

Clearline[®]



instructions

How to get the most from
your solar water heating system



About Solar Water Heating

The Viridian Solar water heater saves you money and helps the environment by converting the light hitting the solar panel into heat in your hot water cylinder.

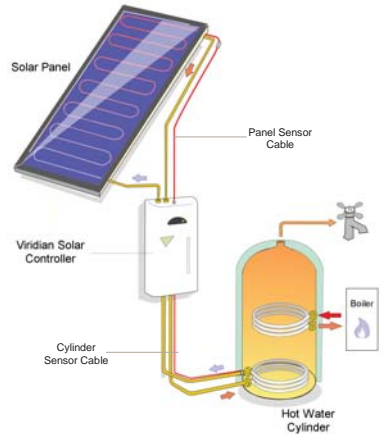
It cannot completely replace your boiler, but can significantly reduce the energy it uses each year.

The solar panel absorbs light and traps the heat generated behind its cover glass. A liquid is pumped through the solar panel, and carries the collected heat to your cylinder.

An electronic controller decides when to turn on the circulation pump based on the temperature in the solar panel and in the cylinder.

The hot water cylinder is arranged so that the boiler can only heat the top section of the cylinder, whereas the solar panel can heat the whole cylinder. On days where there is not enough light, the solar panel will warm the cylinder, and the boiler will raise the temperature to the setting on the cylinder thermostat. On days with plenty of light, the solar panel can heat up the whole cylinder.

Depending on how much hot water you use, the solar panel should provide 50-60% of your hot water averaged over the year.



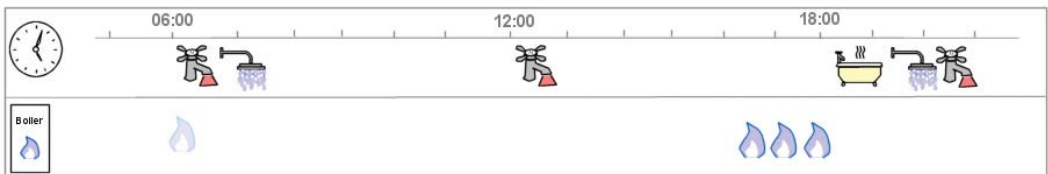
Getting the Most out of Your Solar Heating System

1. Leave it on the whole time.

The solar controller will only switch on the pump when there is energy that can be collected in the solar panel. The electricity used by the system each year is a tiny fraction of the hot water that it provides. Do not switch the controller off to try to save electricity – you may forget to switch it back on and miss out on free hot water.

2. Use your Boiler Timer

You will achieve the biggest savings if you use the boiler timer programmer to heat your water just before you use it. This gives the solar panel more cold water in the cylinder to work on during the day. Avoid having your boiler heating your hot water during the daytime.



If the household uses most of its hot water in the evening and morning the ideal situation is to have the boiler set to heat water in the evening. With a well-insulated hot water cylinder, a further heat input from the boiler in the morning may not be needed.

Service

Your Viridian Solar water heating system should provide years of trouble-free operation, especially if the following maintenance schedule is observed.

Once a year : Service A

1. Check for error messages (check the red light for ten seconds for flashes).
2. Inspect the pipe work and insulation for leaks or damage.
3. Check the fluid in the system as follows:

200 series drain-back controller

Switch off the power to the control unit, if the pump was running (orange light), allow 5 minutes for the fluid to drain back into the vessel. Remove the cover.

The fluid should be at the level of the sight glass (3). If not check the pressure relief catch tank, by unscrewing the drain plug (5) and collecting any fluid that drains out. Unscrew the cap (2) on the drain-back vessel (1). Top up to the level of the sight glass with 30% propylene glycol solution as required (available from Viridian Solar). Replace the cap (2), switch the power back on. Press and hold the test button (4) for one second to run the pump for 2 minutes. Listen for fluid returning to the drain-back vessel. Replace the cover.

250 series fully filled system

Examine the pressure indicator. Indicated pressure should be more than 0.75 bar. Service engineer should re-charge system with 40% propylene glycol solution if pressure is low.

Do not attempt to clean your solar panel. Rain will act to keep the glass clear.

Every Five Years : Service B

As for Service A plus full system fluid replacement.

200 series drain-back controller

Switch off the power and drain the system. Follow steps 5-8 in the Clearline Commissioning Manual to re-fill via filling cap (2).

250 series fully filled system

Switch off the power and drain the system. Service engineer should charge system to 1 bar pressure with 40% propylene glycol solution using external pump.

System fluid additive is available from Viridian Solar.

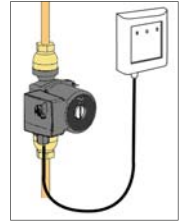
WARNING: Failure to perform Service B will put your solar panel in danger of damage due to freezing.

NOTE: Dispose of the system fluid at your local waste disposal centre. Propylene Glycol Solution.

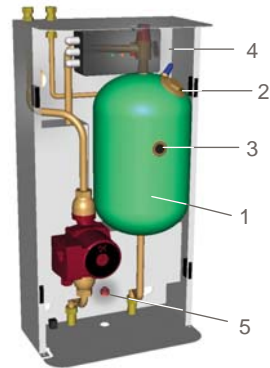
Which System?



200 series



250 series



Inside the 200 series control set

Troubleshooting



Green - power on.



Amber - pump running.



Red flashing - error, see table below

Error	Flashes per 10 second period	Remedial Action
Pump Failure	1	Check pump, check for air-lock or blockage
Cylinder Sensor Open Circuit	2	Power down, unmake and re-make connection, power up.
Cylinder Sensor Closed Circuit	3	Power down, unmake and re-make connection, power up.
Panel Sensor Open Circuit	4	Power down, unmake and re-make connection, power up.
Panel Sensor Closed Circuit	5	Power down, unmake and re-make connection, power up.
Microcontroller error	10	Power down for 10 seconds then on again. Call Viridian if problem persists.

Installation Certificate

Roofing Installation

COMPANY NAME AND ADDRESS

TEL:

✓ CHECKLIST

- Panel secured with provided screws
- Flexi pipes routed downhill

I confirm that we have installed the Clearline solar panel in accordance with the manufacturer's instructions:

SIGNATURE

PRINT NAME

DATE

Plumbing Installation

COMPANY NAME AND ADDRESS

TEL:

✓ CHECKLIST

- Pipes and insulation suitable for high temperature
- Power via hi-limit stat if pressurised cylinder
- System filled with diluted antifreeze solution
- Pump operating, with good flow of fluid

I confirm that we have installed the Clearline solar panel in accordance with the manufacturer's instructions:

SIGNATURE

PRINT NAME

DATE

Service Record

YEAR	SERVICE	DATE COMPLETED	YEAR	SERVICE	DATE COMPLETED	YEAR	SERVICE	DATE COMPLETED
1	A		11	A		21	A	
2	A		12	A		22	A	
3	A		13	A		23	A	
4	A		14	A		24	A	
5	B		15	B		25	B	
6	A		16	A		26	A	
7	A		17	A		27	A	
8	A		18	A		28	A	
9	A		19	A		29	A	
10	B		20	B		30	B	