit

Designed and manufactured in the United Kingdom by EcoStyle Ltd

 **EcoStyle**
www.ecostyle.co.uk

1 User Manual/Operating Instructions



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FREE LESSON PLANS AVAILABLE

Please visit www.ecostyle.co.uk/lessonplans



This is not a toy – children should be supervised by an adult during use

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2 What's in the Box?



Description

- 1 Aluminium solar collector fin
- 2 Copper heating tube
- 3 Digital thermometer (-50°C to +70°C)
- 4 Thermometer probe and rubber stopper
- 5 Foam insulation block
- 6 Rubber end stopper
- 7 Transparent case lid

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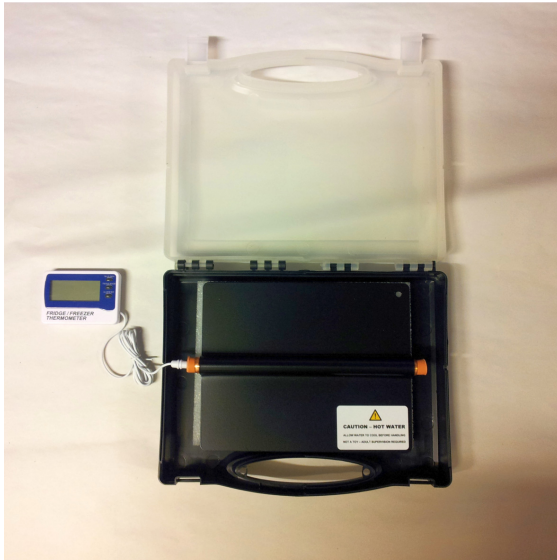


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3 Setting up the Solar Water Heater Kit



Separating the thermometer from the case

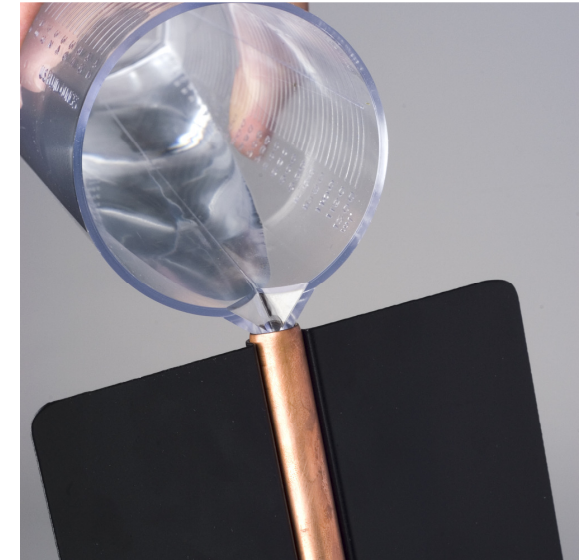
Remove the rubber stopper containing the thermometer probe and feed through one of the slots in each side of the case. The thermometer should be outside the case and the probe and rubber stopper inside.

Push the stopper back into the copper heating tube.



Removing the end bung

Remove the other (solid) end stopper from the heating tube.



Filling the heating tube

Fill the tube with cold water, leaving a small gap at the top. Put the stopper back into the heating tube.

Lay the aluminium solar collector fin onto the foam insulation block inside the case, and close and latch the transparent case lid. Take care that the probe wire remains in its slot to avoid trapping it between the base and lid.

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4 Heating Water



How does solar water heating work?

A solar thermal system uses the sun's energy to heat water. The Solar Water Heater Kit is a miniature version of a domestic flat plate collector system.

It contains a black aluminium solar collector fin which clips onto a copper tube. The black collector fin absorbs the sun's infra-red energy and transfers this as heat to the water within the tube.



Using the sun

Position the case with the transparent lid upwards away from shadows and angled towards the sun.

Solar thermal systems don't need direct sunlight to work – water can still be heated even on a cloudy day.



CAUTION: The water inside the heating tube can get very hot. Allow the water to cool before handling.



Using a lamp

If there is not enough sunlight, or the kit is being used indoors, then a lamp can be used to heat the solar collector fin.

Position the lamp approximately 10cm above the collector fin. The more powerful the bulb, the more effective it will be at heating the water.

Low-energy and fluorescent bulbs will not be able to provide enough heat. For best results use a traditional incandescent or halogen bulb.

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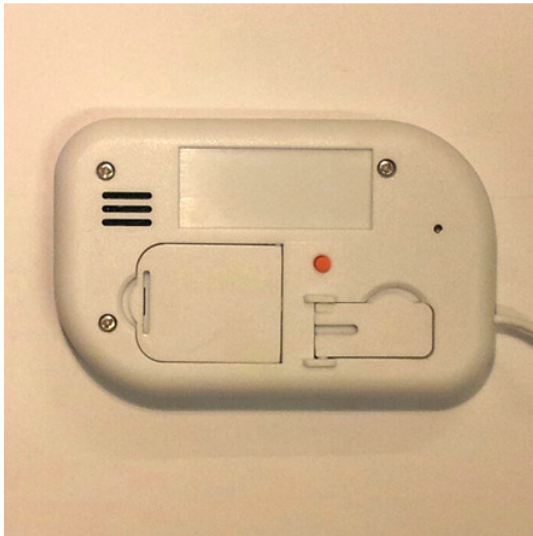
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5 Measuring Water Temperature with the Digital Thermometer



Displaying temperature in °C/°F

Press the red °C/°F button (on the back of the thermometer) to change between °C (Centigrade) and °F (Fahrenheit).



Measuring the external air temperature

The external air temperature can be measured using a sensor in the thermometer display unit.

To measure the air temperature, 'ROOM' should be displayed on the LCD screen. If 'ROOM' is not displayed, press the 'PROBE' button once.

'MIN' or 'MAX' must not be displayed. If they are, press the 'MAX/MIN' button to clear them.



Measuring the internal water temperature

The water temperature inside the heating tube is measured using the thermometer probe.

To measure the water temperature, 'ROOM' should not be displayed on the LCD screen. If 'ROOM' is displayed, press the 'PROBE' button once.

'MIN' or 'MAX' must not be displayed. If they are, press the 'MAX/MIN' button to clear them.

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6 Maximum/Minimum Temperature Memory Function



Displaying maximum temperature reading

Press the 'MAX/MIN' button to display the maximum reading ('MAX' symbol displayed).

Press MAX/MIN button twice to return to normal readings.



Displaying minimum temperature reading

Press the MAX/MIN button twice to display the minimum reading ('MIN' symbol displayed).

Press MAX/MIN button again to return to normal readings.



Resetting min/max temperature memory

Hold MAX/MIN for three seconds to reset minimum and maximum temperature memory.

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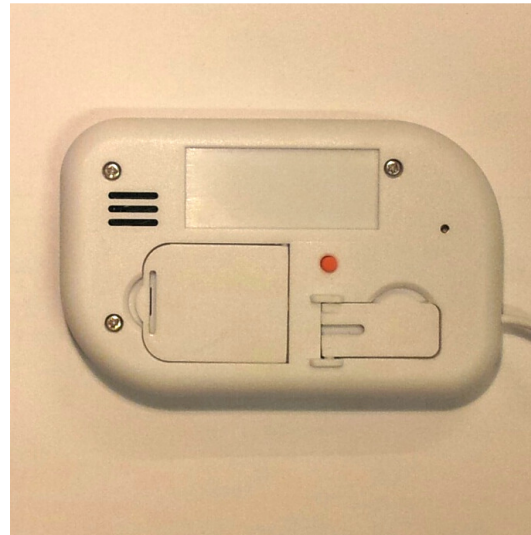
7 Setting the Temperature Alarm



Setting the alarm

To operate the audible alarm, press and hold the alarm set button to adjust the high or low alarm reading, the alarm settings will then flash on the display.

The audible alarm will sound intermittently when the temperature setting has been exceeded and will cease once the temperatures have returned to within the boundaries set.



Setting the high temperature alarm

To set the high alarm, press and hold the °C/°F function button at the rear of the unit.



Setting the low temperature alarm

To set the low alarm, press the 'ALARM SET' button and press and hold the °C/°F function button at the rear of the unit.

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8 Help and Advice

Problem	Possible Cause	Solution
The digital thermometer does not give a reading	The battery has not been fitted	Remove the battery cover and fit the battery
	The battery has been incorrectly fitted	Remove the battery cover and reverse the position of the battery
	The battery has run out	Remove the battery cover and replace the battery
The water in the copper tube is not heating	The solar panel does not have enough light	Place the solar panel in bright sunlight or close to an incandescent bulb (e.g. 10cm)
	The digital thermometer is displaying the 'ROOM' or external temperature	Press the 'PROBE' button once to toggle the digital thermometer to the probe setting, which measures the temperature inside the copper tube
The copper tube is leaking	The rubber bungs are not tightly fitted	Push the rubber bungs in tightly to seal the copper tube
The alarm is sounding	The alarm has been set to sound when the temperature reaches a certain point	Press the 'ALARM SET' button to stop the alarm

For additional technical support, please email info@ecostyle.co.uk or phone **0844 272 2011**

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