

SolarBase Low Ballast Flat Roof System

Installation Guide V 1.4
NO.:PZ30-IM01-14



Introduction

PVezRack® SolarBase system is a roof mounting system suitable for small and medium-sized commercial roof installations. Professional structure design greatly simplifies installation steps, under the premise of guaranteeing safety, which reduces cost and improves efficiency during installation.

Please review this manual thoroughly prior to installing PVezRack® SolarBase. This manual provides supporting documentation for building permit applications relating to PVezRack® SolarBase system.

The PVezRack® SolarBase parts, when installed in accordance with this guide, will be structurally adequate. During installation please comply with the appropriate occupational health and safety regulations. Please also pay attention to other relevant regulations of your local region. Please check that you are using the latest version of the installation manual, which you can do by contacting Clenergy via email on sales@clenergy.com.au, or contacting your local distributor.

Product Warranty:








Please refer [PV-ezRack® Product Warranty](#) on our website.

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Tools and Components

Tools

				
<p>6mm inside hexagonal spanner</p>	<p>Electric tool</p>	<p>5m tape</p>	<p>Marking pen</p>	<p>Torque spanner</p>
				
<p>String</p>	<p>Socket spanner</p>			

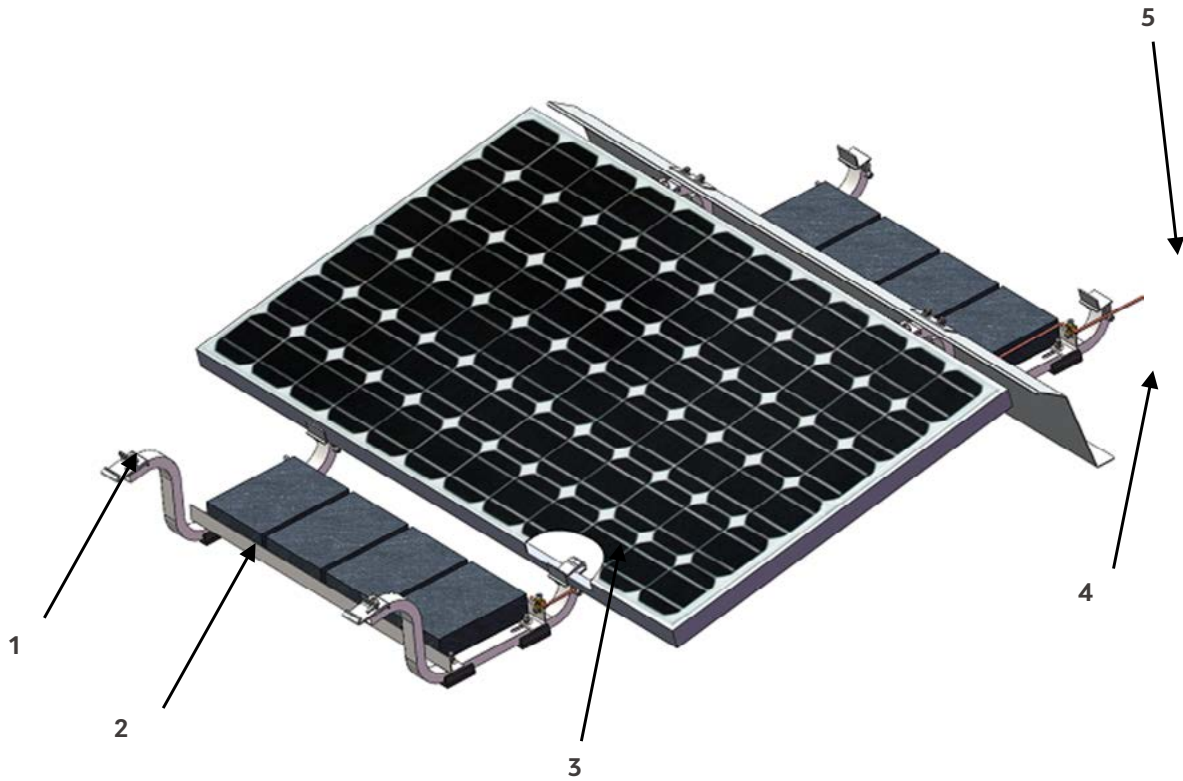
Note: tools in the figure are only used for rack system (not included in supply scope); Consult system installation personnel about electronic part installation tools.

Components

				
<p>ER-S-SB/S10 Support Leg for SolarBase</p>	<p>ER-BB-SB/900 Ballast Bar for SolarBase</p>	<p>EZ-GC-MC40 Module Clamp 40 mm</p>	<p>ER-WD-SB10/17/A3 Wind Deflector for SolarBase</p>	<p>EZ-GL-B Grounding Lug</p>

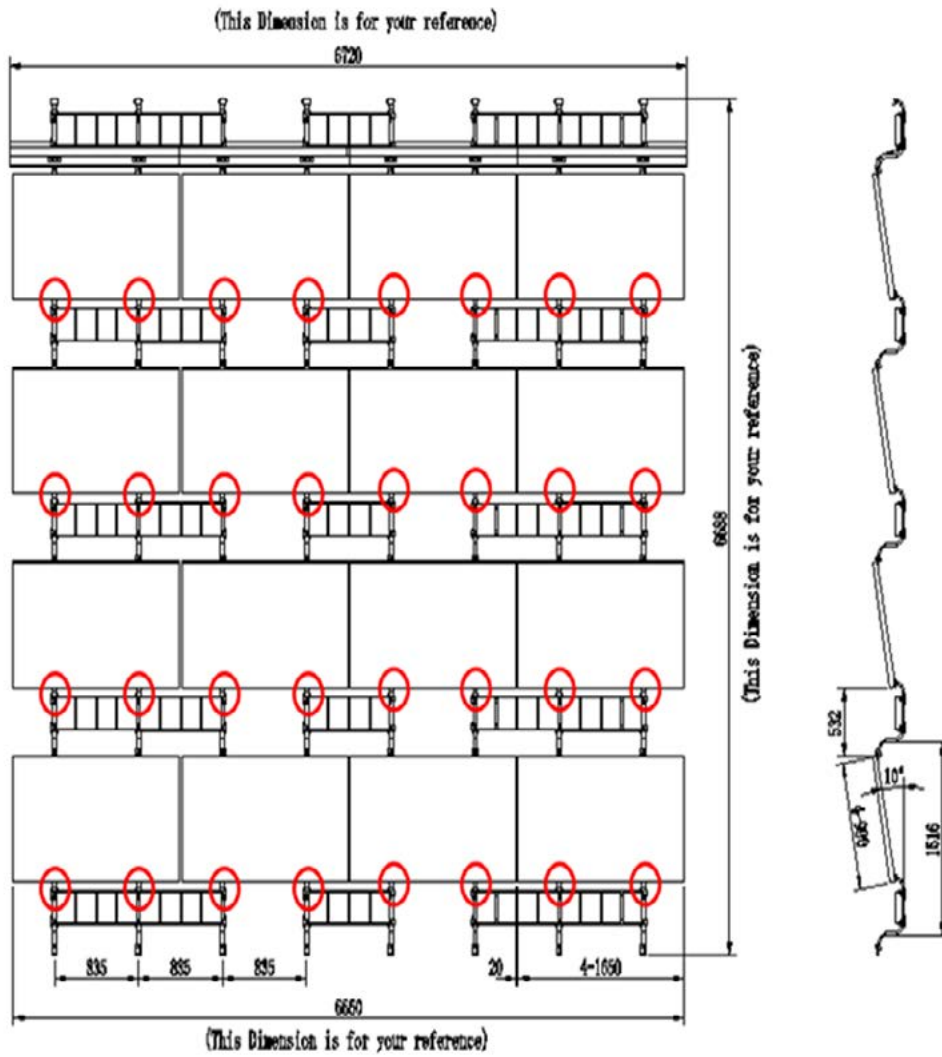
System Overview

Overview of PV-ezRack SolarBase



1. Support Leg 2. Ballast Bar 3. Module Clamp 40 mm 4. Wind Deflector 5. Grounding Lug

Installation planning



Note: Red circles highlight installation of Module Clamp 40;

Take 1650x990x40 PV module as an example. Installation angle is 10° and distance between front and rear parts of component is 532mm.

Precautions during Stainless Steel Fastener Installation

Improper operation may lead to deadlock of Bolts and Nut. Follow the steps below to reduce this risk

Reduce the friction coefficient

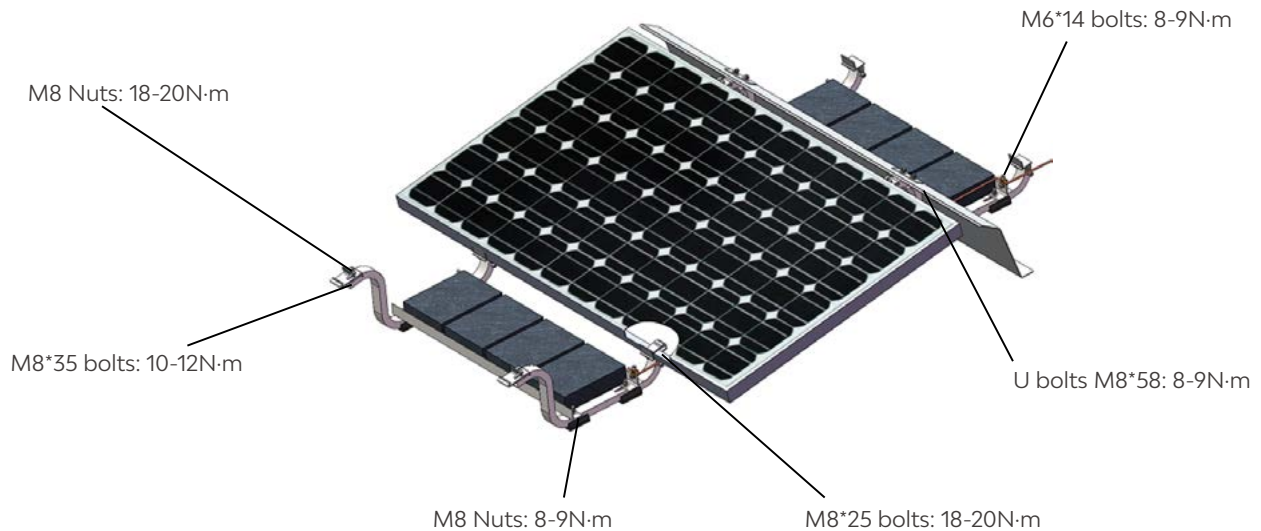
- (1) Ensure that the thread surface is clean (no dirt or contaminant)
- (2) Apply lubricant (grease or 40# engine oil) to fasteners prior tightening to avoid galling or seizing in the threads;

General installation instructions

- (1) Apply force to fasteners in the direction of thread;
- (2) Apply force uniformly, to maintain required torque;
- (3) Professional tools and tool belts are recommended;
- (4) Avoid using electric tools for final tightening;
- (5) Avoid working at high temperatures;

Safe Torques

Please refer to safe torques defined in this guide as shown in below; In case power tools are required, Clenergy recommends the use of low speed only. High speed and impact drivers increase the risk of bolt galling (deadlock) If deadlock occurs and you need to cut fasteners please make sure that there is no load on the fastener before you cut it. Avoid damaging the anodized or galvanized surfaces.



Installation Dimensions

All drawings and dimensions in this installation guide are for a generic reference. The Clenergy PVezRack® SolarBase is to be optimized to suit specific conditions for each project and documented in a construction drawing. As a result, major components of the Clenergy PVezRack® SolarBase may be provided in section sizes and lengths that vary from those shown in this guide. The installation process detailed in this instruction guide remains the same regardless of the component size. In case you need to do any on-site modifications or alteration of the system in a way that would be different from the construction drawing please provide marked up drawings/sketches for Clenergy’s review prior modification for comment and approval.

Installation Instructions

Install Support Leg team

According to specification of ballast, adjust distance between two square neck bolts on Support Leg and fix square neck bolts, as shown in Figure 1.

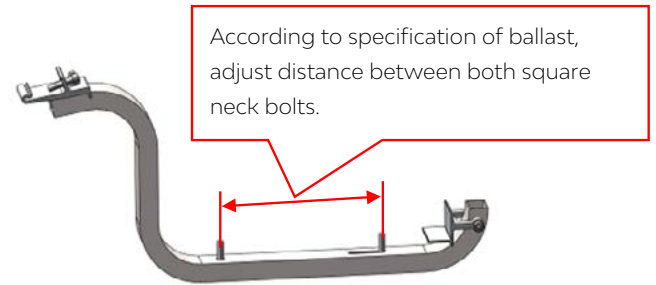


Figure 1

Put rubber protection gasket into Support Leg and make sure the hole centre of rubber gasket is aligned with bolt centre, as shown in Figure 2.



Figure 2

According to installation specification, use tools such as tape, string and marker pen to make out position and then place Support Leg, as shown in Figure 3.

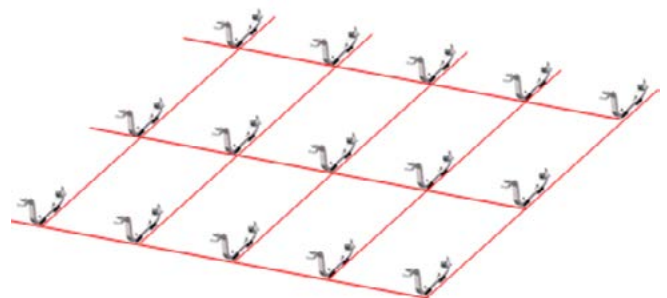


Figure 3

Install Wind Deflector and ballast (optional parts)

Fix Wind Deflector on the pre-assembled bolts of Support Leg team and make it press against Support Leg, and make sure the position of Support Leg team unchanged as shown in Figure 4.

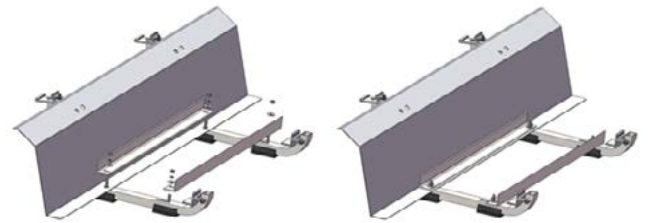


Figure 4

Figure 5

Fix Ballast Bar into the bolts of Support Leg team, and add M8 plain washer, washer and nut and fasten tightly as shown in Figure 4 and 5.

Recommended torque:
8-9 N·m for M8 Bolts

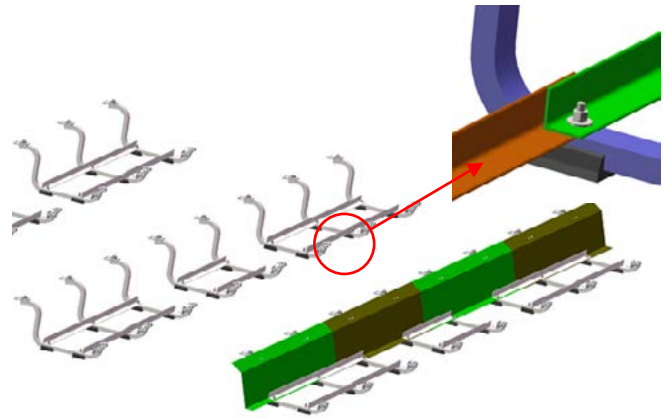


Figure 6

Attention: Wind Deflectors are installed on Support Legs of the last row. Two adjacent Wind Deflectors will be overlapped as shown in Figure 6.

Use U-bolt M8*58 to lock Wind Deflector tightly as shown in Figures 7 and 8.

Recommended torque:
8-9 N·m for U-bolt M8*58

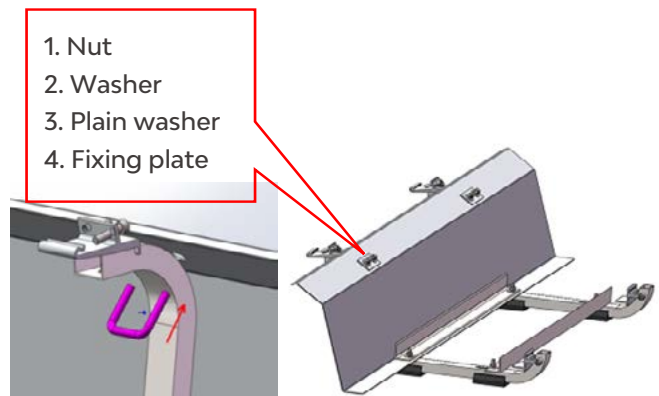


Figure 7

Figure 8

After Wind Deflector and Ballast bar are installed, load ballast orderly. Ballast height should be no more than 145mm as shown in Figure 9.

(If Wind Deflector is not required, please ignore the above instructions.)

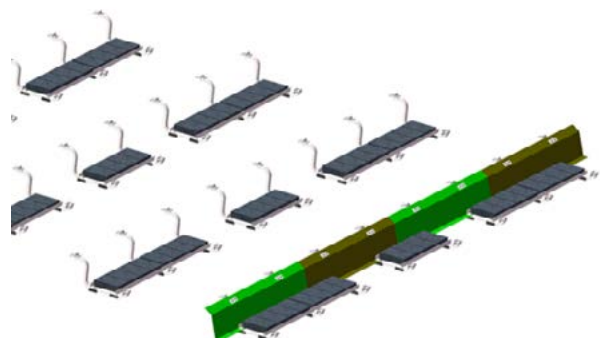


Figure 6

Install PV modules and Module Clamp 40

Rotate the right part of Support Leg to the required position as shown in Figure 10.

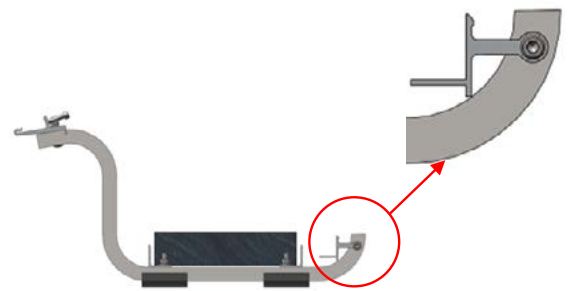


Figure 10

Place PV module smoothly on Support Leg. According to installation planning, adjust left and right positions of PV module and guarantee frame of PV module attach to the rotating part of Support Leg. Pay attention to installation direction of PV module as shown in Figure 11.

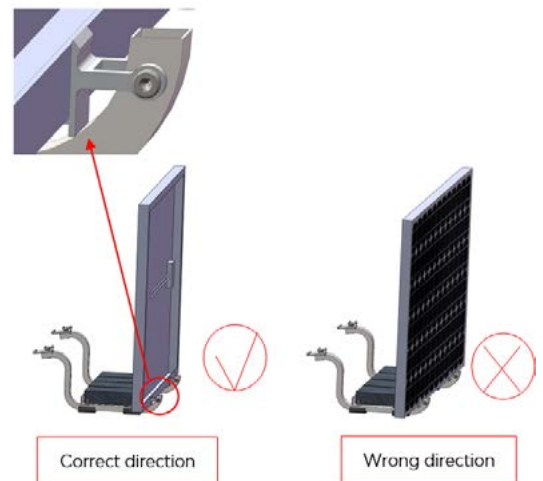


Figure 11

Fasten the frame of PV module and Support Leg with Module Clamp 40 as shown in Figure 12.

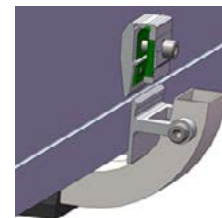


Figure 12

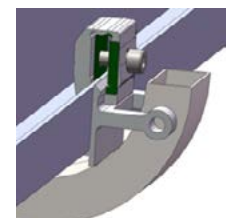


Figure 13

Adjust Module Clamp 40 to ensure that it's located in the middle of preassembled parts of Support Leg and fasten tightly. While fasten the Bolts M8*25, hold the Module Clamp 40 to ensure it unmovable, as shown in Figure 13 and 14.

Recommended torque:
18-20N.m for Bolts M8*25



Figure 14

After fasten the Module Clamp 40, lay PV Module slightly down on the preassembled part of Support Leg in the rear row as shown in Figure 15.



Figure 15

Adjust Module Frame Back Mounting Clip along fore-aft direction; ensure the frame of PV module will be held by Mounting Clip as shown in Figure 16 and 17.

Fasten Bolts M8*35 and Square Neck Bolts M8*45 tightly in order.

Recommended torque:
10-12N·m for Bolts M8*35

Recommended torque:
18-20N·m for Square Neck Bolts M8

Repeat above operations to install the rest PV modules as shown in Figure 18.

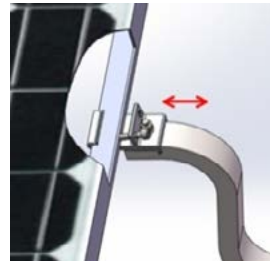


Figure 16



Figure 17



Figure 18

Install Grounding Lug

Fix the Grounding Lug on Ballast Bar of the longest row along vertical direction as shown in Figure 19, install one Grounding Lug per row and fasten tightly.

Fix the Grounding Lug on Ballast Bar of the longest row along vertical direction as shown in Figure 19, install one Grounding Lug per row and fasten tightly.

Fix the Grounding Lug on Ballast Bar of the longest row along vertical direction as shown in Figure 19, install one Grounding Lug per row and fasten tightly.



Figure 19

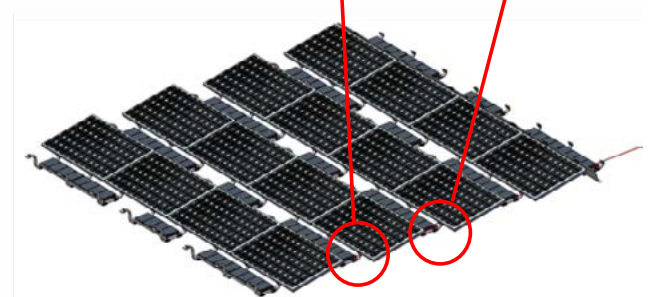


Figure 20








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