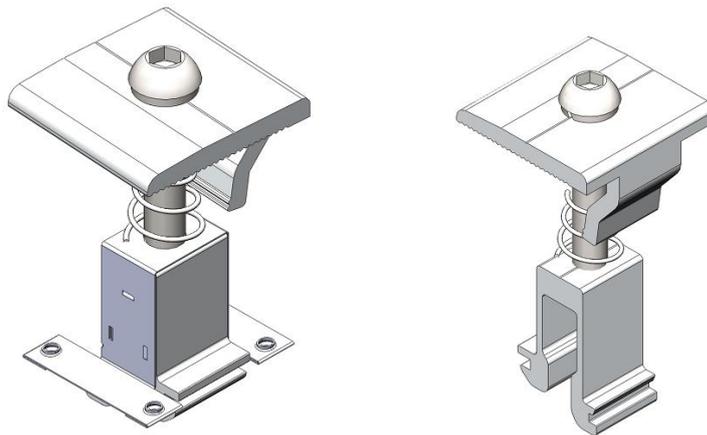


# Universal Clamp Installation Guide V1.1

NO.: PZ01-IM11-11



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## 1. Introduction

PV-ezRack Universal Clamp (C-U/30/46-G or C-U/30/46) is designed for fastening framed PV modules starting from 30mm up to 46mm height. One clamp with both inter clamp and end clamp as well as height adjustable functionality is a good choice for most common framed PV modules over the market.

Please review this guide thoroughly prior to installing PV-ezRack Universal Clamp. This guide provides supporting documentation for installing PV-ezRack Universal Clamp.

The PV-ezRack Universal Clamp, when installed in accordance with this guide, will be structurally adequate and adhere to standard AS/NZS1170, IBC2006 and California 2007. 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 guide, which you can do by contacting Clenergy via email on [sales@clenergy.com.au](mailto:sales@clenergy.com.au), or contacting your local distributor.

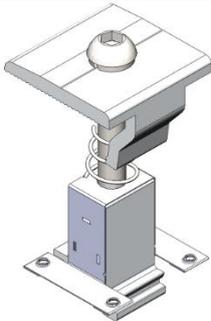
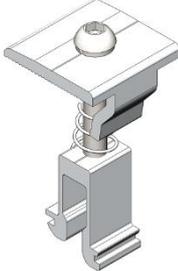
## 2. Tools and Components

### 2.1 Tool

		
Electric tool ( M8 hexagon bolt )	Torque spanner	String
		
5m Tape	Marker	

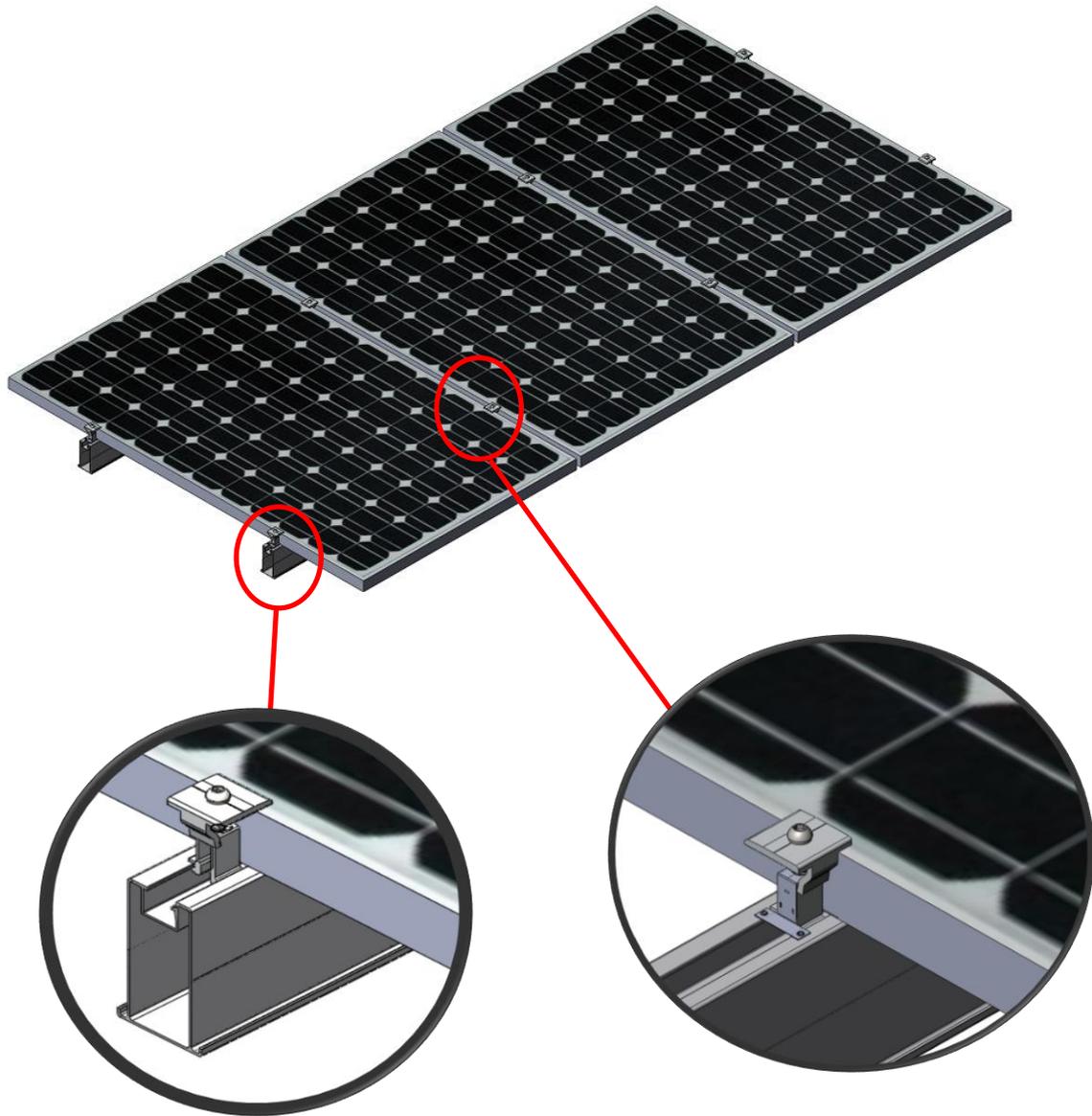
**Note:** Tools in the figure are only used for rack system (not included in Clenergy supply scope) ; Consult system installer about electronic parts installation tools.

### 2.2 Component

	
C-U/30/46-G Universal Clamp for Frame Height 30-46mm with Grounding Clip	C-U/30/46 Universal Clamp for Frame Height 30-46mm

## 3. System Overview

### 3.1 Overview of Assembly

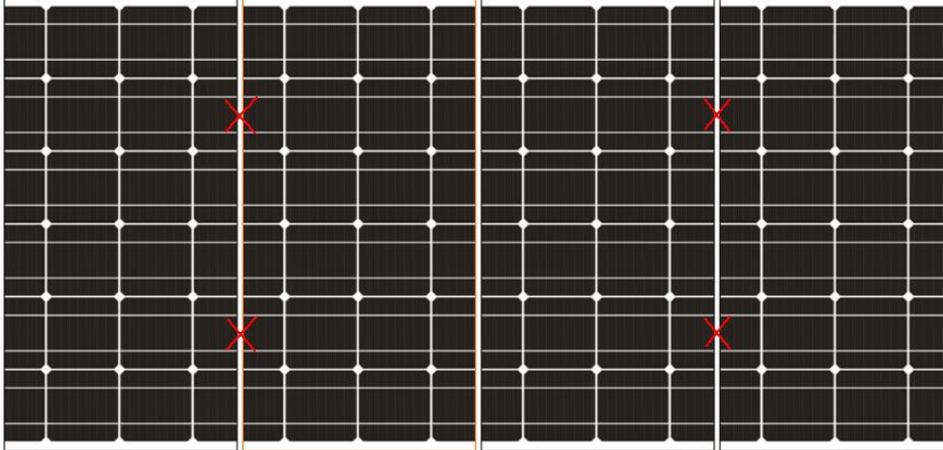


End Clamp Installation

Inter Clamp Installation

### 3.2 Deployment of Grounding Clip

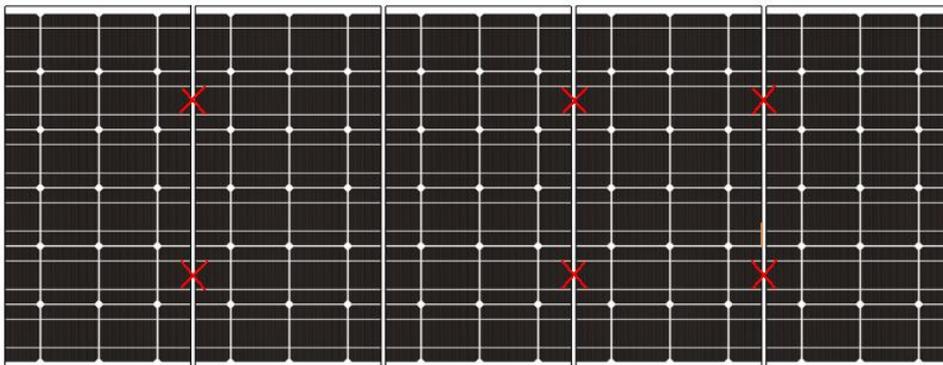
#### 3.2.1 Even number—number of PV Module in each row



The position with X shall be the installation position of Grounding Clip.

Installation number of Grounding Clip = number of PV Module =4

#### 3.2.2 Odd number—number of PV Module in each row



The position with X shall be the installation position of Grounding Clip.

Installation number of Grounding Clip = number of number of PV Module +1=5+1=6

**Key point:**

**When replacing a single PV Module which is defective, it's required to replace the Grounding Clip under the PV Module.**

### **3.3 Precautions during Stainless Steel Fastener Installation**

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

1. Reduce the friction coefficient:

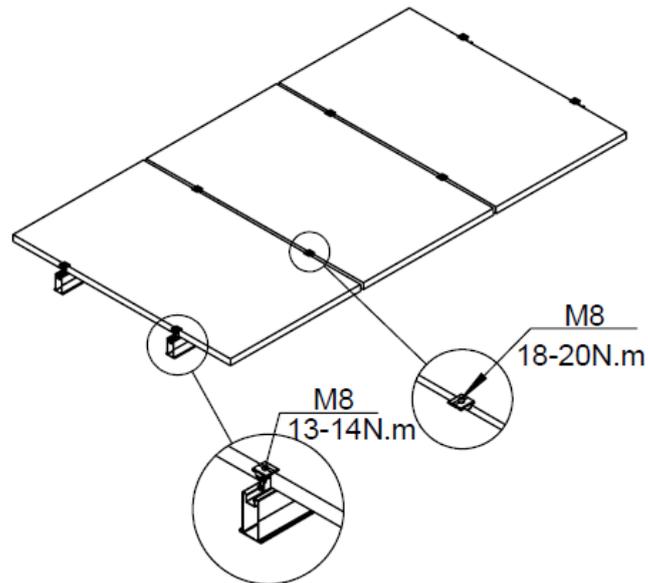
- (1) Ensure that the thread surface is clean (no dirt or contaminant )
- (2) Apply lubricant (grease or 40# engine oil) to fasteners prior tightening to avoid galling or seizing in the threads;

2. 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;

3. 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.



### 3.4 Installation Dimensions

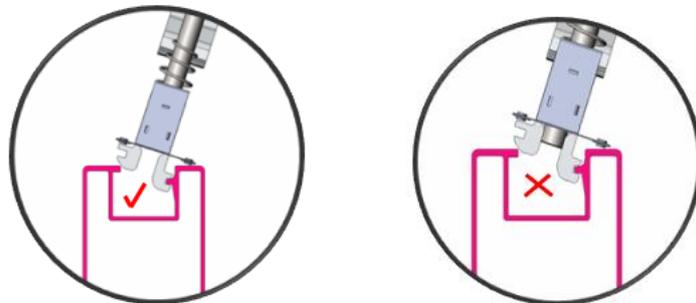
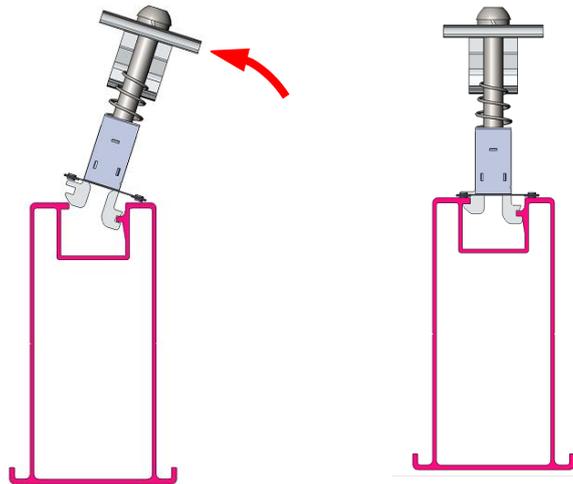
All drawings and dimensions in this installation guide are for a generic reference. The Clenergy PV-ezRack Universal Clamp is to be optimized to suit specific conditions for each project and documented in a construction drawing. As a result, major components of the Clenergy PV-ezRack Universal Clamp 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.

## 4. Installation Instruction

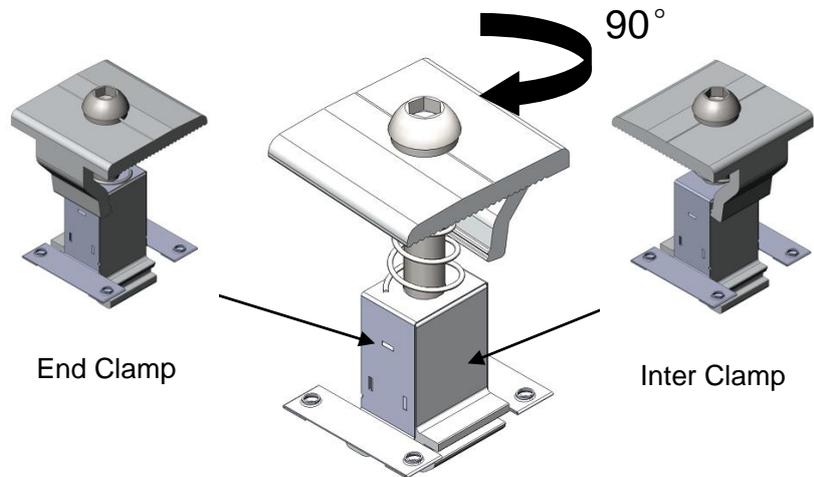
### 4.1 Universal Clamp Installation

4.1.1 Inclining the Universal Clamp to make the channel on its lower part against the lower channel of T rail, and press down the Universal Clamp towards other side to make the channel on its upper part against the upper channel of T Rail as shown in right figure.

Note: before installing, make sure there will be enough clearance between screw and module of Universal Clamp as shown in right figure.

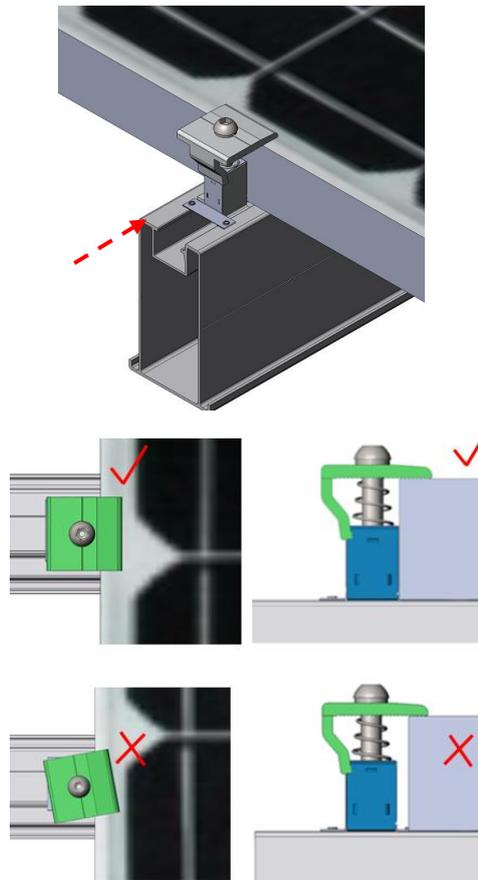


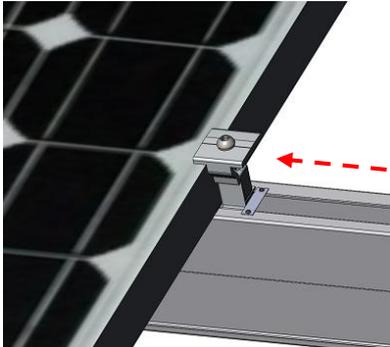
4.1.2 Twisting the head of Universal Clamp changes functionality from end to inter clamp as shown in right figure.



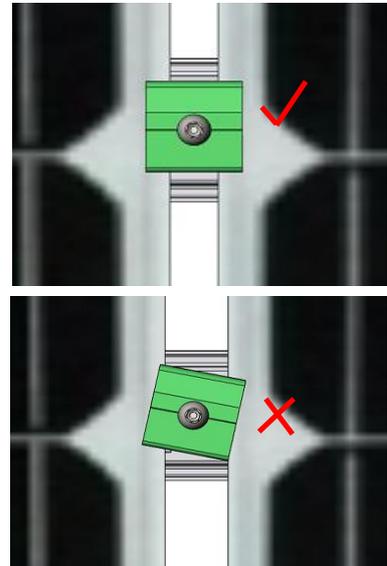
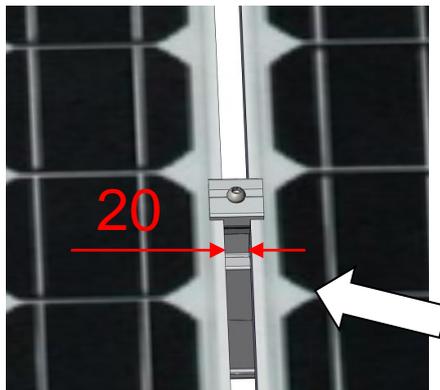
## 4.2 PV Module Installation

4.2.1 When using as End Clamp, slide the Universal Clamp to the position to be fastened, and then slightly slide the framed PV Module on grounding clip of Universal Clamp (ignore this step if C-U/30/46 is applied). Make sure the frame of PV Module is fully in contact with the Universal Clamp as shown in right figure. Visually check the Universal Clamp and PV module are properly



<p>positioned, and then hold Universal Clamp and fasten the M8 bolt with 13~14N.m.</p>	
<p>4.2.2 When using as inter Clamp, slide the Universal Clamp into position on rail to be installed, slightly lift the framed PV module to make sure the Grounding Clip of Universal Clamp will be fully covered (ignore this step if C-U/30/46 is applied) and ensure the frame of PV Module is fully in contact with Universal Clamp as shown in right figure.</p>	

4.2.3 Slightly slide the next framed PV Module into the other side of Universal Clamp, make sure the Grounding Clip of Universal Clamp will be fully covered (ignore this step if C-U/30/46 is applied) and ensure the frame of PV Module is closely in contact with Universal Clamp as shown in right figure. Visually check Universal Clamp and PV module are properly positioned and then hold Universal Clamp and fasten its bolts with 18~20N.m.



## 5. Warranty

10 year limited Product Warranty, 5 year limited Finish Warranty

Clenergy co. Ltd warrants to the original purchaser (“Purchaser”) of product(s) that it manufactures (“Product”) at the original installation site that the Product shall be free from defects in material and workmanship for a period of ten (10) years, except for the anodised finish, which finish shall be free from visible peeling, or cracking or chalking under normal atmospheric conditions for a period of five (5) years, from the earlier of 1) the date the installation of the Product is completed, or 2) 30 days after the purchase of the Product by the original Purchaser (“Finish Warranty”).

The Finish Warranty does not apply to any foreign residue deposited on the finish. All installations in corrosive atmospheric conditions are excluded. The Finish Warranty is VOID if the practices specified by AAMA 609 & 610-02 – “Cleaning and Maintenance for Architecturally Finished Aluminum” ([www.aamanet.org](http://www.aamanet.org)) are not followed by Purchaser. This Warranty does not cover damage to the Product that occurs during its shipment, storage, or installation.

This Warranty shall be VOID if installation of the Product is not performed in accordance with Clenergy’s written installation instructions, or if the Product has been modified, repaired, or reworked in a manner not previously authorized by Clenergy IN WRITING, or if the Product is installed in an environment for which it was not designed. Clenergy shall not be liable for consequential, contingent or incidental damages arising out of the use of the Product by Purchaser under any circumstances. If within the specified Warranty periods the Product shall be reasonably proven to be defective, then Clenergy shall repair or replace the defective Product, or any part thereof, in Clenergy’s sole discretion. Such repair or replacement shall completely satisfy and discharge all of Clenergy’s liability with respect to this limited Warranty. Under no circumstances shall Clenergy be liable for special, indirect or consequential damages arising out of or related to use by Purchaser of the Product.

Manufacturers of related items, such as PV modules and flashings, may provide written warranties of their own. Clenergy’s limited Warranty covers only its Product, and not any related items.