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Assembly Instructions for the Solarproject.co.uk Hot Water Solar Panel – 58mm tube models

Thank you for choosing the Solarproject Solar Panel. Although this product is designed for simple and fast assembly, a few moments studying these notes will save you time in that process.

One of the benefits of Evacuated tube panels over simple 'Flat Panels' is that only the frame needs to be assembled in order to mount the panel in its final position. Most of a panel's weight is in the heat pipe assemblies, and these are only fitted once the frame has been secured and the plumbing circuit connected.

Thus the lightweight frame can be manoeuvred and fixed onto your roof with relative ease and speed.

SAFETY NOTE. Metal parts and glass tubes can have sharp edges so gloves are recommended. Working at heights has obvious dangers and appropriate precautions should be adopted. Tubes can reach temperatures in excess of 180 deg C if left un-cooled, which could cause a serious burn if touched.

Instructions:

1/ Unpack and check the contents of the boxes marked:

*Stand

*Manifold box

*Reflectors

The stand / frame box contains* *(*parts may differ slightly between models)*

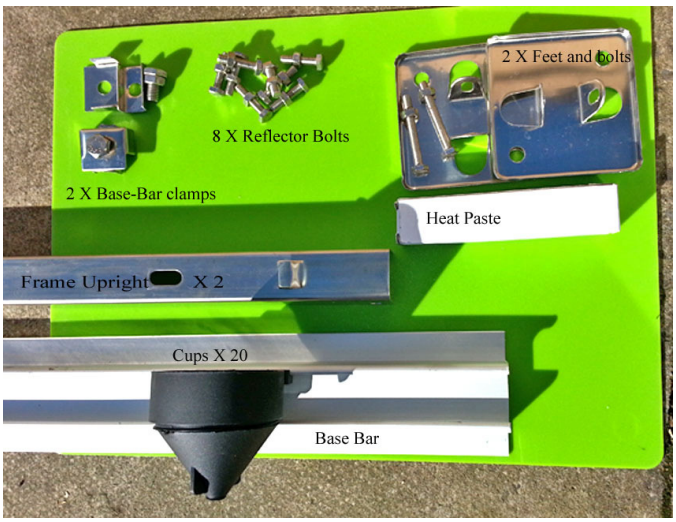
2 x stainless steel side bars

1 extruded alloy base bar

20 x Tube Support Cups

1 x pack nuts and bolts

2 x stainless steel 'feet'



2/ Lay the manifold case on the floor, face down, with the captive bolts upwards and the 20 tube ports facing towards you.

3/ Remove the nuts and protective plastic tips from the manifold bolts and attach the side bars using the end of the upright which has one round and one oval hole, ensuring the 4 holes on each side bar are facing inwards for the reflector fixings. Replace the nuts to finger tightness.

4/ Attach the alloy base bar using the 2 nut/bolt/washers*, with the nuts and retainer facing you, on what will later be the underside of the frame. Finger tightness is sufficient at this stage. Note that the thicker lip of the bar faces upward (if applicable)

5/ Fit the Reflectors using the 8 nuts and bolts supplied. Remove the blue protective film (if fitted) from the reflector by peeling it with a finger nail.

6/ Check the frame is 'square' and tighten the bolts gently with a spanner or pliers.

7/ Mount the panel in its desired position and fix at each corner. Stainless steel fixing strap is available or standard roof ties from any builders merchant may be used. The 'Feet' plates are provided as fitting options.

OPTION- If you are using the optional Flat Roof Stand Kit, please follow the Assembly Instructions for the Flat Roof Fitting Kit from this point.

The plumbing circuit can now be connected up and tested for leaks and air locks. The tubes are not inserted into the panel until the fluid is flowing freely as they will create heat once exposed to solar energy.

Due to the design, fluid is not able to leak through the manifold collars so a panel will continue to operate OK even if a tube is missing
Ideally, the fluid should be designed to flow from Left to Right through the manifold (as you face the panel). The manifold has a small port built in to the Right Hand Side of the Manifold to accommodate a temperature probe. This ensures you are measuring the temperature of the heated fluid as it leaves the heat exchanger manifold.
Any probe should only be inserted into the port by approximately 100mm to 125mm for most accurate results.

8/ Locate the 20 Support Cups into the upper groove of the Base Bar and press down to click into place. Hinge open the lower part of the cup to allow the tubes to slot in later.

9/ Using the Thermal Heat Paste provided, smear the condensing bulb of the heat tube with a thin layer of paste.
TIP! One tube holds enough for 2 to 3 panels, you don't have to use it all!

10/ With the holding cup hinged open, using gentle twisting pressure, slip the bulb up into the manifold by approx 50mm so that the bulb is a snug fit into the collar. Close the Cup and screw up the adjustment gently to take the weight of the tube and prevent it slipping out over time. Do not tighten the support cup- adjusters, leave half a turn as to allow for the tube to expand in heat.

TIP! A little soapy water on the top of glass tube will help it slip into the dust sealing rubber ring on the manifold.

TIP! The copper heat pipe is soft metal and can easily be hand-bent straight if it appears to have been pushed out of alignment during the delivery process.

TIP! If the tube assembly appears too short you can adjust the frame, moving the manifold down and the base bar up. You may also find that you have pressed the copper heat pipe down into the glass tube.

TIP! The silver surface at the base of the glass heat pipe is there to show that the vacuum is in tact. Any damage can be identified by the immediate loss of the silvering, indicating a need to replace the glass. Tubes are an industry standard product, spares are readily available from Solarproject, or any solar supplier.

The tube on the right was hit by a fork lift truck. Note the loss of silvering

Useful Installation Notes

(1)Panels can be fixed to a sloping tile roof using perforated metal strip at each corner, which is slipped between an upper and lower tile. This is fixed to a rafter inside the roof and the frame is bolted to this externally with a single bolt.
(2)Panels work at their best when directly facing to the sun. Typically this is around 45 degs from vertical and facing South, but they work when tilted at any angle over 20 degs and also very well at 90 degs (vertical on a gable end) as they catch the low Winter Sun. Anything between East and West is effective.
(3)The manifold must be higher than the base of the tubes as the panels are not effective mounted upside down or on their side.
(4)The glass Tubes are certainly tougher than you might expect, but it is wise to fit two or three at a time as in tests they did not respond well to being dropped off a roof!

Further installation tips can be found on www.solarproject.co.uk