

# ***Shingled Roof Mounting Guide***

**Commercial | Residential | Industrial | Institutional**

## ***Product Certifications***

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***WEEB-KSR***

***WEEB-M-KR***

***CL501TN***

These products are tested to UL 467, CAN/CSA-C22.2 No.41 US/Can safety standards for safety grounding and bonding equipment.





Kinetic Solar  
65 Martin Ross Ave. Unit 1  
www.Kineticsolar.com  
1-416-665-3755

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## ***Disclaimer***

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Kinetic Solar Racking and Mounting does not install any component of its racking and mounting systems and therefore will not have any duty or responsibility for safe and proper installation of its racking systems, including job site safety standards and procedures. Installation of each system and project including Occupational Safety and Health Administration (OSHA) supervision, safety programs, injury, loss or death to any or all persons, property and work located on the job project site is the responsibility of the installer and/or the contractor or developer.



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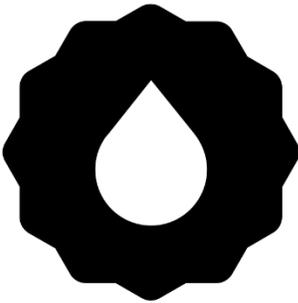
## ***System Advantages***

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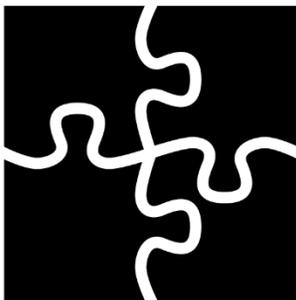
### **Fewer tools required**

All fasteners are 1/2" drive and are tightened to 12 ft-lbs of torque, increasing the speed and accuracy of your install



### **100% Watertight**

Avoid leaks and dry rot with our K-Flash watertight system



### **Pre-assembly**

Mid-Clamps, End-Clamps and L-Brackets come pre-assembled, increasing speed of installation

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## ***General Notes***

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- Drawings in this installation manual are examples and are NOT specific to your order
- Kinetic racking systems are available in two finishes, anodized and mill
- Placement of rails and clamps is governed by Landscape (horizontal) or Portrait (vertical) module orientation.
- Upon receiving the order, it is the customer's responsibility to verify receipt of ordered parts
- All fasteners (1/2" Drive) must be tightened to between 12-18 ft-lbs (16.3 - 24.4 N-m) unless specified otherwise

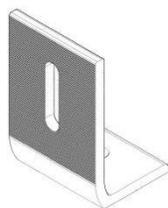
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## ***Main components***

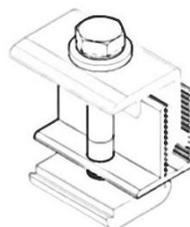
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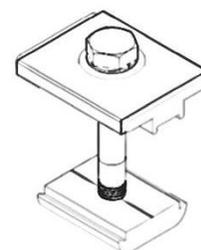
**Flashing Kit for  
Shingled Roof Mounting**



**L-Bracket Kit**



**End-Clamp  
Assembly**



**Mid-Clamp  
Assembly**

- **Flashing Kit for Shingled Roof Mounting** – Base plate, K-Flash, Two Lag Bolts
- **L-Bracket** – Used to attach the rail to the Mounting solution on the roof.
- **Kinetic Rail** – Used under the solar modules for mounting
- **End-Clamp** – Used to attach the modules to the rails.
- **Mid-Clamp** – Attach the modules to the rails.
- **(Optional) B.E.S. 925 Sealant (or equivalent)**

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***Tools required***

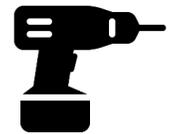
**Measuring Tape**



**Chalk /String Line**



**Hand Drill**



**7/32" Drill Bit**



**1/2" Drive Wrench/Socket and Torque Wrench**



**Caulking Gun**



**Fall Restraint Harness**



## ***Mounting Procedure***

### ***Step 1: Install Roof Mounts***

1. Measure and mark the appropriate bracket locations. Use a measuring tape to ensure chalk lines are straight and square.

- Ensure rail spacing is in accordance with module manufacturer's guidelines



2. Prepare roof for installing lag bolts by drilling two 7/32" pilot holes through the roof and into the rafter for each base plate.

- NOTE: Spacing between supports should not exceed 48 inches. The maximum cantilevered length is 24 inches. These may be extended in certain cases. Please contact us for further information

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3. Screw each base plate into position using two lag bolts. The base plate should be facing downward (holes up with respect to the peak of roof, stud facing outwards)
4. Apply BES 925 sealant or equivalent to the underside of your K-Flash Panel. BES 925 sealant or equivalent is required for wind speeds above 40km/h
5. Slide the K-Flash flashing under shingles and position over the base plate stud. The K-Flash should sit flush against the roof.

### ***Step 2: Attach Rails to Base Plate***

1. Insert the channel nut of the L-Bracket assembly into the side channel of the rail
2. Attach the short side of the L-Bracket to the base plate using a flange nut. The long portion should be upright (see picture)



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***Step 3: Install Rail Joiner (Splice)***



1. If not using rail joiners, continue to step 4
2. Insert the joiner assembly into the side channel of the rails at the ends being joined
3. Tighten the bolts of the joiner. Torque to 12-18 ft-lbs (16.3 – 24.4 N-m). If using anodized rails, please refer to Appendix A of this document for further instructions.
4. Attach cable management channels /cable ties to the rail.
5. Solar module width and/or length will determine the exact rail spacing. (Please refer to the module manufacturer's specifications)

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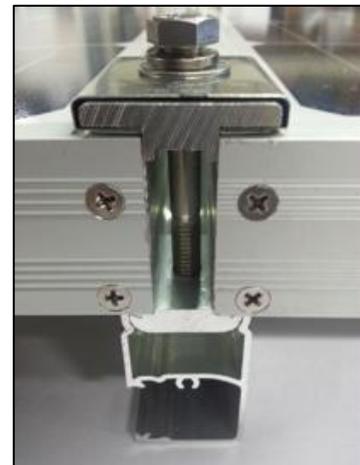
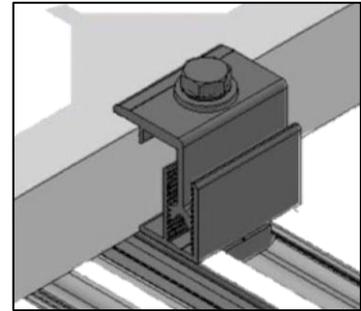
***Step 4: Install Micro-Inverters***

1. Install micro-inverter mounts
  - a. If using top mount
    - i. Remove from package
    - ii. Insert channel nut into top channel at 30 degree angle and drop into position
    - iii. Install micro-inverters according to manufacturer specifications
  - b. If using side mount micro-inverters
    - i. Insert channel nut into side channel at 30 degree angle
    - ii. Install micro-inverters according to manufacturer specifications

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***Step 5: Mount Solar Modules***

1. Insert the channel nut of the End-Clamp and assembly into the top channel of the rail
2. Repeat for Mid-Clamp
3. Position module on the rails (make sure to hold modules securely until properly fastened)
4. Slide clamps into place
5. Tighten clamps and torque to 12-18 ft-lbs (16.3 – 24.4 N-m)
6. Ensure the first row is square before continuing as it will affect the squareness of the array



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***Step 6: Cable Management***

1. Determine the rail that will be carrying the cables (usually the higher of the two)
2. Hang the cylindrical edge of the cable management conduit on the bottom edge of the side channel of the rail
3. Cable management kits include sufficient conduit to span L-Bracket to L-Bracket. NOTE: if joiner is used between L-Brackets, a 4 ½" section of conduit will remain unused
4. Lay cables in conduit and ensure that no cables are sagging or touching the surface of the roof
5. Rotate conduit until it snaps into top edge of side channel
6. Install cable ties if required

