

# Installation Manual:

## Ford Transit V2 Roof Rack, Premium, 148" WB Extended

SKU: 1003-MK57-01

Date: 5/19/25

Revision: 0

# Notes

**Rack Shipping:** This kit is shipped in a single box which should be handled by two people before it is opened

**AC and Fan Install:** If you plan to install solar panels that are 58.7” or wider, including the Rich Solar 250W panels, we recommend installing or at least getting your solar panels roughly in place, before installing the fan and air conditioner. Note, this is not required for the Rich Solar 200W solar panels.

**Disclaimer:** Unaka Gear Co. is committed to providing high-quality products, but it is important to note that we are not liable for any damage, failure, or loss resulting from incorrect installation or safety precautions taken during installation or use of our roof racks. Proper installation is crucial to ensure safety and functionality. We strongly recommend that all installation be performed by a qualified professional or according to the detailed instructions provided with the product. By using our roof racks, you acknowledge and accept that Unaka Gear Co. is not responsible for any issues arising from improper installation. For any questions or concerns, please contact our customer service team.

**Installation Safety:** Installation of this roof rack requires two ladders for two people to help with the installation. Make sure that your ladders are tall enough, and that you have a level area to use them on. Accessing the roof of your van will put you at risk to potential falls which can result in injury or death.

**Terms of Service & Warranty:** To see our complete terms, conditions, as well as warranty information use the link below or head over to our website. <https://unakagearco.com/policies/terms-of-service>

**Preventative Maintenance:** In order to ensure proper performance of your rack you must do an initial torque check after 4 to 7 days, follow up checks after 1 month, routine checks every 3 to 4 months, and after moderate driving on bumpy or gravel roads.



## Installation Overview

- Layout and identify all parts
  - Keep hardware separate, some pieces may be only slightly different and are **not** interchangeable
  - Failure to follow this step may result in extended delays in resolution and additional steps on the customer to determine origin of error
- Pre-install selected hardware
- Initial cross bar assembly
- Prep van roof for bracket installation
- Install and locate roof rack brackets
- 8020 Side Rail installation and positioning
- Initial cross bar installation, and positioning
- Set side rail to side rail and rack brackets final position
- Tighten and seal roof rack brackets
- Premium side plate installation
- Final wind fairing installation, and positioning
- Solar panel installation (optional)
- Confirm all hardware torqued and tightened

## TOOLS NOT INCLUDED

3



Torque Wrench (75 to 132 in-lbs)



SAE Socket set – 1/2" & 7/16" socket required & Metric 13mm socket



1/2", 7/16", & 13mm box wrenches

2 x



2 x Ladder



Tin Snips



File



Tape Measure



Caulk Gun



Paint Cleaning/Prep Materials



Dicor Sealant (not included)



Sandpaper



Loctite C5-A Anti-Seize

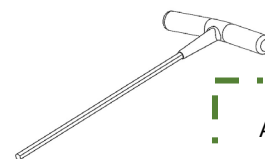
Customer may desire to dab anti-seize to the side of each bolt that will be paired with a nylock nut. Nylock nuts have a small plastic insert to make them vibration resistant. - (not included with kit)



Loctite 242

Apply this to any bolt that is not used with a nylock nut (pre-applied to bolts in kit)

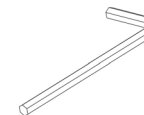
## INCLUDED TOOLS



22

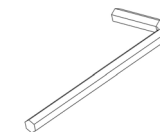
3/16 T-HANDLE ALLEN WRENCH

[ITEM 20] {QTY. 1}



23

1/8 ALLEN WRENCH  
[ITEM 21] {QTY. 1}



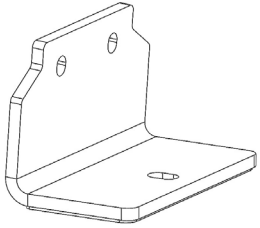
24

5/32 ALLEN WRENCH  
[ITEM 22] {QTY. 1}

# Rack Components

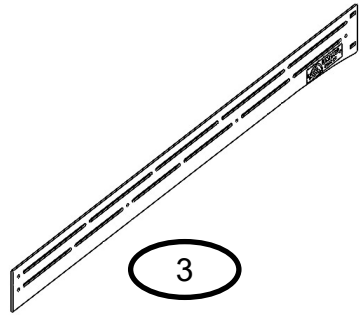
Item #'s are roughly in order, see the next page for remaining hardware

2



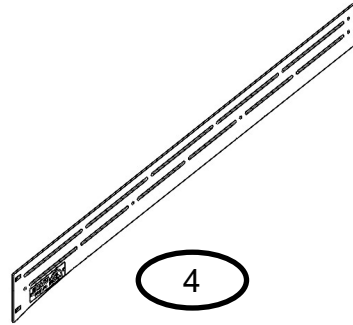
FORD TRANSIT PREMIUM MAIN ROOF BRACKET W/RUBBER ONLY [ITEM 2] {QTY. 8}

3



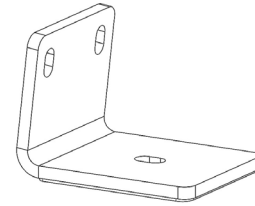
FORD TRANSIT PASSENGER SIDE FRONT PLATE ASSEMBLY [ITEM 3] {QTY. 1}

4



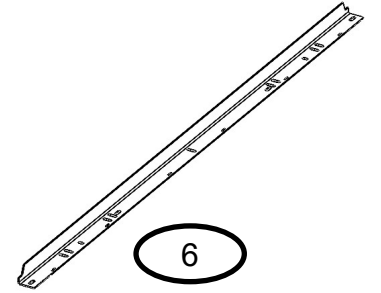
FORD TRANSIT DRIVER SIDE FRONT PLATE ASSEMBLY [ITEM 4] {QTY. 1}

5



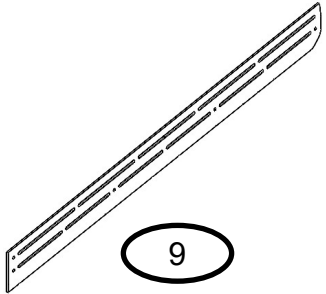
FORD TRANSIT REAR ROOF RACK BRACKET W/RUBBER ONLY [ITEM 5] {QTY. 2}

6



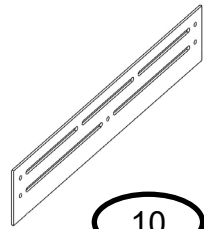
FORD TRANSIT PREMIUM SOLAR CROSS BAR [ITEM 6] {QTY. 4}

9



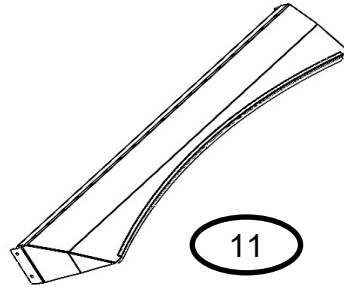
FORD TRANSIT REAR SIDE PLATE [ITEM 9] {QTY. 2}

10



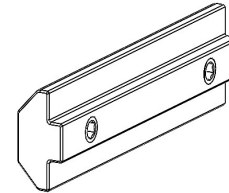
FORD TRANSIT 148 EXT MIDDLE SIDE PLATE [ITEM 10] {QTY. 2}

11



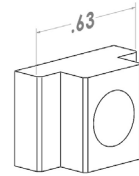
FORD TRANSIT PREMIUM WIND DEFLECTOR WELDMENT [ITEM 11] {QTY. 1}

12



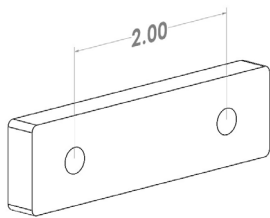
8020 INSIDE SPLICE PLATE ASSEMBLY [ITEM 12] {QTY. 8}

14



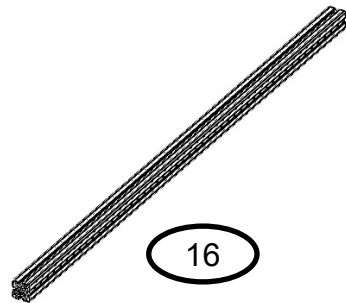
T-SLOT NUT 5/16-18 [ITEM 14] {QTY. 4}

15



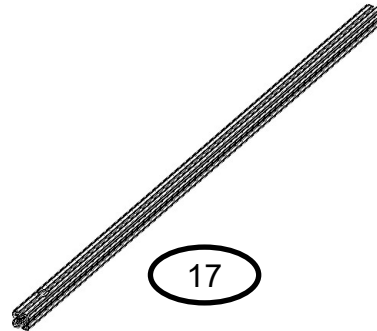
SIDE RAIL TAPPED SPLICE PLATE, 5/16-18 [ITEM 15] {QTY. 4}

16



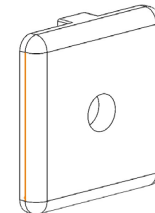
8020 STYLE EXTRUSION, 15 SERIES, 48.81" LONG [ITEM 16] {QTY. 6}

17



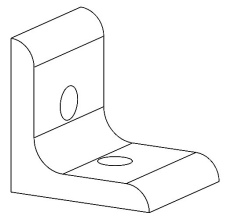
8020 STYLE EXTRUSION, 15 SERIES, 61.29" LONG [ITEM 17] {QTY. 1}

18



END CAP, 15 SERIES [ITEM 18] {QTY. 2}

33

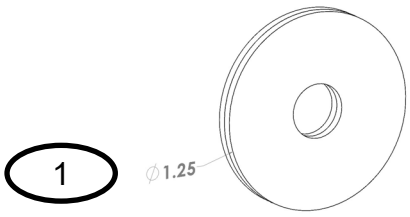


CORNER BRACKET, 2 HOLE [ITEM 33] {QTY. 4}

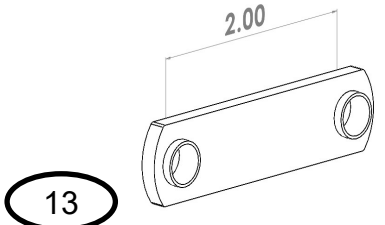


# Hardware Components

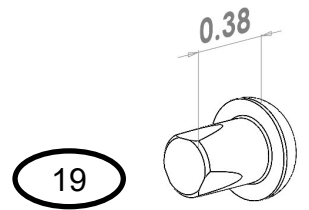
• Keep hardware separate; some pieces may be only slightly different and are **not** interchangeable



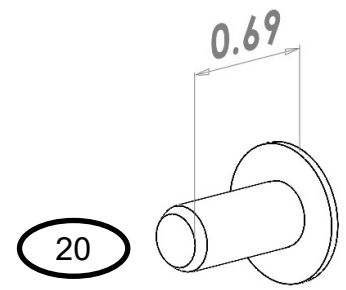
1 BONDED WASHER, 1.25 OD, .34 ID [ITEM 1] {QTY. 12}



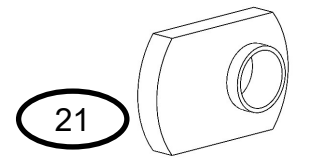
13 DOUBLE T-NUT, 15 SERIES, 5/16"-18 THREAD, 2" SPACING [ITEM 13] {QTY. 10}



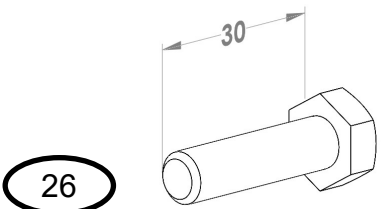
19 M7 x 0.36", BUTTON HEAD SCREW SELF TAPPING [ITEM 19] {QTY. 2}



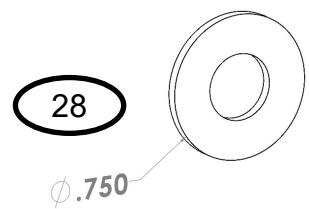
20 5/16-18 X 11/16" FLANGED BUTTON HEAD SCREW W/ THREAD LOCKER [ITEM 20] {QTY. 28}



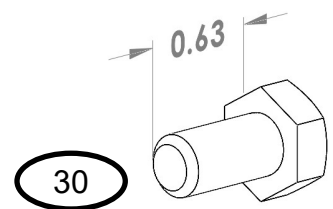
21 5/16-18 T-NUT, 15 SERIES [ITEM 21] {QTY. 38}



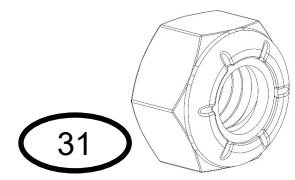
26 M8 x 1.25MM x 30MM LONG, HEX BOLT [ITEM 26] {QTY. 10}



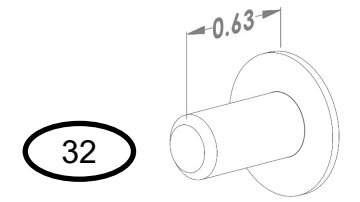
28 5/16" WASHER, .344" ID, 3/4" OD [ITEM 28] {QTY. 8}



30 5/16-18 X .625" LONG, HEX BOLT [ITEM 30] {QTY. 8}

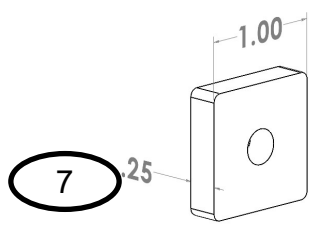


31 M8 X 1.25, NYLOC NUT [ITEM 31] {QTY. 2}

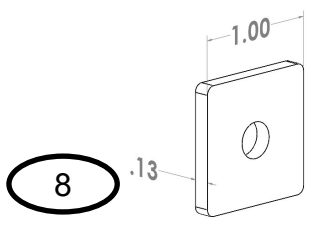


32 5/16-18 X 5/8" FLANGED BUTTON HEAD W/ THREAD LOCKER [ITEM 32] {QTY. 34}

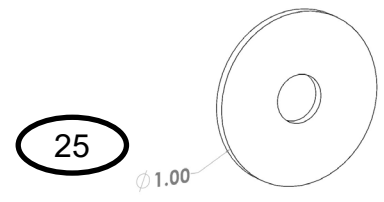
## Solar Panel Hardware



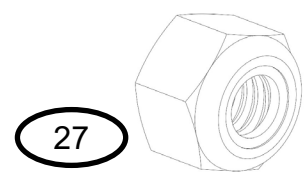
7 .25" SOLAR PANEL SPACER [ITEM 7] {QTY. 16}



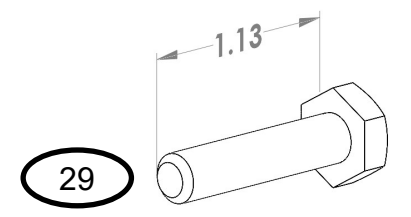
8 FT EL 0.125" SOLAR PANEL SPACER [ITEM 8] {QTY. 16}



25 1/4" WASHER, 1" OD, .28" ID [ITEM 25] {QTY. 32}



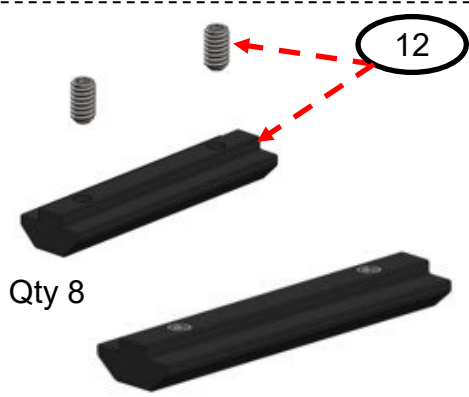
27 1/4 - 20 LOCKNUT [ITEM 27] {QTY. 16}



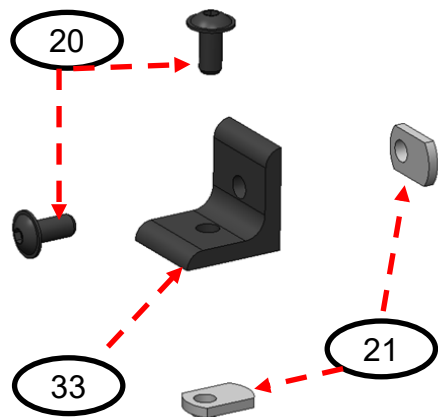
29 1/4-20 x 1-1/8", HEX BOLT [ITEM 29] {QTY. 16}

## Pre-install Select Hardware

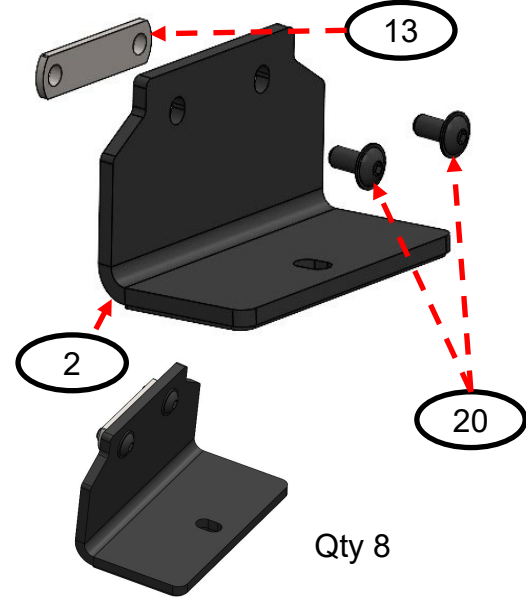
- Pre-install the hardware for each sub item as shown.
- Hardware should be loose so that the brackets or items can easily slide onto the 8020 channels in later steps.
- Take care not to leave hardware so loose that it falls off or out while being handled.



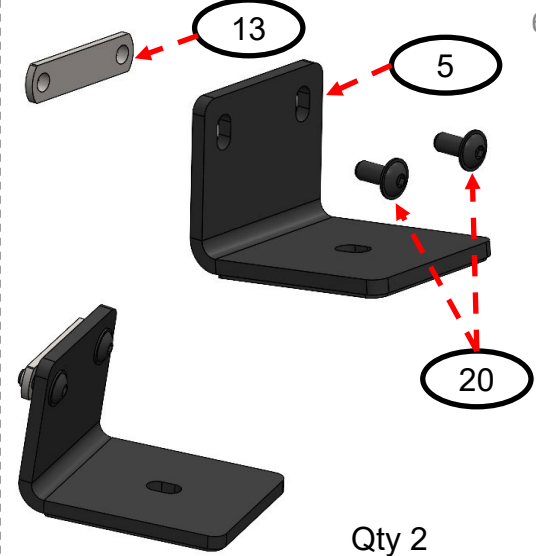
**Hardware Sub Kit:** Inside Splice Plate Kit, 8020 insert with set screws  
**Note:** Set screws are already installed in the insert. If not, install them now.



Rear Crossbar Bracket  
 Repeat x 4



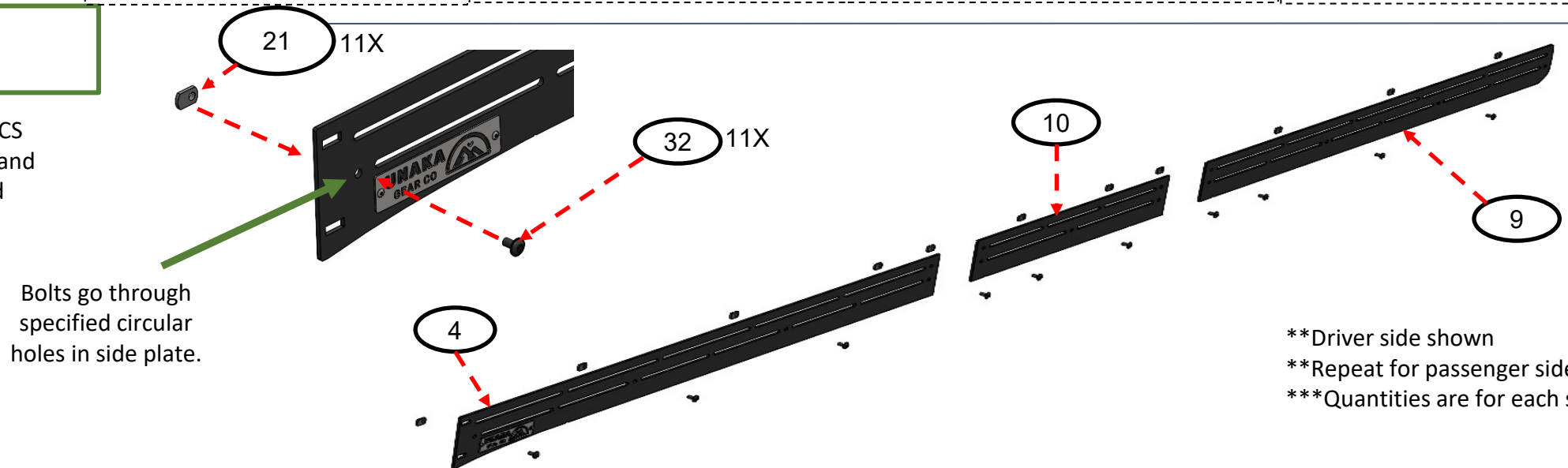
Main Roof Rack Bracket  
 Repeat x 8



Rear Roof Rack Bracket  
 Qty 2

## Pre-install Side Plate Hardware

Pre-install the Flanged BHCS (Button Head Cap Screw) and T-nuts into the designated holes in the side plates as shown.

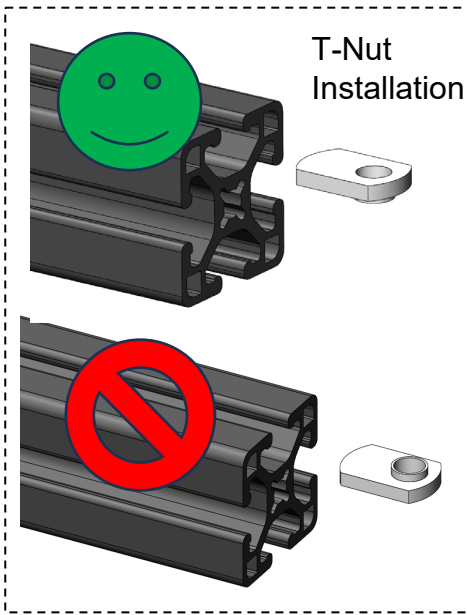


Bolts go through specified circular holes in side plate.

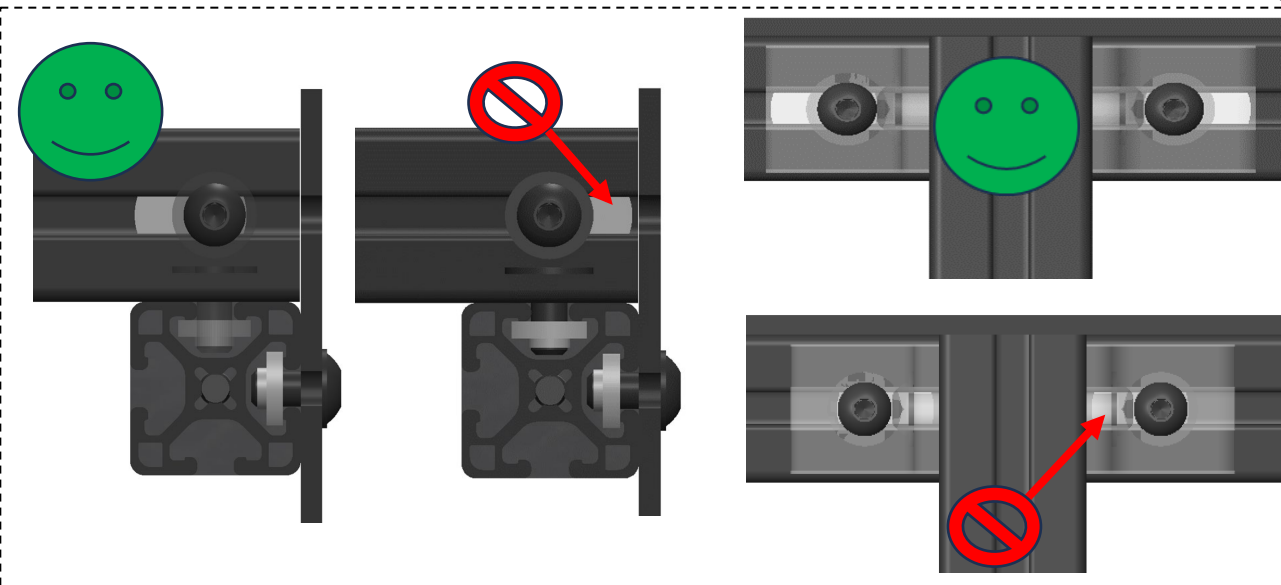
\*\*Driver side shown  
 \*\*Repeat for passenger side (mirrored)  
 \*\*\*Quantities are for each side

## General T-Nut Installation Tips

- Install T-nuts long side first and boss down.
- If long side of T-nut faces outside, it will interfere with adjacent 8020 or other components.



## Potential Interferences

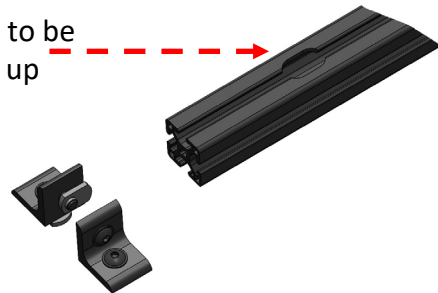


## Rear Cross Bar Initial Assembly:

1 x 3/16 Allen Wait

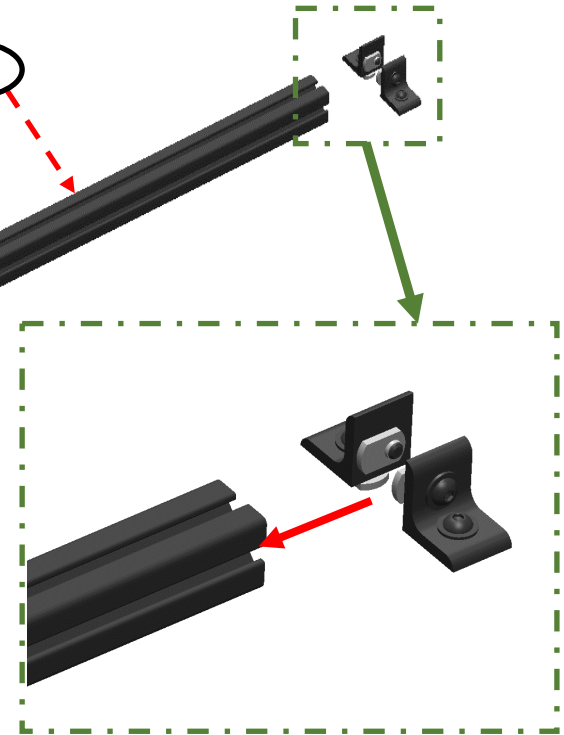
- The rear cross bar 8020 length is 61.29" long, and should be oriented so the machined cut out on one end is facing up
- Slide in corner bracket connectors with T-nuts long side first and boss-down from both ends.
- DO NOT fully tighten the hardware at this time, but they should be snug enough so they can not slide off while handling.

Drop slot to be Facing up



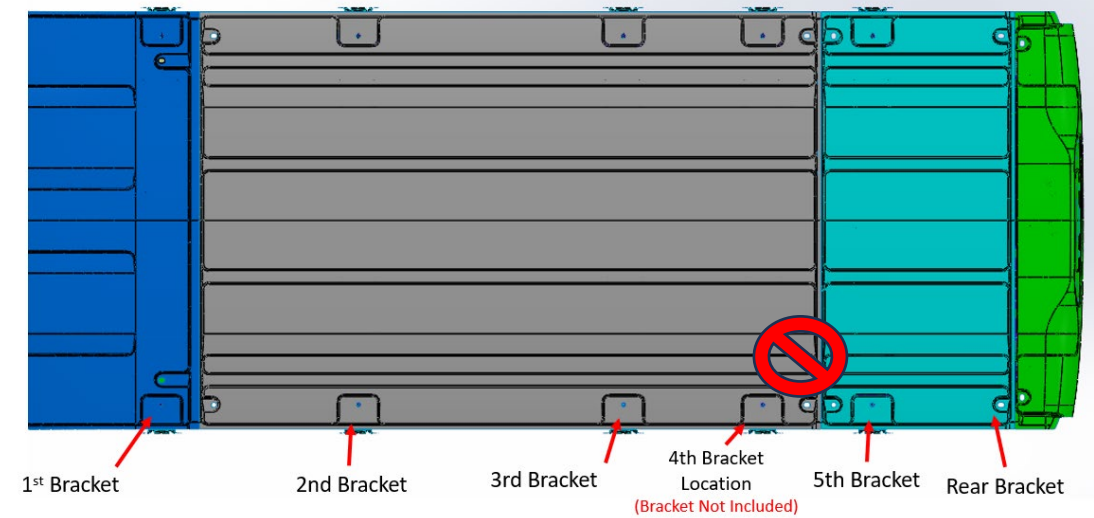
T-nuts for solar panels & other accessories

17



## Remove Caps from Van Roof

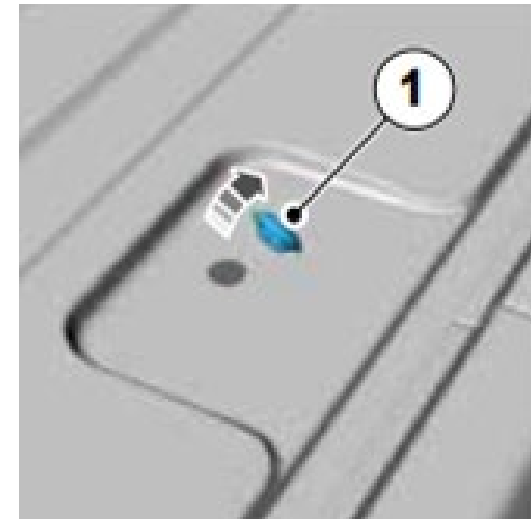
- Identify and remove the hole covers at the indicated rack bracket locations.
  - **Note this kit does not use the 4th bracket location on the van roof. Do not remove this cap location.**
  - Other holes may be present on the roof, only remove the hole covers at the rack mounting pad locations.
- Apply light heat to the hole cover using a heat gun while using a plastic scraper to break the outside cap edges and remove cap.
  - **TIP:** Use constant motion with heat gun to avoid damage to van's exterior finish.
- Remove any extra glue and clean with denatured alcohol.



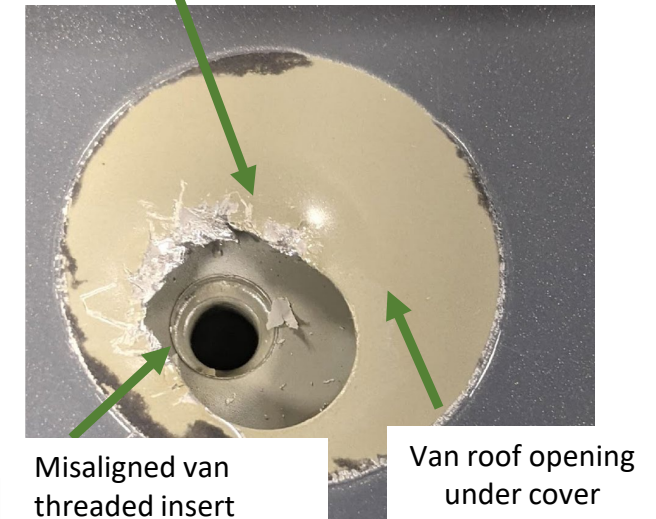
## Check Van Threaded Insert Alignment

- Using the M8 bolt provided, check the alignment of the van threaded insert by screwing it in by hand.
  - **Warning:** Do not try to force bolt into position or force thread. If threaded insert does not align well with rooftop hole you'll need to trim rooftop.
  - **NOTE:** The rear bracket location does not have a threaded insert.
  - **NOTE:** In rare cases the threaded insert may have too much paint inside and the bolt will not thread. DO NOT force it, instead you will need a M8x1.25 hand tap to run it through the threaded insert and clear the paint.
- Trim to open up any misaligned holes so the M8 bolt has clearance to be threaded.
  - Using tin snips, cut away just enough material to expose the threaded insert. This can be done by cutting small V notches.
  - Use a file or sandpaper to clean the metal to remove bent or sharp edges.

Remove Cap







Material removed using tin snips

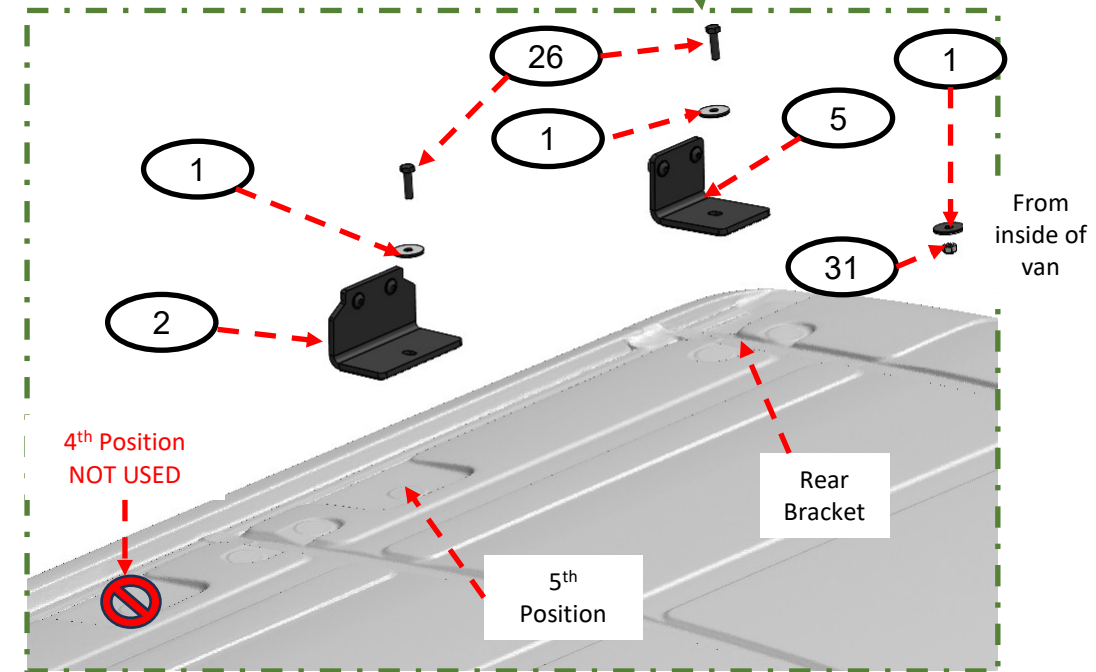
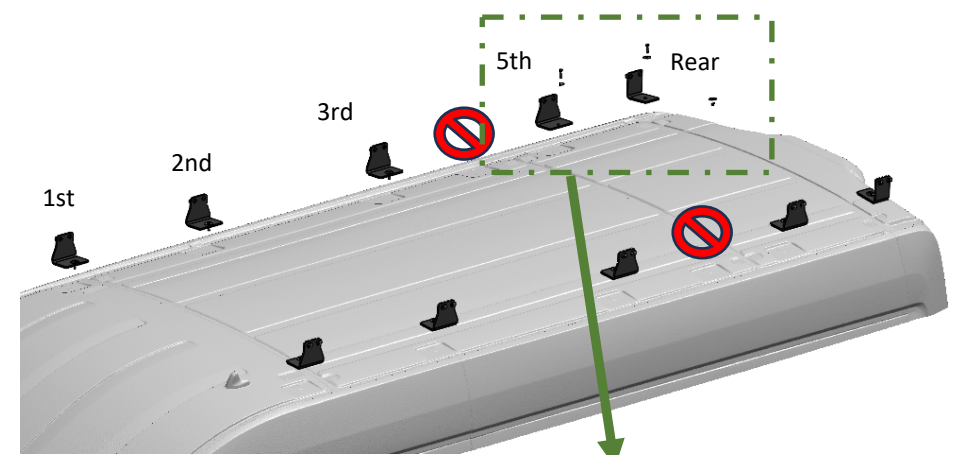




## Install Rack Brackets (Premium and Standard racks)

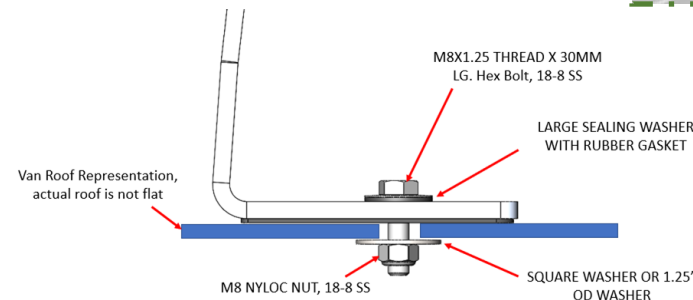
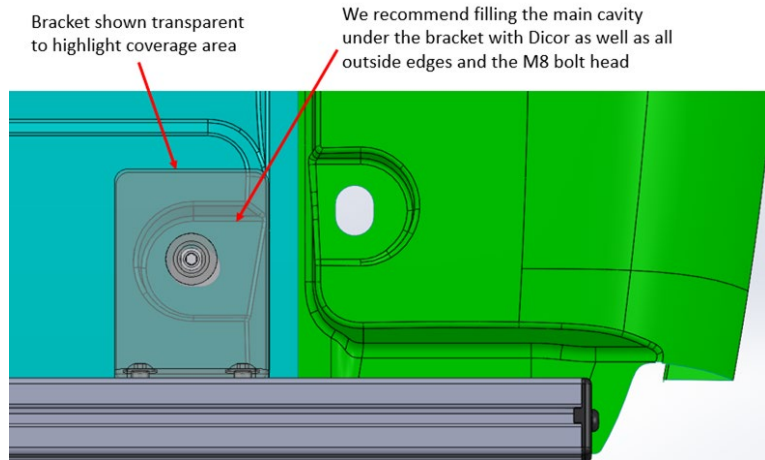
1 x  & 1 x   13MM" Socket  Wait

- Take 8020 adapter brackets with pre-installed hardware and locate at their respective roof locations.
- Repeat for all brackets for both driver and passenger sides.
- Loosely install the hardware securing the bracket to the roof.
- Rear Brackets: Note the rear positions do not have threaded inserts, insert the bonded washers nylock nut from inside the van to secure these rear brackets.
- Do not tighten brackets. Leave them loose enough to have play.



## Rear Bracket Set Up

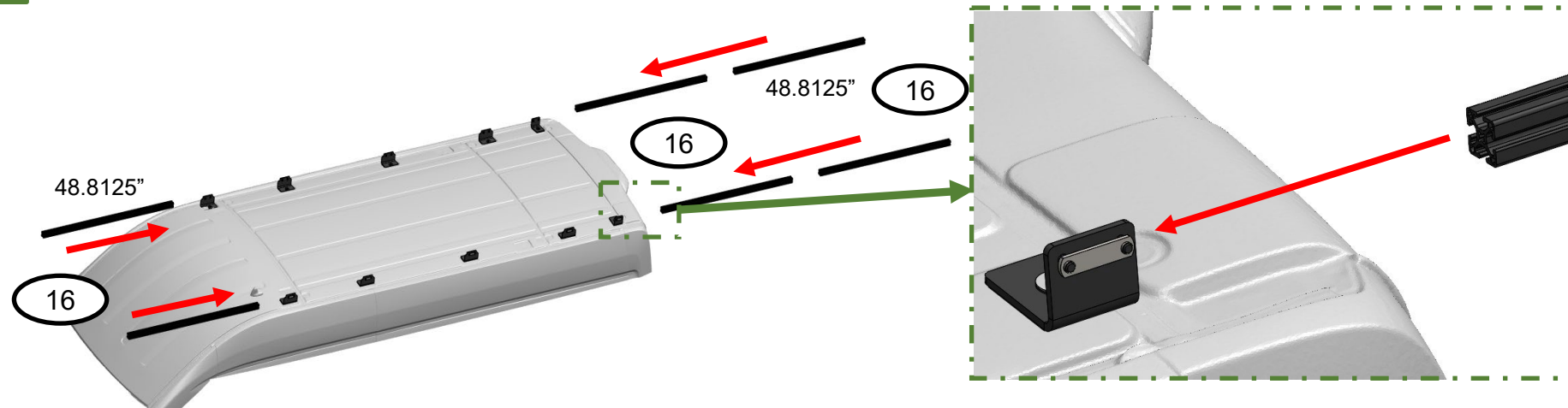
Ford does not include the same mounting pad over a cross bar with internal tapped hole at the back of the van. Instead, the rear bracket bolts through the roof of the van using an extra oversized washer and nut.







## Side Rail Assemblies (Premium and Standard racks)

2 x  & 2 x   • 3/16 Allen  Wait

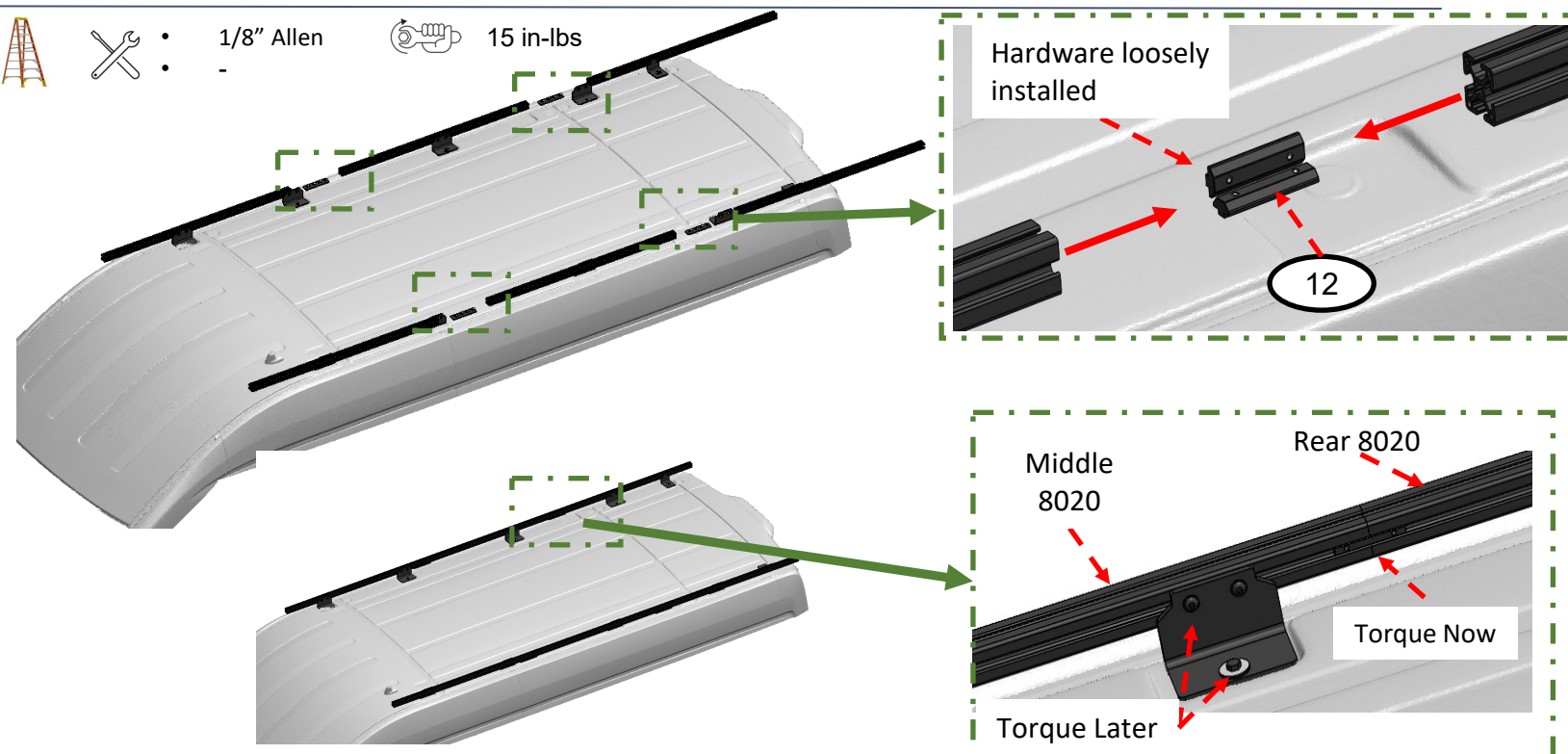
- Slide 8020 side rails onto rack brackets from the front and rear.
- **PRO TIP:** If you encounter too much resistance to slide, loosen the t-nuts but do not fully unthread them.







## Join Side Rails with Splice Plate (Premium and Standard racks)

2 x  & 2 x   • 1/8" Allen  15 in-lbs

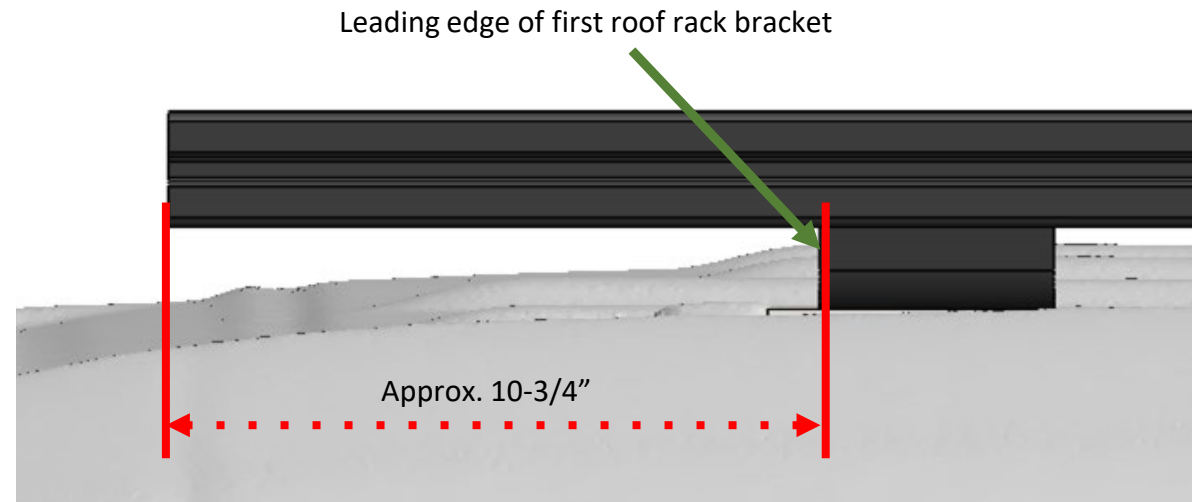
- Slide the Splice Plate Assembly with pre-installed hardware into the bottom channels of the 8020 at each connection. Note, loosen splice plate hardware if needed. Set the position so the plate is halfway engaged.
- Snug up two of the bolts on the bottom, securing the plate to 1 rail to prevent splice plate from sliding while adjusting other rails.
- Connect next section of side rail and tighten splice plate bolts. Repeat for each section of side rails. Repeat on other side of van
- Torque splice plate hardware only now.
- DO NOT fully tighten or torque hardware securing the brackets to the roof. The side rail should still be able to move around as a complete assembly.







## Side Rail Positioning (Premium and Standard racks)

2 x  & 2 x  :  :  $\frac{1}{2}$ " Socket  Wait

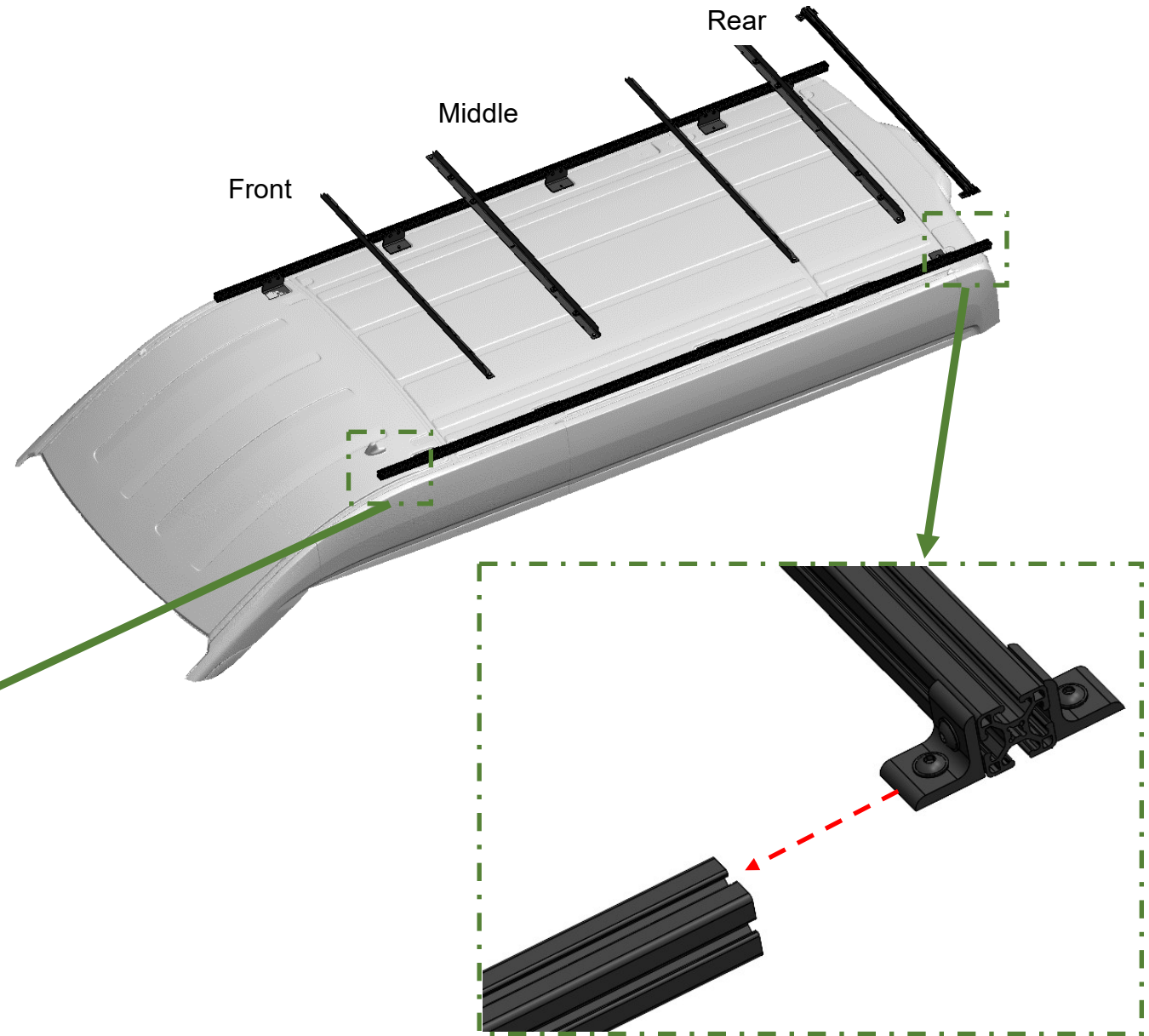
- Position front side rails so they are 10.75" from the leading edge of the first roof rack bracket. Whatever final dimension you end with, ensure driver side and passenger side rails are set to same dimension.
- Note, this is a target dimension and can be adjusted as needed once wind fairing is installed but may require loosening hardware.



## Set Side Rail Spacing





2 x  & 2 x   : 3/16 Allen -  Wait

- Roughly position the five cross bars to set the side rail spacing using at least one crossbar towards the front, one in the middle, and one towards the back – does not need to be their final location.
- Slide 1 t-nut with bosses down into the top of each side rail assembly for each cross bar bracket.
- For the rear 8020 cross bar, slide 2 t-nuts with bosses down into the top of each side rail assembly.
- TIP. The cross bars will prevent all t-nuts from being installed from one place, so slide in from the front and back as required.
- Slide any additional t-nuts into the top of your 8020 side rails that you may need for other accessories (awnings, tie downs, etc.).
- Lower your cross bars onto the 8020 side rails.
- Apply Blue Loctite 242 to the hex head bolts if required, and thread them into the installed t-nuts. Do not fully tighten.

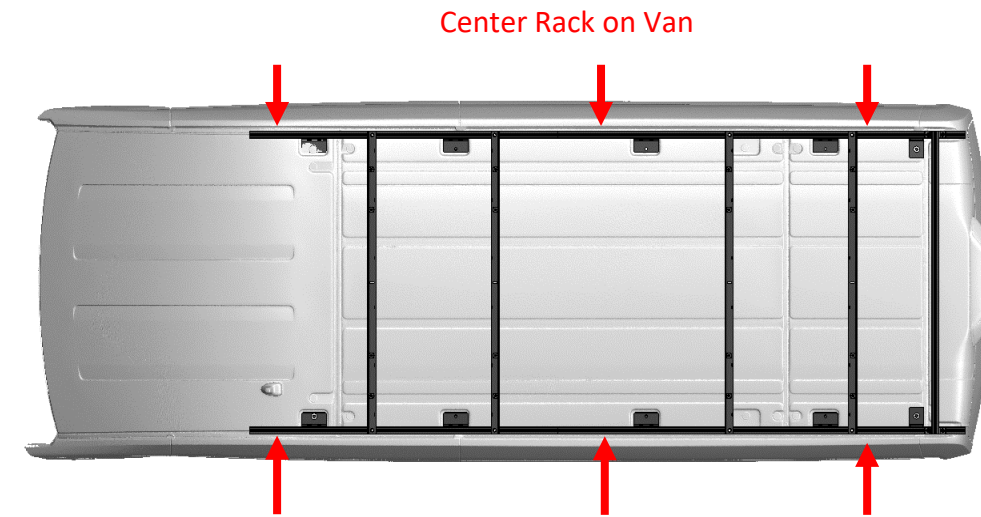
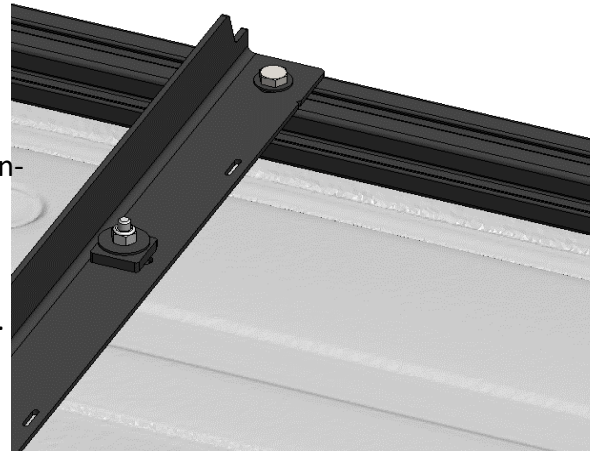


NOTE: REFER TO GENERAL T-NUT INSTALLATION TIPS ON EARLIER PAGE FOR REFERENCE

## Setting Side Rail Spacing

2 x  & 2 x  :  : 3/16 Allen Wrench & Socket  132 in-lbs

- Once cross bars are in place, center the rack on the van and set the side rail to side rail spacing so that the cross bars are snug, but can still be removed, or adjusted forward or backwards.
- As you adjust the rail to rail spacing, snug up the 8020 Adapter brackets and crossbar hardware to hold things in place.
  - If the 8020 adapter brackets are too tight, loosen just enough to allow the rail to rail spacing to be set.
- Once everything is parallel and square, torque bolts securing 8020 adapter brackets & side rail assemblies to the Transit roof to 132 in-lbs.
- Double check that all 8020 adapter bracket BHCS are tight and torqued before moving to the next step. Once solar panels and other items are installed, tightening and checking these is difficult.



## Seal Rack Brackets to Roof

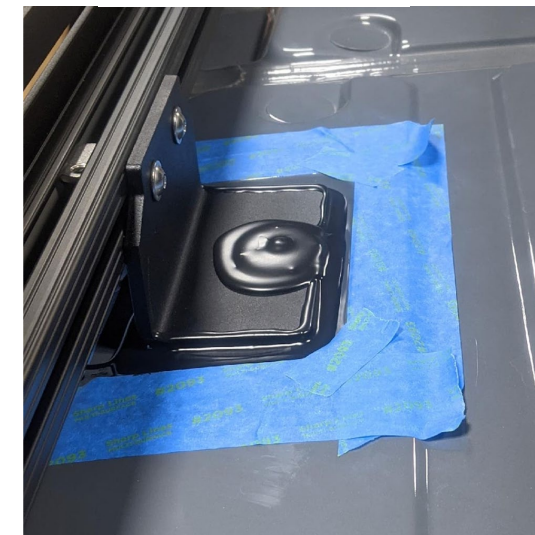
- Apply Dicor to all 4 sides of the rack bracket, the hex bolt, and to the sealing washer.
  - Follow Dicor's Instructions for proper install.
  - TIP: Apply painters' tape around each bracket for a cleaner installation if desired.
- When ready, remove the painters tape.
  - TIP: Remove painters tape in ~10 min or less of application of Dicor to have cleaner edges.



Before Dicor



After Dicor



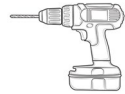
We typically use self leveling Dicor, but since the van roof is at an angle, some people may choose to use Non-Self Leveling Dicor.

## Side Rail Spacing to Solar Assembly



- **We strongly suggest installing your solar panels before you install your exterior side plates.**
- **Rich Solar 200W Solar Panels (58.7" long or shorter)**
  - These solar panels can be installed after the side rails are installed since you can access the install hardware from above, but you may find it easier to do so with the side plates not installed
- **Rich Solar 250W solar panels (60.6" Long)**
  - These solar panels physically can not be installed with the side plates already installed.
  - If your solar panel will be positioned between two fans or other roof accessories that can not be moved, installation of a 250W panel will be more difficult without purchasing roll in t-nuts

## Prepping Solar Panels

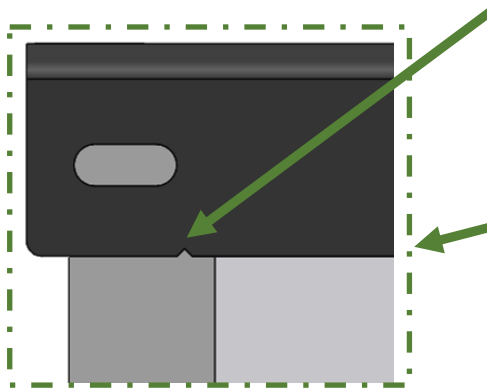


- 1/8" Bit
- 5/16" Bit

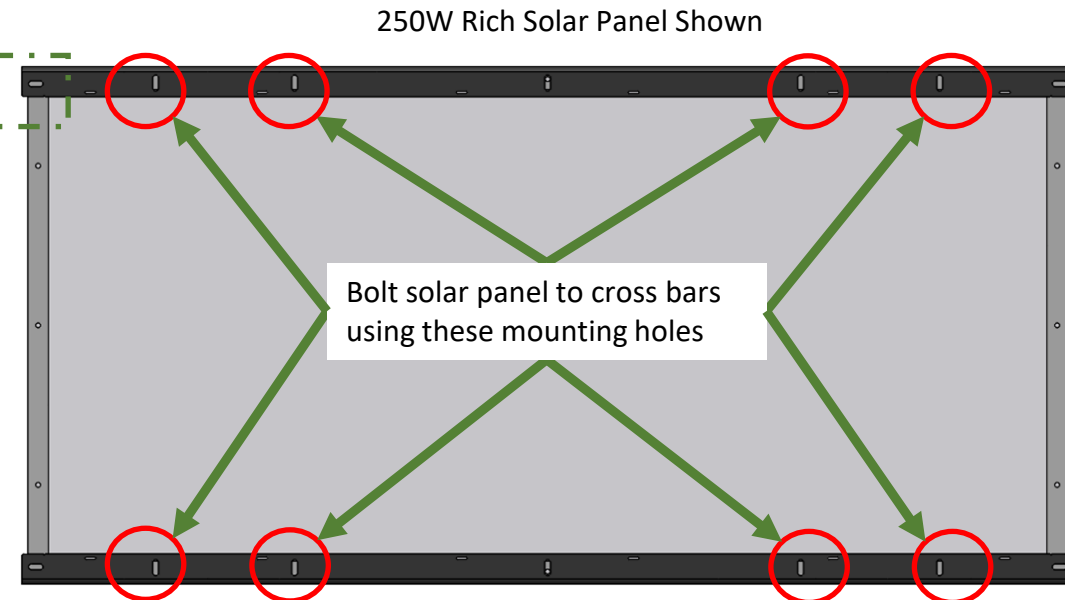
- Un-box panel and place it face down on a table using the foam to protect glass.
- Center your cross bar on the solar panel, or position it as desired
- If the mounting features in your cross bars align with the holes in your solar panels, move to the next step of installing your hardware

If Holes Do Not Line Up: drill new holes in solar panel

- Mark the hole location with a sharpie, remove the crossbar
- Use a center punch and hammer to set a drill point,
- **WARNING: Place a board behind the solar panel flange**
- Drill out the required holes in the solar panel. Use an 1/8" bit for the pilot hole, and a 5/16" bit to finish the hole



Notch in corners of cross bars should help center / align 200W Rich Solar Panels



250W Rich Solar Panel Shown

Bolt solar panel to cross bars using these mounting holes

## Crossbar Mounting Hardware Installation



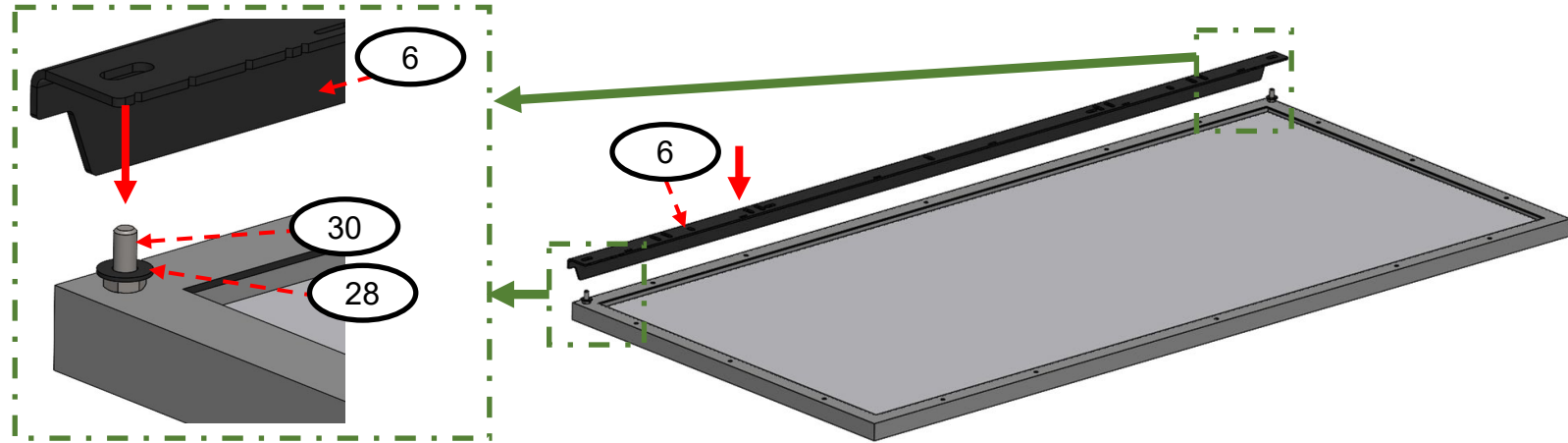
• Tape measure



Wait

15

- Locate the installation hardware under the outside slots in the cross bar as shown in this step. This is required for Rich Solar 250w panels - for smaller panels skip this
- Place the cross bar down and over the installation hardware capturing the bolt in the slotted hole



## Install Solar Panel Spacers and Hardware

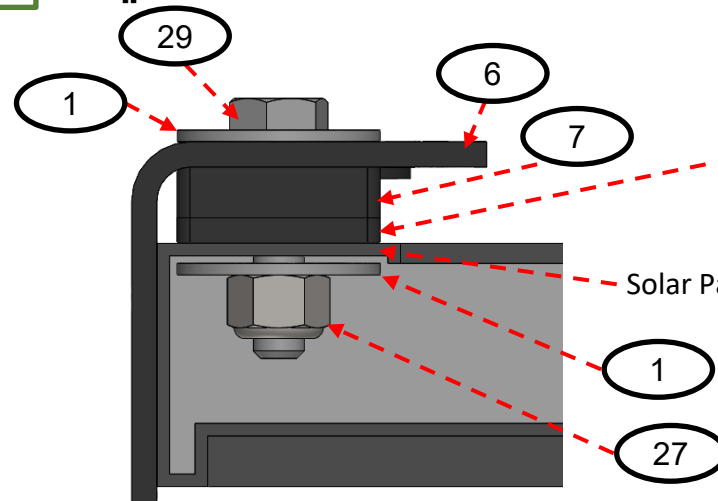


• 7/16" Wrench & Socket



75.2 in-lbs

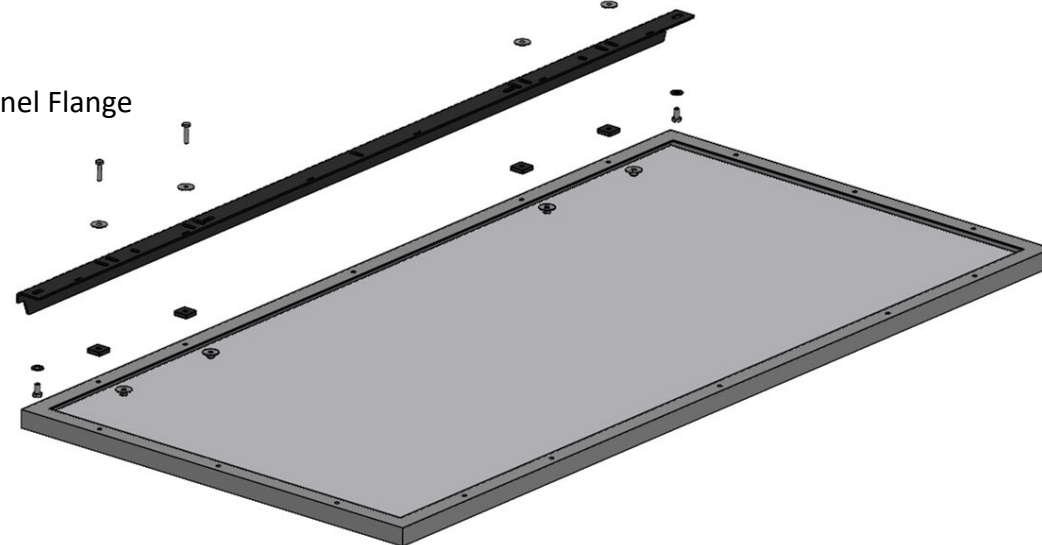
- Carefully slide the solar panel spacers between the solar panel flange and the cross bar.
  - 1.2" thick solar panels, use Qty. 1 x 1/4" and Qty. 1 x 1/8" thick spacer at each point
  - 1.4" thick solar panels, use Qty. 1 x 1/4" thick spacer at each point
- **TIP:** Hold the lock nut and washer underneath the panel lip and thread the bolt with washer from the top through the crossbar, spacers, then solar panel, and finger tighten.
- **SUPER TIP:** Start on one end of the panel then move to the opposite end to keep the crossbar from sliding around and dropping spacers.
- Repeat for crossbar on other side of panel
- Center crossbar on the solar panel before tightening
- Tighten all bolts, then torque



Rich Solar recently changed all of their solar panels to be 1.2" thick, to get a more flush profile, use a 1/8" spacer

Solar Panel Flange

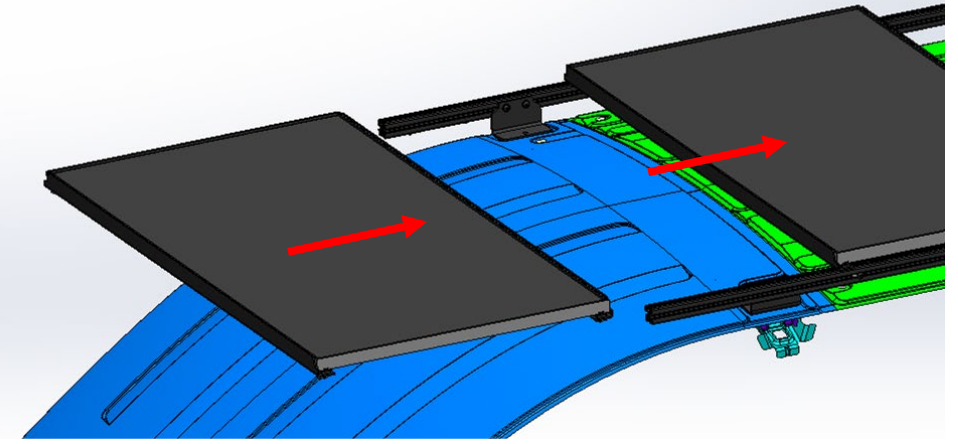
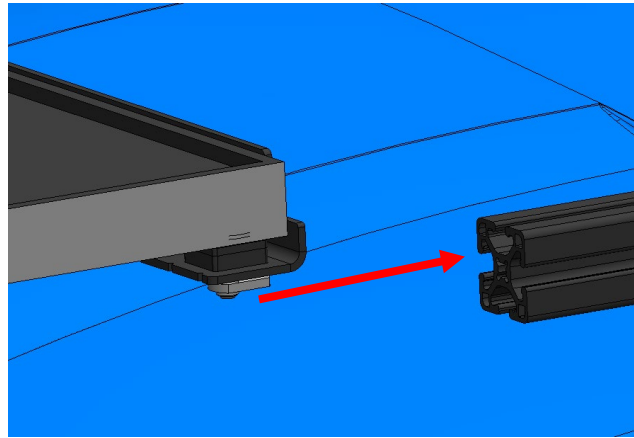
Cross Section showing solar panel hardware installed



## Install / Mount Solar Panels

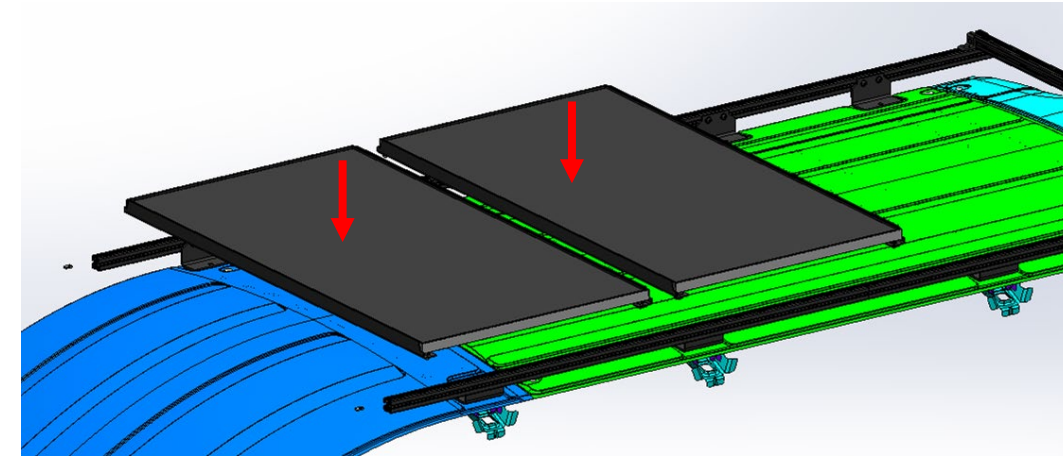
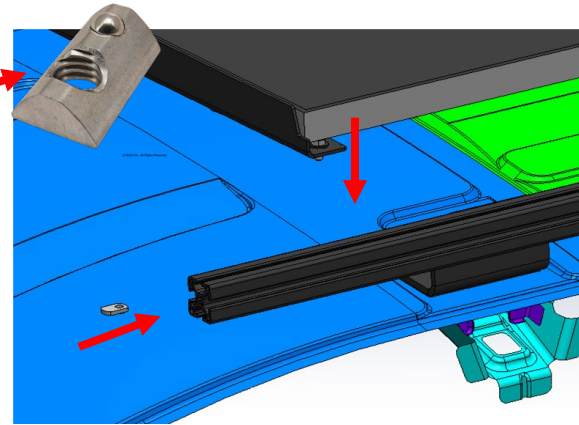
- Install method 1 (when possible) - Prior to roof top AC or vents installed

- Preinstall t-nuts loosely to the hex bolt for mounting and slide the panel along the side rails to your desired locations.
- **PRO TIP:** Make sure your solar connectors are loose and accessible for hook up and routing before bolting in place

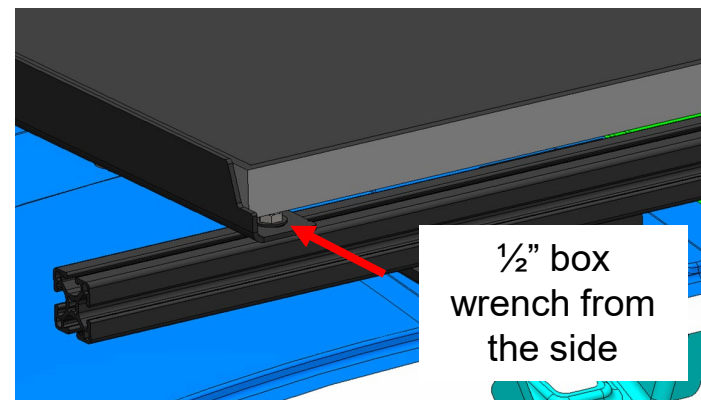


- Install method 2 (when needed) - If you already installed roof top AC or vent

- **PRO TIP:** Using roll-in t-nuts can make this step easier to provide easier bolt capture. Note these are sold separately.
- If using slide in t-nuts, place into the top channel and place it close to desired panel location
- Carefully place panels onto side rails and attempt to land on top of t-nuts
- Using box wrench (for 250w Rich Solar panels) or ratchet, tighten bolts








- Once your solar panels are roughly in place, you can install your AC unit or Fan now, before final solar panel install or side plate install
- Final position solar panels
- Use a 1/2" open box wrench from the outside of each panel to tighten / secure the panel in place

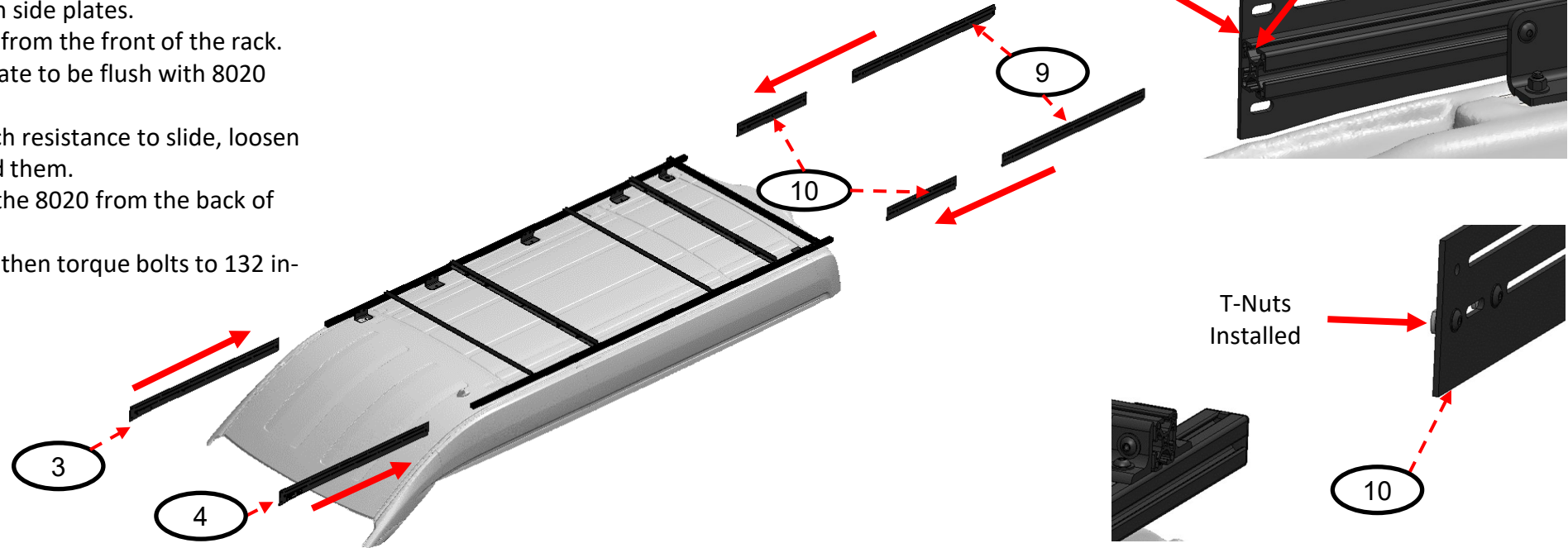









## Install Side Plates

2 x  & 2 x  •  • 3/16 Allen  
•  • 1/2" Wrench & Socket  132 in-lbs

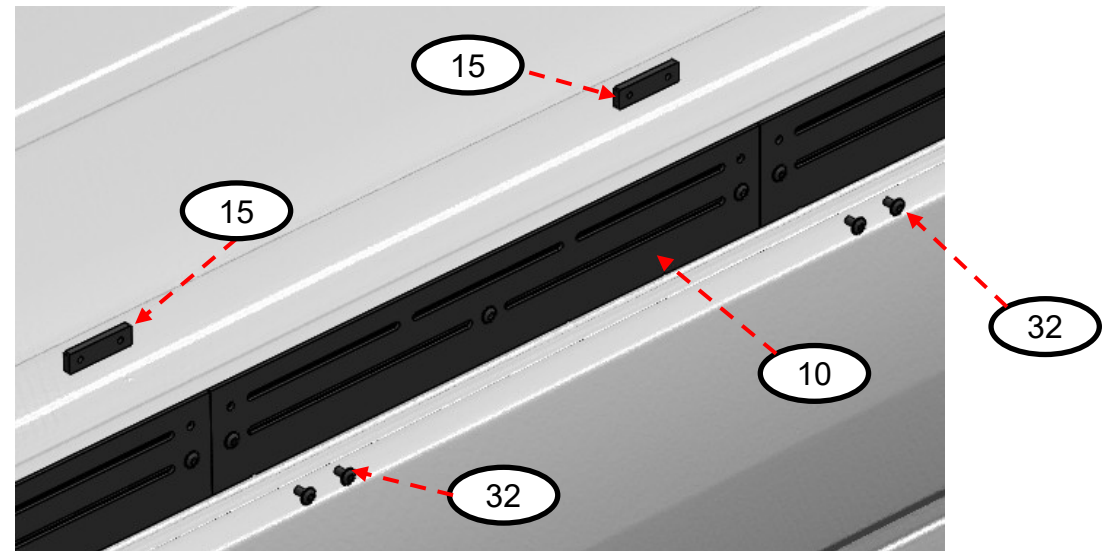
- Hardware should be pre-installed in side plates.
- Slide the front plate onto the 8020 from the front of the rack. Set the leading edge of the front plate to be flush with 8020 edge and snug up hardware.
- **PRO TIP:** If you encounter too much resistance to slide, loosen the t-nuts but do not fully unthread them.
- Slide the middle & rear plate onto the 8020 from the back of the rack and snug up hardware.
- Position plates together as desired then torque bolts to 132 in-lbs.



## Install Side Plates Cont.


2 x  & 2 x  •  • 3/16 Allen  
•  • 1/2" Wrench & Socket  132 in-lbs

- Install the two-hole splice plates to join the front and rear side plates to the middle plate (2 on Driver Side, 2 on Passenger Side).
- **NOTE:** This plate bolts through the top holes in the side plates.
- Optional - apply anti-seize to the bolt threads during this step.
- Repeat for all 4 splice plates.
- Torque to 132 in-lbs.



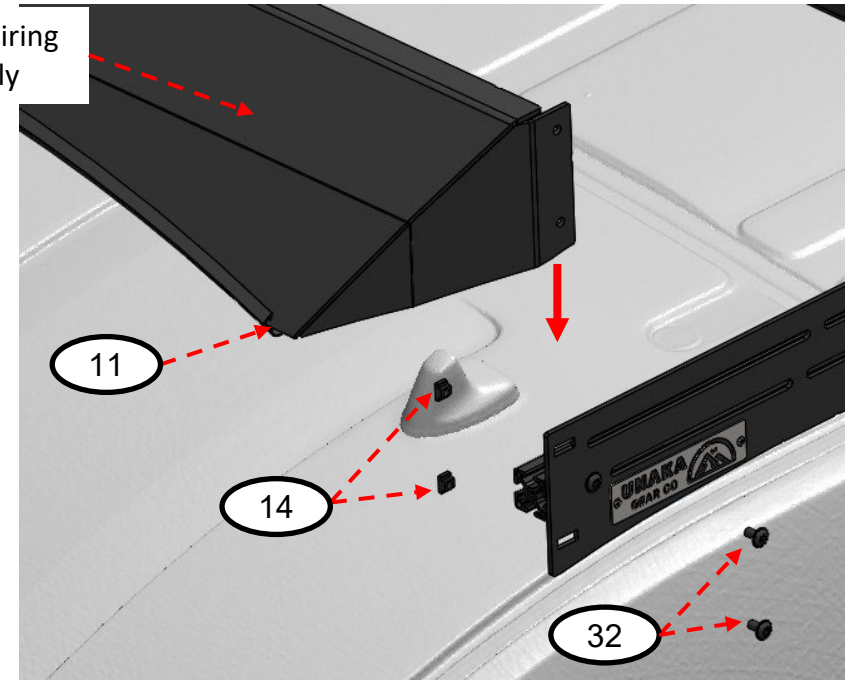
## Final Install of Wind Fairing

2 x  & 2 x  •  • 3/16" Allen

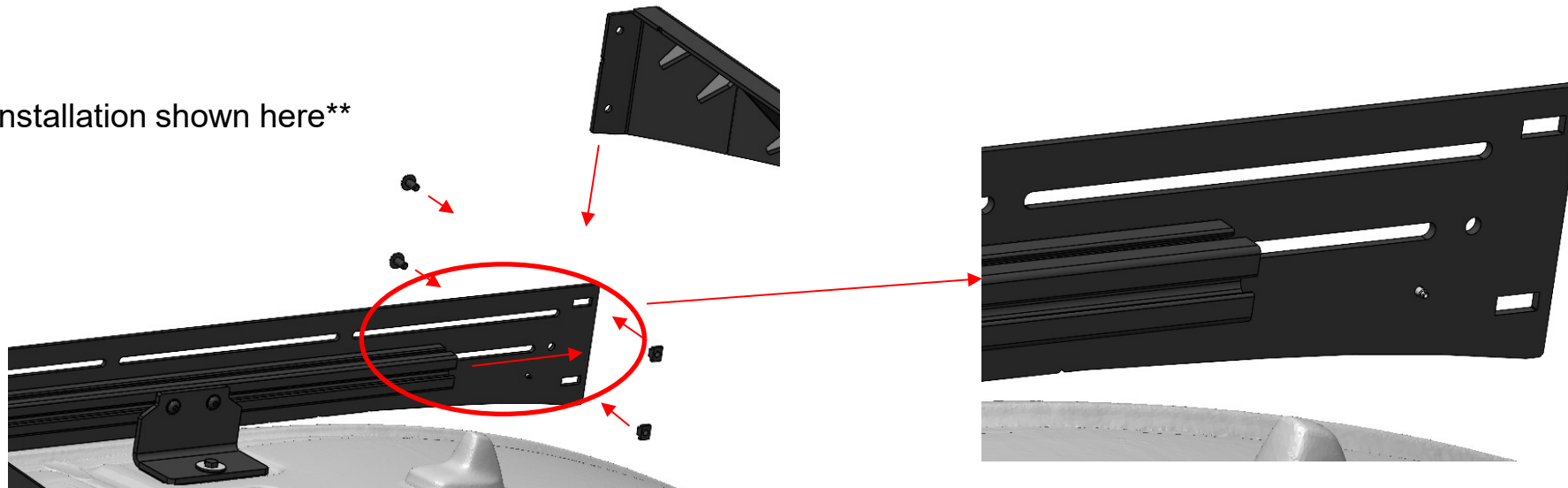
 132 in-lbs

- Lower wind fairing assembly down on the outside of the side plates
- Insert and start the hardware to secure the wind fairing to the rack. Apply anti-seize to the bolts during this step. Do not fully tighten.
- Position and angle the wind fairing as desired and snug up hardware.
- Tighten all hardware attaching wind fairing to side rail assemblies & Torque to 132 in-lbs.
- **Note:** The slots in the side plate allow for forward / backward adjustment of the wind fairing, as well as gives the ability to adjust the angle of the wind fairing.
- **Super Note:** If using a 250w panel at the very front of the rack it will be difficult to access the bottom bolt to secure wind fairing. For this installation you will need to keep your front side plates loose and slide them forward to give access to bottom wind fairing bolt (like making a sliding drawer) - once the fairing is angled as desired tighten those bottom bolts and slide the "drawer" back into place and tighten side plate bolts
- **Warning:** Take extra precautions to not drop the wind fairing onto the windshield or down the front of the van!

Wind fairing assembly

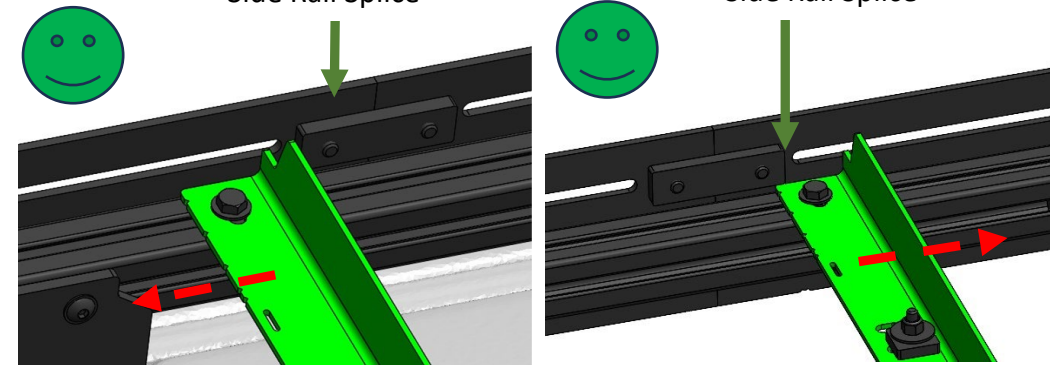
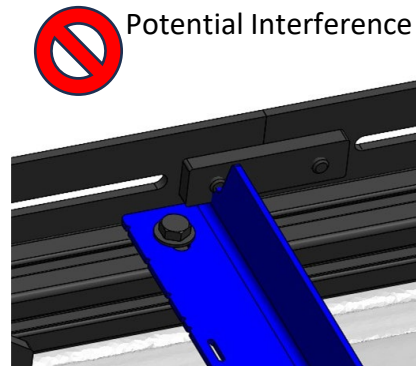


\*\* "Super note" installation shown here\*\*







## Potential Interference / Adjustments

- Depending on your layout, you may need to adjust the position of your cross bars to eliminate interferences.
- Slide the formed cross bars forward or backwards as needed to avoid this interference.
- TIP:** Verify the side rail splice plate or hardware will not interfere with your chosen solar panel. *If there is interference, you CAN omit the side rail splice plate.*

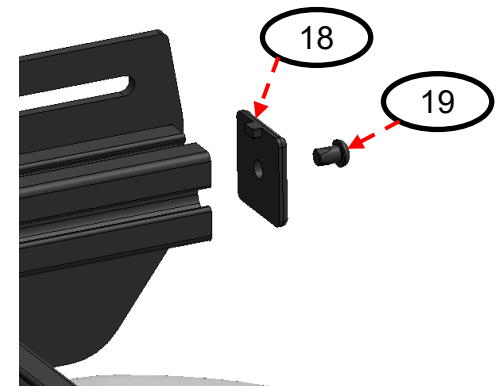


## End Caps

- End caps are used to cover the exposed 8020 at the back of the rack.
- Verify that all 3678 T-nuts have been installed in your 8020 side rails.
- Place the end cap over the back of the 8020.
- Insert the Self tapping screw through the end cap and into the hole in the center of the 8020.
- Carefully tighten the self tapping screw until it is snug (Do Not Overtighten as these are easy to strip).
- Repeat for the other end cap.

1 x  & 1 x   : 5/32 Allen  Snug

**Hardware Kit:** 8020 Style 15 Series End Caps, Set of 2



## Final Torque Checks

Once everything is installed, go back and check that all hardware is tight and torqued.