IBR ROOF
INSTALLATION MANUAL
1. INTRODUCTION

PROINSO PV RACK offers structural solutions, which are MORE ROBUST, MORE FLEXIBLE, AND MORE COST-EFFECTIVE.

PROINSO PV RACK has been customized to combine easy assembly with high quality materials. All our products are delivered in a convenient-sized box which contains all items for installation.

The versatility of the roof system from PROINSO PV RACK allows an easy adaptation to most locations, complying with the applicable regulations in each area.

2. DESCRIPTION SYSTEM

PROINSO PV RACK rooftop structures are installed by means of hollowed aluminium profiles bolted together. This ensures the ability to support photovoltaic modules with standard commercial dimensions. These profiles, with the aluminium triangles allow the lifting of the structure until desired inclination. PROINSO PV RACK customizes the kits for the majority of existing roofs.

Roof systems from PROINSO PV RACK allow a quick assembly. All elements are easily manipulated by the workshop staff.

Structure components are made up of 6063-T5 Aluminium and Anchorages of CORROSHEILD BRAND Self Drilling Screw. This gives a higher durability to the system.
3. MAIN COMPONENTS ARE LISTED BELOW:

<table>
<thead>
<tr>
<th>PART NAME</th>
<th>DESCRIPTION</th>
<th>MATERIAL</th>
<th>COATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>L-connector</td>
<td>Unequal angle with 2mm EPDM</td>
<td>AL6063T6</td>
<td>Anodized</td>
</tr>
<tr>
<td>Self drilling screw</td>
<td>SDS 5.5 x 65</td>
<td>HSS</td>
<td>GI</td>
</tr>
<tr>
<td>-</td>
<td>DIN 6798A M8 washer</td>
<td>Inox</td>
<td>A2</td>
</tr>
<tr>
<td>-</td>
<td>DIN 6923 M8 nut</td>
<td>Inox</td>
<td>A2</td>
</tr>
<tr>
<td>-</td>
<td>DIN 933 M8 x 30 bolt</td>
<td>Inox</td>
<td>A2</td>
</tr>
<tr>
<td>Adjustable Z fixing panel</td>
<td>Z angle profile</td>
<td>AL6063T6</td>
<td>Anodized</td>
</tr>
<tr>
<td>T fixing panel (mid clamp)</td>
<td>T angle profile</td>
<td>AL6063T6</td>
<td>Anodized</td>
</tr>
<tr>
<td>Cable clips</td>
<td></td>
<td>Inox</td>
<td>A2</td>
</tr>
<tr>
<td>Splice plate</td>
<td></td>
<td>AL6063T6</td>
<td>Anodized</td>
</tr>
<tr>
<td>Wing nut</td>
<td>M8</td>
<td>Inox</td>
<td>A2</td>
</tr>
<tr>
<td>-</td>
<td>DIN 6798A M8 washer</td>
<td>Inox</td>
<td>A2</td>
</tr>
<tr>
<td>-</td>
<td>DIN 6923 M8 nut</td>
<td>Inox</td>
<td>A2</td>
</tr>
<tr>
<td>-</td>
<td>DIN 933 M8 x 20 screw</td>
<td>Inox</td>
<td>A2</td>
</tr>
<tr>
<td>-</td>
<td>DIN 912 M8 x 25 screw</td>
<td>Inox</td>
<td>A2</td>
</tr>
<tr>
<td>-</td>
<td>DIN 912 M8 x 30 screw</td>
<td>Inox</td>
<td>A2</td>
</tr>
<tr>
<td>Aluminium profile 40x38</td>
<td>40x38x2 profile</td>
<td>AL6063T6</td>
<td>Anodized</td>
</tr>
</tbody>
</table>

EACH 1 KW BOX CONTAINS THESE ELEMENTS

3.2 Mounting Process

In order to perform the mounting process, assembly drawings will be provided by PROINSO PV RACK.

Before starting the assembly of the structure:
1. Ensure all required components and tools are present to start the process.
2. An individual kit should be assembled in order to make position marks for the different components.

All necessary steps for assembly are described below.

3.2.1 Fixing the roof anchorages to the roof purlins:

This solution only applies from steel sheet thicknesses from 0.5mm and aluminium sheet thicknesses from 0.8mm, as long as the roof has enough self-supportive capacity to hold the loads from the new structure. It always recommended that Angle Brackets should anchor to substructure (purlins).

In order to install the fixations, self-screwing Screw supplied with EPDM to guarantee the sealing will be used. During bolting threading, stop blocks will be used to avoid any damage to the sheet, losing its mechanical properties. This system is only recommended if the mechanical properties of the sheet and more than 2mm Thickness of Purlins can be guaranteed.

TOOLS REQUIRED FOR THIS STEP:
- Electrical Screw Driver and Hexagonal Socket for Self Drilling Screw.
3.2.2 Assembly of base profiles onto roof anchorages:

The assembly of base profiles onto roof anchorages is done using DIN 933 M8x30 bolts and DIN 6923 M8 A2 nuts.

The same number of bolts as fixations has to be placed into the hollowed part profiles; the bolts will be moved along the profile to the correct position to be screwed with the nut onto each roof anchorage.

The correct position for the profile should be checked in the corresponding kit drawing.

TOOLS REQUIRED FOR THIS STEP:
• Open End wrench No 13 or torque wrench with socket no 13.

3.2.3 Junction between aluminium profiles:

The Joint between two aluminium profiles that form the structure is performed with an aluminium plate with 4 holes, using 4 DIN 933 M8x20 A2 bolts and 4 DIN 6923 M8 A2 nuts to secure them as shown in the image.

Firstly, the bolts are inserted loosely in the plate as displayed on the image. Then, half of the plate is inserted at the end of the first profile, assuring that two bolts are inserted at the bottom slot. Subsequently, tighten these two bolts to fix the plate to the first profile.

Secondly, the end of the second profile will be inserted until it stops with the first one, also guaranteeing that these two bolts are inserted at the bottom slot. Finally, the proper torque setting to every fastener will be given.

TOOLS REQUIRED FOR THIS STEP:
• Open end wrench no 13 or torque wrench with socket no 13.
3.2.4 Assembly of PV modules onto aluminium profiles:

Installation of PV modules directly onto aluminium profiles is performed when the required disposition of PV modules is in portrait.

PV modules will be fixed at 4 attachment points, as shown in the kit drawing.

The assembly of PV modules is performed with “Z” aluminium pieces (individual fixations), “U” aluminium pieces (double fixations), DIN 912 M8x30 for the “U” and DIN 912 M8x35 for the “Z”, A2 bolts, DIN 6798A M8 A2 washers and M8 A2 spring nuts as shown in images above.

TOOLS REQUIRED FOR THIS STEP:

- Hexagonal wrench 6mm.

3.2.5 General considerations:

Torque settings for fasteners:

1. M8 nuts and bolts: 23 Nm.
2. M10 nuts and bolts: 43 Nm.

PV modules attachment points:

Attachment points of PV modules are approximately at ¼ of the longest side measured from the end of the module, always prevailing manufacturer recommendations over this issue.

Minimum distances for anchorages position:

The minimum distance to be kept from the end of the aluminium profile to place any anchorage or fixation is 50 mm.

4. DO’S AND DON’TS:

- Installation of PROINSO PV RACK intended to be Performed by Trained Installers.
- Please Ensure all Safety Equipment shall be use by Installers.
- Please Ensure Substructure , Super Structure of Roof can with stand load of PROINSO PV RACK and Live load during installation.
- Do not modify any Product of Proinso PV RACK without any Prior Approval by Engineers.
- Please follow recommended instructions of solar module manufacturer during handling and installation.
- Please ensure Solar module can Install on Rail one at a time, Please take care for slipping of module.
PROINSO HQ
943 Yeovil Road
SL1 4NH Slough
United Kingdom

PROINSO SOUTH ASIA
2-22 Evergreen Industrial Estate Shakti Mill Lane
Mahalaxmi Mumbai-400011, India

PROINSO AMERICAS
1030 Riverside PKWY
Suite 130 West Sacramento
CA 95605, United States

WWW.PROINSOCPVTRACK.COM