BARNRACK 2.0

Pitched Roof Mounting System

by KB RACKING®

INSTALLATION MANUAL

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CERTIFICATION

ANSI/UL 2703

BarnRack 2.0 is certified in compliance with ANSI/UL 2703 Standards for Mounting Systems, Mounting Devices, Clamping/Retention Devices, and Ground Lugs for Use with Flat Plate Photovoltaic Modules and Panels. This racking system may be used to ground and/or mount any PV module complying with UL 1703 or UL61730 only when the specific module has been evaluated for grounding and/or mounting in compliance with the included instructions.

EVALUATED MODULES

BarnRack 2.0 has been tested with the following UL Listed modules:

- **Silfab** SLAXXXM, SLAXXXP, SLGXXXP, SLGXXXM, SLA-X.
- **Canadian Solar** CS3U-P, CS3U-MS, CS3K-P, CS3K-MS, CS6U-P, CS6K-P, CS6K-MS.

ETL CERTIFIED CLAMPS

BarnRack 2.0 uses ETL Certified KB Konnect Clamps to secure PV modules to the system.

The KB Konnect Clamps feature protruding screws that pierce the module frame providing a bonding connection between adjacent module frames. The grounding continues through the racking system to a grounding point or grounding lug.

NOTE: Grounding locations are dependent on the system configuration, detailed on Page 29.

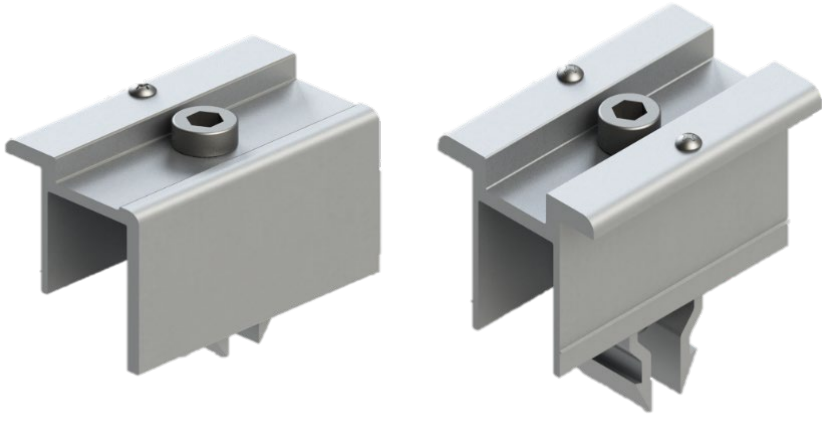


Figure 1 – KB Konnect Clamp Family

SAFETY

Only qualified professionals should install solar modules, DC cabling, and any anti-lightning safety devices.

KB Racking® components may have shifted during shipping. Take extra care when moving and unpacking components.

Seulement les professionnels qualifié devrait installer les panneaux solaires, les fils CC, et les dispositifs de sécurité contre la foudre.

Les composants de KB Racking® peuvent ont déplacé au cours du transport. Prendre des précautions supplémentaires lorsque vous déplacez et déballage les composants.

FALL SAFETY

While installing the PV system, proper safety equipment should be worn. If roof/building edge has a fall distance of 10ft (3m) or greater, appropriate safety measures must be taken (i.e. harnesses) for installation of modules closer than 6.5ft (2m) to roof edges or skylights.

INSTALLER'S RESPONSIBILITY

It is the installer's responsibility to:

- Wear and correctly use proper safety equipment.
- Ensure the correct type and quantities of parts have been delivered.
- Inspect all components prior to installation.
- Store parts in a secure, dry location prior to, and during installation.
- Maintain proper rooftop drainage.
- Mount the racking system over a fire resistant roof covering rated for the application.
- Ensure that the racking system is installed in accordance with the provided instructions.

- Provide an appropriate method of direct-to-earth grounding in accordance with the latest edition of the Canadian Electrical Code Part 1, CSA 22.1 Safety Standard for Electrical Installations or the National Building Code, including NEC 250: Grounding and Bonding, and NEC 690: Solar Photovoltaic Systems.

- Keep Copper away from Aluminum components in a fashion that maintains a minimum of ¼" separation.

- Comply with all applicable building and fire codes that may supersede this manual.

TABLE OF CONTENTS

SYSTEM OVERVIEW

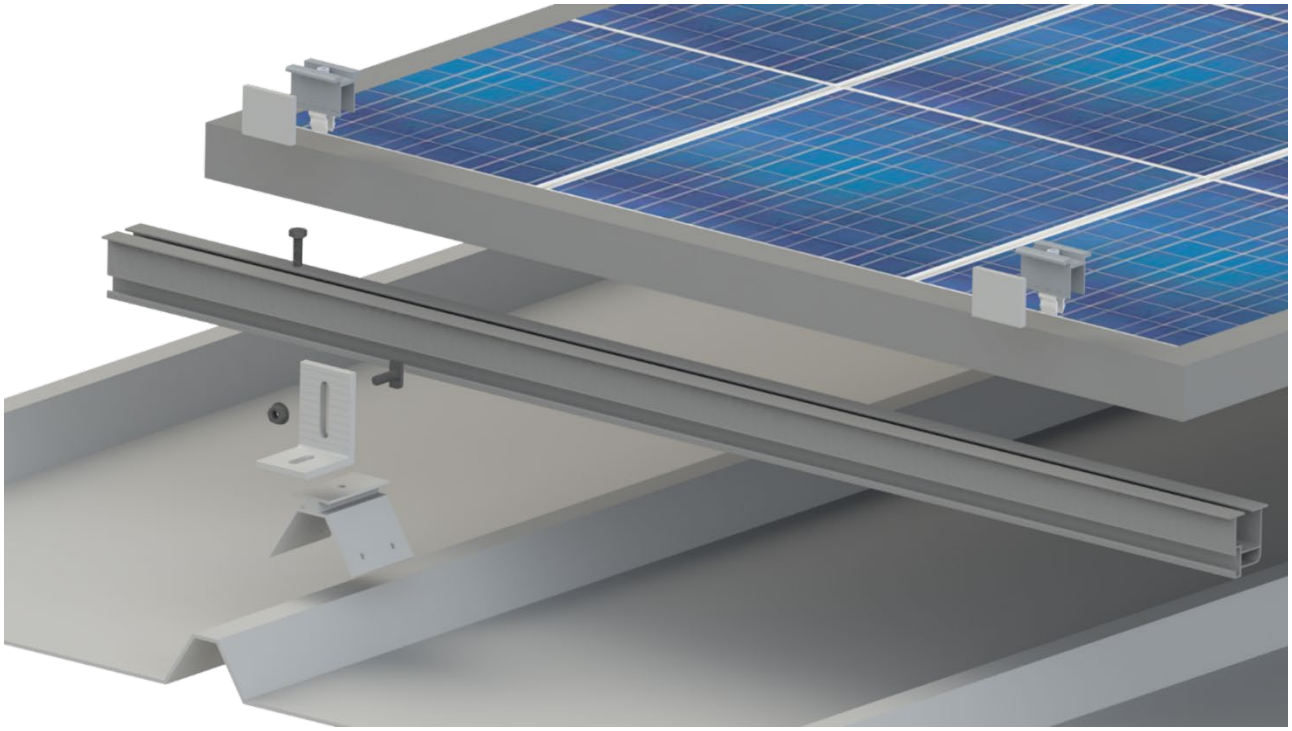
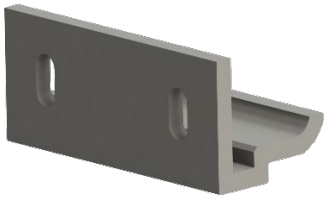
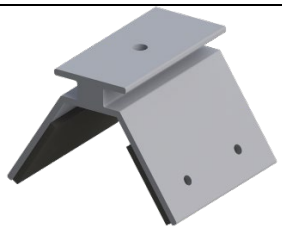
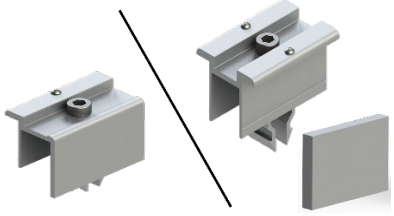


Figure 2 – System Overview

COMPONENTS

 KB10 Series Rail	 KB10 Series Splice	 KB Konnect Clamp
 Barn Attachment†	 L-Foot†	 KB Konnect End Clamp*

†*Project-specific component may appear different*

**KB Konnect End Clamp Variations (KB Konnect End Clamp, KB Konnect Clamp with End Block) are shown*

TOOLS REQUIRED

- □ 5mm Hex Bit
- □ 13mm Hex Socket
- □ Tape Measure
- □ Safety Gloves
- □ Spacing Sticks
- □ Jigs
- □ Torque Wrench
- □ Cordless Drill
- □ Spirit Level
- □ Portable Band/Reciprocating Saw
- □ Safety Glasses

TORQUE VALUES

Size	Fastener	Torque [N-m]	Torque [ft-lb]
M6	KB Konnect Clamp	8.3	6.1
M8	M8 Hardware	22	16.2

SYSTEM LIMITATIONS

Limitations that govern the installation of the BarnRack 2.0 system are listed below:

- For Shared Rail installations, the centre of each KB Konnect Clamp must be placed at minimum 4" from the module edge.
- Any given rail must contain a minimum of two Rail spans (i.e. three anchor connections to the roof).
- Splices can be used between two Rails only when each Rail has at least two spans.
- A thermal break of at least 1.75" must be included for every 80 feet of spliced Rail.
- Modules must not be installed across thermal breaks.
- Maximum Rail cantilever is ⅓ of maximum span and must not exceed 3 feet.
- The system must have an appropriate method of direct-to-earth grounding in accordance with current standards.
- The maximum clearance between roof and bottom of module is 8".
- Sufficient clearance must be maintained between the module frame and roof, in accordance with module manufacturer instructions.

NOTE: A Rail span is defined as a section of Rail that runs between two adjacent Roof Attachments.

The image below shows an example of a Rail with two spans (i.e. with three anchor connections to the roof).

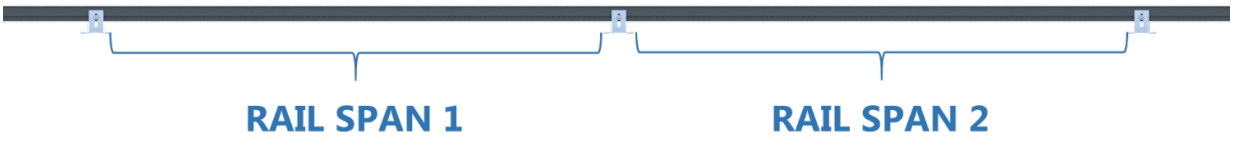


Figure 3 – Rail Spans

INSTALLATION CONFIGURATIONS

The versatility of BarnRack 2.0 allows it to be installed in both Shared-Rail and Fully-Railed configurations depending on your project requirements.

NOTE: The selected configuration must adhere to the mounting instructions provided by your module manufacturer.

SHARED-RAIL CONFIGURATION

Shared-Rail configurations feature three Rails per two rows of modules. Consequently, Rails are shared between modules.

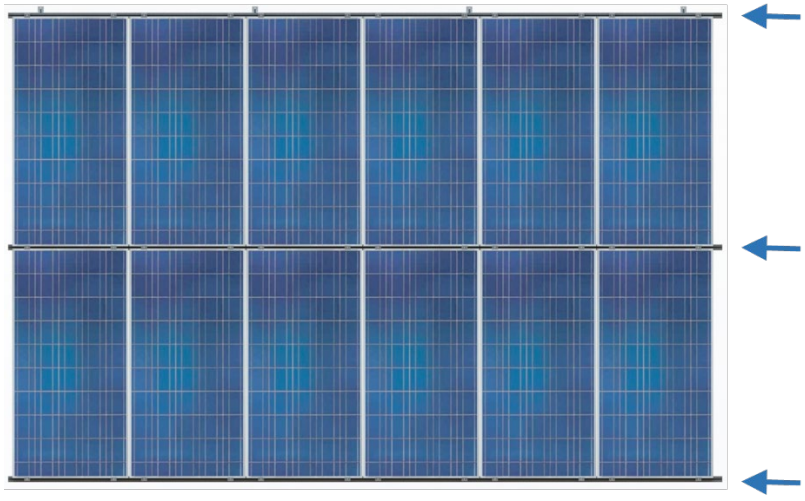


Figure 4 – Shared-Rail Portrait Configuration

Figure 5 – Shared-Rail Landscape Configuration

FULLY-RAILED CONFIGURATION

Fully-Railed configurations feature two Rails per row of modules.

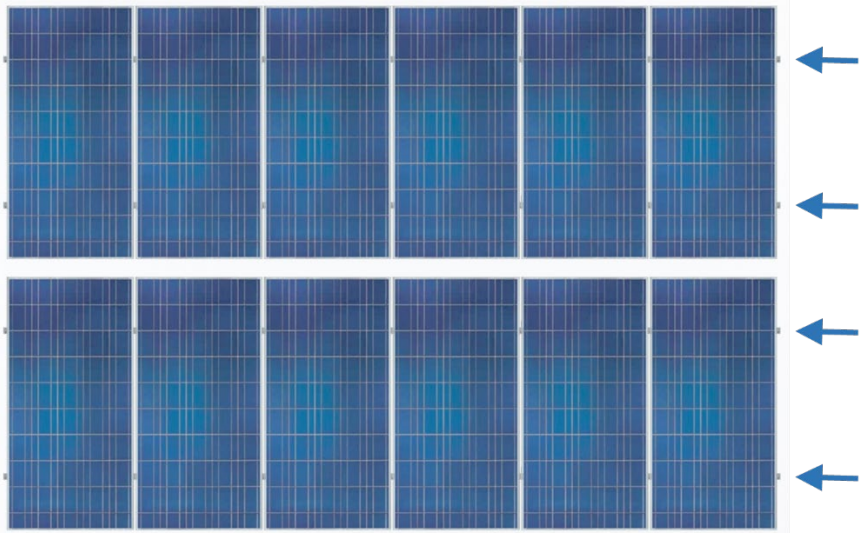


Figure 6 – Fully-Railed Portrait Configuration

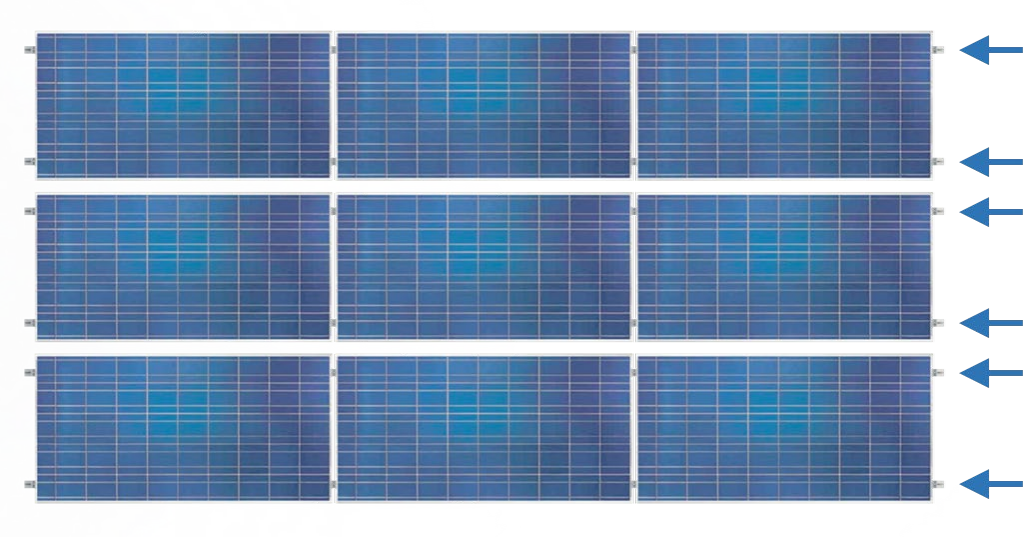


Figure 7 – Fully-Railed Landscape Configuration

PRE-INSTALLATION

This section reviews the supporting documents that are included with your BarnRack 2.0 system. Study each document prior to installation.

LAYOUT DIAGRAM

Figure 8 – Sample Layout Diagram

Layout Diagrams contain plans for all arrays in your project.

Note the following items on your project-specific Layout Diagram:

□ **NORTH ARROW**	□ **DIMENSIONS**	□ **LEGEND**
□ **ARRAY NUMBERS**	□ **ROOF STRUCTURES**	□ **THERMAL BREAKS**

Array Origin: From your layout, use the N/S and E/W dimension at a corner of your roof as the origin of your installation (see details A and B in Figure 8).

SPACING DIAGRAM

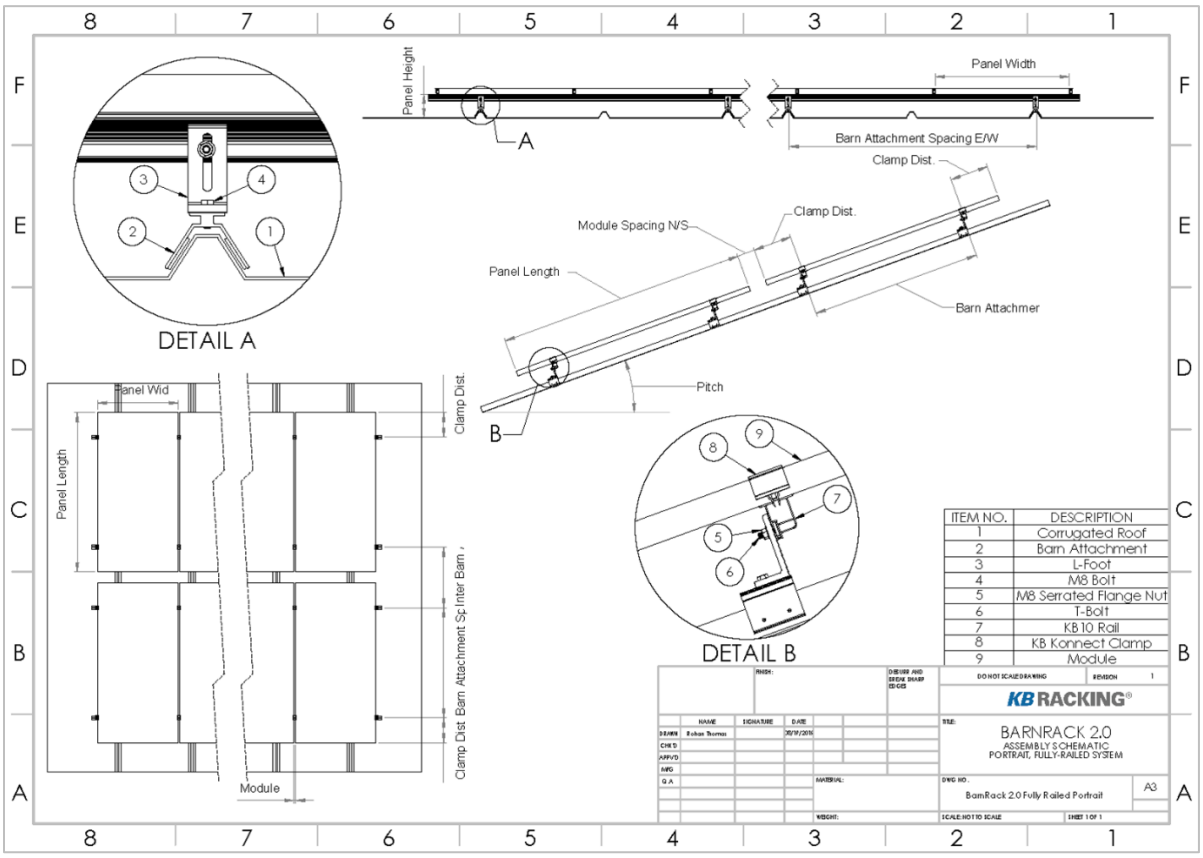


Figure 9 – Sample Spacing Diagram

Your Spacing Diagram will indicate the following dimensions:

- **BARN ATTACHMENT SPACING N/S** (Distance between attachments, along corrugation)
- **BARN ATTACHMENT SPACING E/W** (Distance between attachments, across corrugations)
- **INTER BARN ATTACHMENT SPACING N/S** (Distance between attachments between module rows; Fully-Railed configuration only)
- **MODULE SPACING** (Distance between modules)
- **MODULE HEIGHT** (Clearance between module and roof)

NOTE: Ensure measurements are taken from the centre-to-centre or edge-to-edge points as indicated in your project-specific Spacing Diagram.

INSTALLATION

KEY INSTALLATION TIPS

INSTALLATION ORIGIN

Each array in your layout diagram will have a point of origin. The installation of every array MUST begin at the origin.

INSTALLATION DIRECTION

It is recommended that installations start at the bottom of the roof, working up.

Figure 10 – Installation Direction

ORDER OF INSTALLATION

The general order of installation is:

Roof Attachments → Rails → Modules → Grounding and Bonding

RAIL HEIGHT ALIGNMENT

When laying Rails, ensure adjacent Rails maintain the same height off the roof. Use a jig to consistently position the Rail at the same height.

THERMAL BREAK

A thermal break of at least 1.75" must be included for every 80 feet of spliced Rail. Thermal breaks are identified in your Layout Diagram.

RAIL SPACING

Care must be taken to ensure the Rails are positioned as per the Spacing Diagram. Use the slots on the L-Foot to adjust Rails ±½" as needed. Failure to comply with the specified dimensions will result in poor alignment between the racking system and module. Use a jig to help position the Rails correctly.

L-FOOT ORIENTATION

L-Feet must sit as perpendicular as possible to the roof surface. This is controlled by properly installing the roof attachment. An improperly installed L-Foot will prevent proper installation of BarnRack 2.0.

Always rotate and orient the L-Feet as shown in the figure below. This is recommended to keep the installation consistent throughout the array.

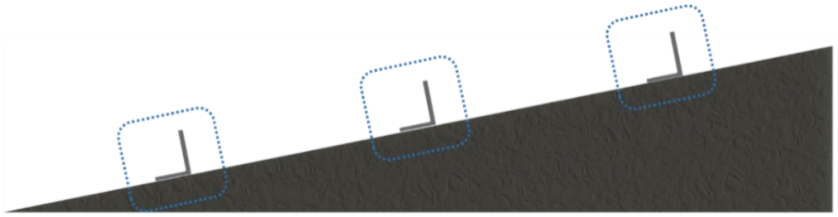


Figure 11 – L-Foot Orientation

LOCKING T-BOLT

The M8 T-Bolt features an indicator which confirms engagement with the Rail. When securing the T-Bolt, ensure the indicator remains in the vertical position.

Figure 12 –Vertical Position showing Engagement

KB KONNECT END CLAMP VARIATIONS

At array ends, modules that are 30, 35 or 40mm in thickness will use KB Konnect End Clamps. Other module thicknesses will use KB Konnect Clamps with End Blocks matching the module thickness.

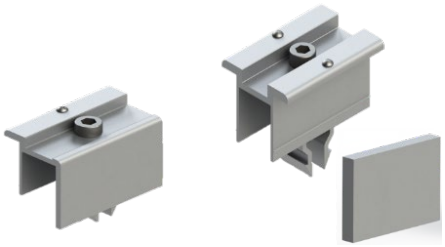
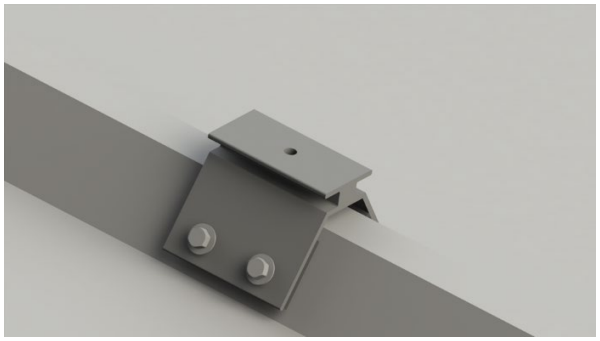
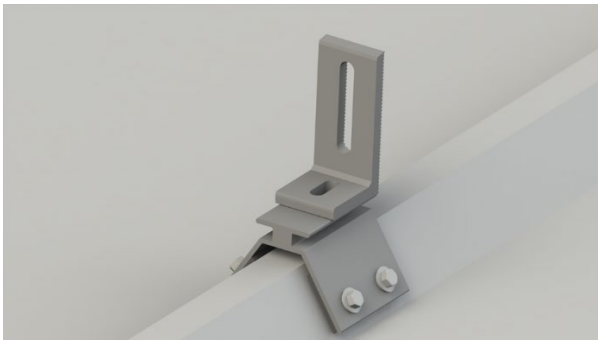
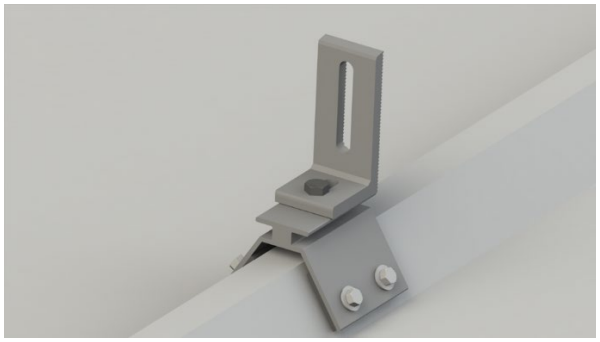
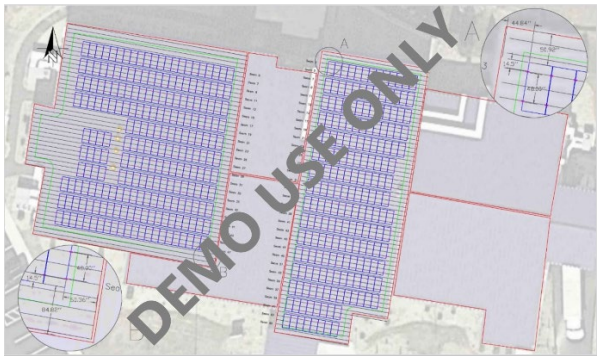
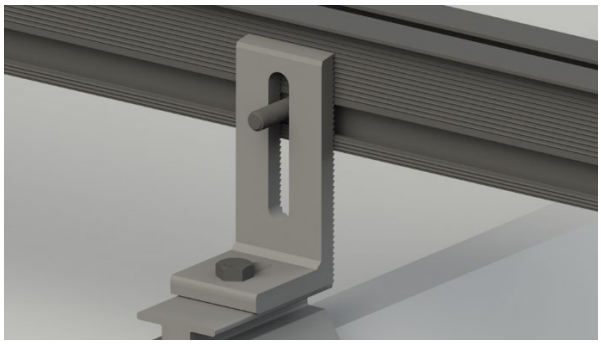
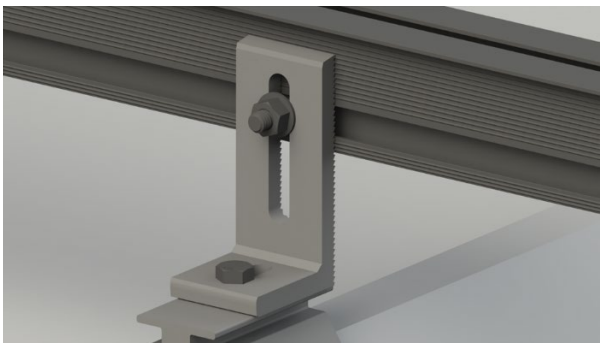
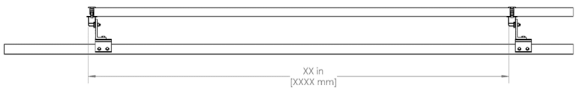


Figure 13 – KB Konnect End Clamp (*Left*), KB Konnect Clamp with End Block (*Right*)

ROOF ATTACHMENTS

1	Install Barn Attachments onto roof corrugations. Use your Spacing Diagram to obtain spacing dimensions. Consistent spacing is important; use a spacing stick or jig to aid installation. *Refer to **Appendix** for detailed Barn Attachment installation instructions.*	 Figure 14 – Barn Attachment Installation  Figure 15 – Barn Attachment Spacing
2	Install L-Feet onto Barn Attachments, short leg resting on the Attachment. Rotate and orient the L-Feet as shown in Figure 16. Additionally, ensure L-Feet are perpendicular to the roof surface. Use the provided M8 Bolt to hand-tighten the L-Feet to the Barn Attachments.	 Figure 16 – L-Foot Placement
3	Fasten the L-Feet to the Barn Attachments. Torque to **22Nm (16.2 ft-lb)**.	 Figure 17 – L-Foot Attachment

RAIL ATTACHMENT

1	Refer to your Layout Diagram to determine the arrangement of Rails for each array. Multiple rail lengths may be required. See Page 28 for instructions on cutting Rails.	 Figure 18 – Sample Layout Diagram
2	Install Rails onto L-Feet by aligning the T-Bolt slot on the Rail with the L-Foot slot. Raise the Rail to the height specified in the Spacing Diagram. Ensure this height is kept consistent throughout the array. For each Rail, fasten L-Feet closest to the Rail ends first, followed by the remaining L-Feet. **NOTE:** Use a jig to consistently position the Rail at the same height off the roof.	 Figure 19 – T-Bolt through Slot on L-Foot
3	Use the provided T-Bolt and M8 Serrated Flange Nut to secure the Rail to the L-Feet. **Torque to 22Nm (16.2 ft-lb).**	 Figure 20 – Fastening Rail to L-Foot
4	Double-check Rail alignment based on Spacing Diagram dimensions. **NOTE:** The L-Feet feature a slot to allow ± ½" adjustment on the Inter-Rail/Rail Spacing.	 Figure 21 – Rail Spacing/Spacing Diagram

SPLICING RAILS

The BarnRack 2.0 system uses a Splice to connect two Rails end-to-end.

SPLICE REQUIREMENTS

- Adjacent Rails being spliced must be at the same height off the roof. Use a jig to maintain consistent Rail height throughout the array.
- Each Rail being spliced must span across a minimum of three (3) anchor points (i.e. two spans).

SPLICING RAILS

1	Install Splices between two adjacent Rails. Do not place any gaps in between. The Splice must be evenly spaced on each Rail. T-Bolts are inserted into each Rail, rotating to the locked position (Page 14). Guide the T-Bolts through the slots on the Splice.	 Figure 22 – Placing Splice between Rails
2	Secure the installation with an M8 Serrated Flange Nut, ensure the T-Bolt indicator remains vertical. Torque to **22Nm (16.2 ft-lb)**.	 Figure 23 – Securing Splice to Rails

THERMAL BREAKS

Aluminum components experience thermal expansion/contraction due to temperature cycles. To prevent damage from thermal expansion, thermal breaks must be included, as specified below. Failure to comply with this instruction can result in damage to the BarnRack 2.0.

A thermal break of at least 1.75" must be included for every 80 feet of spliced Rail in BarnRack 2.0 arrays. Thermal Breaks are identified in your Layout Diagram.

NOTE: Do not install modules across/over thermal breaks.

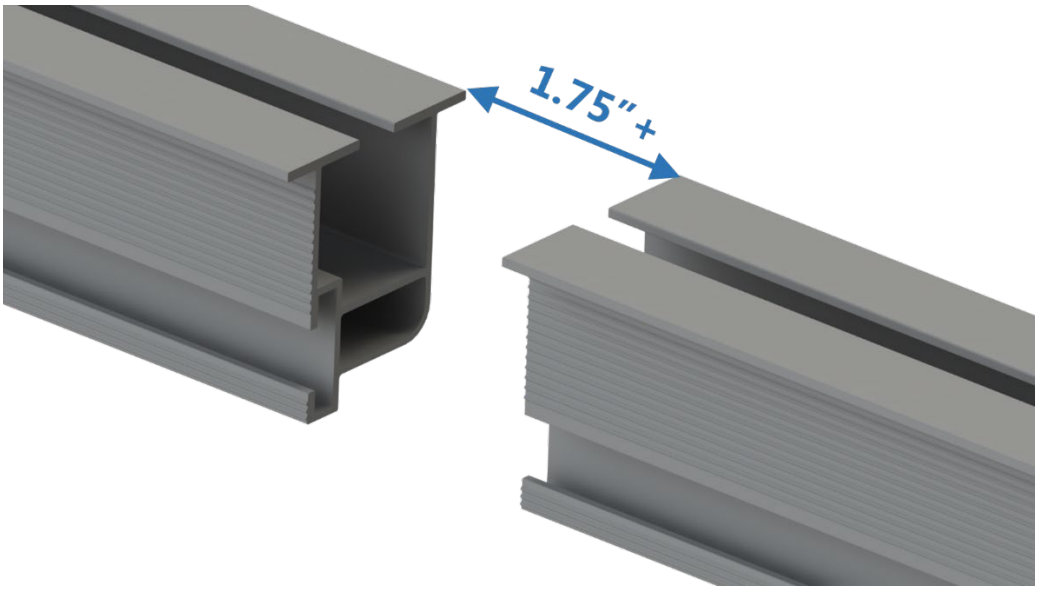


Figure 24 – Thermal Break

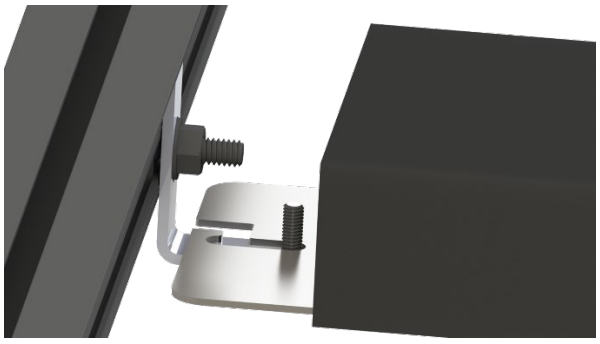
MICROINVERTER INSTALLATION

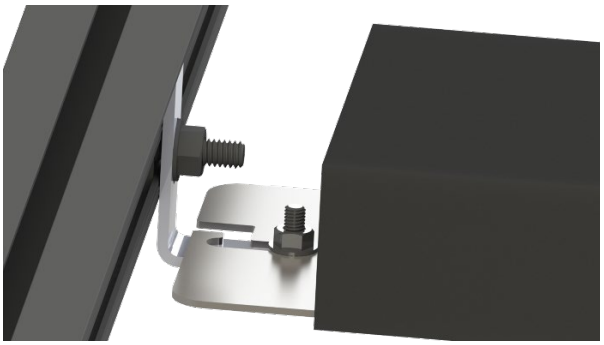
This section provides guidance on installing microinverters to your BarnRack 2.0 system. KB Racking® can provide a mounting kit containing the following components to mount a microinverter weighing less than 5kg:

- Accessory Bracket
- M8 Serrated Flange Bolt
- M8 T-Bolt
- M8 Serrated Flange Nuts

NOTE: Some microinverters require the use of a star washer or other components to complete grounding requirements. Please follow instructions set by your microinverter manufacturer. KB Racking® can provide star washers if requested.

NOTE: The maximum microinverter weight that can be mounted with the KB Microinverter Kit is **5kg**.

1	Install the Accessory Bracket onto the Rail using the provided T-Bolt and M8 Serrated Flange Nut. Orient the Accessory Bracket as shown in Figure 25. While securing the Accessory Bracket with a M8 Serrated Flange Nut, ensure the T-Bolt remains in its locked position (Page 14). Torque to **22Nm (16.2 ft-lb).** **NOTE:** Accessory Brackets should be used on every mounting point on the microinverter.	 Figure 25 – Securing Accessory Bracket to Rail  Figure 26 – Placing Microinverter on Accessory Bracket

2	Install the microinverter onto the Accessory Bracket using M6 Serrated Flange Bolts and Nuts. Torque to **9.5Nm (7.0 ft-lb)**.	 Figure 27 – Securing Microinverter to Accessory Bracket

ALTERNATE INSTALLATION METHOD

Alternate microinverter installation method is shown below:

Module Mounting (*Fully-Railed Configuration Only*):

Microinverters are mounted to the module frame using slots on the underside of the module.

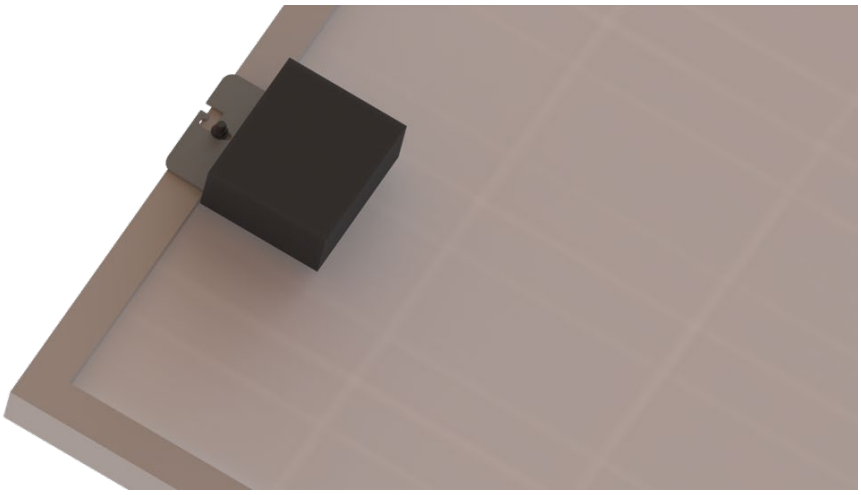
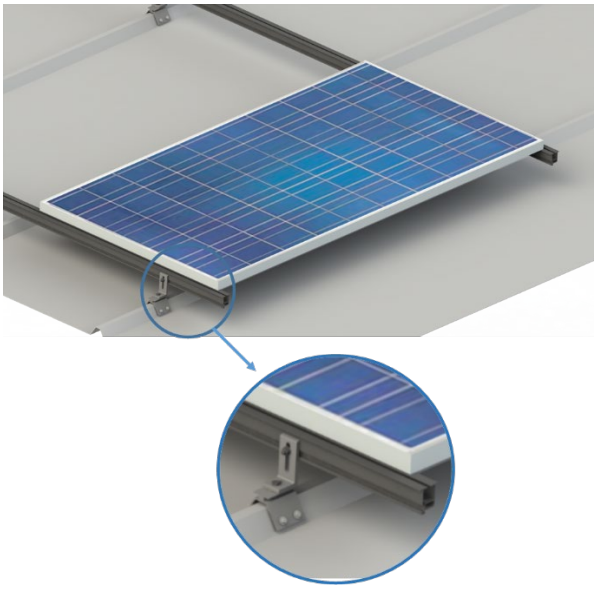
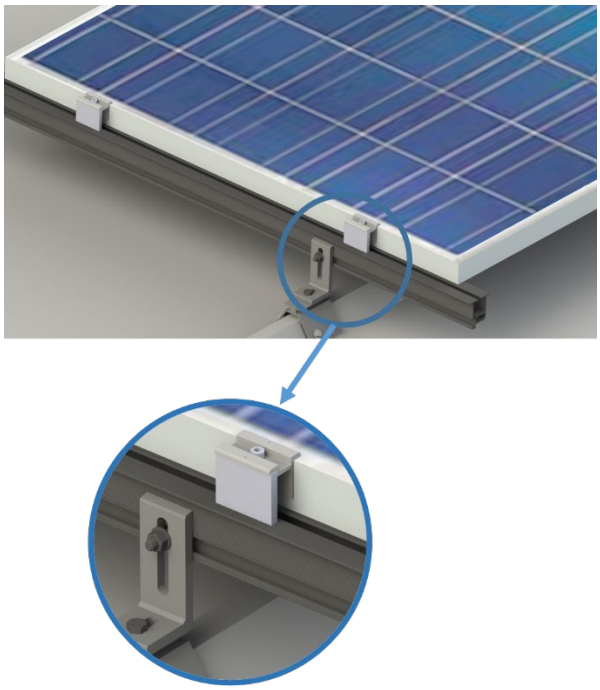


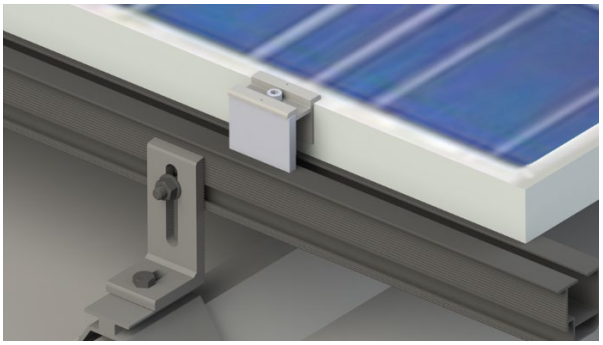
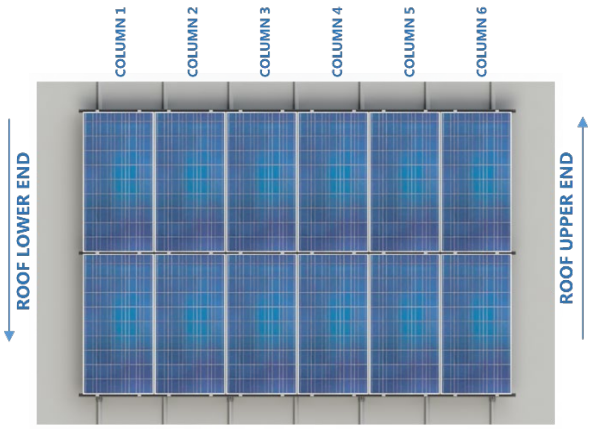
Figure 28 – Microinverter Mounted to Module (Fully-Railed Configuration Only)

SHARED-RAIL CONFIGURATION

Module installation begins at the array origin (Page 11), or corner location. It is a continuous installation process that sees adjacent modules being installed **up, then across**. This may also require some adjustment to Rail positioning. A correctly installed system will have modules evenly seated on Rails, and KB Konnect Clamps in full-contact, flush, and correctly spaced on modules.

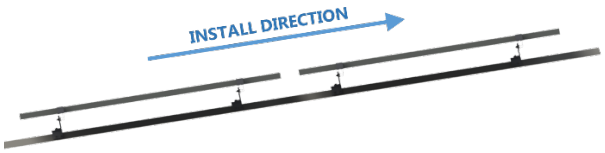
1	Begin installing at the origin, or alternatively, at an array edge. Install a module evenly across two rails, as shown on your Spacing Diagram. If needed, adjust the Rail position using the slots on the L-Foot. Installations start at the bottom of the roof, working up. See Page 28 for Rail cutting and position requirements. **NOTE:** Strong winds can lift modules. Under no circumstances must modules be left unsupervised <u>without</u> all four KB Konnect Clamps installed.	 Figure 29 – Module Placement on Rails  Figure 30 – Recommended Install Direction

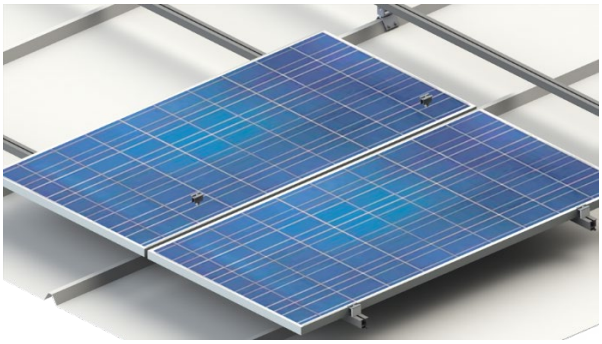
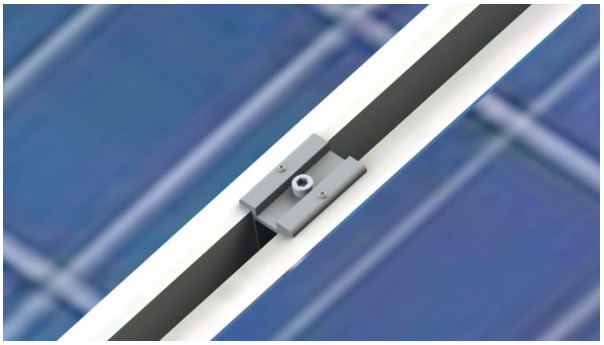
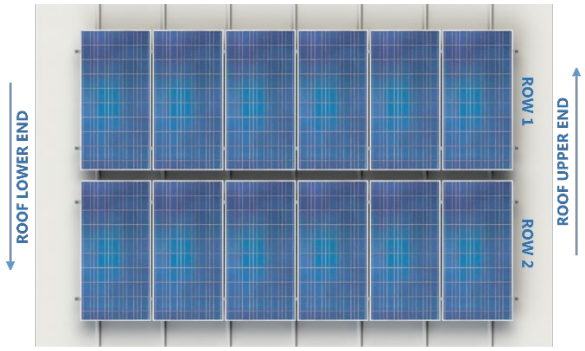
2	Secure the first module onto each Rail with KB Konnect Clamps. Use your Spacing Diagram to locate the Clamp locations relative to the module edge. Click-in and secure End Clamps at array edges first. The centre of each KB Konnect Clamp must be placed at least 4" from the module edge. KB Konnect Clamps + End Blocks, or KB Konnect End Clamps are installed at array edges. KB Konnect End Clamps are for 30, 35, or 40mm modules only.	 Figure 31 – Example End Clamp Placement
3	Place the next module towards the upper end of the roof, as shown in Figure 33. If there is no module in this direction, completely install the first module with four (4) KB Konnect End Clamps. Click-in and secure KB Konnect Clamps between modules. The adjacent module must be in place before completely installing the KB Konnect Clamp.	 Figure 32 – Clamp Placement

4	Completely secure the first module. Use a 3/16" Allen Bit/5mm Hex Drive, tighten all Clamps with a standard drill or torque wrench. Torque to **8.3Nm (6.1ft-lb).** **NOTE:** To prevent damage to module and KB Konnect Clamp, do not exceed recommended torque setting above. Do not use hammer drills, impact drivers, or long Allen keys.	 Figure 33 –KB Konnect Clamp + End Block Installed
5	Continue installing modules until the end of the array. Once complete, move to the next column of modules. Use your Spacing Diagram to determine the required gap between columns. Repeat steps 2-5 until the entire array is complete. **NOTE:** KB Konnect Clamps are designed for single use only. If KB Konnect Clamps are removed for maintenance purposes, please re-install using a new KB Konnect Clip.	 Figure 34 – Installed Array

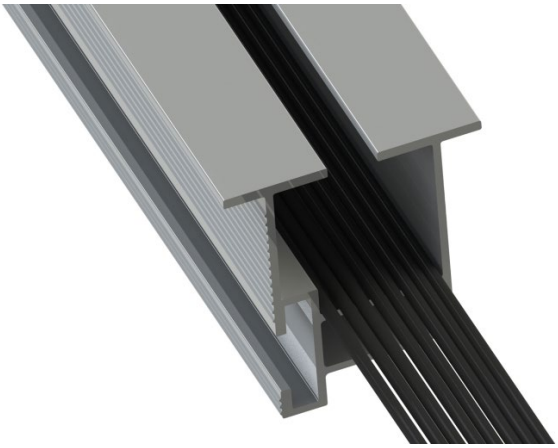
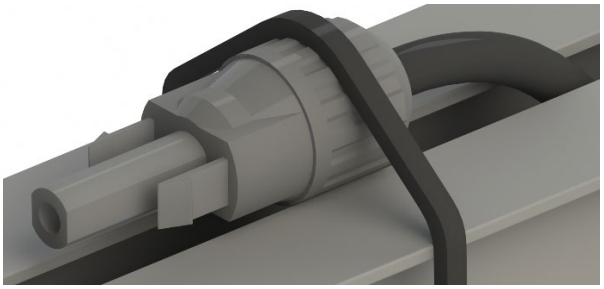
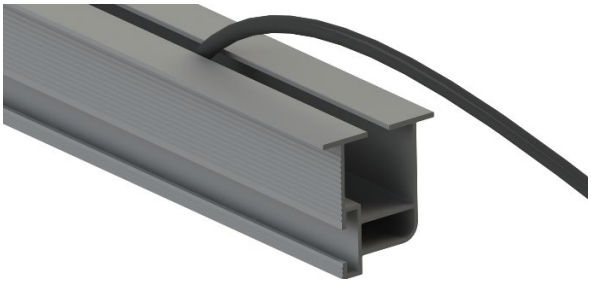
FULLY-RAILED CONFIGURATION

Module installation begins at the array origin (Page 11), or corner location. It is a continuous installation process that sees adjacent modules being installed **across, then up**. This may also require some adjustment to Rail positioning. A correctly installed system will have modules evenly seated on Rails, and KB Konnect Clamps in full-contact, flush, and correctly spaced on modules.

1	Begin installing at the origin, or alternatively, at an array edge. Install a module evenly across two rails, as shown on your Spacing Diagram. If needed, adjust the Rail position using the slots on the L-Foot. Installations start at the bottom of the roof, working up. See Page 28 for Rail cutting and position requirements. **NOTE:** Strong winds can lift modules. Under no circumstances must modules be left unsupervised <u>without</u> all four KB Konnect Clamps installed.	 Figure 35 – Install Direction
2	Secure the first module onto each Rail by installing KB Konnect Clamps. Click-in and secure End Clamps at array edges first. KB Konnect Clamps + End Blocks, or KB Konnect End Clamps are installed at array edges. KB Konnect End Clamps are for 30, 35 or 40mm modules only.	 Figure 36 – End Clamp Placement

3	Place the next module in the row, as shown in Figure 38. If no module is directly adjacent in the row, completely install the first module with four (4) KB Konnect End Clamps. Click-in and secure Clamps between modules. The adjacent module must be in place before completely installing the KB Konnect Clamp.	 Figure 37 – Clamp Placement
4	Completely secure the first module. Use a 3/16" Allen Bit/5mm Hex Drive, tighten all Clamps with a standard drill or torque wrench. **Torque to 8.3Nm (6.1ft-lb).** **NOTE:** To prevent damage to module and clamp, do not exceed recommended torque setting above. Do not use hammer drills, impact drivers, or long Allen keys.	 Figure 38 – Installed KB Konnect Clamp
5	Continue installing modules in the first row. Once complete, move to the next row of modules. Use your Spacing Diagram to determine the required gap between rows. Repeat steps 2-5 until the entire array is completed. **NOTE:** KB Konnect Clamps are designed for single use only. If KB Konnect Clamps are removed for maintenance purposes, please re-install using a new KB Konnect Clip.	 Figure 39 – Installed Array

WIRE MANAGEMENT

1	As modules are being installed, tuck wires into the wire management slot of the KB10 Series Rails.	 Figure 40 – Wires Routed through Channel
2	As an added measure, MC4 connectors must be securely zip tied to the Rails.	 Figure 41 – Securing MC4 Connectors
3	Ensure wires are carefully inserted into the wire management slot, to prevent any damage.	 Figure 42 – Inserting Wires through Channel

CUTTING RAILS

This section will serve as a guide to cutting Rails on BarnRack 2.0.

Shared-Rail Installations: Measure 6.5" or greater from the KB Konnect End Clamp (as shown in Figure 44), and mark this distance.

Fully-Railed Installations: Measure 4" or greater from the KB Konnect End Clamp (as shown in Figure 45), and mark this distance.

Excess Rail beyond this mark must be cut. Ensure wires being routed through the Wire Management Channel are kept away from this section. Use a portable band/reciprocating saw to cut the Rail. Once cut, deburr any sharp edges on the Rail ends.

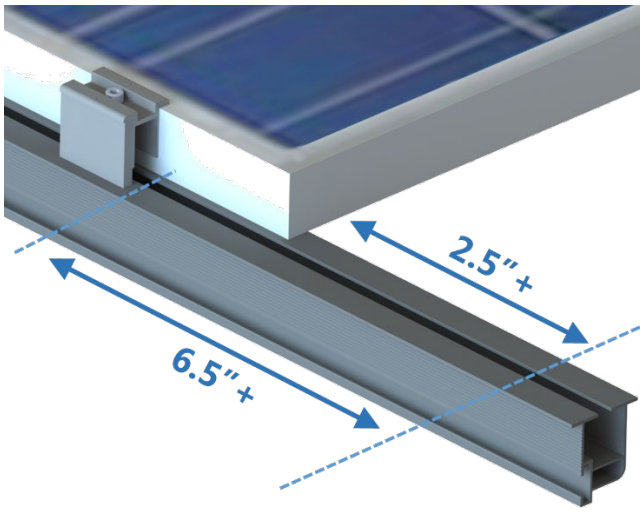


Figure 43 – Excess Rail for Shared-Rail Installations

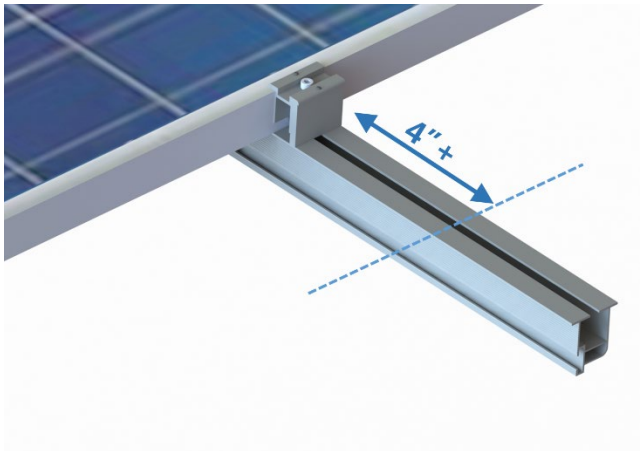


Figure 44 – Excess Rail for Fully-Railed Installations

GROUNDING & BONDING

Installers must provide an appropriate method of direct-to-earth grounding in accordance with the latest edition of the Canadian Electrical Code Part 1, CSA 22.1 Safety Standard for Electrical Installations or the National Building Code, including NEC 250: Grounding and Bonding, and NEC 690: Solar Photovoltaic Systems.

Grounding and Bonding method is dependent on the install configuration of the system.

WARNINGS:

- Use at least one grounding lug for every continuous, electrically bonded array.
- Maximum Series Fuse Rating: 30 Amps
- Keep Copper away from Aluminum components in a fashion that maintains a minimum of ¼" separation.
- At all times, the array must be interconnected to the grounding lug (as well as during maintenance).

GROUNDING LUGS

Only ETL Certified Grounding Lugs may be used to ground KB Racking® systems.
Examples of ETL Certified Grounding Lugs are:

- TE Connectivity: Solarlok Grounding Assembly (2058729-1)
- Ilsco Solar: SGB SOLAR GRND BND (SGB-4)

SHARED-RAIL CONFIGURATION

Shared-Rail Installations require one grounding point per array.

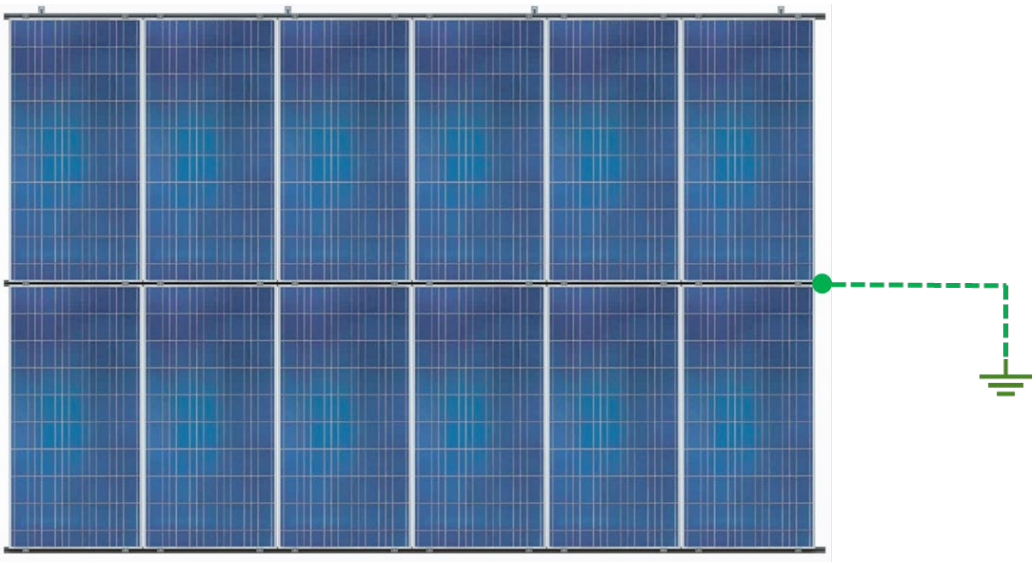
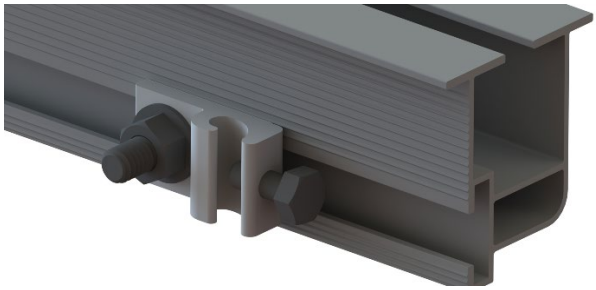
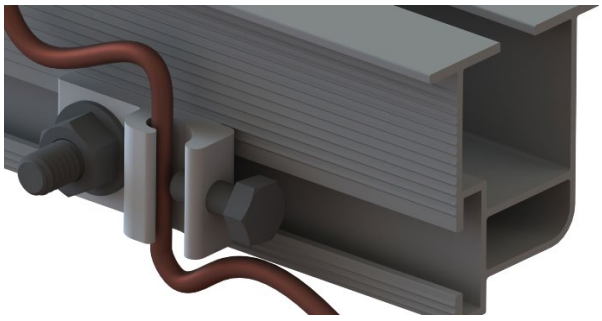


Figure 45 – Shared-Rail Grounding Scheme

1	Fasten grounding lug to the Rail. Torque as per manufacturer requirement. Figure 47 is for reference.	 Figure 46 – Grounding Lug Placement
2	Insert #6 AWG – RW75 uninsulated copper ground wire into grounding lug. Torque as per manufacturer requirement.	 Figure 47 – Copper Wire through Grounding Lug

FULLY-RAILED CONFIGURATION

Fully-Railed Installations require one grounding point per row of modules.

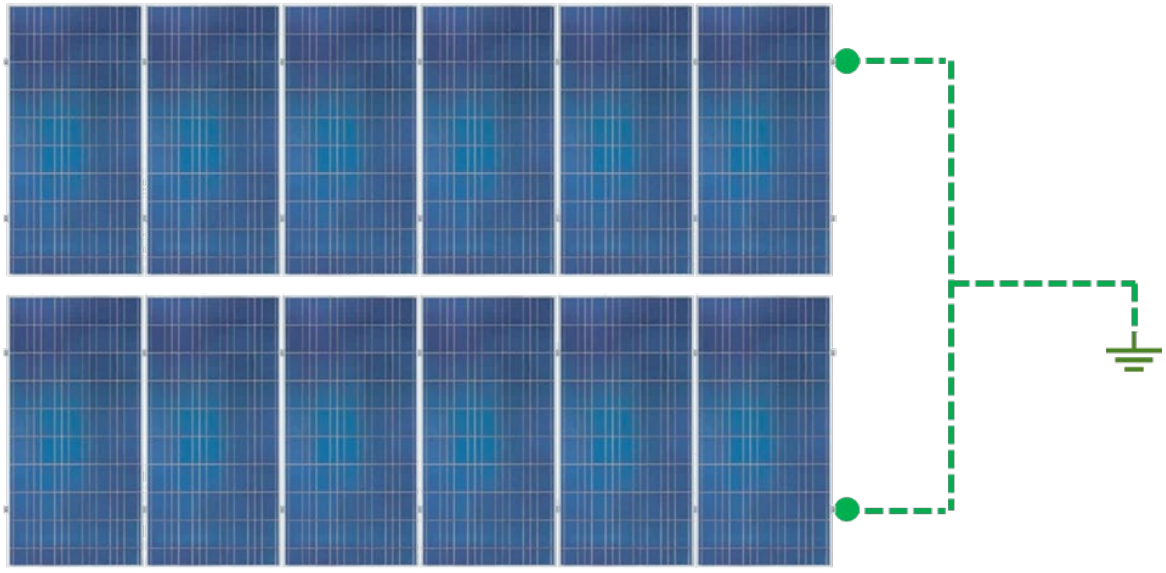
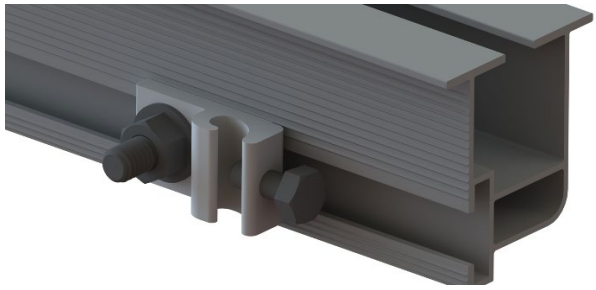
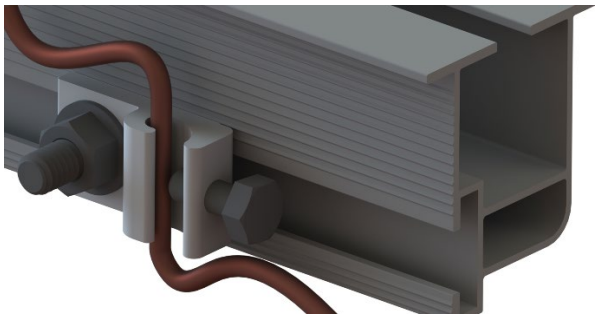


Figure 48 – Fully-Railed Grounding Scheme

1	Fasten grounding lug to one Rail per row of modules. Torque as per manufacturer requirement. Figure 50 is for reference.	 Figure 49 – Grounding Lug Placement
2	Insert #6 AWG – RW75 uninsulated copper ground wire into each grounding lug. Torque as per manufacturer requirement.	 Figure 50 – Copper Wire through Grounding Lug

LABEL ATTACHMENT

Certification labels (Figure 52) must be visibly displayed on every array.

Mark the appropriate quarter and year of assembly using a 1-hole punch. For a system being installed in April 2021, punch Q2 2021.

For each array, a certification label must be pasted to at least one Rail carrying a grounding lug. Place labels next to the grounding lug, as shown in Figure 53.

To paste, peel the outer cover on the back of the label, exposing the adhesive.

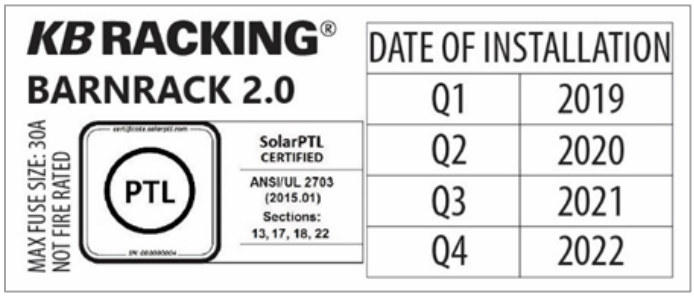


Figure 51 – Certification Label

Figure 52 – Certification Label Placement

POST-INSTALLATION

COMPLETING INSTALLATION

For each array, ensure the following items are checked off:

BARN ATTACHMENTS	
Are Barn Attachments torqued as per manufacturer instructions?	Y/N
L-FEET	
Are L-Feet perpendicular to roof surface?	Y/N
Are L-Feet correctly torqued?	Y/N
RAILS	
Are Rails securely fastened to L-Feet?	Y/N
Are T-Bolts correctly torqued?	Y/N
Is a thermal break included, as specified in the manual?	Y/N
Are thermal breaks free of modules?	Y/N
Does every Rail contain a minimum of three attachments?	Y/N
Is maximum Rail cantilever 3 feet or less?	Y/N
Are excess Rail lengths cut at recommended distances?	Y/N
MODULES	
Are modules evenly spaced on Rails?	Y/N
KB KONNECT CLAMPS	
Have screws pierced into the module?	Y/N
Are KB Konnect Clamps correctly torqued?	Y/N
Shared Rail: Are clamp centres 4" or more from module edges?	Y/N
SPLICES	
Are Splices correctly torqued?	Y/N
Are Rails evenly spaced within Splice?	Y/N
GROUNDING LUGS	
Have Grounding Lugs been correctly torqued?	Y/N

PRODUCT MAINTENANCE

To maximize life span and ensure peak performance, KB Racking® recommends routine maintenance checks. The following checks should be completed every 6 months to maintain the system's integrity.

- Remove debris from rooftop that can damage modules or stop solar absorption.
- Clean solar modules and remove bird waste.
- Check clamps and hardware to ensure intended connections are secured.
- Check components for damage (warping, bent)

TECHNICAL SPECS

BARNRACK 2.0 – TECHNICAL SPECS	
Distribution Load	1.5 – 3 lbs/ft^2
Inclinations	Flush
Wind Speed	Up to 190mph
Material	6000 series aluminum
Module Type	All standard size framed PV modules
Wire Management	Built into KB10 Rail
Orientation	Landscape, Portrait
Rail Length	10', 20'
Configurations	Shared-Rail, Fully-Railed
Roof Pitch	0° - 45°
Roof Type	All corrugated metal roofs
Grounding Method	ETL certified KB Konnect clamps
Module Spacing	Customizable based on project requirements
Roof Clearance	Up to 8" (Bottom of module to roof)
Span Lengths	Dependant on project location, 3' – 8'