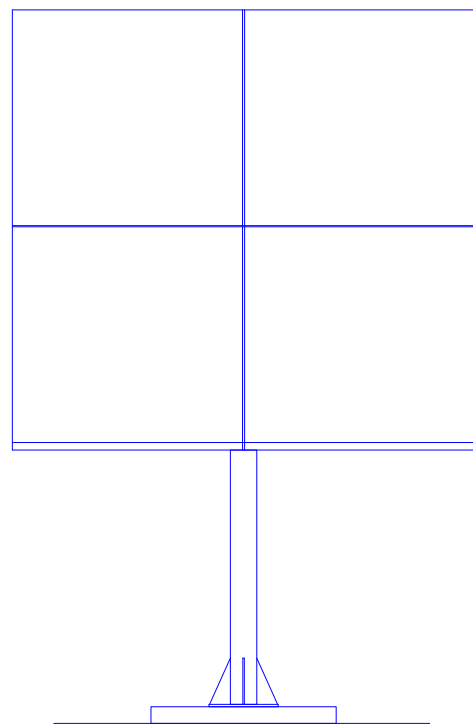
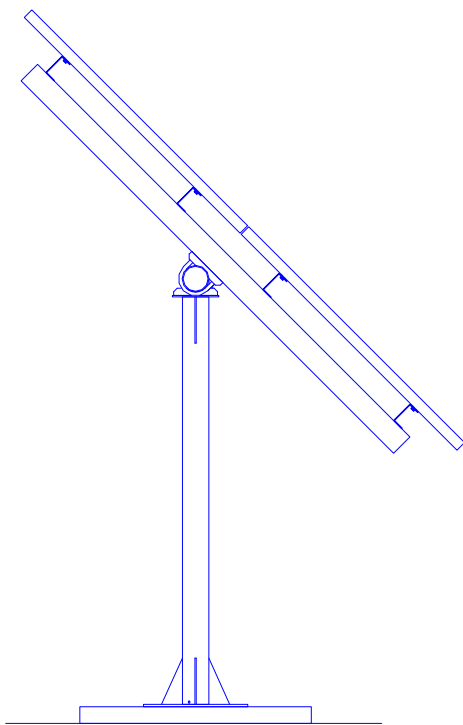


Installation & Users Manual for SKN type structures



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Introduction

Thank you for purchasing the N type structure, these structures are available for a wide range of solar module types, with arrangements for 1, 2, 3, 4 & 6 modules per structure. The tilt angle of the solar panels can be set to your required angle by simply loosening the U bolts rotating into the correct angle and then re-tightening the U bolts. The column and horizontal pole are designed to allow the use of internal cabling via Polypropylene conduit to allow for underground cabling to the charge controller.

Below is a minimum list of tools required for Mechanical installation (not including foundation work), others tools would be required for wiring etc .

Description	Use
10mm A/F spanners (2 off)	For use with Modules with M6 fasteners
13mm A/F spanners (2 off)	For use with Modules with M8 fasteners
19mm A/F Spanners (2 off)	For M12 fasteners (Cross beams only)
24mm A/F spanner	M16 ground anchors & U bolts
Round File	To remove excess galvanising from holes
Super glue	To aid installation of nylon washers
Inclinometer	To set tilt angle
Tape measure	
Wire brush	To Clean up ground anchor bolts
Galvafruid (or similar)	Touch-up of galvanising

For Full assembly drawing and parts list, please refer to the pages attached to the back of this manual.

Foundations

Each structure requires a concrete foundation, this is to be cast preferably at least 2 weeks prior to the installation of the structure assemblies. The concrete foundations shown are for minimum guidance and are fine in most normal ground conditions with a minimum safe ground bearing pressure of 70kN/m². The minimum density of the concrete should be no less than 2250kg/m³ and have an inherent characteristic strength of 30N/mm². On a steep slope the concrete foundations may need to be deeper to allow for the fall of the groundworks and to ensure that each platform is level.

The Anchor bolt set provides you with 4 x M16 J bolts to be cast into the concrete and a plywood template to ensure correct positioning of the bolts. Once the concrete is set the template can be removed. Note that the nuts washers & spring washers supplied with this kit are then to be used to bolt down the column. Packing may be used if required to ensure the pole is vertical.

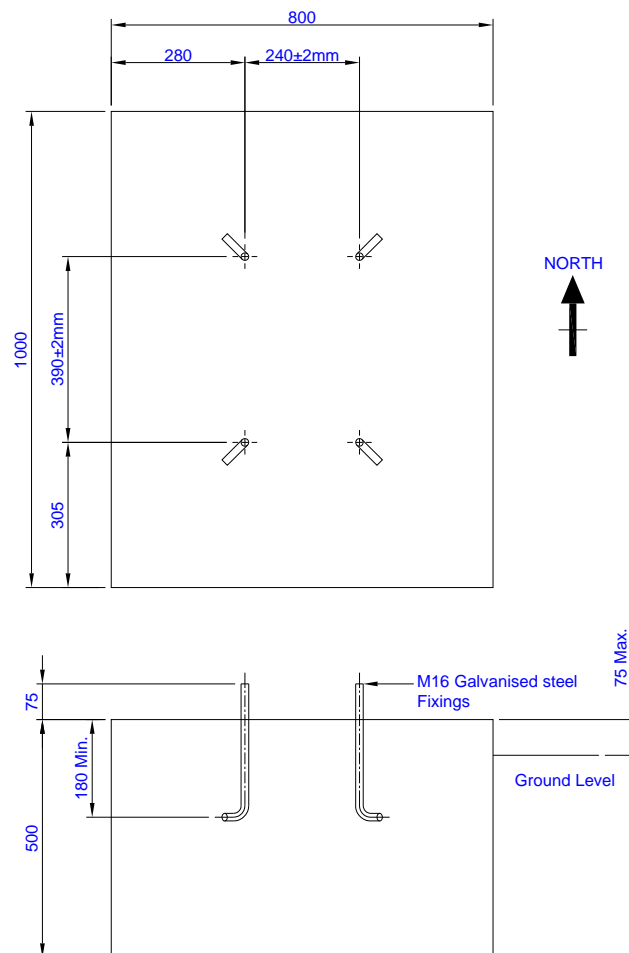


Figure 1 Foundation Details

Fitting Stand to Foundation

Once the concrete has set correctly, the structure leg can be placed over the 4 M16 ground anchor bolts place a washer, spring washer then Nut onto each in turn. Make sure that the stand is vertical prior to tightening the nuts. Place packing pieces under the plate if required.

Now fit the horizontal pole onto the top of the stand using the M16 U bolts and Saddles as shown below. Make sure that you line up the hole in the horizontal tube with the hole in the top of the stand, this is to allow cables to pass from one to the other if required, and ensures that the pole is placed centrally.

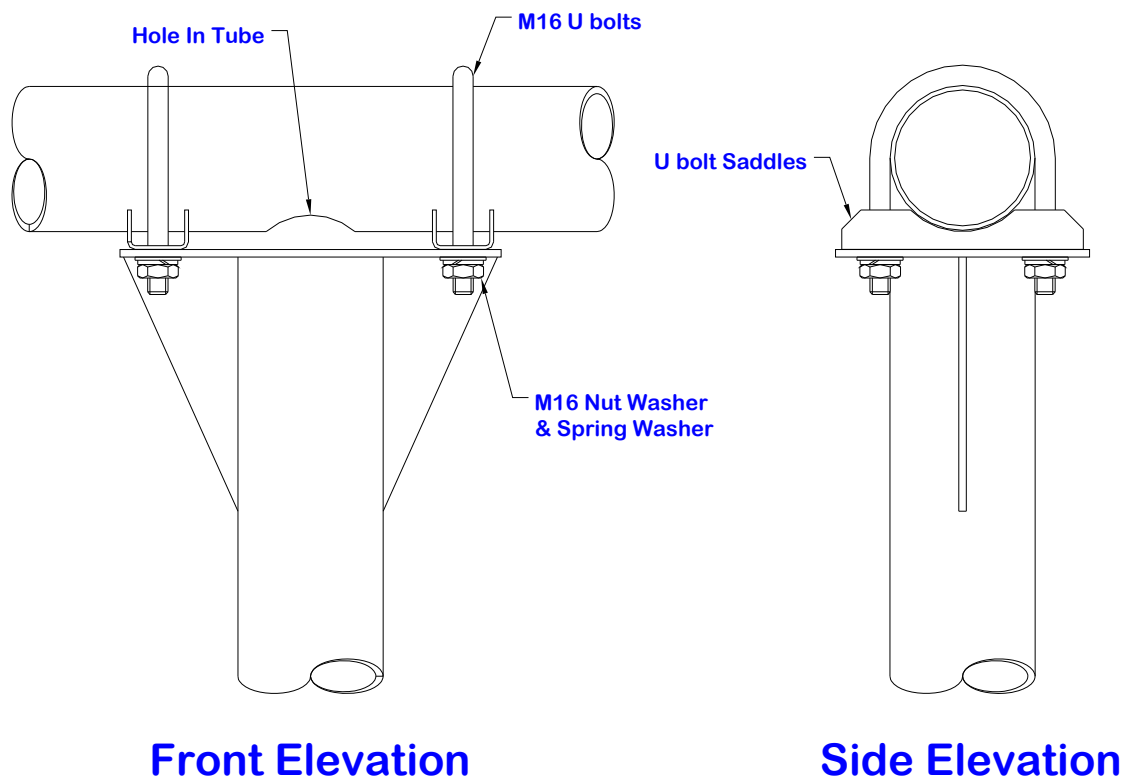


Figure 2 Fitting Horizontal Tube

Sub-Array Assembly

The structures are designed for a range of solar panels, therefore this section shows the basic assembly of a 2 module sub-array (used on 2 & 4 module structures). For 3 module arrays the principle is the same with the exception of 1 more panel is added to the sub-array.

Lay the modules face down on a flat clean surface side by side making sure that the module junction boxes are all at the same end, with a gap of around 10mm between them. The structure rails attach to the mounting holes in the back of each module using either M6 or M8 fasteners depending on type of module. Each module must be mounting using all 4 mounting holes. Select the holes to be used on the back of each panel and using the “Supaglue” affix one of the Nylon washers on each of the 4 holes on the back of the panel, this method will help the with the assembly. The Nylon washers are placed between the Aluminium module frame and the Galvanised steel structure to prevent corrosion between dissimilar metals. Position all the fasteners before tightening. Once all the fasteners are in place you can now tighten as required.

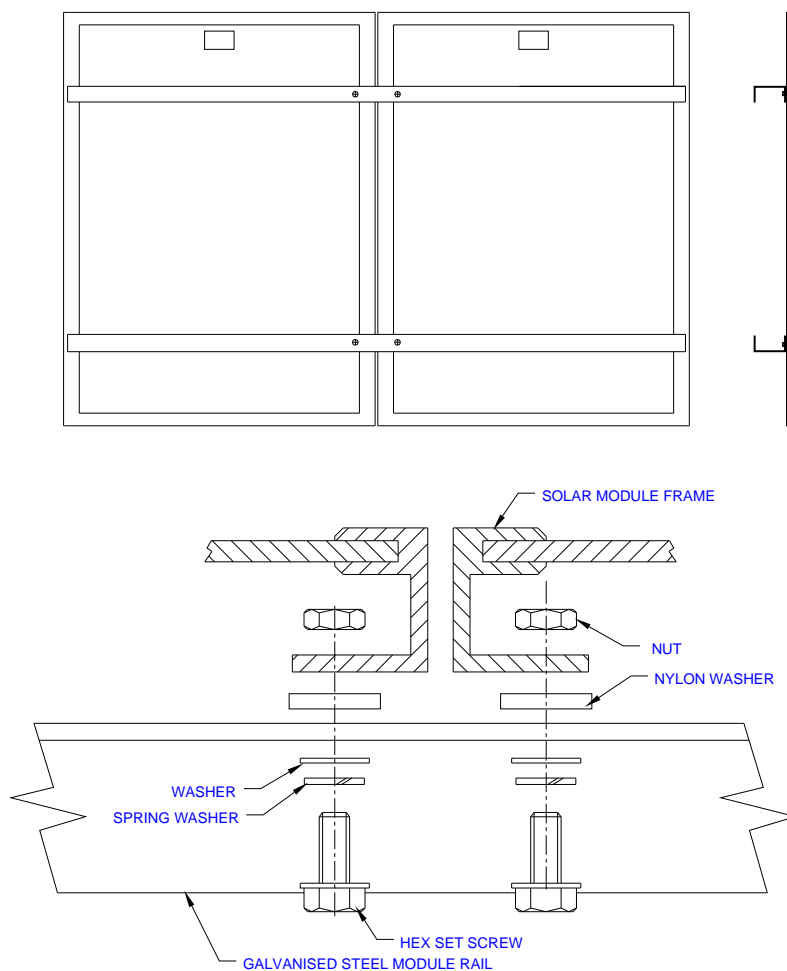


Figure 3 Sub-Array Assembly

Fitting Sub-Array Assemblies

Once the sub-arrays are assembled, these can be fitted onto the horizontal tubes. If only one sub-array is required (1, 2, 3 module structures) then the array is fitted centrally onto the horizontal tube. For 4 & 6 module arrays, you require to fit two sub-arrays with a gap of around 10-15mm between each array. You will require at least 2 people to install the sub-arrays due to the weight of these units. All general rules apply with regards to Hard Hats, and protective shoes/boots for this operation, as the arrays are to be lifted onto the high level tubes. Place the assembly over the tube with the assembly Horizontal to help with balance. Fit the M16 U bolts c/w saddles around the horizontal tube onto each of the rails and just tighten by hand.

Setting The Tilt Angle

Once both U bolt assemblies are in place, the assembly can be rotated around the pole to the required tilt angle. Once in place tighten the U bolts to secure. Repeat for each sub-array.

Maintenance

The structures should require little maintenance once installed. It is good practice to inspect the array occasionally checking for signs of rust etc. Should rust appear, brush off the rust using the wire brush and apply galvafruid paint or similar to the area. Make sure that all the fasteners are tight and secure, taking special care to check the U bolts.

Guarantee

The galvanized steel structure is guaranteed against corrosion for a period of 5 years. Should you experience any problems then please contact your supplier as soon as possible.