Sollega™

The Simple Solar Racking Solution™

Installation Manual
For Framed Thin Film Modules*

* Ask us about compatibiltiy with Sollega InstaRack system.

Introduction

Our mission is to provide the easiest to install and most cost effective solar mounting solution available. Our goal is to enable the installation of solar PV on every suitable roof in the world.

Sollega simplifies and accelerates the adoption of solar energy technologies by reducing the mounting and installation costs associated with solar arrays. We provide the simplest solar mounting systems on the market, reducing labor, time and project costs.

As the solar industry has grown, we have seen the cost of solar panels come down. We see installation and labor as the logical next steps to reducing the cost of PV. Our mounting systems minimize on-roof assembly and utilize industry standard, readily available attachment hardware. Our systems are quick to install and maximize available roof space.

Company Profile

Sollega designs, tests and manufactures solar mounting solutions serving the US market. The InstaRack is a patent-pending high-efficiency solar racking system that is one-piece, pre-formed stand made from durable lightweight high density polyethylene plastic (HDPE). It utilizes a UV inhibitor for durability and extended life (25-year Warranty). This durable material uses a minimum of 35% recycled content, resulting in a lower carbon footprint than conventional energy intensive aluminum racking systems. We source and manufacture our products entirely in the USA and the InstaRack is ARRA compliant.

Sollega racking systems are compatible with most common solar panels on the market today. Our universal design enables the installation of nearly any type PV modules. This ensures our clients can continue using their existing supply chains for modules.

With offices in San Francisco and New York, we welcome you to let us know how we can best serve your needs and look forward to providing you the highest quality, lowest cost solar racking solutions available.

Sincerely,

Elie Rothschild, CEO

Important Installation Details

Always use all four attachment points on the InstaRack when attaching strut. (Two holes in the tower section and one on each embedded strut in the toe section.)

If strut is sourced locally, the minimum requirements are to use 1-5/8" x 1-5/8" 12-gauge pre-galvanized (or hot-dip galvanized) steel slotted channel, following ASTM A-366 and ASTM 653 (or ASTM-123-09). If any strut is cut, apply a coat of galvanizing compound spray to the area that is cut. We recommend using Rust-Oleum Enamel Aerosols product number V2185838 - Cold Galvanizing Compound or an equivalent product.

Sollega uses DURA-CON AFS hardware for bolts, washers, and nuts. Contact Sollega for Stainless Steel pricing.

Material Expansion Requirements. Always leave room for expansion of materials. When placing two pieces of strut end to end on the InstaRack there should be a gap with a minimum of an 1/16" to compensate for expansion. Additionally, when attaching modules without intermodule clamps, ensure there is a gap with a minimum of an 1/16" between the modules to compensate for expansion.

Installation Tips. Install Windscreen Brackets (SL5) and Roof Stanchion Brackets (SL6) BEFORE modules are attached.

Ballast Requirements

Follow all current and applicable codes, such as ASCE 7-05. For assistance with ballast requirements for a specific project, contact engineering@sollega.com.

The roof pavers (a.k.a. ballast blocks or CMUs) should have dimensions of 16" x 8" x 4" with a weight of 27 to 33 lbs. (Fig 1), unless otherwise noted. Pavers should have a minimum net area compressive strength of 3000 psi or must comply with ASTM Designation C1491. Please visit www.sollega.com/ballast for details on where to source roof pavers near your particular location.

Whenever there is a potential for the pavers to slide or move, such as in high seismic areas, pavers must be tied down with metal bailing wire. Use the drainage holes on the sides of the InstaRack to attach 16 gauge galvanized bailing wire to all ballast blocks (Fig 2).

- Maximum Number of Pavers per InstaRack – 6
- Maximum Number of Pavers per Ballast Tray – 8

In some cases, depending on the geometry of the module, the frame might hit the top layer of blocks on the InstaRack. If necessary, stagger the top layer of blocks by pushing it 1" back so that the northern top block touches the tower section.

Tools Required

- 1/2" socket and 1/2" box wrench
- Socket wrench or cordless drill with clutch setting

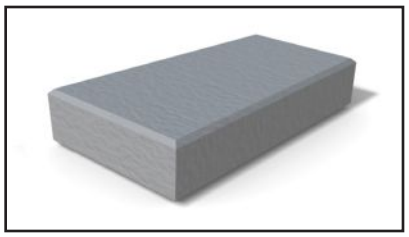


Figure 1: Standard Roof Paver
27 to 33 lbs, 16" x 8" x 4"

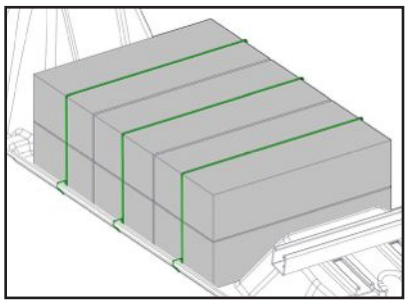


Figure 2: Bailing Wire (green) on Pavers

The installer is solely responsible for:

- Utilizing all necessary safety equipment, as required by applicable rules and regulations or as required by common sense
- Complying with all applicable local or national building codes, including any that may supersede this manual
- Ensuring that the Sollega InstaRack and other products are appropriate for the particular installations and are designed for the installation environment
- Ensuring that the roof, its rafters, connections, and other structural support members can support the array under live load conditions
- Ensuring that lag screws used for roof anchoring have adequate pullout strength and shear capacities
- Maintaining the waterproof integrity of the roof including selection of appropriate flashing
- Ensuring safe installation of all electrical aspects of the entire system
- Following the roofing manufacturer's installation procedure and guidelines before beginning the installation.

Disclaimer of Liability

SOLLEGA does not assume responsibility and expressly disclaims liability for loss, damage, or expense arising out of, or in any way connected with installation, operation, use, or maintenance by using this manual.

SOLLEGA assumes no responsibility for any infringement of patents or other rights of third parties, which may result from use of modules. No license is granted by implication or under any patent or patent rights. The information in this manual is believed to be reliable, but does not constitute an expressed and/or implied warranty.

SOLLEGA reserves the right to make changes to the product, specifications, data sheets and this manual without prior notice.

This document is not prescriptive regarding safety and does not purport to address all the safety concerns that may arise with its use. Contractors should become familiar with all applicable safety, health and regulatory requirements before beginning work.

Electrical Safety

Any work done with PV and electrical equipment presents a shock hazard. Sollega InstaRack is a mechanical solar mounting system and contains no "live" parts. Mechanical installers and electricians should coordinate in order to ensure that all personnel are aware of electrical hazards.

Assembly Modifications

Unauthorized field modification of Sollega components or assemblies may affect Sollega warranty coverage. Provide written drawings for Sollega's review, comment and approval prior to attempting any field modifications. Also, follow the requirements listed in the System Layout Guidelines.

General Information

The installation of solar modules requires a great degree of skill and should only be performed by qualified licensed professionals, including, without limitation, licensed contractors and electricians.

The installer should be familiar with construction standards established by the Occupational Safety and Health Administration (OSHA).

Plan for safe practice during any installation activity with respect to hazards from tripping, falling, lifting, repetitive stress, and any overhead or electrical hazards. When working close to building roof edges, consider protection options that reduce worker exposure to fall hazards. Refer to OSHA Sub Chapter 7, Group 1, Article 2.

Sollega InstaRack is made from High-Density Polyethylene (HDPE) and has the UL material rating UL 94-HB. The embedded strut in the InstaRack is hot dipped galvanized steel and the hardware embedding the strut is stainless steel. When used as described in this installation manual, these materials are considered to be nontoxic.

Project Specific Design Modifications

On-site workers assisting in the installation process may encounter undocumented or unexpected obstacles requiring a modification of the project system design supplied by Sollega. Since PV arrays are intended to be primarily regular and repeating structures, any modifications to the original design should be noted on working drawings. If the array is disconnected or if the number of rows or length of a row is changed, contact a Sollega engineer for a revised ballast layout.

Care for the Roof

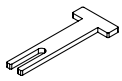
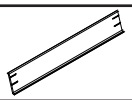
WARNING! Single-ply roofs are not damage tolerant. Avoid accumulation of metal fragments that result from drilling or sawing metal components. Metal fragments embedded in the soles of shoes can damage single-ply roofs.

The service life of any roof is contingent upon care for the roof especially during equipment installation on a roof. Avoid concentrated loads on the roof. Never drag components into place. Instead, elevate the component, and then move it manually or with a cart. Locate it and then place it "on spot." To ensure roofing system warranty continuation, work with roofing contractors to ensure roofing system and array compatibility.

Final inspection

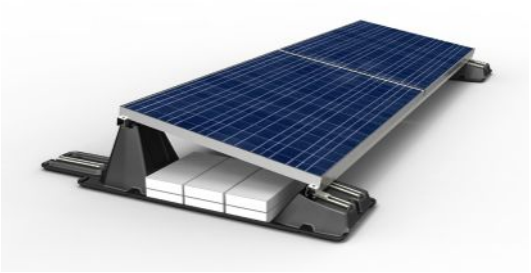
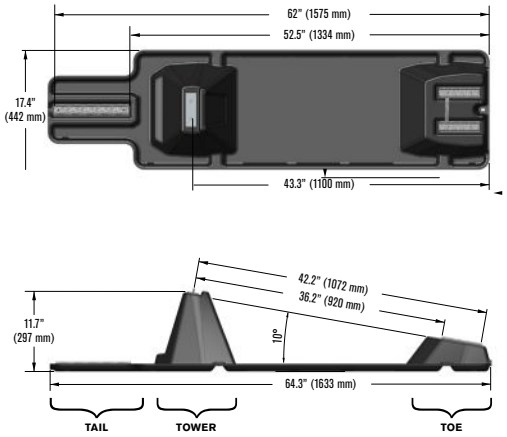
Visually inspect assembled arrays. The suggested process consists of a row-by-row walk-through and then a perimeter walk-around, after mechanical assembly, before electrical completion. Report any distortion in the assembly to Sollega. Array substrate supports should be in full contact with the roof or the ground. Any indication of uneven distribution of weight should be evaluated and corrected before continuing with electrical finishing.

Parts List

PICTURE	REF #	PART NAME	DESCRIPTION
		Slotted Strut	12 GA. 1-5/8" x 1-5/8" HDG[2] or PG[3] channel (11' length - typical)
	T	Channel Nut	5/16"-18 thread top spring nut
	B	5/16" x 7/8" Hex Bolt	5/16"-18 thread x 7/8" length bolt
	B4	5/16" x 2-3/4" Hex Bolt	5/16"-18 partially thread x 2-3/4" length bolt
	N	5/16" Locknut	5/16"-18 thread flange hex locknut
	W1	5/16" Fender Washer	5/16" x 1-1/4" OD[4] fender washer
	W2	5/16" Flat Washer	5/16" x 3/4" OD washer
	L	5/16" Lock Washer	5/16" x 1/2" OD split lock washer
	SL5	Windscreen Bracket	Attaches windscreen to rear strut 7" long HDG 12 GA. "L" shaped bracket
	SL6	Stanchion Bracket	Attaches 6" stanchion to rear strut SS[5] 10 GA. bracket with slot and hole
	BW	Beveled Washer	Used in conjunction with corner supports 1.25" x 1.25" and 10 degree bevel. 3/8" Hole diameter
	GC	Grounding Clip	Burndy WEEB-WMC grounding clip
	GL	Ground Lug	WEEBLug-6.5 or equivalent Tin copper ground lug kit (includes SS screw, external tooth lock washer, and lock nut)
	EC	End clamp	End clamp (aluminum or SS)
	IC	Intermodule clamp	Intermodule clamp (SS)
	SL-T75	Spacer	4" x 1.75" Plastic spacer
	SL9	Windscreen	65" long PG steel windscreen

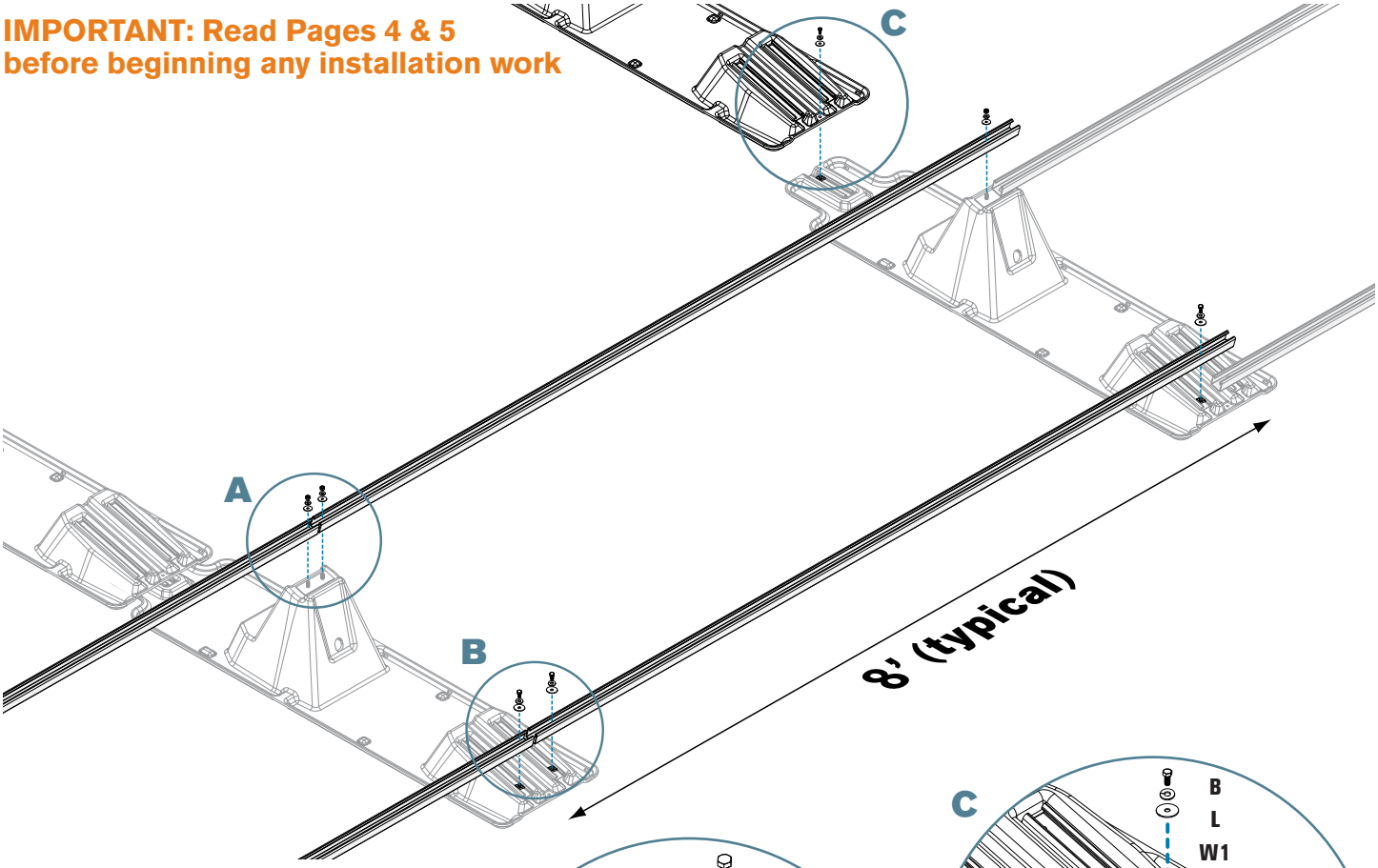
[2] HDG - Hot Dip Galvanized [3] PG - Pre-galvanized [4] OD - Outer Diameter [5] SS - Stainless Steel

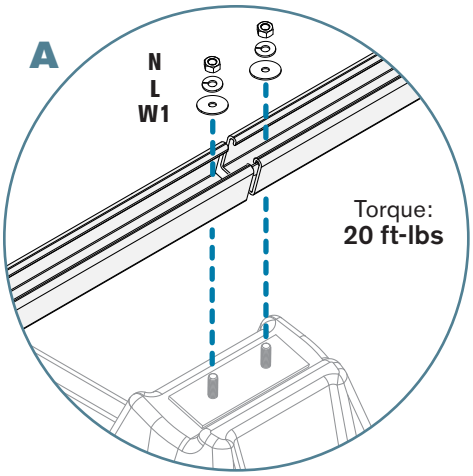
Product Specifications

Product Name	**InstaRack**10™
Product Image	
Tilt Angle	10°
Row Spacing	Up to 62” (1575 mm)
Weight	12 lbs. (5.4 kg)
Ballast Requirements	4” x 8” x 16” roof paver (27 to 33 lbs each) Based on ASTM Designation C1491.
Material	High-Density Polyethylene (HDPE) Minimum 35% recycled content
Module Orientation	Portrait
Wind Load Criteria	Meets ASCE 7-05 up to 120 mph
UL Material Rating	UL 94-HB
Warranty	25 years
Dimensions	(LxWxH) 64.3” x 17.4” x 11.7” 1633 mm x 442 mm x 297 mm
	

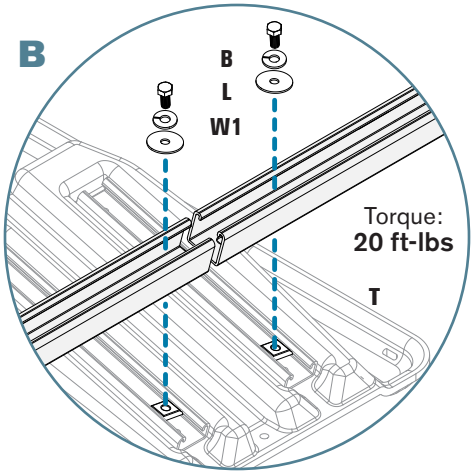
Position InstaRack & Attach Strut

IMPORTANT: Read Pages 4 & 5 before beginning any installation work

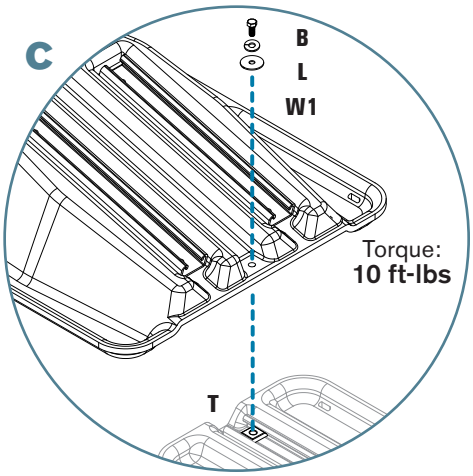




Place the end of the strut over one exposed bolt. Fasten a locknut (N), split lockwasher (L), and fender washer (W1) through the slots in the strut. Attach another piece of strut on the other bolt and ensure a maximum gap of 1/8" between the two ends of strut.

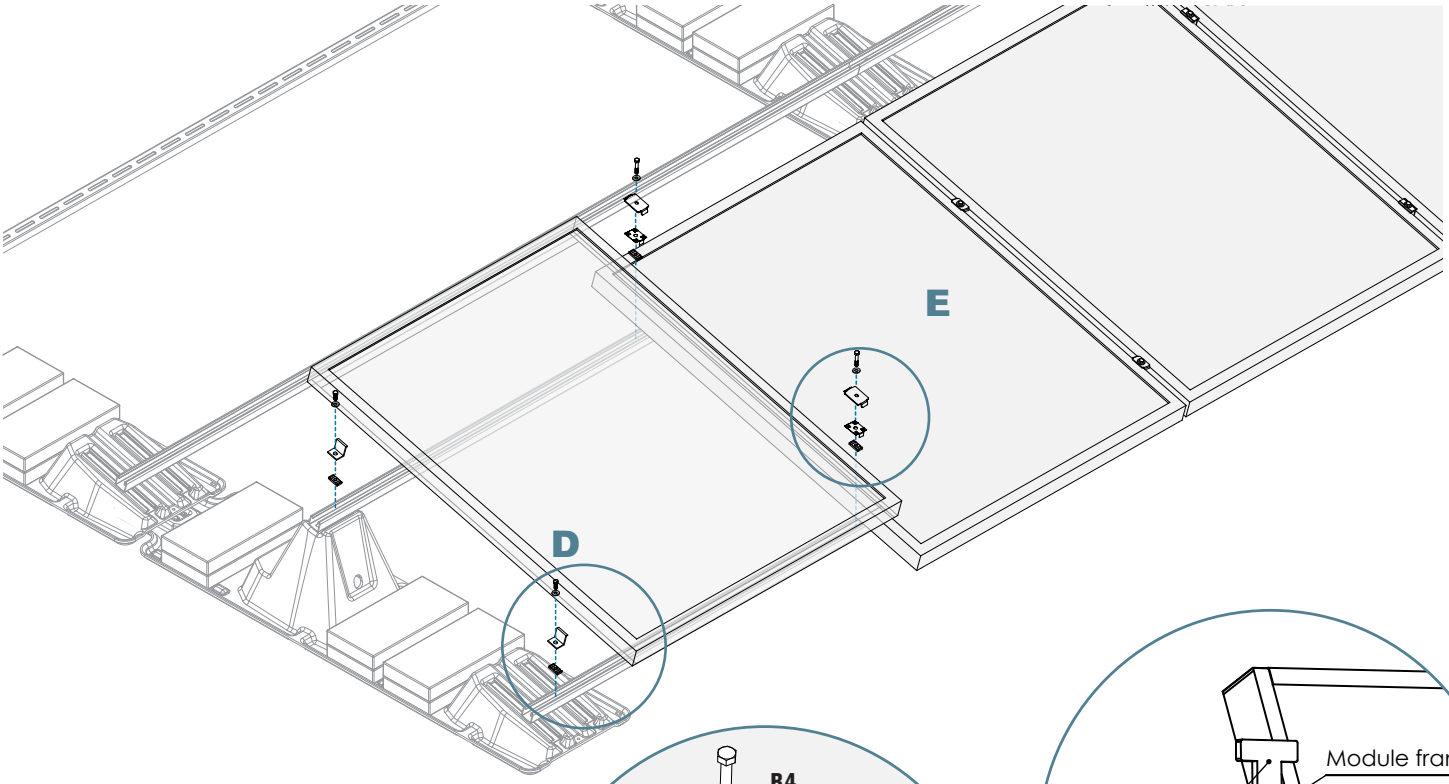


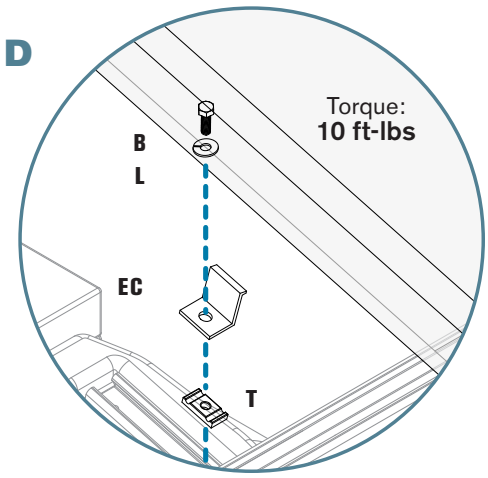
Make sure the channel nuts in the front strut are located just above the lower bolt securing the embedded strut. Fasten the bolts (B) with a lock washer (L) and a fender washer (W1) through the strut into the channel nuts (T) in the toe section. Attach the strut open end up.



Adjust the channel nut (T) in the strut channel located in the tail section according to row spacing requirements. Fasten the bolt (B) with a lock washer (L) and a fender washer (W1) through the toe into the channel nut. Place the front (South facing) row first, then place the next row with the toe overlapping the tail of each InstaRack.

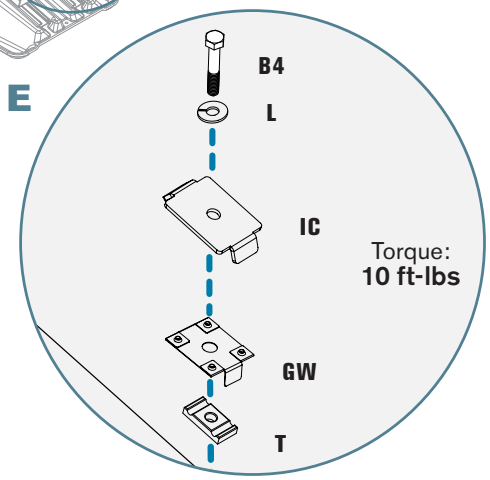
Attach Modules to Strut



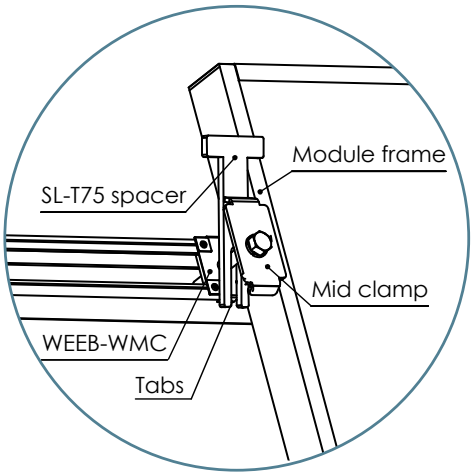


Lay down the first module of the row and secure it to the rail using a bolt (B) and a split lockwasher (L) through the end clamp (EC), fastening to a channel nut (T) in the strut. Use two end clamps at each end of the row. Make sure the long edge of the module frame is perpendicular to the strut before torquing down the clamps.

See module requirements for appropriate clamp placement.



Loosely pre-assemble two mid clamps with a bolt (B4), split lockwasher (L), grounding clip (GC) (optional) and channel nut (T), making sure about two threads are sticking out. Use two (2) WEEB grounding clips per pair of modules (see next page) and assemble the clamps simultaneously. Holding the clamp and WEEB together, insert the channel nut in the strut. Drop the WEEB, making sure the tabs are outside the strut. Slightly lift the frame of the first module, and slide WEEB grounding clip under module until the teeth are covered.



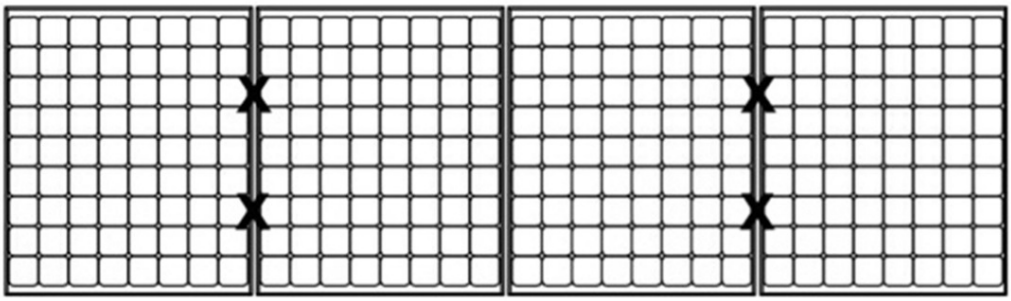
Insert spacer with “T” bar on top of module and “U” shape around the bolt. Check that the bolt is parallel to the side of the module frame. Bring the following module and lay it on the strut, pushing it against the spacer and making sure it covers the WEEB teeth. If necessary, use the spacer to adjust the bolt or WEEB position.

See grounding details on next page and inspection steps on page 11.

Use two (2) ground lugs per row of modules. See **Grounding Manual** for more information on grounding installation.

Grounding Details

Even number of modules in row

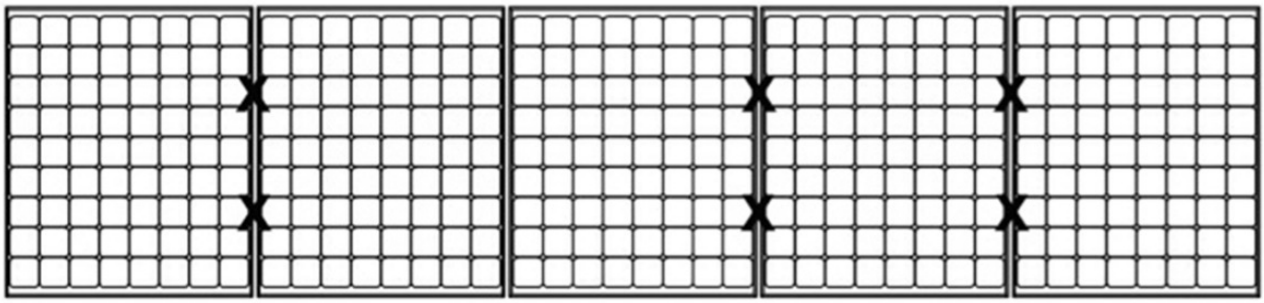


X denotes places to install WEEB-WMC. Two (2) grouding clips are needed per pair of modules.

Number of WEEB-WMC needed = Number of even rows x Number of modules per row

In this case, 1 row x 4 modules per row = 4 WEEB-WMC clips.

Odd number of modules in row



X denotes places to install WEEB-WMC. Two (2) grouding clips are needed per pair of modules, plus two additional clips for the last module of the row.

Number of WEEB-WMC needed = Number of odd rows x (Number of modules per row + 1)

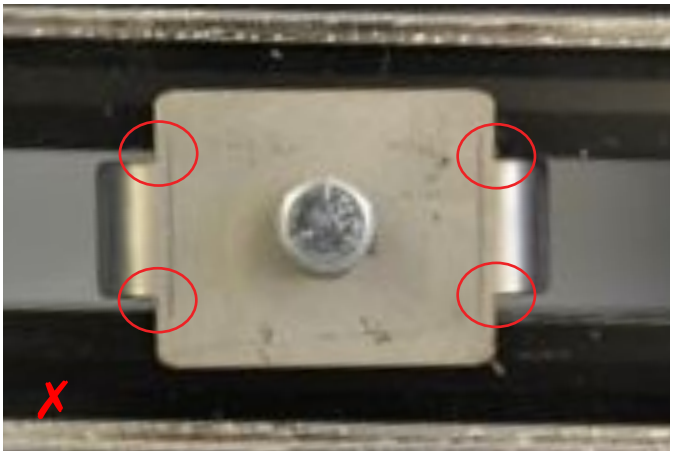
In this case, 1 row x (5 modules per row +1) = 6 WEEB-WMC clips.

Maintenance

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.

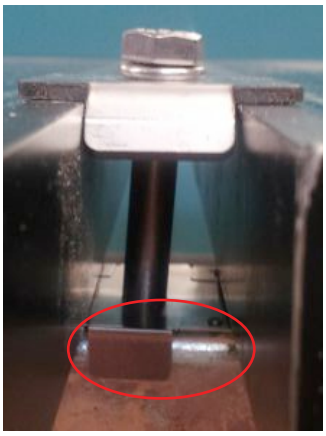
WEEB-WMC clips are for single use. Functionality will not be guaranteed if reused.

Step 1: Visual Inspection from above



Check that all four sides of the tabs are flush with the modules.
No space should be visible between the tab and the module.

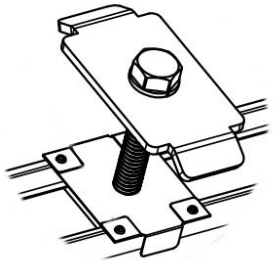
Step 2: Visual Inspection from the side



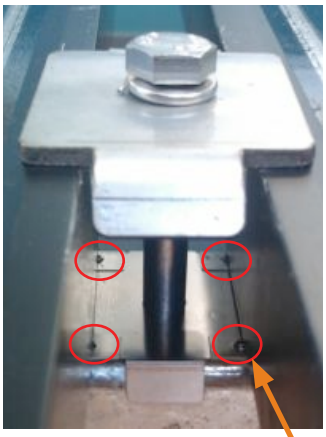
✗

✓

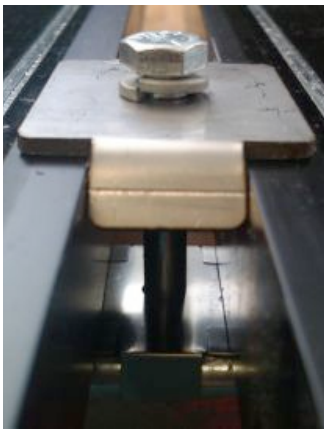
The tabs of the WEEB-WMC clip should be pointing downward, covering the strut.
Check that the tabs of the WEEB-WMC clips are in the middle of the space between modules.
The bolt should be parallel to the vertical edge of the module frame.



Step 3: Visual Inspection from the side (at an angle)



✗



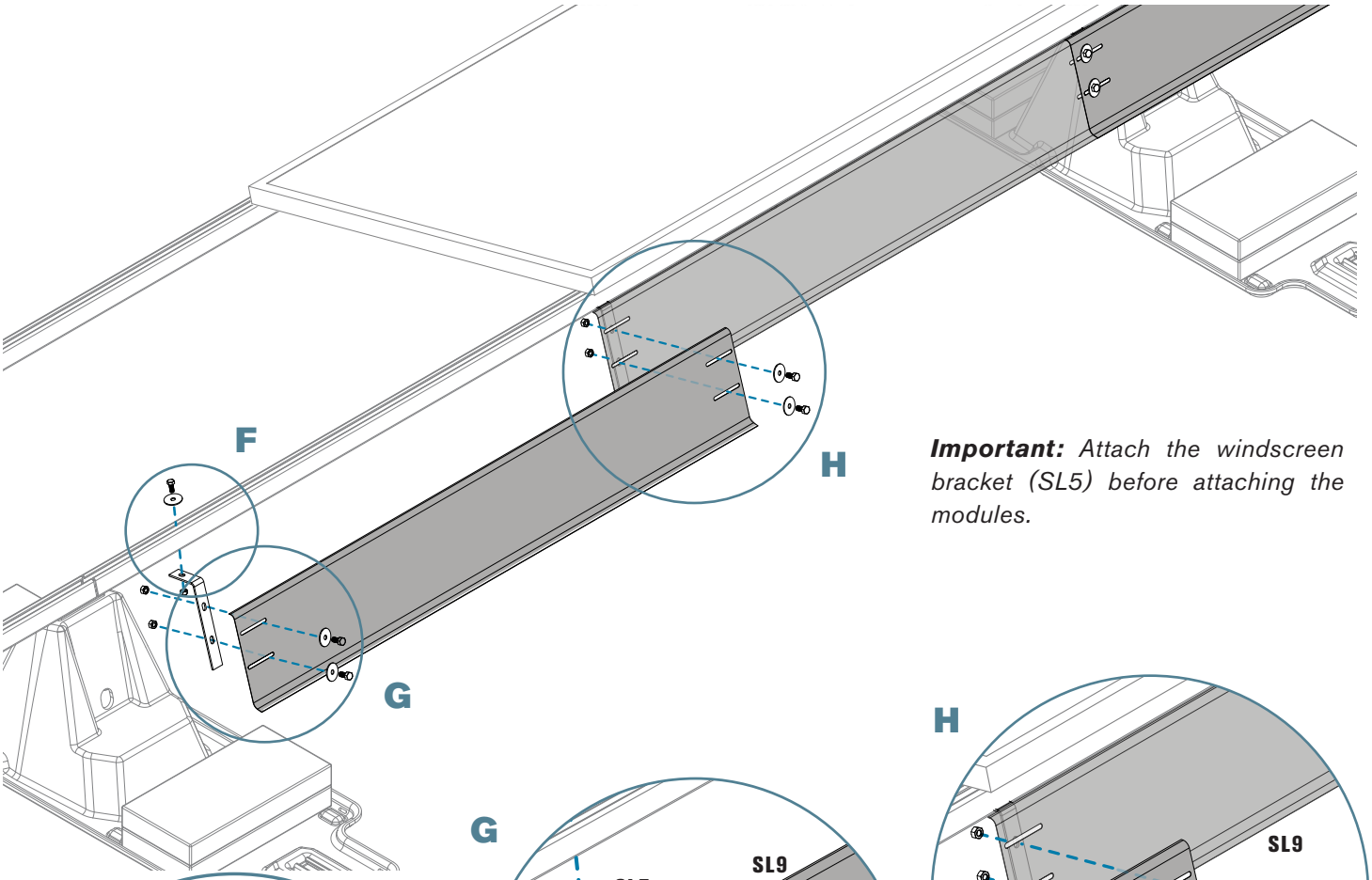
✓

Uncovered tooth

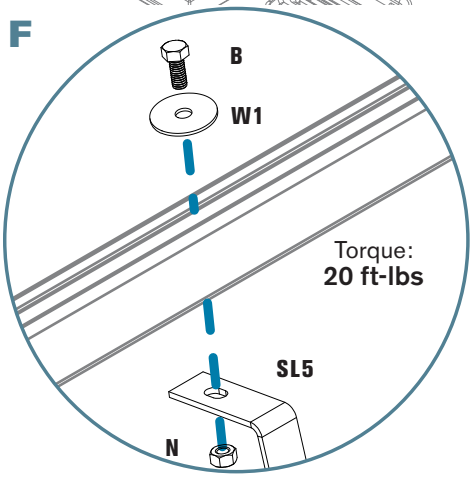
Check that all WEEB teeth are covered by the module frame before torquing the bolt.
None of the four teeth should be visible (even partially) to ensure grounding continuity.

WEEB-WMC clips are for single use only. Do not torque fasteners down if position of modules is not finalized. Only slightly tighten fasteners to keep modules in place.

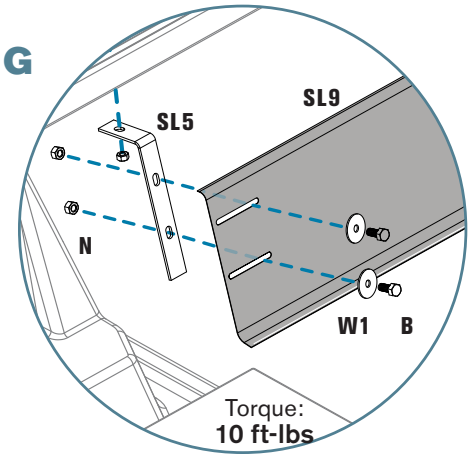
Attach Windscreens to Strut



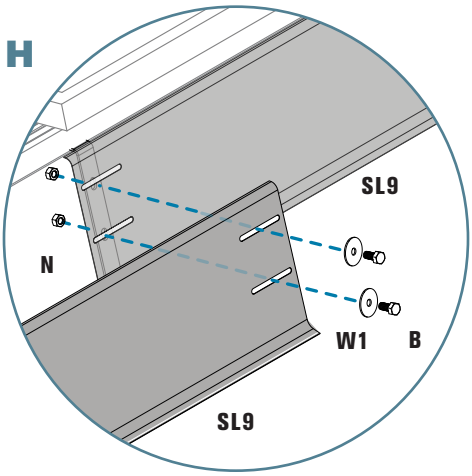
Important: *Attach the windscreen bracket (SL5) before attaching the modules.*



Attach the bolt (B) and fender washer (W1) through a slot in the strut and attach the windscreen bracket (SL5) with a locknut (N). The first bracket at the end of the row should be located as close as possible to the end of the strut (either outside of the array if corner supports are used or inside of the InstaRack).



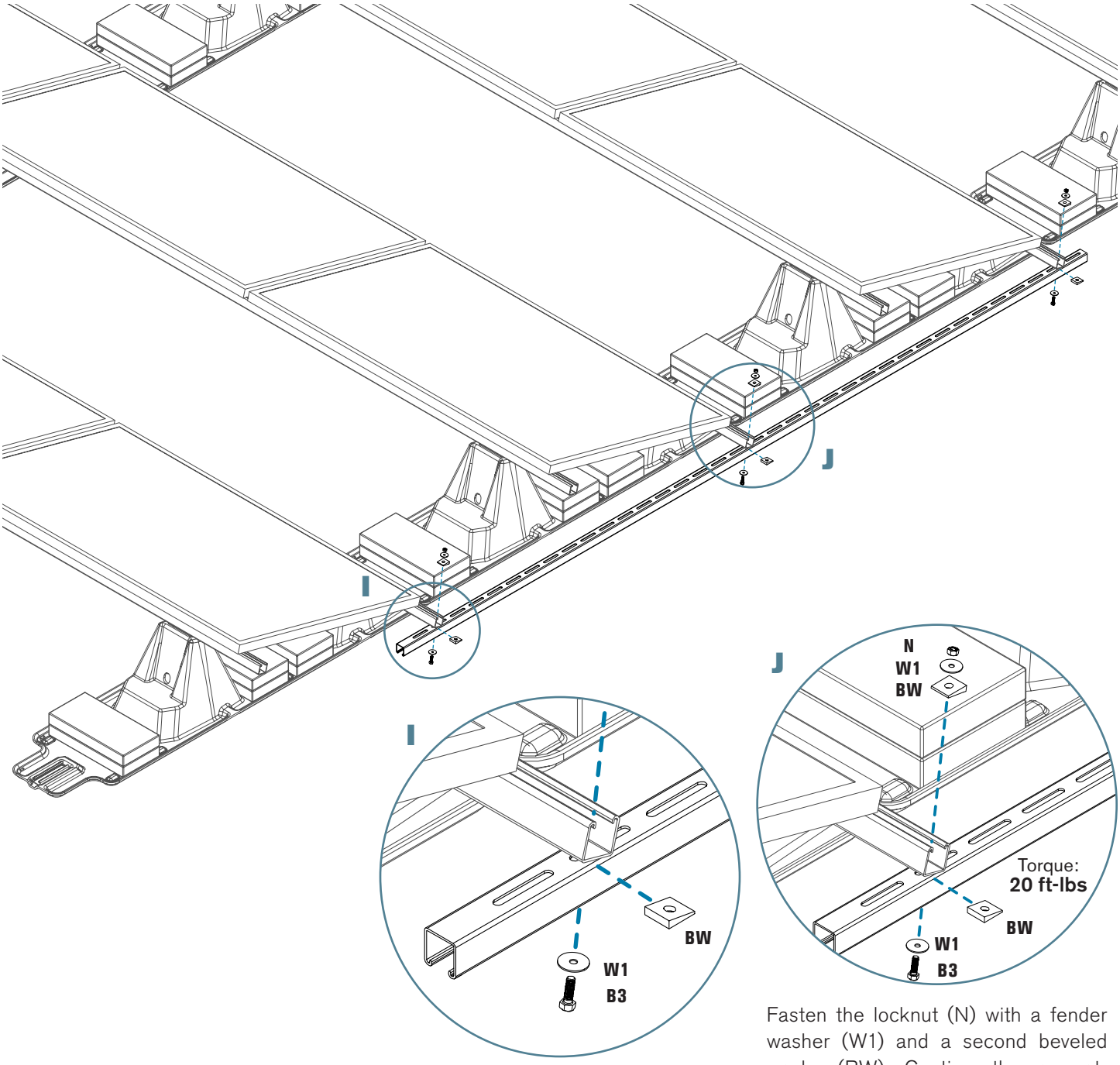
Insert a bolt (B) and fender washer (W1) through the slot in the windscreen (SL9) and fasten with a fender washer (W1), a locknut (N) through the windscreen bracket (SL5).



Join the second windscreen together using the second windscreen bracket. Insert a bolt (B) and fender washer (W1) through the slots in the overlapping windscreens (SL9) and fasten with a fender washer (W1) and a locknut (N) through the windscreen bracket (SL5).

Repeat this operation along the row and finalize the row with a single windscreen bracket (SL5), similar to step F.

Attach Corner Supports

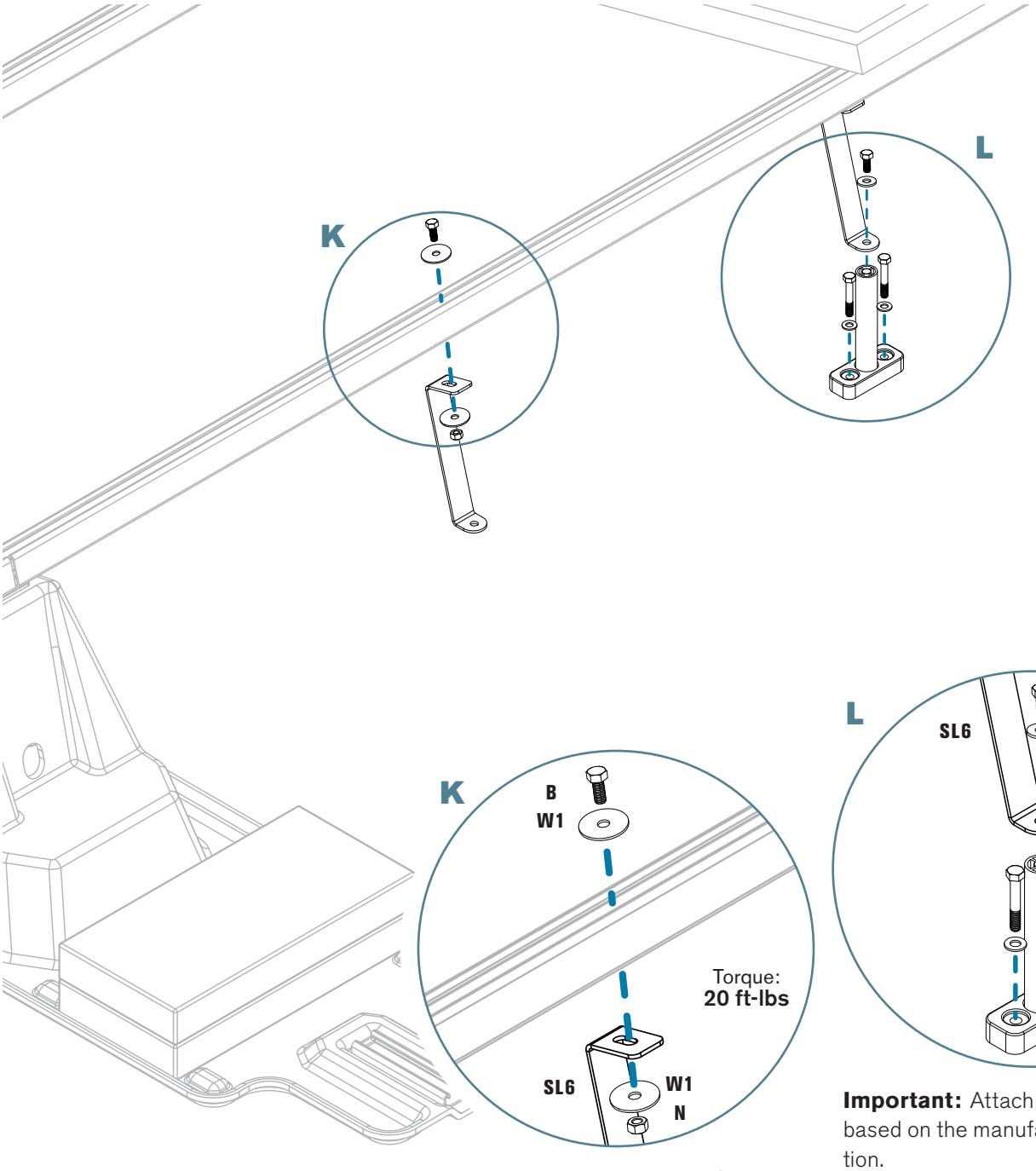


Insert the bolt (B3) and fender washer (W1) through the bottom strut with a beveled washer between each strut to match the angles for a flush connection.

Fasten the locknut (N) with a fender washer (W1) and a second beveled washer (BW). Continue the same attachment for the other two rows.

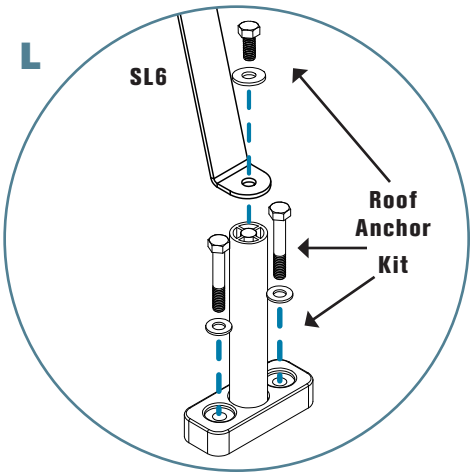
Note: *In some scenarios it may be beneficial to use a corner support plate and double the quantities of hardware listed above. Corner supports might also be mounted in the interior of the InstaRacks in some cases.*

OPTIONAL: Attach Roof Anchor



Important: Attach the Roof Anchor brackets (SL6) before attaching the modules.

Attach the bolt (B) and fender washer (W1) through the bottom channel in the strut and attach the roof anchor bracket (SL6) with a fender washer (W1) and locknut (N).

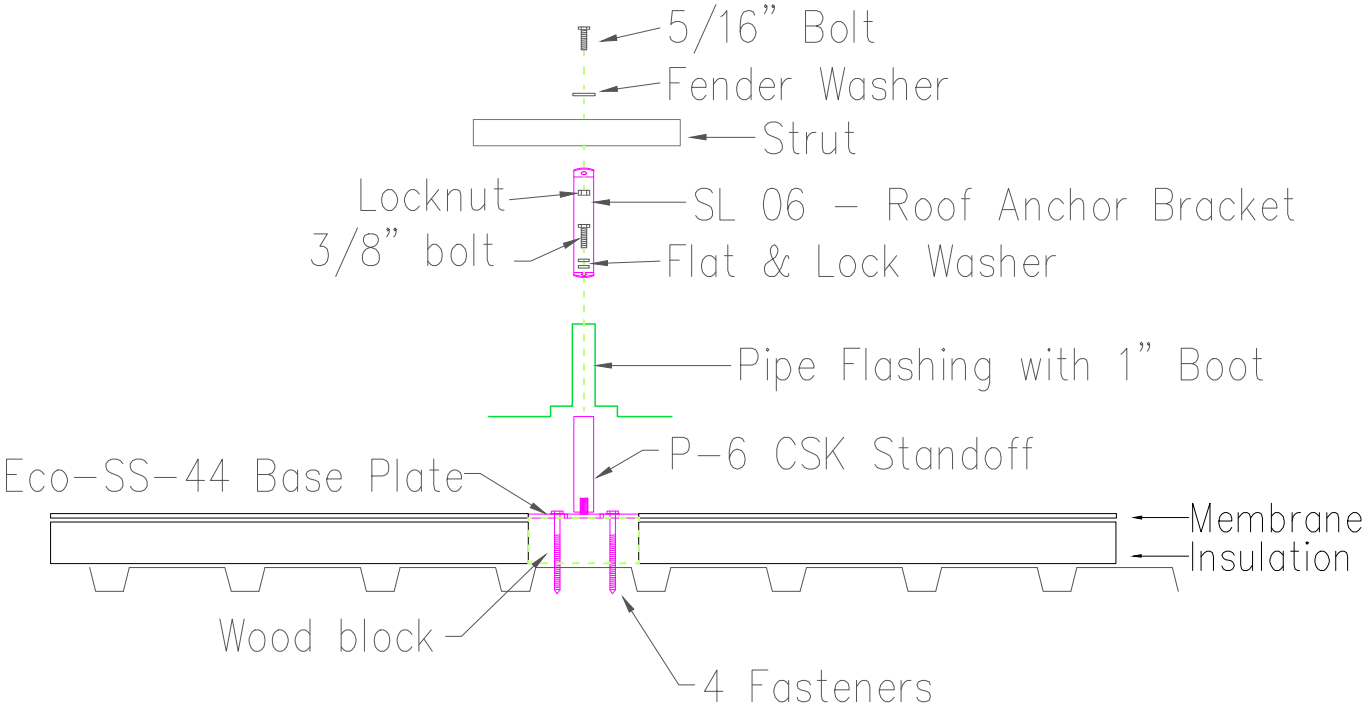


Important: Attach the Roof Anchors based on the manufacturer's specification.

Fasten the provided bolt and washer through the Roof Anchor Bracket (SL6) and into the roof anchor.

See Page 13 for more details.

EcoFasten Exploded View



If your project is not compatible with the above drawing, please contact engineering@sollega.com. Otherwise, use the tools that are available at www.Sollega.com/techsupport.

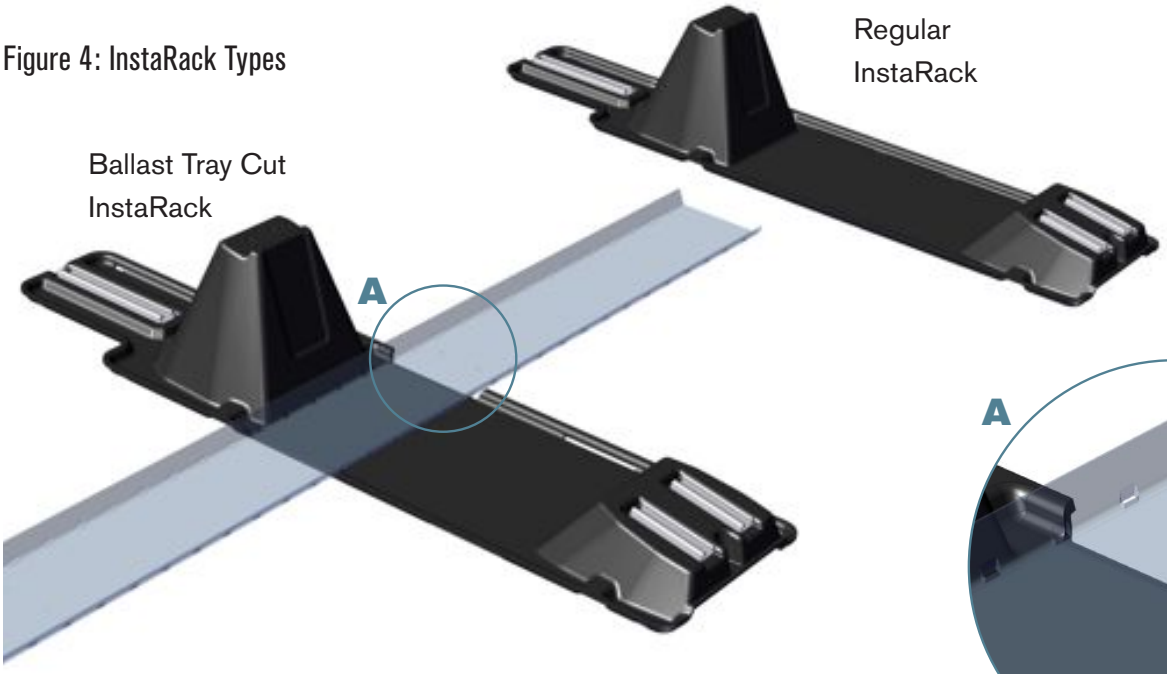
Manufacturer	Model	SKU Number
EcoFasten Solar	Eco-44R with P6 Bracket	ECO44R-P6
EcoFasten Solar	Eco-44 with P6 Bracket	ECO44-P6
ProSolar	Commercial FastJack E-Series with 6" standoff (Hardware not included)	CFJE-600-18

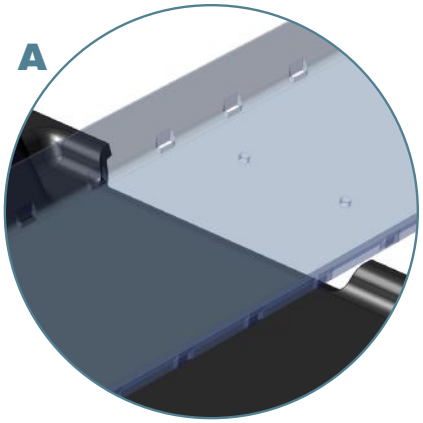
The installer is solely responsible for:

- Ensuring that lag screws used for roof anchoring have adequate pullout strength and shear capacities
- Maintaining the waterproof integrity of the roof including selection of appropriate flashing
- Following the roofing manufacturer's installation procedure and guidelines before beginning the installation.

Ballast Tray Guide

Figure 4: InstaRack Types





This section is trimmed so the Ballast Trays will slot smoothly into the InstaRack. Place the Ballast Tray Cut InstaRacks in the locations that hold ballast trays.

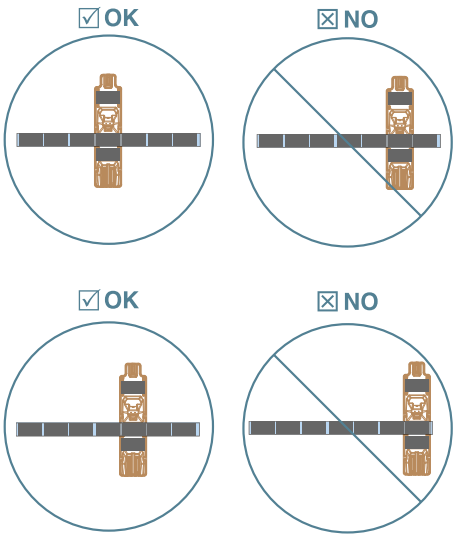
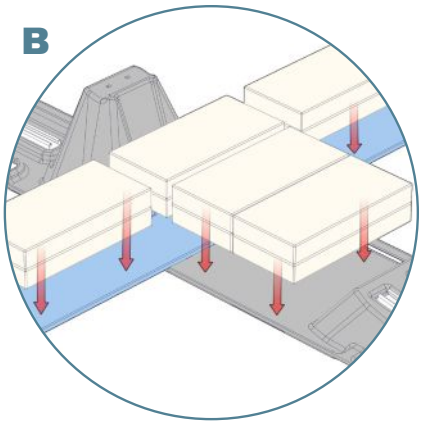


Figure 5: Ballast Tray Placement

Ballast Trays are only compatible with the Ballast Tray Cut InstaRacks (see Fig. 4). Ballast Trays must be centered on the InstaRack. See the image above (Fig. 5) for proper placement of ballast trays.



Finish by placing roof pavers on InstaRacks and ballast trays as specified by engineering documentation.

Sollega InstaRack 25-Year Warranty

SOLLEGA Inc.™ is dedicated to providing excellent customer support and service and will continually evolve our warranty to enhance our dealers' and customers' experiences with SOLLEGA. The following policies and procedures are subject to change as our process evolves.

SOLLEGA Inc. warrants that its InstaRack™ Photovoltaic (PV) Module Mounting System, when sold and delivered pursuant to a SOLLEGA Sales Order, will be new, will conform to the specifications in the applicable SOLLEGA Sales Order, and will be free from defects in material and/or workmanship for a period of Twenty Five (25) years from the date of shipment. Except for the foregoing limited warranties, SOLLEGA makes no other warranties express or implied for its SOLLEGA InstaRack.

This Warranty does not apply to damage incurred during shipment and does not apply to damage that is the result of improper handling. This Warranty will be void if during the warranty period, the SOLLEGA InstaRack has been improperly or incorrectly installed, used, or maintained, or has been operated under abnormal conditions or contrary to applicable specifications.

This Warranty is granted to the original SOLLEGA InstaRack owner only and is only applicable to the original installation of the SOLLEGA InstaRack. This Warranty does not apply to damage to the SOLLEGA InstaRack that is the result of weather conditions that exceed local building code limits that were applicable at the time that the SOLLEGA InstaRack was originally installed.

It is recognized and agreed that the foregoing limited warranties are in lieu of all other warranties, whether express or implied, and that SOLLEGA Inc. does not make any warranty of merchantability or any warranty of fitness for a particular purpose.

In the event the SOLLEGA Inc. InstaRack fails to satisfy the foregoing limited warranties, then SOLLEGA will repair or replace, at its option and cost, the defective product. The foregoing remedy shall be in lieu of all others that the SOLLEGA Purchaser may have, and the Purchaser waives all other remedies.

To obtain warranty service, the Purchaser should contact SOLLEGA Inc. by telephone or email, and SOLLEGA will establish a claim file and initiate action to repair or replace the defective product. SOLLEGA will work with the Purchaser to determine the extent of the problem and may elect to perform a site inspection.

SOLLEGA Inc. will not assume expense or liability for correction of a defective SOLLEGA. InstaRack by the Purchaser or by third parties without SOLLEGA's prior written authorization. In the event of the authorized correction of a defective SOLLEGA InstaRack, the warranty period will be extended by the length of time during which the defective equipment was in the process of being repaired or replaced.

Unauthorized field modification to SOLLEGA's final layout will affect warranty coverage. If any changes are made that significantly affect the structural integrity of the system, customer must provide written drawings for SOLLEGA's review, comment and approval prior to attempting any field modifications. Modifications may include but are not limited to changes in location of InstaRacks, modules, windscreens, roof anchors, roof pavers, ballast trays, or any other racking system components.

SOLLEGA Inc.'s total liability hereunder for the repair or replacement of a SOLLEGA InstaRack, or any defective components thereof, shall not exceed the original purchase price of the system. In no event will SOLLEGA Inc. be liable for or responsible to the Purchaser, or to any other party, for any consequential, incidental, or special, loss, cost, damage, or expense arising from the curtailment or interruption of photovoltaic (PV) system operation or from the curtailment or interruption of any operations, processes, or equipment connected to the PV system.

This warranty grants the purchaser specific legal rights that may vary according to the state in which the Sollega InstaRack is installed. In some states, sellers cannot limit the rights of the purchaser, so you may have access to legal remedies in addition to or greater than those specified here.

This warranty does not cover failures resulting from freeze damage, fire, flood, lightning, hurricane, tornado, hailstorm, windstorm, earthquake, or other acts of god, vandalism, explosions, exposure to harmful materials or fluids, or unauthorized alterations or repairs or any other cause beyond the control of SOLLEGA Inc.

Sollega™

The Simple Solar Racking Solution™

Contact Us

855.725.RACK

Western USA: 415.648.1299

info@Sollega.com | www.Sollega.com

Sollega USA West

2480 Mission Street Ste. 107B

San Francisco, CA 94110

Tel: (415) 648-1299