

Suncell SOLAR HEATING

TUBULAR STEEL FLAT ROOF SUPPORT KIT AND INSTALLATION



This purpose designed tubular steel framework on which to mount the framed panels is made of galvanized steel tubing with mechanical fittings and has been designed to offer a time-saving method of mounting the solar panels and a structurally sound support system.

These support frames are supplied in kit form for on-site erection and comes complete with the tubular bracing and all the necessary fittings, including aluminium fixing brackets and nuts and bolts.

The only tools required are spanners. An Allen key is provided in the kit.

The CPV code is FSK.

The frames are intended to be fixed onto a FLAT ROOF and support the panels at a suggested angle of 20° to the horizontal.

Other angles can be obtained by changing the distance between the front and back legs.

These support frames should be fixed either directly to a flat roof or to galvanized steel or timber bearers. The bearers must be firmly anchored to the roof of the building.

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 10mm (1/2") per panel is sufficient.

SETTING OUT DIMENSIONS ARE SHOWN IN VIEWS A and B on the next page FSK 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 on the two end support frames of the installation i.e. the angle of bracket attached to the aluminium frame around the solar panel almost completely covers the aluminium fixing bracket attached to the legs of the flat roof support frame (See view A).



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INSTALLATION

1. The frames are secured to timber, galvanized steel or other suitable bearers by means of the clamp flange fitting which serves as a footplate. The bearers should be securely fixed to the side of the building or the roof. The fixing centres are shown in VIEW B. The bearers may need to be slightly proud of the roof surface so that the roof drainage is not affected.
2. Fix the footplate in position on the legs of the support frame.
3. Place the front leg on the front bearer and temporarily fix in an upright position. Locate the rear leg on the rear bearer and temporarily fix in 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 leg bolts provided.

4. Set up an adjacent frame in the same way ensuring that the distance between the holes in the aluminium fixing brackets 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 brackets 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.

5. Locate the U-bolt fittings on the rear legs and offer up the diagonal bracing rail. The braces for the end bays are shorter than those for the intermediate bays.
6. 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.

7. Set up a string line at a constant distance above the bearers so that the string is just touching the two frames.

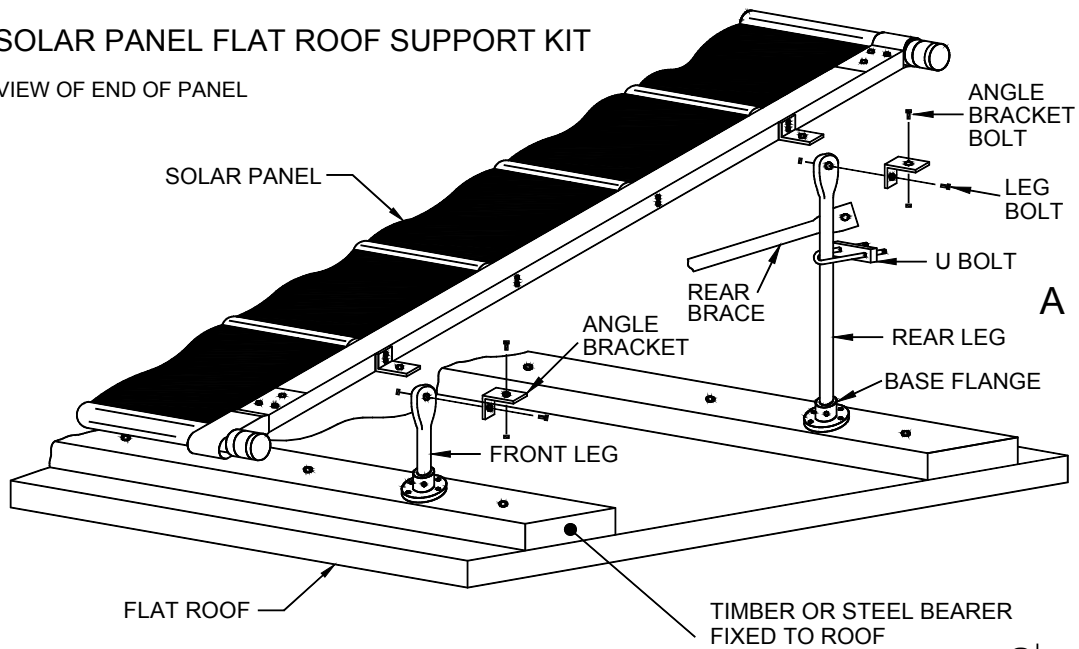
Repeat the above procedure for the remaining frames ensuring that the frames just touch the string line.

8. Check and level the installation completely before securely fixing the frames to the bearers.

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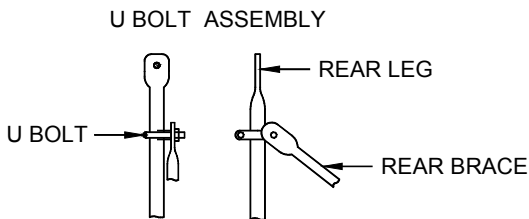
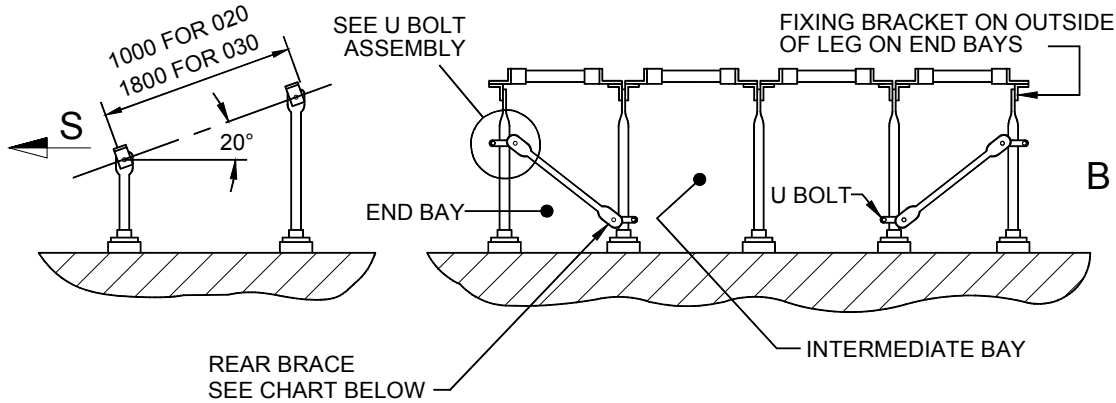
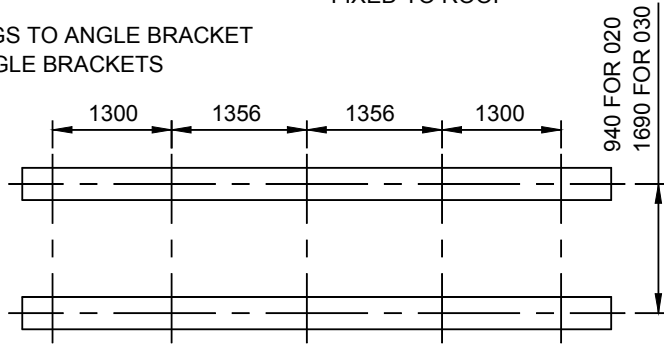
SOLAR PANEL FLAT ROOF SUPPORT KIT

VIEW OF END OF PANEL



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

POSITION OF BEARER AND FRAMEWORK



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



FLAT ROOF 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		SC02L RSK	SC03L RSK	SC022 RSK	SC032 RSK	SC023 RSK	SC024 RSK	SC034 RSK	SC025 RSK	SC025 RSK	SC035 RSK	SC026 RSK	SC036 RSK	SC027 RSK	SC037 RSK	SC028 RSK	SC038 RSK
ITEMS IN KIT																	
FRONT LEG	SC.030.FLR	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9
REAR LEG	SC.020.RLR	2		3		4		5		6		7		8		9	
	SC.030.RLR		2		3		4		5		6		7		8		9
REAR BRACE	SC.020.RBR	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	9
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
BASE FLANGE	SC.033.BFR	4	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18
ALLEN KEY	SC.001.SAK	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
LIST OF COMPONENTS																	
FRONT LEG (use for 020 & 030)	SC.030.FLR	1" medium galvanised tube flattened both ends. 9mm dia. Hole one end														x 320mm length overall	
REAR LEG	SC.020.RLR	“	“	“	“	“	“	“	“	“	“	“	“	“	“	x 660mm “ “	
	SC.030.RLR	”	”	”	”	”	”	”	”	”	”	”	”	”	x 940mm “ “		
REAR BRACE	SC.020.RBR	¾" light galvanised tube flattened with 9mm dia. hole each end														x 1350mm “ “	
	SC.020.RBG	”	”	”	”	”	”	”	”	”	”	”	”	”	x 1430mm “ “		
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															
BASE FLANGE	SC.033.BFR	1" galvanised clamp flange															
ALLEN KEY	SC.001.SAK	Base flange allen key															

REAR BRACE CONFIGURATION AND SUPPORT FRAME DIAGRAM OVERLEAF