



Advancing Renewable Technology

Washer, Electrical Equipment Bond

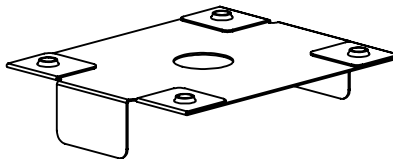
WEEB

Patent Pending

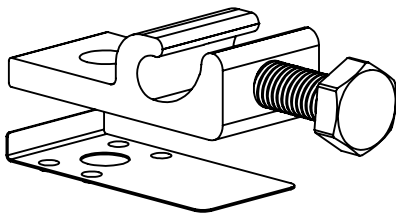
INSTALLATION INSTRUCTIONS

For TTI Mounting Systems

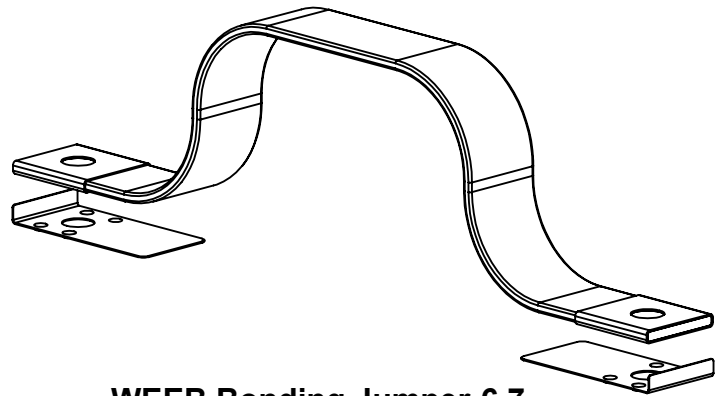
Please read carefully before installing.



WEEB-WMC



WEEBL-6.7



WEEB Bonding Jumper-6.7



Intertek
3098177

Products are tested to UL 467
UL standard for safety grounding and bonding equipment

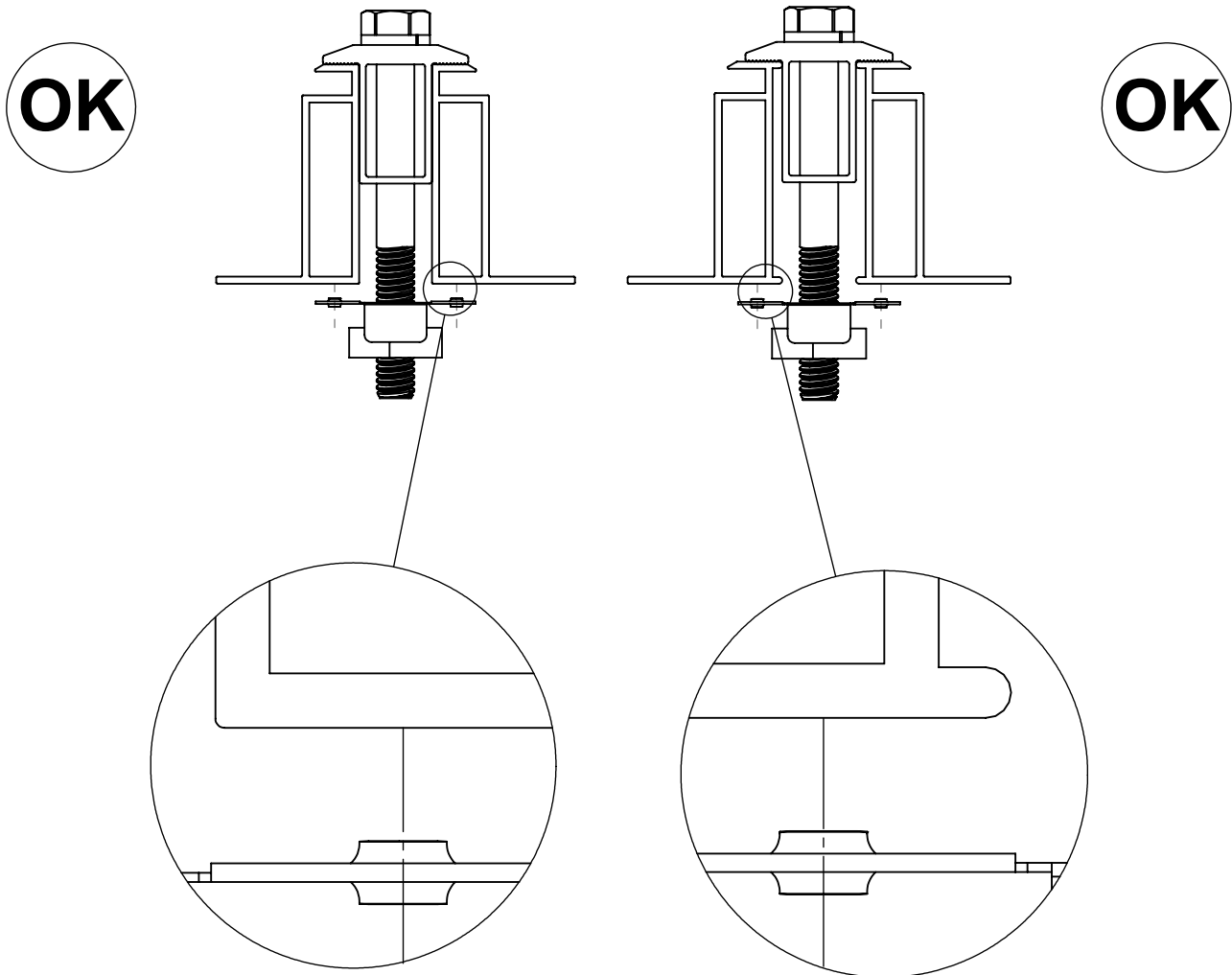
Document Number 104-0404-000035-004

WEEB COMPATIBILITY

The WEEB family of products can be used to bond anodized aluminum, galvanized steel, steel and other electrically conductive metal structures.

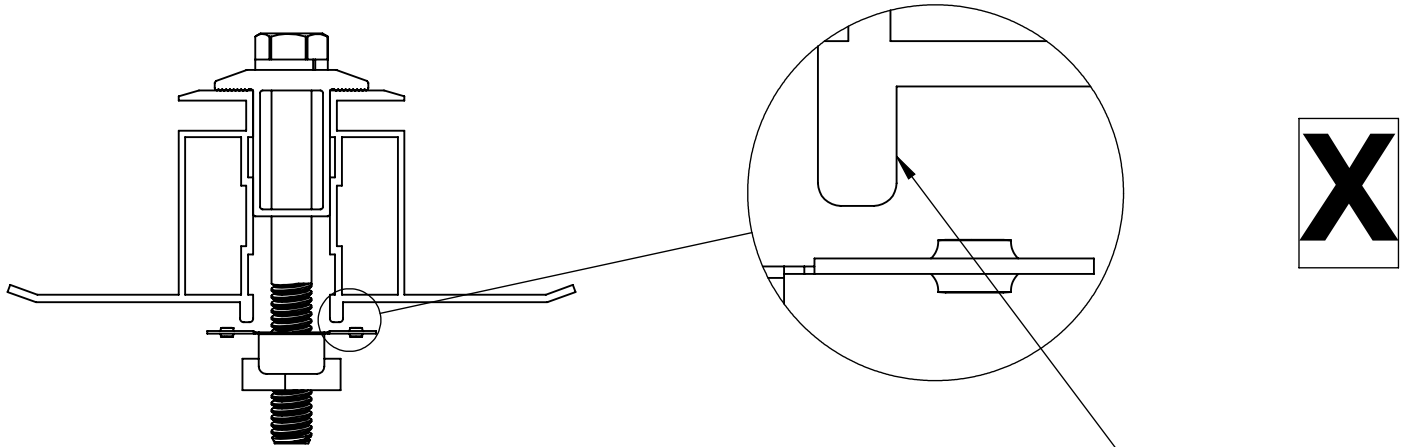
Standard Top Down Clamps

The WEEBs used for bonding the PV modules to the mounting rails are compatible with various cross-sections of module frames. The following are examples of module frames that are compatible. Notice that the WEEB teeth are positioned completely under the edge of the module frame.

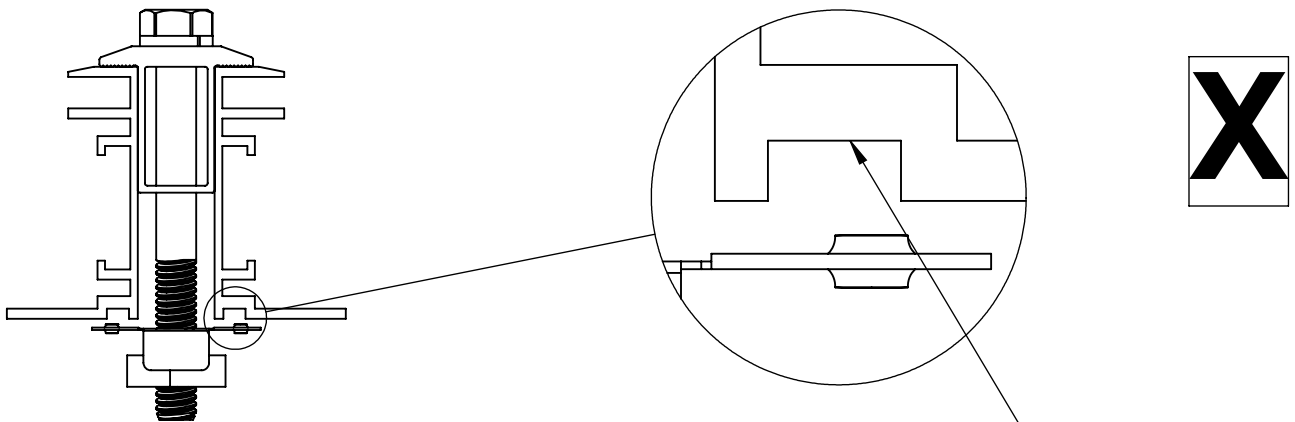


WEEB COMPATIBILITY

Module frames like those shown here may have a ridge or lip on the bottom edge of the frame that would prevent the WEEB teeth from fully embedding. These types of frames are not compatible.



Shown here is an example of a lip that will prevent the WEEB teeth from properly penetrating the module frame. This type of frame is not compatible with the WEEB.



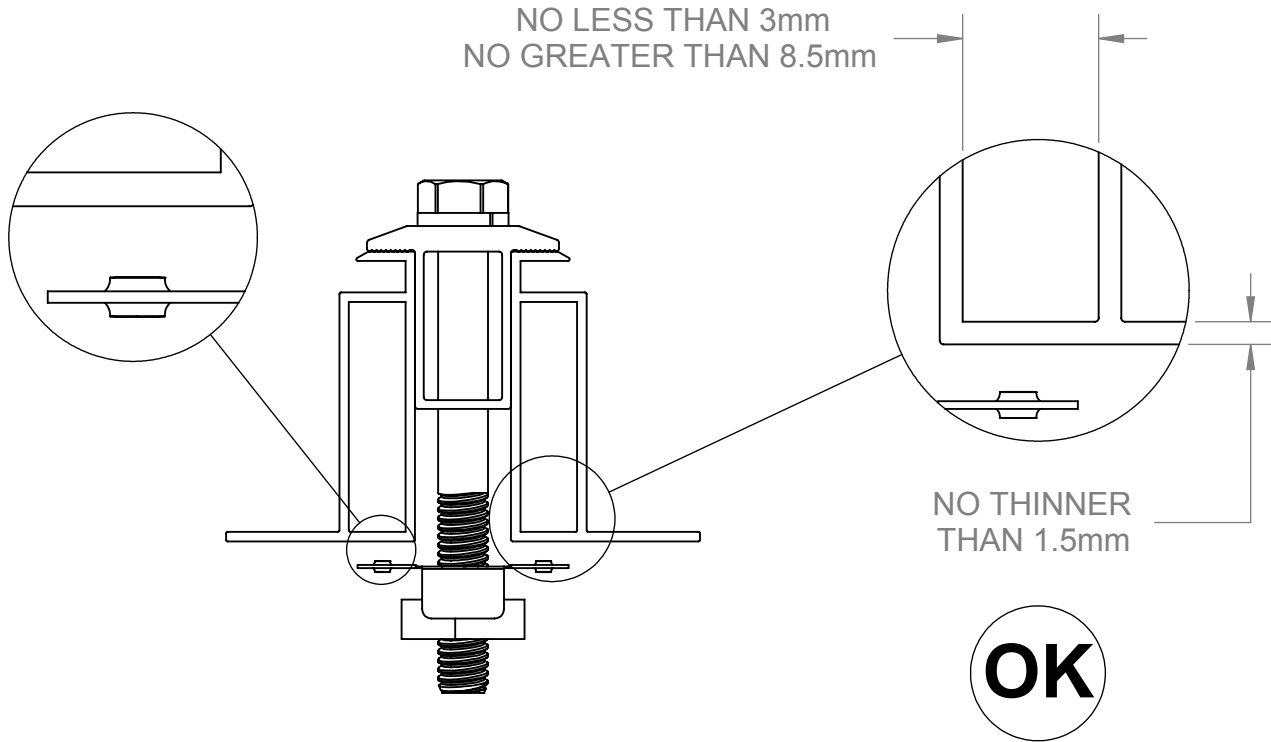
Shown here is an example of a groove that will prevent the WEEB teeth from properly penetrating the module frame. This type of frame is not compatible with the WEEB.

Important Note:

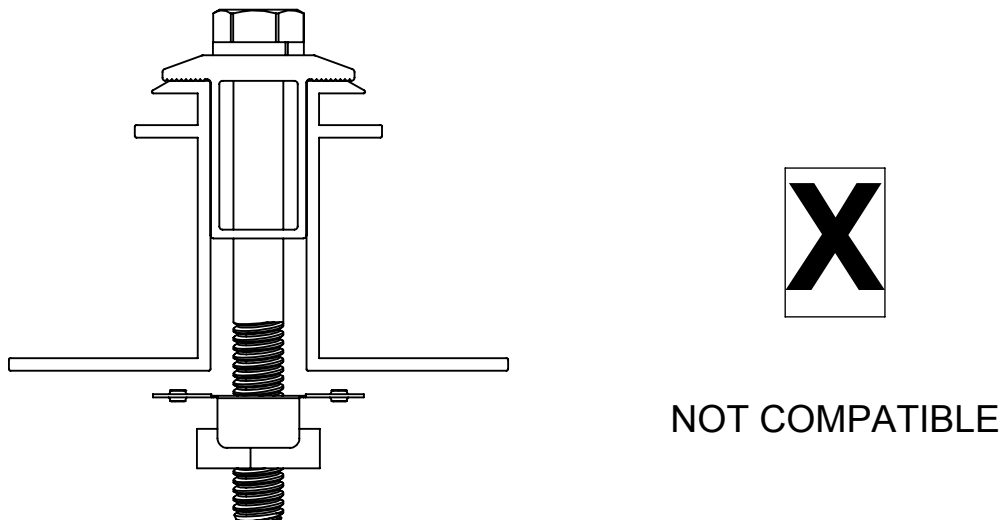
Inspect each module frame used with a WEEB to ensure that the bottom mounting face of the frame is flat, and that there are no hinderances to embedding WEEB teeth. Do not use a module with a frame that prevents the WEEB teeth from embedding fully.

WEEB-WMC and Boxed Module Frames

Due to the width of the mid clamp and the tooth spacing on the WEEB-WMC, only module frames with reinforcing box structures can be used for grounding with the WEEB. Below are specifications for such module frames.

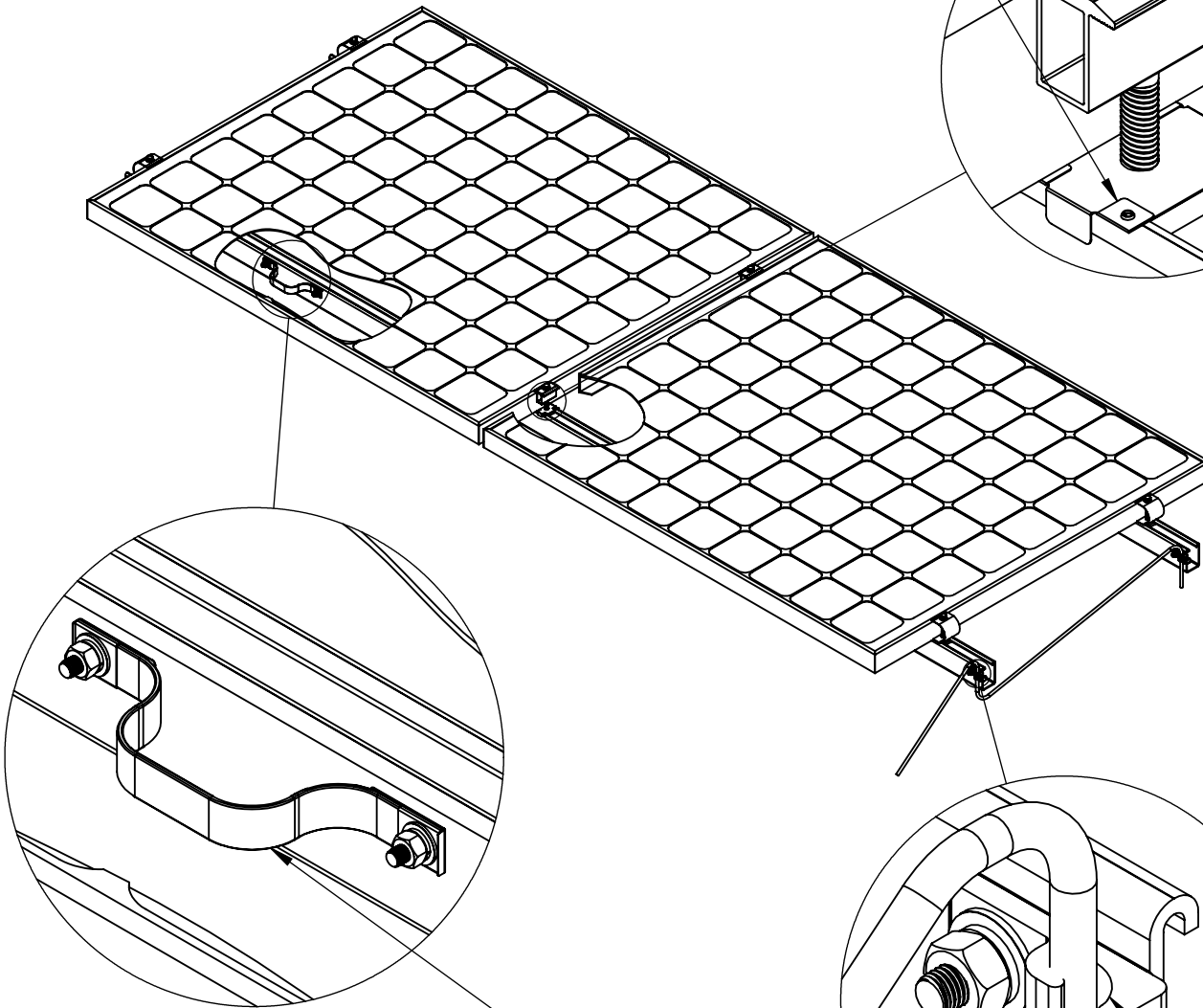
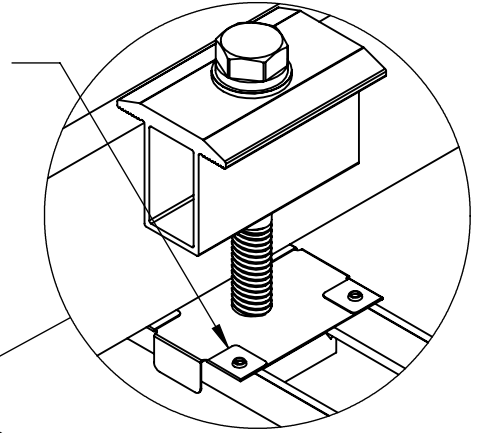


C-shaped module frames, like the one shown here, are incompatible with the WEEB-WMC



SYSTEM OVERVIEW

Use WEEB-WMC to bond solar modules to module mounting rail.



Use WEEB Bonding Jumper to electrically connect mechanically spliced rails.

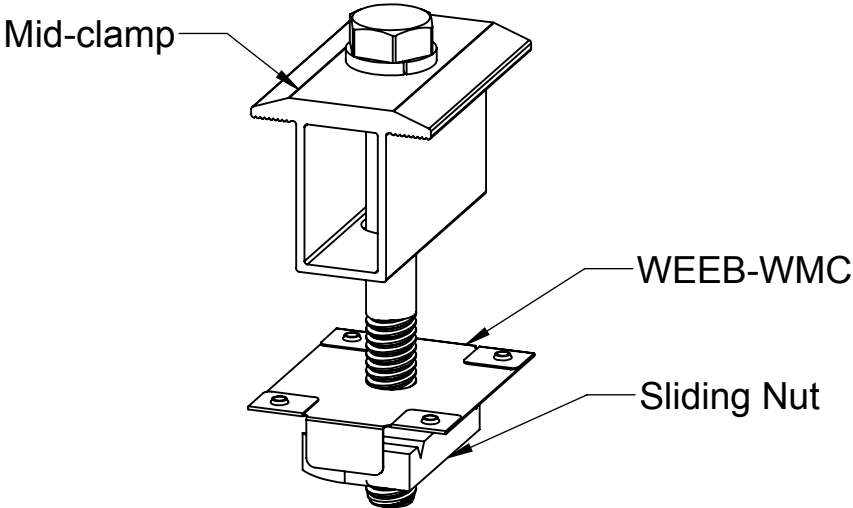
Use one WEEBLug-6.7 assembly per rail to connect system to equipment ground conductor.

Important notes

1. Use general purpose anti-seize compound on fastener threads when installing WEEBs.
2. WEEBs are intended for **SINGLE USE ONLY**. Functionality will not be guaranteed if reused.

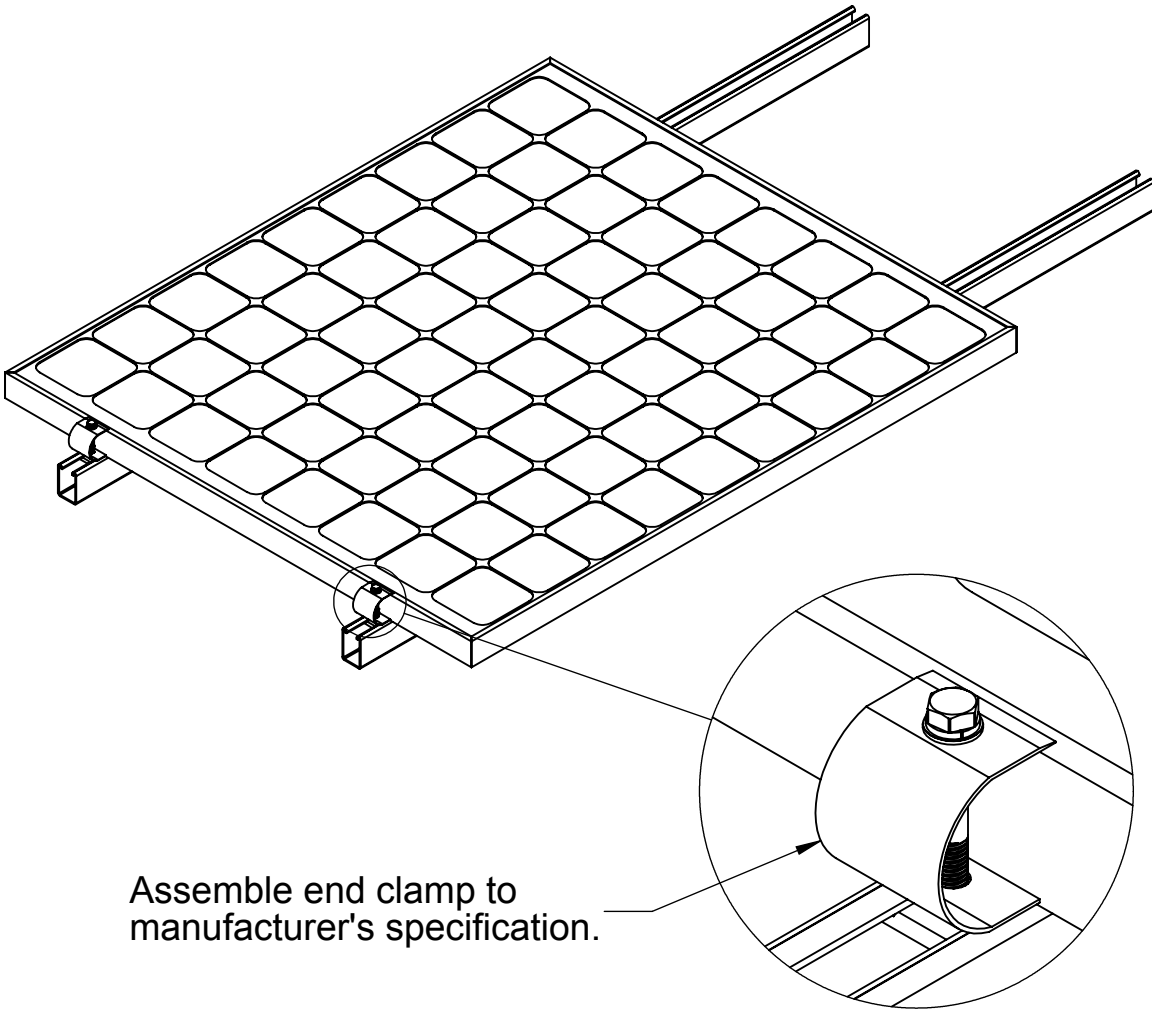
WEEB-WMC ASSEMBLY

1



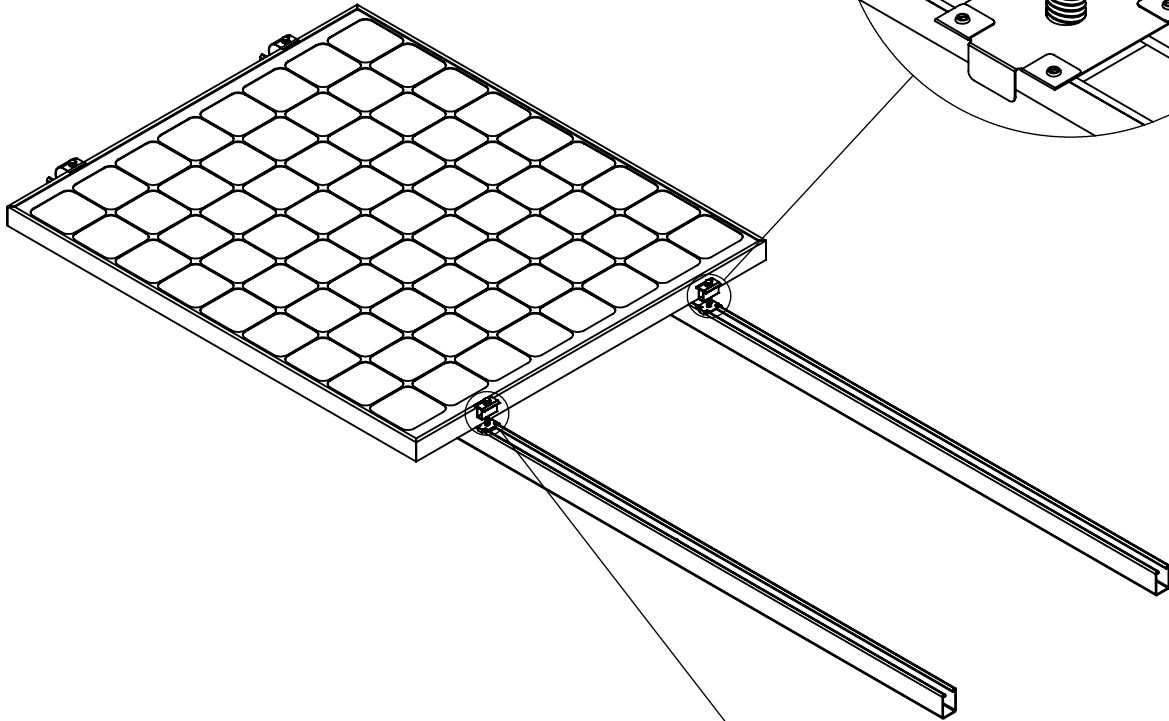
Pre-assemble WEEB-WMC to mid-clamp assembly as shown. Pre-assembling WEEB-WMC to mid-clamp assembly will contain the small individual parts, reducing the possibility of losing parts during installation.

2

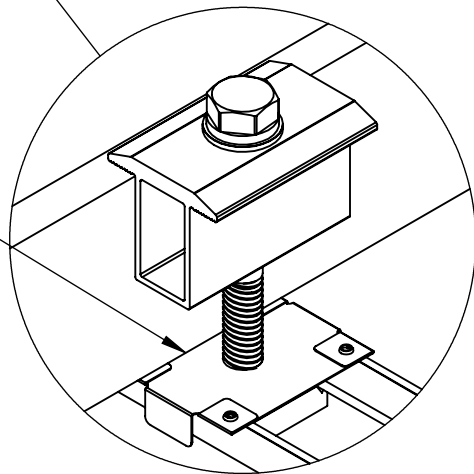


3

Slide pre-assembled WEEB-WMC and mid-clamp assembly into position.



Slightly lift solar module and slide WEEB-WMC and mid-clamp assembly into position. WEEB teeth will automatically be aligned under the edge of the module when the mid-clamp assembly is correctly installed.



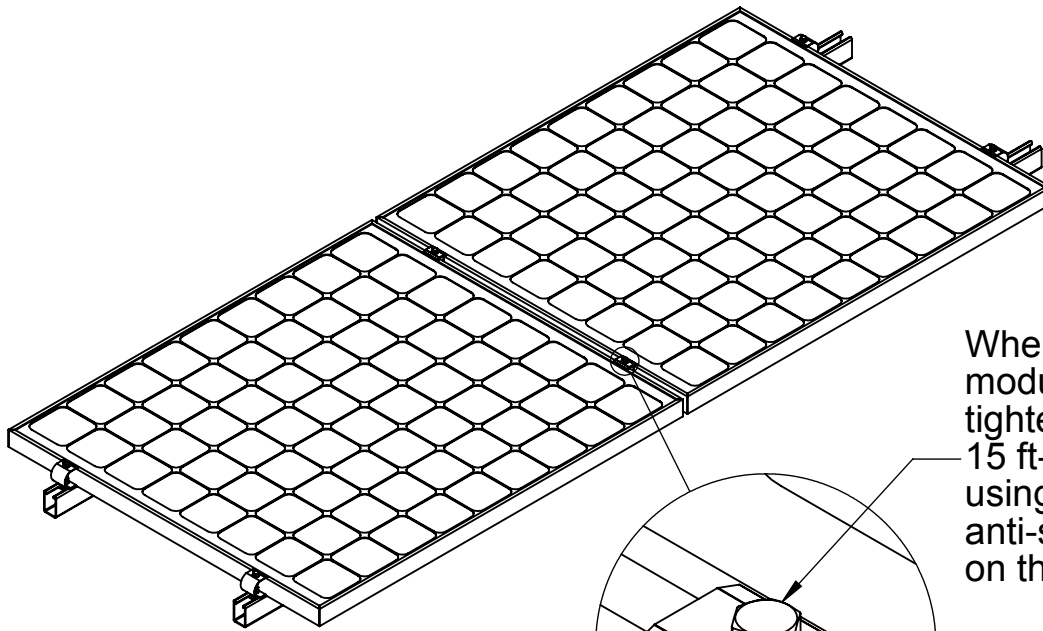
Important Note:

To correctly install WEEB-WMC, ensure the modules fully cover the WEEB teeth. If the module frame does not fall flat on the teeth than the WEEB may not create a safe and proper bond. Check with the module manufacturer for any additional installation requirements.

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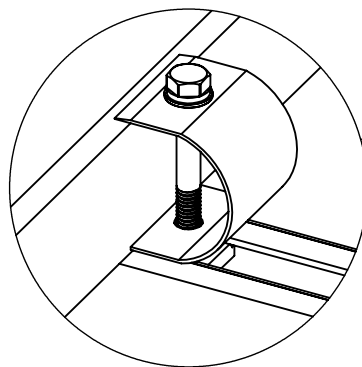
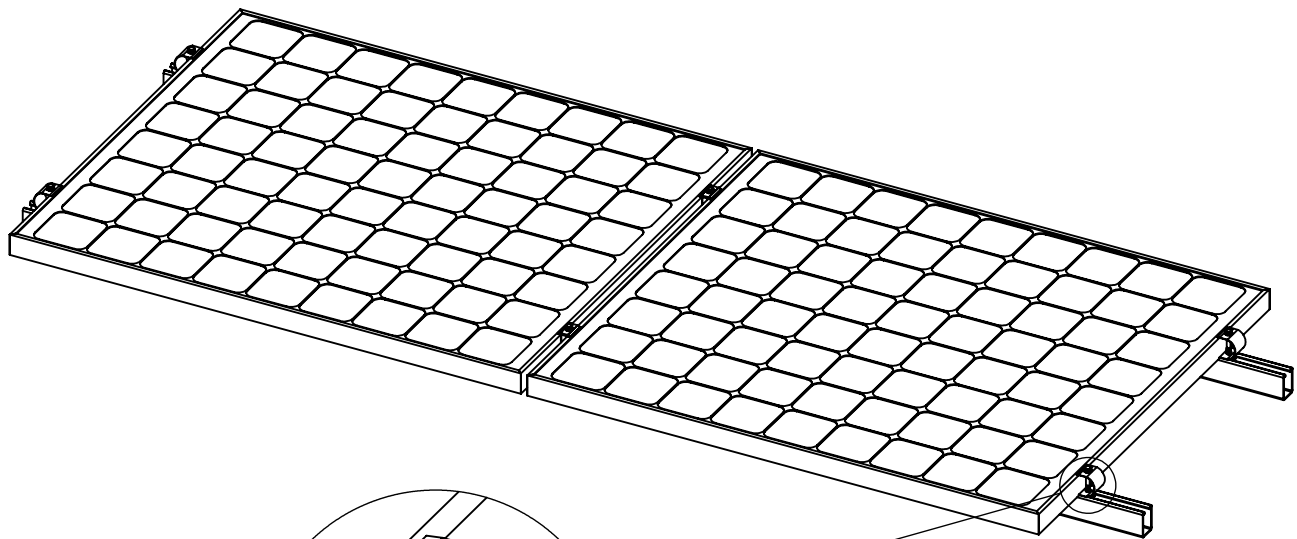
Important note:

WEEBs are for **SINGLE USE ONLY!** Do not torque fasteners down if position of solar modules is not finalized. Only slightly tighten fasteners to keep modules in place.



When position of solar modules is finalized, tighten fasteners to 15 ft-lb / 20.5 N-m using general purpose anti-seize compound on threads.

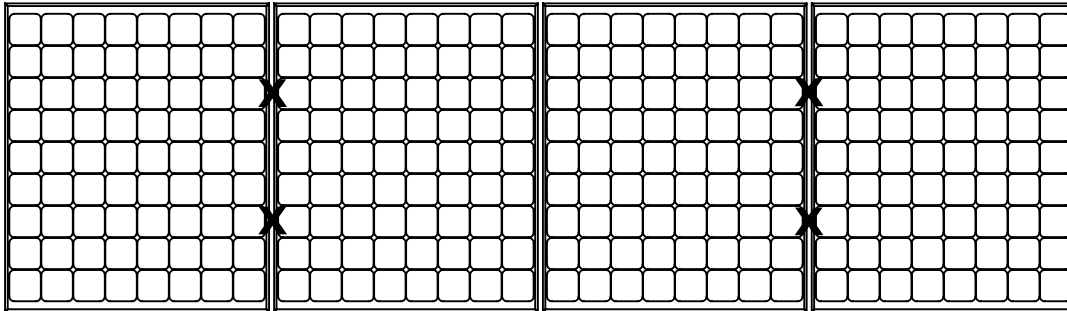
⑤



WEEB-WMC LAYOUT

⑥

EVEN NUMBER OF MODULES IN ROW

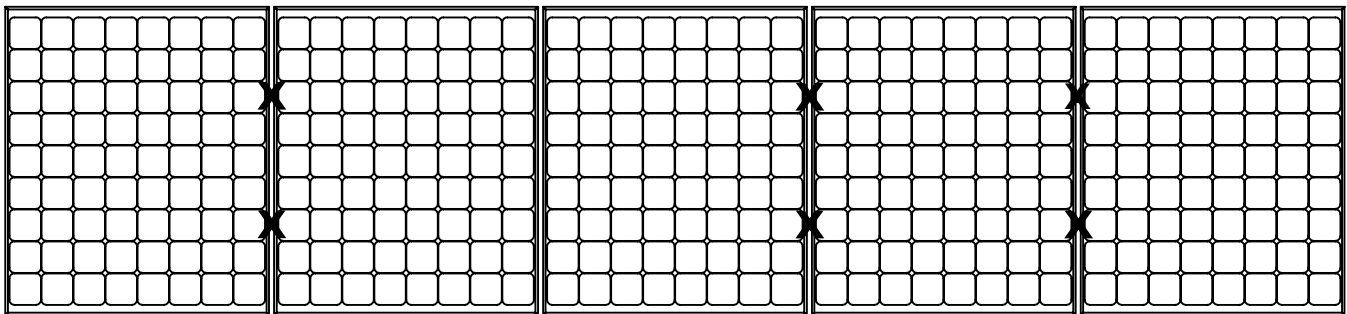


X DENOTES PLACES TO INSTALL WEEB-WMC

$$C \times R = 4 \times 1$$

$$\text{WEEB-WMC NEEDED} = C \times R = 4 \times 1 = 4$$

ODD NUMBER OF MODULES IN ROW



X DENOTES PLACES TO INSTALL WEEB-WMC

$$C \times R = 5 \times 1$$

$$\text{WEEB-WMC NEEDED} = [C+1] \times R = [5+1] \times 1 = 6$$

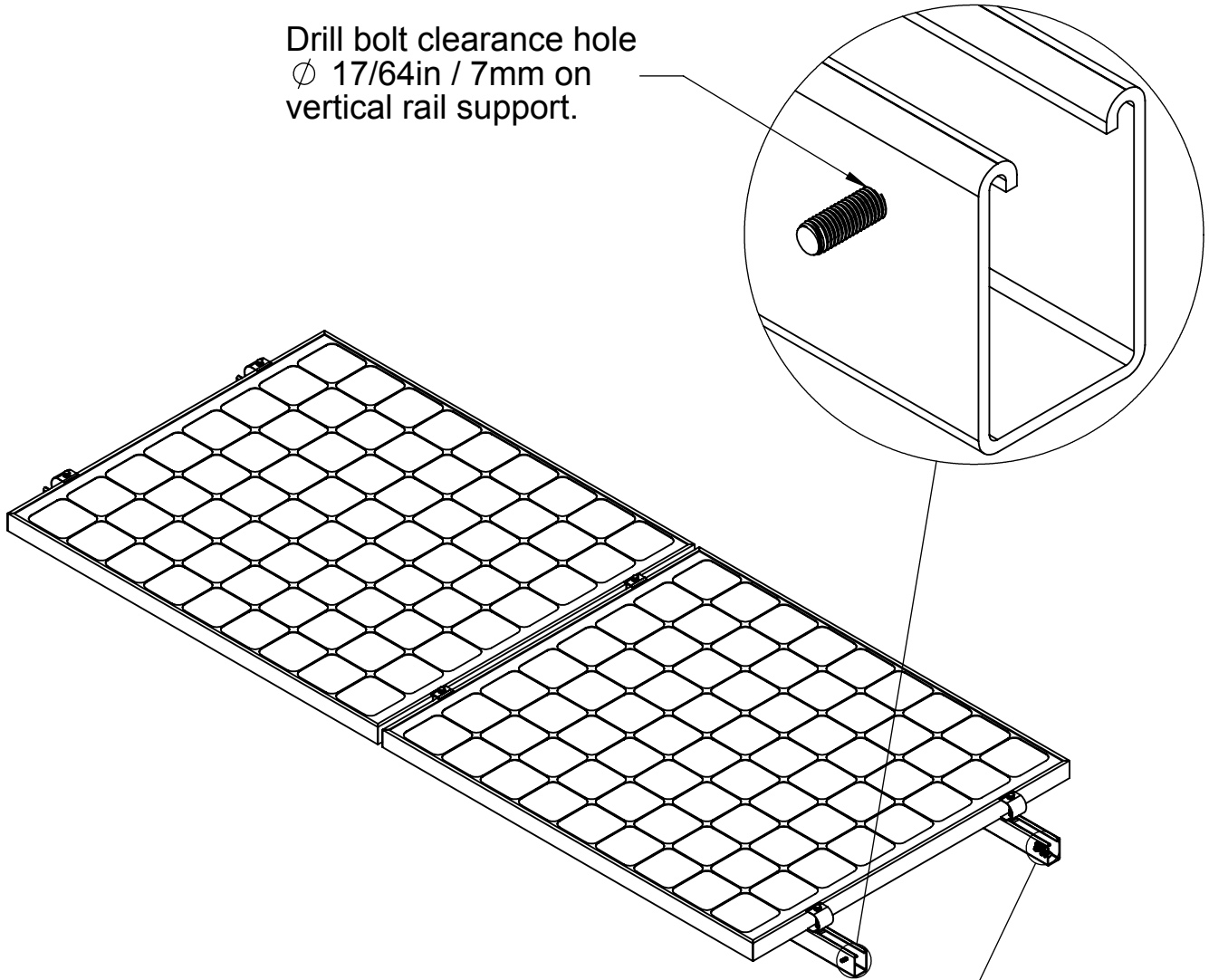
Note:

When replacing a single faulty module, also remove the adjacent module which contacts the same WEEBs as the faulty module. This will ensure that there are never ungrounded modules in the array.

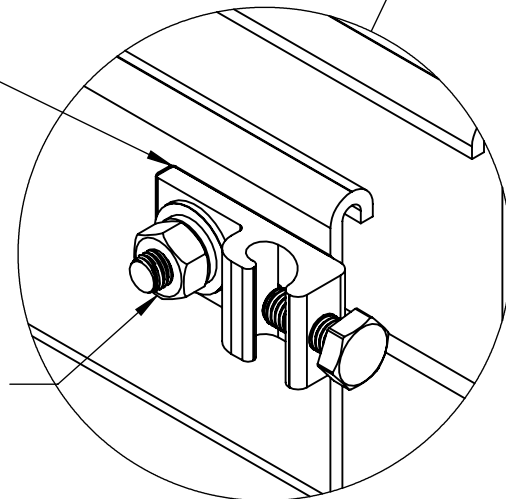
WEEBLUG ASSEMBLY

7

Drill bolt clearance hole
 ϕ 17/64in / 7mm on
vertical rail support.



WEEB teeth towards rail

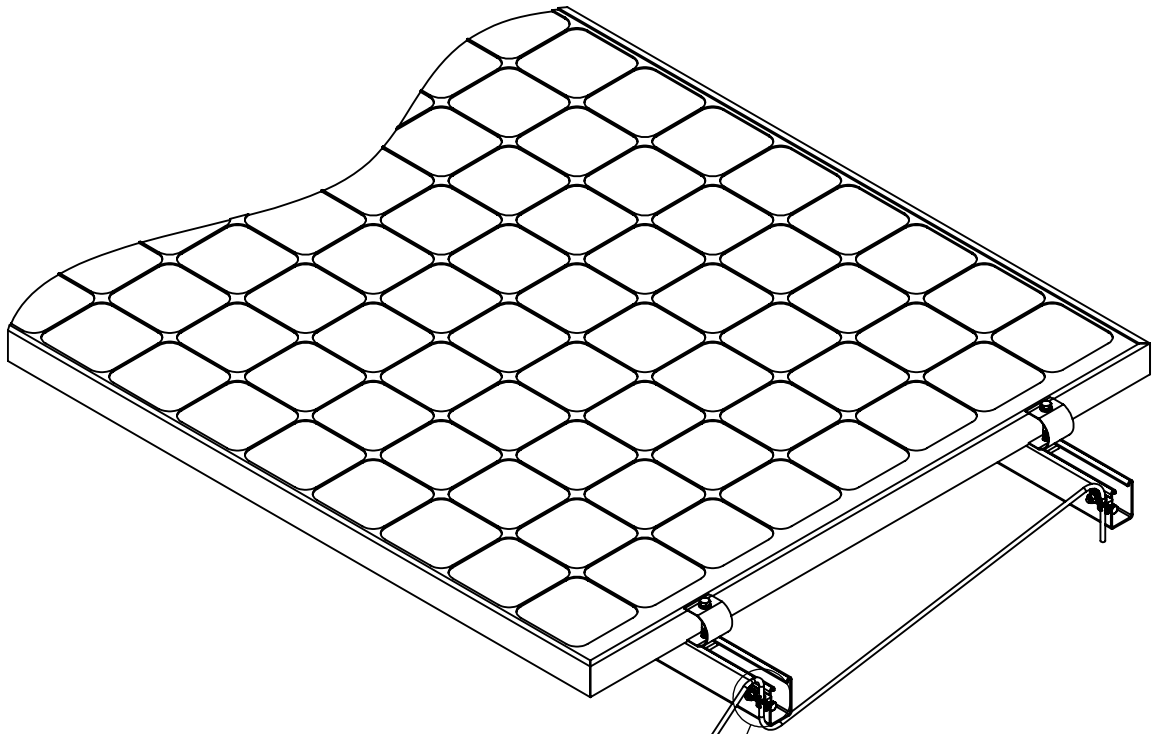


Assemble WEEBLug-6.7 assembly and
tighten fasteners to 10 ft-lb / 13.5 N-m,
using general purpose anti-seize on
threads.

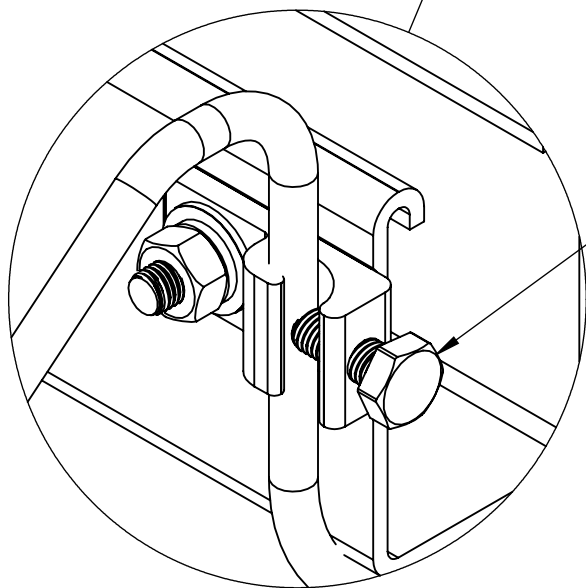
Important note:

**WEEB-6.7 that sits under the WEEBLug is for SINGLE USE ONLY!
Ensure position is correct before tightening.**

8



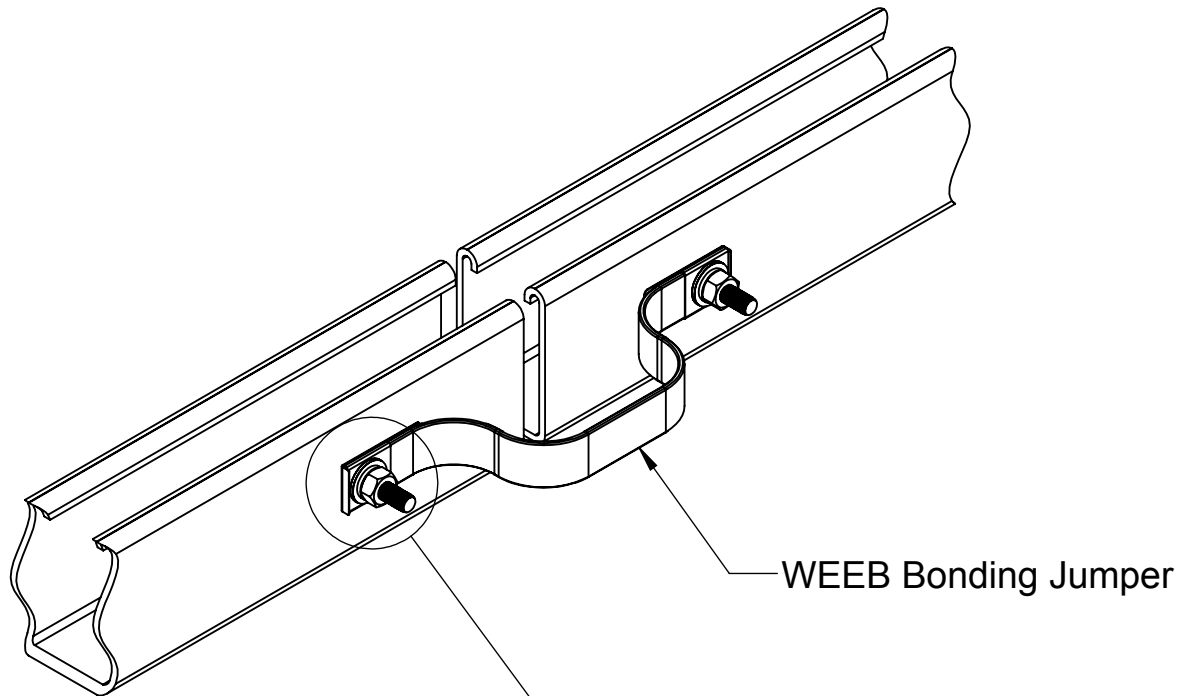
Equipment ground conductor



Lay in equipment ground conductor and torque bolt to 7 ft-lb / 10 N-m

WEEB BONDING JUMPER ASSEMBLY

- ⑨ WEEB Bonding Jumper can be used for all rail splices including expansion joints.



Tighten fasteners
to 10 ft-lb / 13.5 N-m
using general purpose
anti-seize compound
on threads.

