SIMPLERACK
SR-X°

INSTALLATION MANUAL

PV MOUNTING SYSTEM FOR FLAT CONCRETE ROOFS
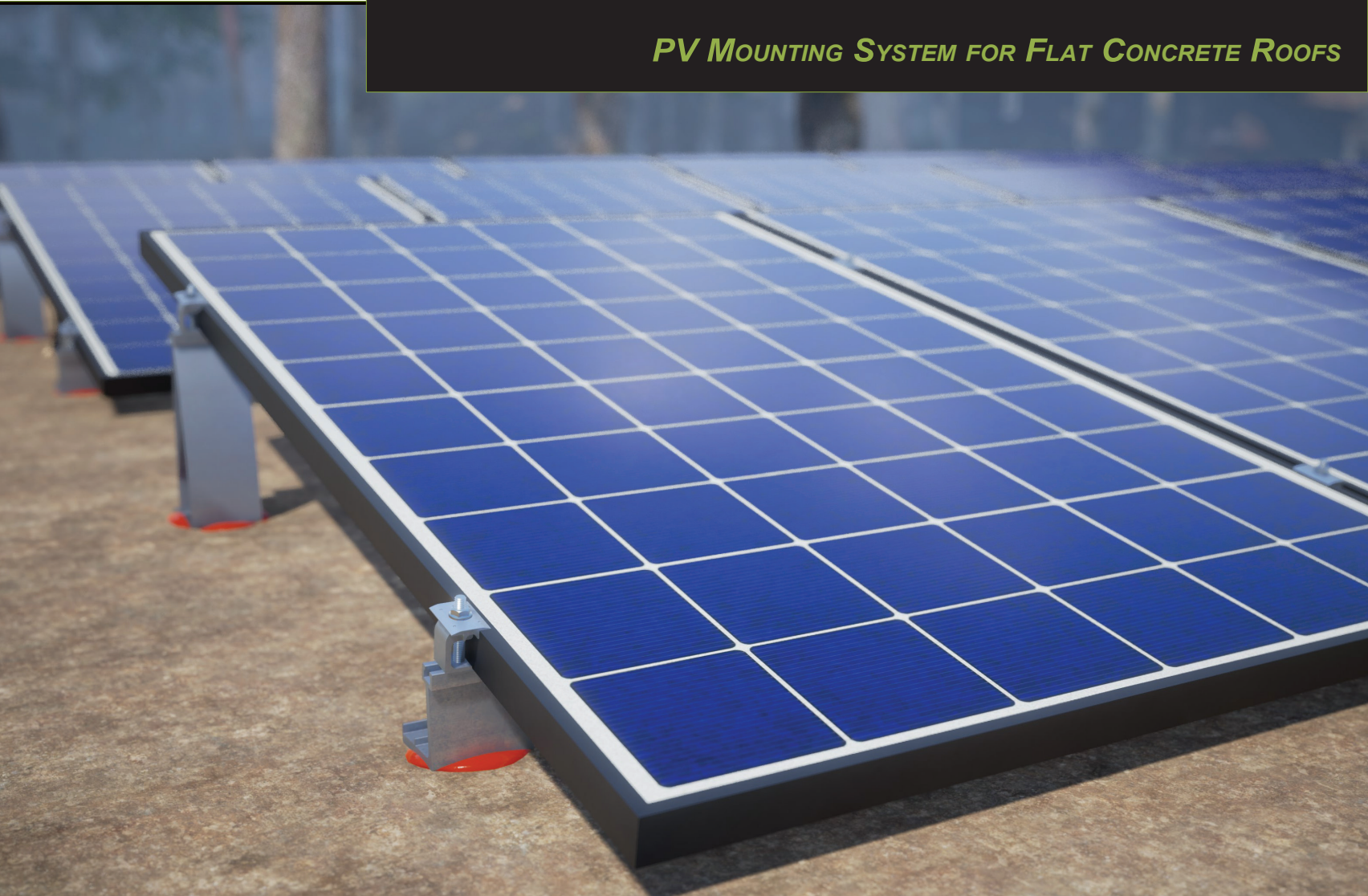
EcoFasten Solar®

EcoFasten Solar®
Committed to the connection

Contents

SimpleRack SR-X°

Designed with the installer in mind.

EcoFasten Solar specializes in solar roof attachments that are fast and easy to install, straightforward, secure and cost-effective. EcoFasten offers a wide variety of standard products as well as custom solutions, for a one-stop source for all of your rooftop anchoring needs. Products are rigorously tested and approved above and beyond industry standards in-house and by third party agencies. EcoFasten's patented conical sealing system has been in service in the snow guard and solar industries for two decades.
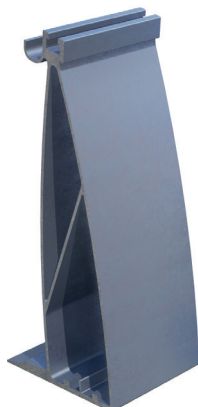
Features

- Designed specifically for flat concrete roofs
- Fast, easy to install fixed-position mounting
- Integrated electrical bonding
- Accommodates low profile & high profile mounting
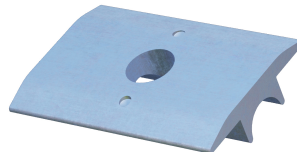- SIMPLE- minimal components

System Components
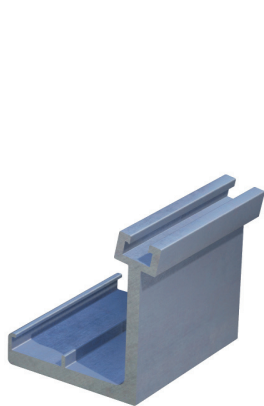
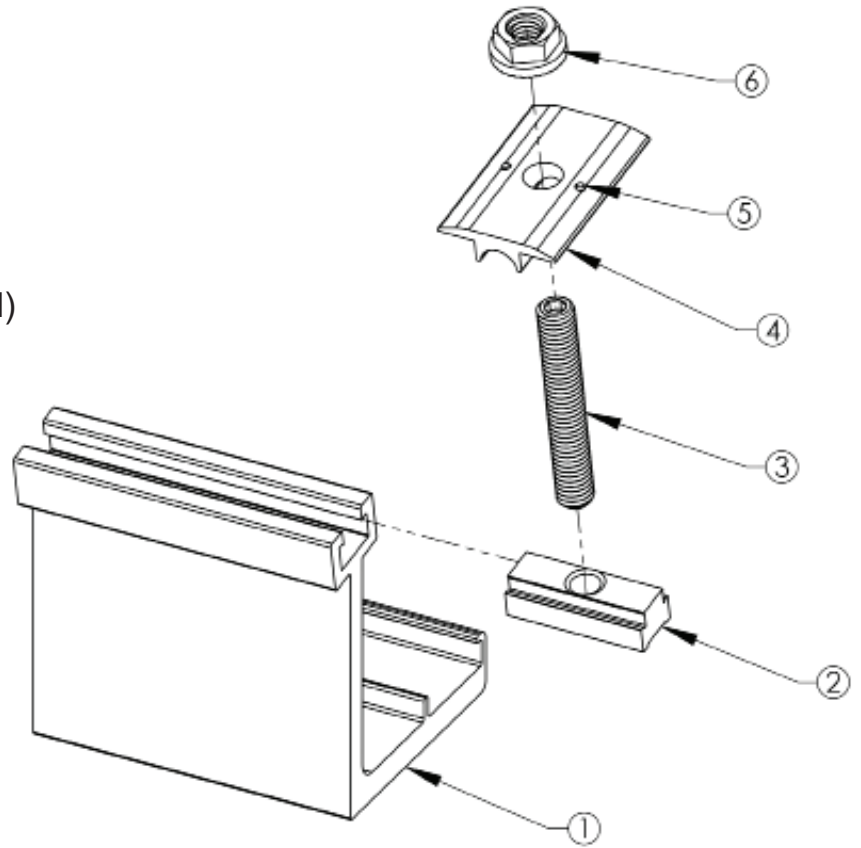| SR-X° LEG - S (Short) | SR-X° LEG - T (Tall) | SR-X° MID-CLAMP | SR-X° END SPACER 32mm, 35mm or 40mm | SR-X° LEG EXTENSION (optional) |

EcoFasten Solar®

SimpleRack SR-X° Leg - S Assembly

1   SR-X-S-BRKT 6000 Series AL

2   SR-X-T-NUT-AL 6000 Series AL

3   SET-C SS-.375-16X2.5 300 Series SS

4   SR-X-MIDCLAMP 6000 Series AL

5   SETPIN-SS 300 Series SS (pre-installed)

6   N-FL SS-.375-16 300 Series SS

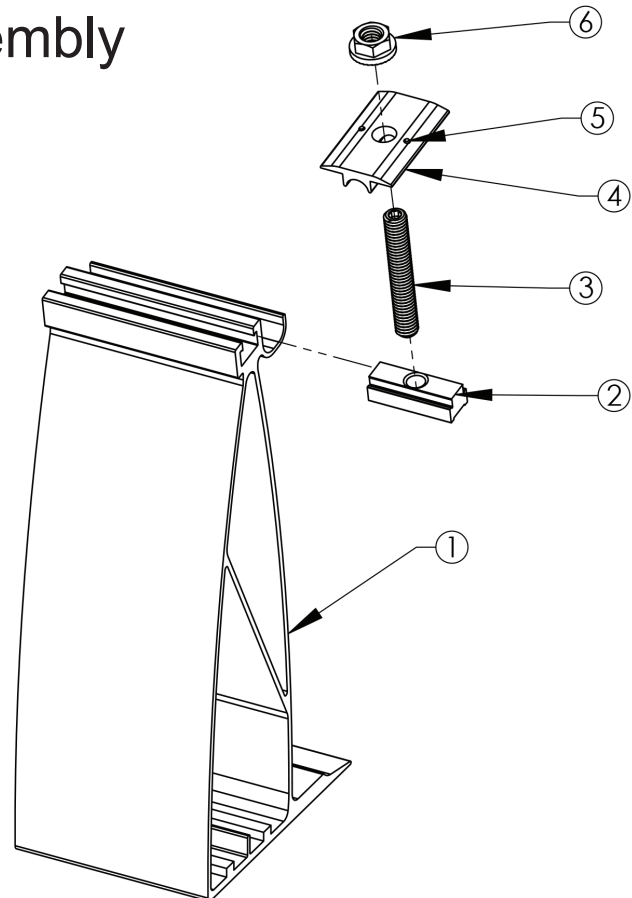# SimpleRack SR-X° Leg - T Assembly

1   SR-X-T-BRKT 6000 Series AL

2   SR-X-T-NUT-AL 6000 Series AL

3   SET-C SS-.375-16X2.5 300 Series SS

4   SR-X-MIDCLAMP 6000 Series AL

5   SETPIN-SS 300 Series SS (pre-installed)

6   N-FL SS-.375-16 3
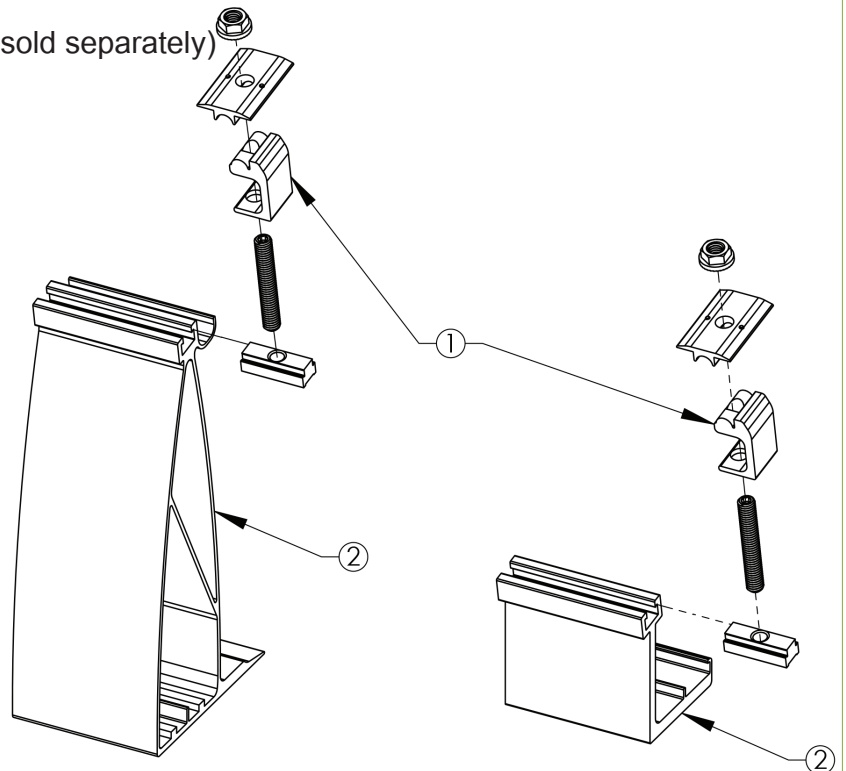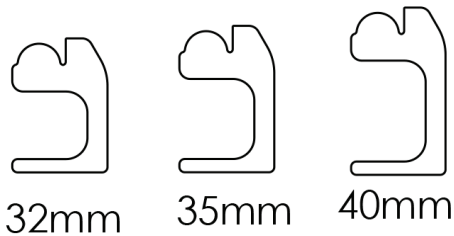
SimpleRack SR-X° Leg Extension Assembly

1 SR-X-EXTENSION 6000 Series AL

2 N-FL SS-.375-16 300 Series SS

3 SET-C SS-.375-16X2.5 300 Series SS
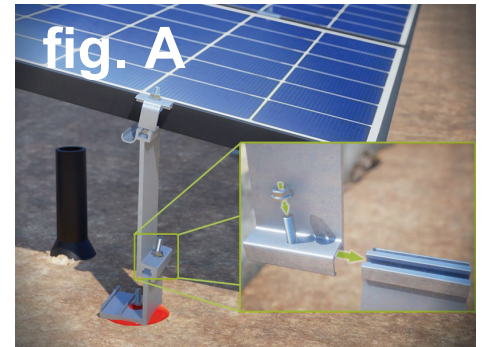
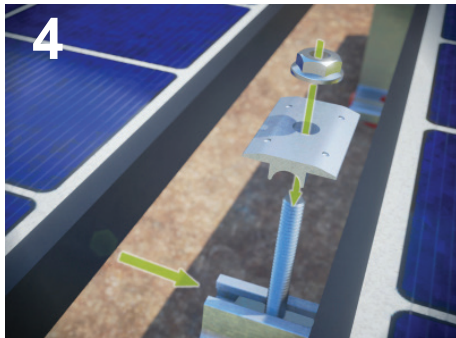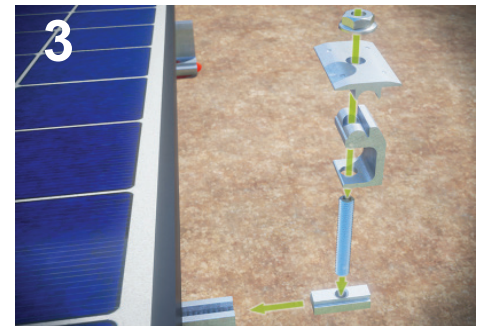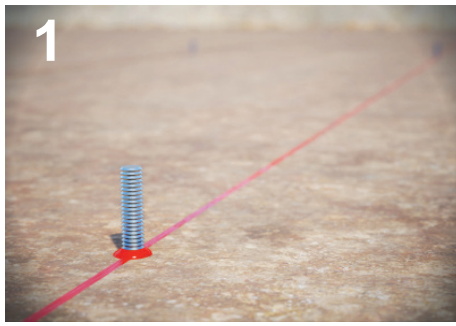**4** SR-X-T-NUT-AL 6000 Series AL
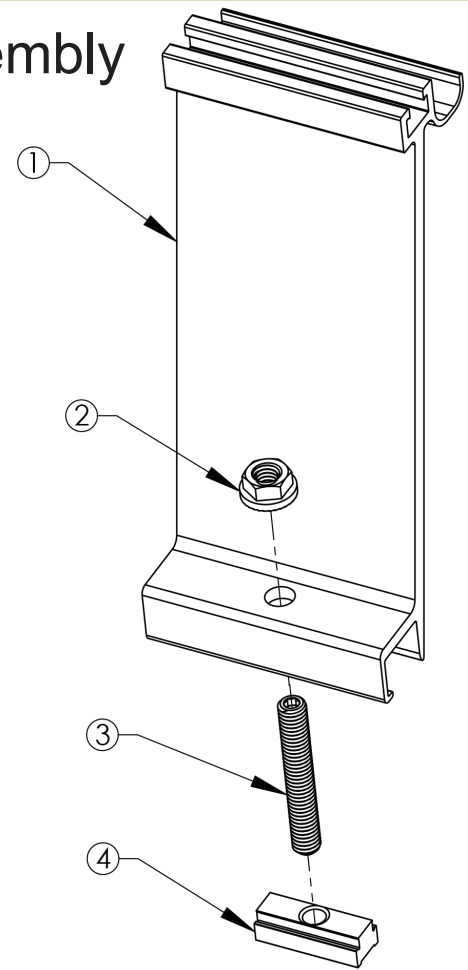
SimpleRack SR-X° End Spacer Assembly

1 SR-X-END-32, SR-X-END-35, SR-X-END-40 6000 Series AL

2 SR-X-LEG-T, SR-X-LEG-S 6000 Series AL (sold separately)

32mm   35mm   40mm

SimpleRack SR-X° Install

fig. A

Step 1   **System Layout**

•Lay out and install roof compatible concrete anchors using epoxy/construction adhesive.

•E-W anchor spacing is equal to module length plus 1/2".

Step 2   **Install All Legs**

•SR-X° Leg-T is always installed at the back of the module to ensure the proper slant (see image 5 for reference).

•Spacing between Leg-S and Leg-T will be approximately 38" in portrait orientation, depending on module size and mounting locations.

•Epoxy should be used on the bottom of each leg. Place over anchors.

•Place Bonded Washer and Flange Nut over anchor. Torque to 200 in-lb.

•Epoxy should be used around Flange Nut.

Step 3   **Install End Spacers and Clamps**

•Once all legs are installed, install a SR-X° End Spacer (32MM, 35MM or 40MM) on the end of the first row, clamping to the modules as you go. Torque to 200 in-lb.

Step 4   **Install Mid-Clamps**

•Mid-clamps are to be placed between adjacent modules. Torque to 200 in-lb.

•Mid-clamps are compatible with all module frames.

Step 5   **Install End Spacers and Clamps on Opposite End of Row**

•Repeat step 3.

•Follow the above steps for each subsequent row.

Optional Extension Installation (fig. A)

•If additional height is needed to clear roof vents, pipes or other roof obstructions, the use of SR-X° Leg Extensions will be needed on entire row in order to reduce shading of adjacent panels.

•Extensions slide over the T-Slot section of each leg.

•Install end spacers, clamps and modules in same fashion as steps 3-5.

•Additional spacing between rows may be needed when using Extensions.

Grounding Lug Install
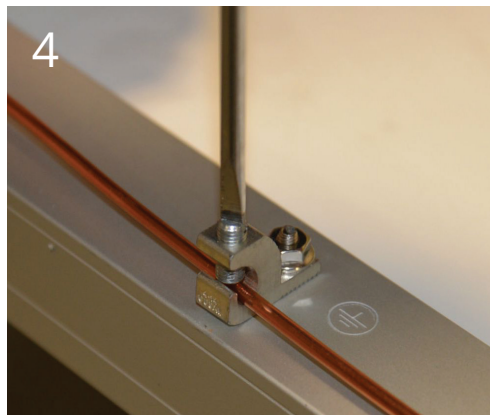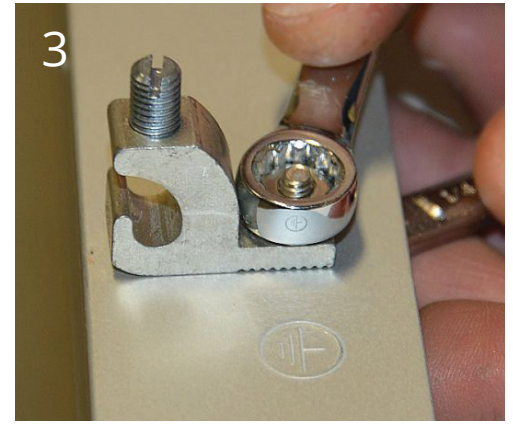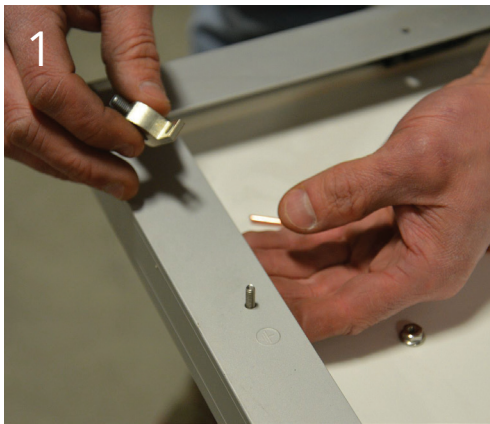
Necessary Components:
- Burndy CL50-1TN Ground Lug (UL Listing #KDER.E9999)
  Note: Drill and deburr hole in Ground Lug prior to installation
- 14 AWG - 4 AWG Copper Ground Wire*
- 8-32 x 0.5" Serrated Flange Head Bolt (300 Series SS)
- 8-32 Serrated Flange Nut (300 Series SS)
- 11/32" and 1/4" wrenches or ratchets/sockets

1 Insert the flange bolt into the module ground hole. Place Ground Lug over the bolt and turn to desired orientation.
2 Install Flange Nut.
3 Tighten Flange Nut/Bolt.
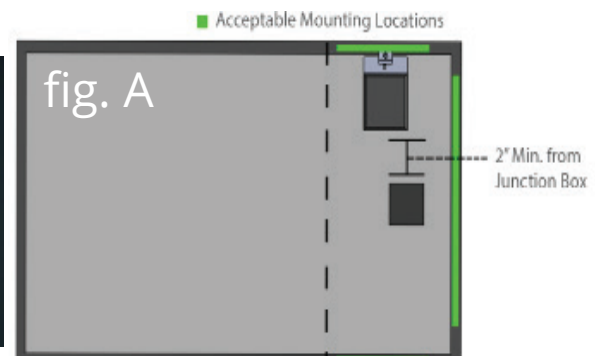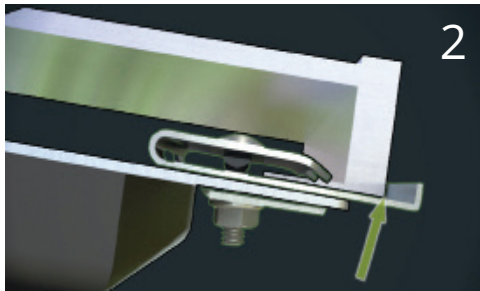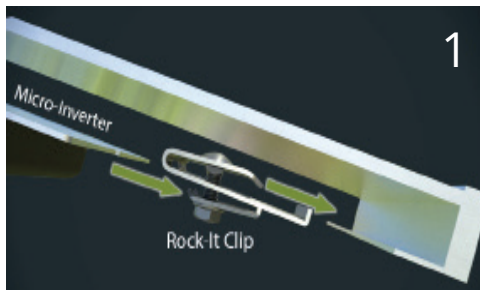**4** Place wire in Ground Lug channel and tighten set screw to complete assembly.
   Torque Values:
   14-10 AWG= 20 in-lbs.
   8 AWG= 25 in-lbs.
   6-4 AWG= 35 in-lbs.
*Minimum of 1/4" clearance required between bare copper wire and aluminum.

Rock-It Inverter Clip Install (Optional)

fig. A

1 Locate all parts
   • Locate the Rock-It Clip SS, micro-inverter/power optimizer, and the section of the module frame in which you will be mounting the micro-inverter/power optimizer. See fig. A for acceptable mounting locations.

2 Install the Rock-It Clip SS
   • Slide the Rock-It Clip SS onto the lip of the module frame.
   • Slide the micro-inverter/power optimizer into the opposite lip of the Rock-It Clip SS.
   • Tighten the bolt to 20 ft-lb to clamp the Rock-It Clip SS to the module frame and the micro-inverter/power optimizer to the Rock-It Clip SS.
   • Ensure that the lip on the clip is tight against the frame and that the micro-inverter/power optimizer flange is tight against the Clip flange to avoid rotation during tightening.

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Grounding Information

The SimpleRack SR-X° System may be used to mount and ground PV modules that comply with UL 1703, only when that specific module has been evaluated for mounting and grounding, in compliance with the included installation instructions.

Note: Grounding lug must be visible to inspectors from the entire perimeter of the PV array.

Multiple Use Grounding Pins

Grounding pins within the Mid-Clamp are multiple use bonding/grounding devices. Modules will need to be adjusted if the Mid-Clamps are loosened to ensure there is "new" metal for the grounding pins to pierce into upon retightening.

Grounding Method

Each row of modules bonds E-W through the Mid-Clamps and End Clamps.
One Burndy CL50-1TN ground lug is required per row of modules, limited to 300 modules, placed in portrait orientation.

Bonding Assembly and Bonding Path

─── Bond Path

● Grounding Lug

── Equipment Grounding
Conductor (EGC)-
generally to earth
ground

■ Brackets/Mid-Clamps
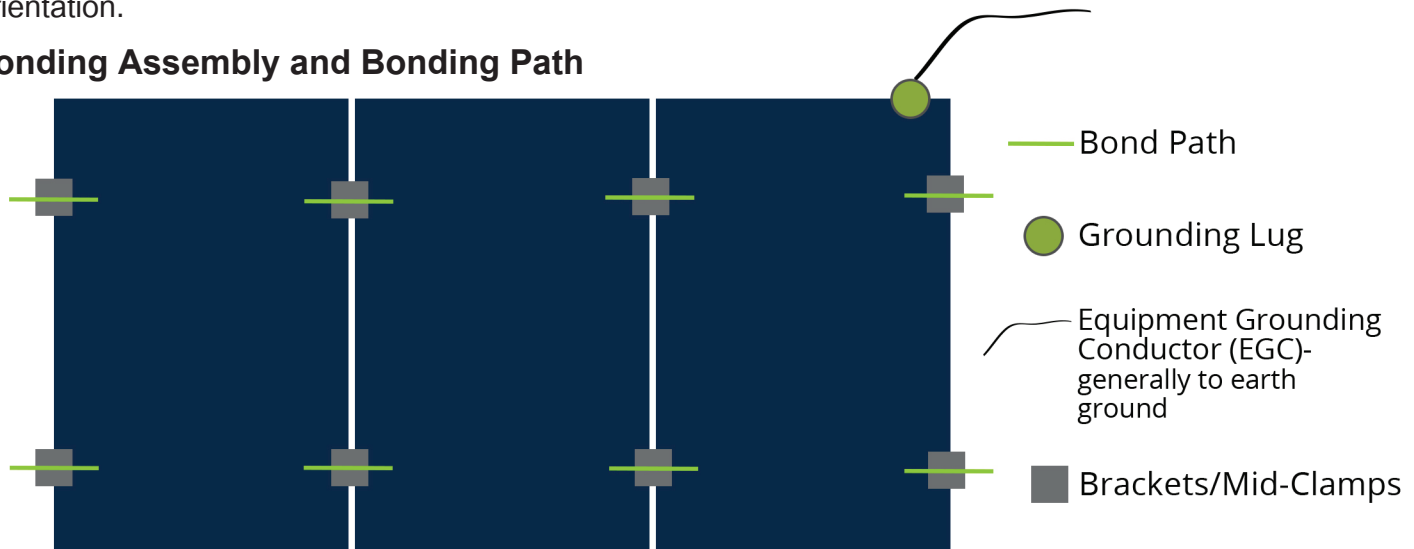
Maintenance Jumper Bonding Path

─── Bond Path

● Grounding Lug

── Equipment Grounding
Conductor (EGC)-
generally to earth
ground

■ Brackets/Mid-Clamps

6
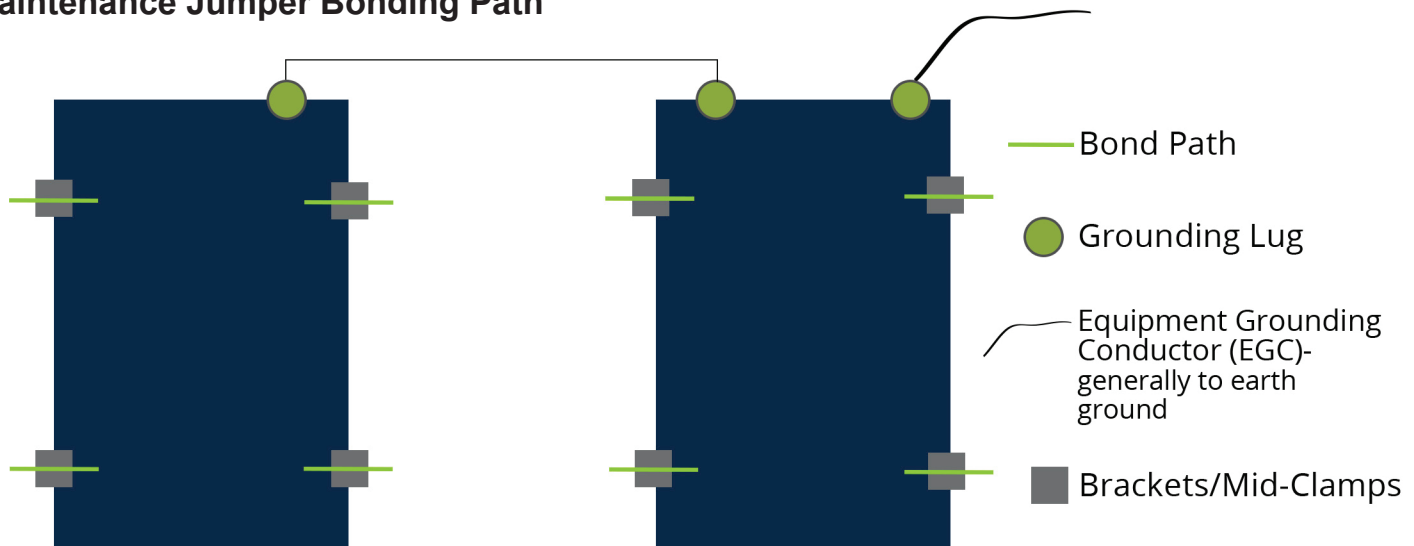
SimpleRack SR-X°

Load Ratings and Approved Modules

Module Manufacturer	Model Type	Downward Pressure (psf)	Upward Pressure (psf)
Hyundai	HiS-SXXXTI	30	30
Hanwha Q Cells	Q.PRO-G4 XXX	30	30
RECOM	RCM-XXX-6-MB	30	30
LG Electronics	LGXXXS1C-B3	30	30
Jinko Solar	JKMXXXP-60	30	30
Boviet Solar	BVM6610P-XXX	30	30

Periodic re-inspection for loose components

The system is subject to re-inspection as required by the PV module manufacturer or by the Authority Having Jurisdiction. Re-inspection, as required, should include evaluation of any loose components or loose fasteners. All loose components and fasteners should be secured in accordance with these instructions. The system should also be evaluated for any evidence of corrosion. Any corrosion should be removed. Any affected part should be cleaned or replaced in accordance with these instructions.

Ratings Details

Test #	SR-X-LEG-S Tension	SR-X-LEG-S Compression	SR-X-LEG-T Tension	SR-X-LEG-T Compression	System Lateral
1	4283 (lb.)	4764 (lb.)	3139 (lb.)	2689 (lb.)	1762 (lb.)
2	4280 (lb.)	4958 (lb.)	2941 (lb.)	2580 (lb.)	2016 (lb.)
3	4500 (lb.)	4341 (lb.)	2910 (lb.)	2506 (lb.)	1890 (lb.)
4	4510 (lb.)	4302 (lb.)	2937 (lb.)	2806 (lb.)	1934 (lb.)
Average	**4393 (lb.)**	**4591 (lb.)**	**2982 (lb.)**	**2645 (lb.)**	**1901 (lb.)**

*The SimpleRack SR-X° is not fire rated