

Suncell SOLAR HEATING

TUBULAR STEEL GROUND SUPPORT KIT AND INSTALLATION



These purpose designed support frames are made of galvanized steel tubing with mechanical fittings and offer a timesaving method of mounting the solar panels and a structurally sound support system.

They are supplied in kit form for on site erection and come complete with all the necessary nuts and bolts. The only tools required are spanners.

The CPV code is GSK.

Suncell ground level support frames are intended to be set in concrete and support the panels at a suggested angle of 35° to the horizontal. Other angles can be obtained by changing the distance between the front and back legs.

It is very important that the framework is erected in a straight line and in such a way that the solar panels are not subjected to twisting forces which could lead to damage.

In order to prevent airlocks forming within the panels the header pipes must be horizontal or, alternatively, installed at a slight gradient with the inlet connection at the LOWEST point and the outlet at the HIGHEST point. A fall of 12mm (1/2") per panel is sufficient.

SETTING OUT DIMENSIONS ARE SHOWN IN VIEWS A and B on page GSK 02.

NOTE

The end bays are at 1300mm centres and the intermediate bays at 1356mm centres. This is because the end solar panels are fixed onto the outside of the aluminium fixing brackets on the legs of the two end support frames of the installation i.e. the angle bracket attached to the aluminium frame around the solar panel almost completely covers the aluminium fixing bracket attached to the legs of the ground support frame (See view A).

INSTALLATION

1. Mark out the foundation pads in a straight line and at the centres shown on view B.

Run a string along the line of installation and over the holes so that they can be excavated to the same depth.

The foundation holes should be 300mm x 300mm x 300mm deep.
If the frames are to be located in made-up soil then the holes should be deeper.

2. Place the front leg in the front hole and temporarily fix in an upright position.

Locate the rear leg in the rear hole and temporarily fix in an upright position so that the front and rear leg are at the correct horizontal distance apart.

Check that the dimension between the fixing holes at the top of each leg is correct 1000mm for the 020 (2m) panel and 1800mm for the 030 (3m) panel.

Locate the aluminium fixing bracket at the top of the legs using the M8 x 30 bolts provided.

3. Set up an adjacent frame in the same way ensuring that the distance between the holes in the fixing bracket plate is 1300mm.

To do this, make up a timber strip with two nails driven through 1300mm apart. By inserting the nails through the holes in the aluminium fixing bracket the two frames will be held in position at the correct distance apart.

NOTE

On the two ends of a bank of panels the aluminium fixing brackets are located on the outside of the legs.

When the legs are correctly located temporarily fix them in an upright position.

4. Locate the U-bolt fittings on the rear legs and offer up the diagonal bracing rail.
5. Remove the strips of timber and place the solar panel on the aluminium fixing brackets.

Bolt down the panels using the M6 x 20 gutter bolts.

Place a hose connector and two jubilee clips onto both header pipes before continuing.

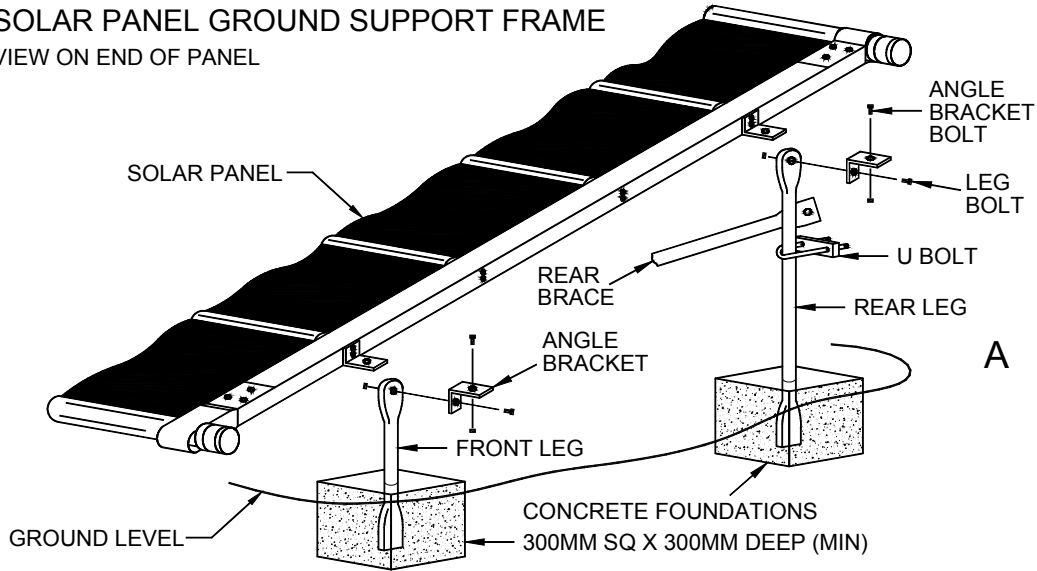
6. Set up a string line at a constant distance above the bottom of the foundation pads so that the string is just touching the two frames.

Repeat the above procedure for the remaining frames ensuring that the frames just touch the string line.

7. Check and level the installation completely before back filling the foundation holes with concrete.

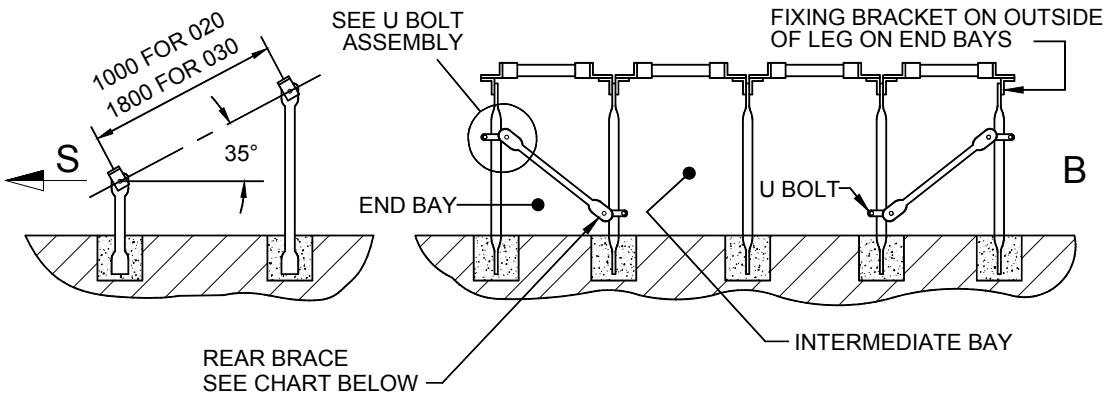
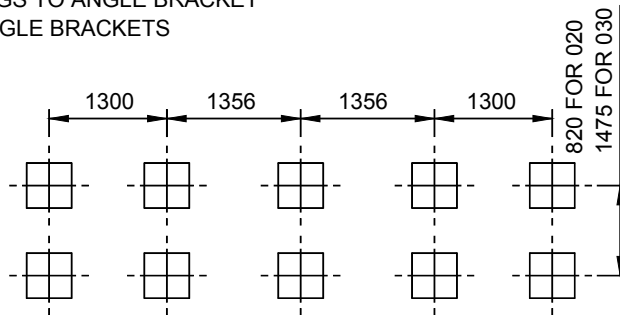
SOLAR PANEL GROUND SUPPORT FRAME

VIEW ON END OF PANEL

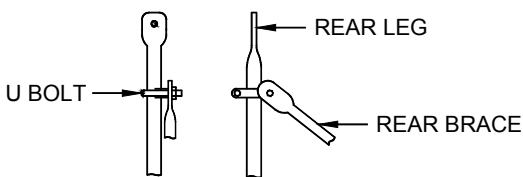


BOLT FIXINGS: M8 USED TO FIX LEGS TO ANGLE BRACKET
 BOLT FIXINGS: M6 USED TO FIX ANGLE BRACKETS

POSITION OF CONCRETE FOUNDATIONS AND FRAMEWORK



U BOLT ASSEMBLY



PANEL	REAR BRACE CONFIGURATION	BRACES
1		1
2		2
3		2
4		2
5		3
6		4
7		4
8		5

GROUND SUPPORT KITS

NO. OF PANELS IN BANK		1		2		3		4		5		6		7		8	
PANEL SIZE		2m	3m	2m	3m	2m	3m	2m	3m	2m	3m	2m	3m	2m	3m	2m	3m
CODE		SC.021.GSK	SC.031.GSK	SC.022.GSK	SC.032.GSK	SC.023.GSK	SC.033.GSK	SC.024.GSK	SC.034.GSK	SC.025.GSK	SC.035.GSK	SC.026.GSK	SC.036.GSK	SC.027.GSK	SC.037.GSK	SC.028.GSK	SC.038.GSK
ITEMS IN KIT																	
FRONT LEG	SC.020.FLG	2		3		4		5		6		7		8		9	
	SC.030.FLG		2		3		4		5		6		7		8		9
REAR LEG	SC.020.RLG	2		3		4		5		6		7		8		9	
	SC.030.RLG		2		3		4		5		6		7		8		9
REAR BRACE	SC.020.RBG	1		2		2		2		3		4		4		5	
	SC.030.RBG		1		2		2		2		3		4		4		5
U BOLT	SC.001.SUB	2	2	3	3	4	4	4	4	6	6	7	7	8	8	9	7
ANGLE BRACKET	SC.001.SAB	4	4	8	8	12	12	16	16	20	20	24	24	28	28	32	32
LEG BOLT	SC.008.SLB	4	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18
ANGLE BRACKET BOLT	SC.006.ABB	4	4	8	8	12	12	16	16	20	20	24	24	28	28	32	32
LIST OF COMPONENTS																	
FRONT LEG	SC.020.FLG	1" medium galvanised tube flattened both ends. 9mm dia. Hole one end												x 780mm length overall			
	SC.030.FLG	" " " " " " " " " " " " " " " "												x 830mm " "			
REAR LEG	SC.020.RLG	" " " " " " " " " " " " " " " "												x 1350mm " "			
	SC.030.RLG	" " " " " " " " " " " " " " " "												x 1850mm " "			
REAR BRACE	SC.020.RBG	¾" light galvanised tube flattened with 9mm dia. hole each end												x 1430mm " "			
	SC.030.RBG	" " " " " " " " " " " " " " " "												x 1630mm " "			
U-BOLT	SC.001.SUB	Plated U-bolt c/w nuts															
ANGLE BRACKET	SC.001.SAB	Aluminium 50 x 38 x 30 c/w 2 No. 9mm holes															
LEG BOLT	SC.008.SLB	M8 x 30 galvanised nut and bolt															
ANGLE BRKT BOLT	SC.006.ABB	M6 x 20 galvanised nut and gutter bolt															

REAR BRACE CONFIGURATION AND SUPPORT FRAME DIAGRAM OVERLEAF

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GROUND INSTALLATION

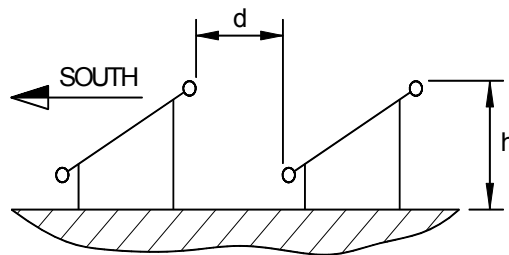
SHADING

Ensure that the panels will remain unshaded throughout the day.

It is easy to overlook trees in winter, which can cause considerable shading when in leaf.

DISTANCE BETWEEN BANKS OF PANELS

When a bank of panels is installed behind another bank the distance between the banks must not be less than the height of the front bank.



To prevent shading the distance 'd' must be equal to or greater than the height of 'h'



