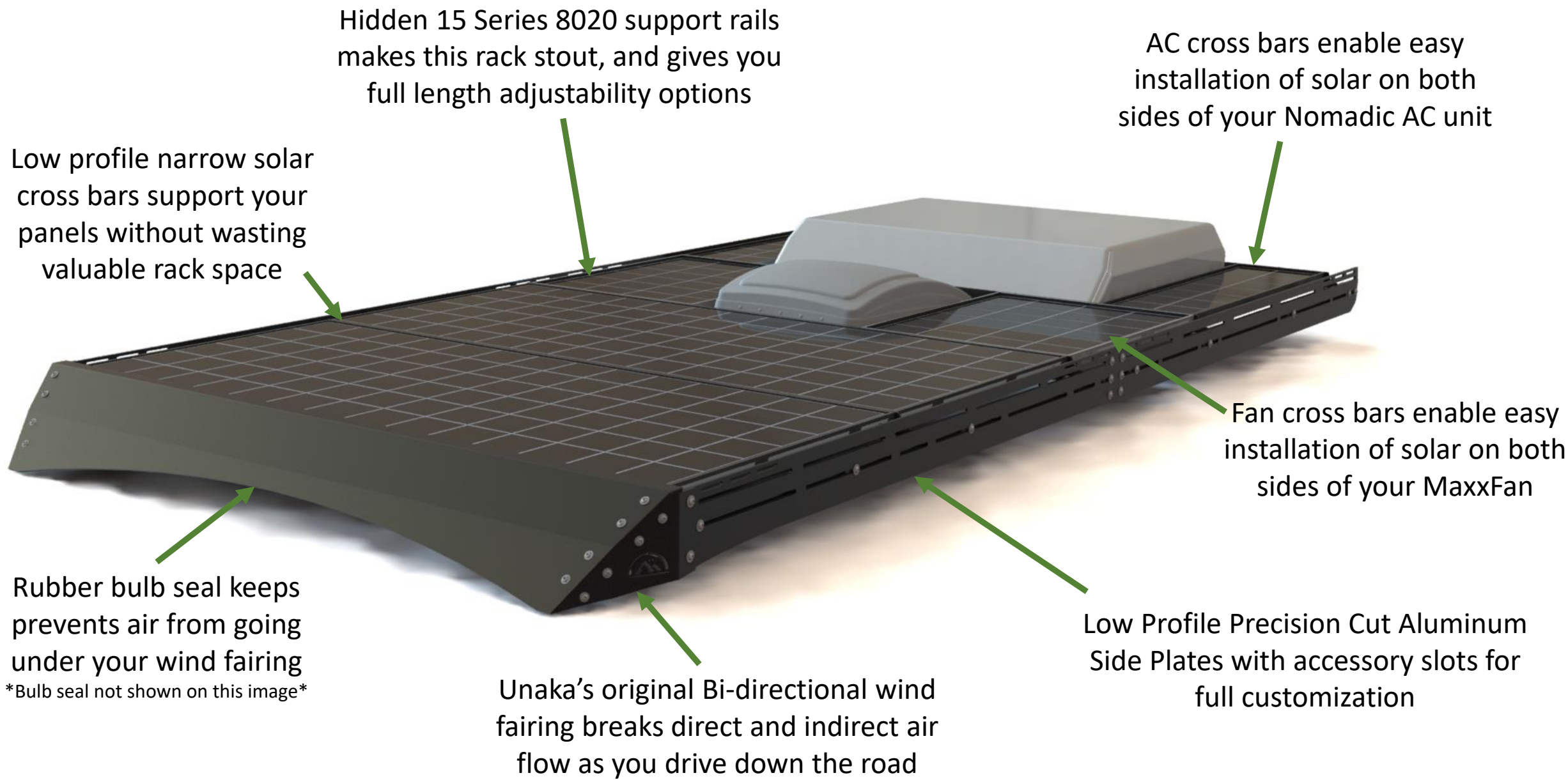


ExPlorist Life Rack Installation Manual

Date: 4/08/24

Revision: 0.1



Hidden 15 Series 8020 support rails makes this rack stout, and gives you full length adjustability options

AC cross bars enable easy installation of solar on both sides of your Nomadic AC unit

Low profile narrow solar cross bars support your panels without wasting valuable rack space

Fan cross bars enable easy installation of solar on both sides of your MaxxFan

Rubber bulb seal keeps prevents air from going under your wind fairing
Bulb seal not shown on this image

Unaka's original Bi-directional wind fairing breaks direct and indirect air flow as you drive down the road

Low Profile Precision Cut Aluminum Side Plates with accessory slots for full customization

Safety and PPE

Ladders: 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 extreme risk to potential falls which can result in injury or death.

Warning: Ladders are dangerous and should only be used with appropriate training. Incorrect use of ladders can result in injury or death.

Fall Protection: Accessing the roof of your van will put you at extreme risk to potential falls which can result in injury or death. Appropriate fall protection should be used when accessing your van roof. For general use situations, OSHA requires that fall protection be provided at elevations of four feet in general industry workplaces.

Required Tools

- 1 to 2 tall sturdy ladders
- Standard set of box wrenches
- Standard socket set
- Metal file and or sandpaper (for cleaning holes in rib after drilling)
- Primer and paint (to protect holes after drilling)
- Torque Wrench
- Anti-Seize to apply to all bolts during installation

Loctite & Anti-seize

A small tube of Blue Loctite 242 and Loctite anti-seize are provided with each kit. Follow manufactures recommendation for application and safety.

Blue Loctite 242

- Apply this to any bolt that is not used with a nylock nut

Loctite Anti-seize

- Apply a dab of 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.

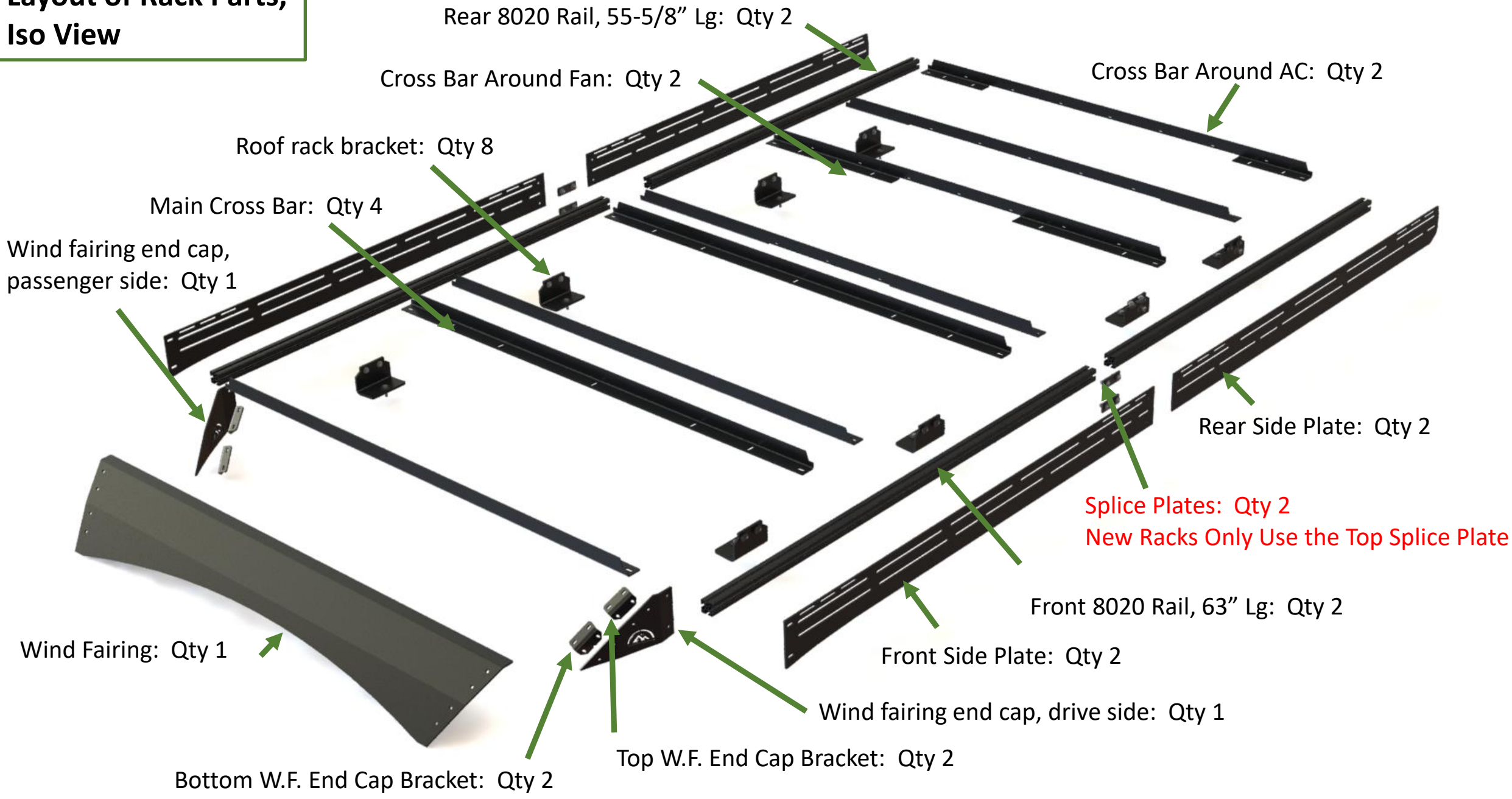


Loctite 242

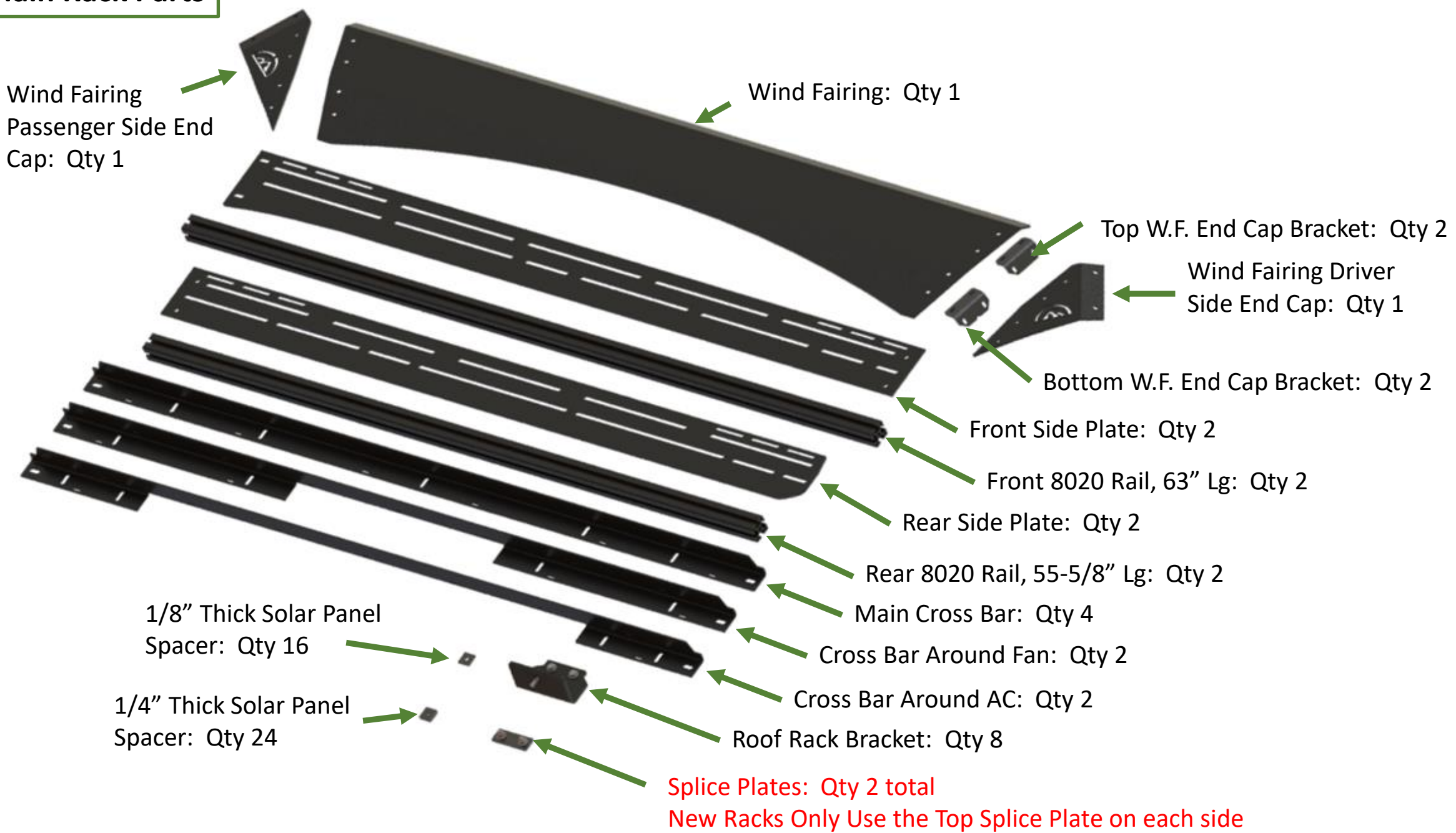


Loctite C5-A Anti-Seize

**Layout of Rack Parts,
Iso View**



Main Rack Parts



Wind Fairing
Passenger Side End
Cap: Qty 1

Wind Fairing: Qty 1

Top W.F. End Cap Bracket: Qty 2

Wind Fairing Driver
Side End Cap: Qty 1

Bottom W.F. End Cap Bracket: Qty 2

Front Side Plate: Qty 2

Front 8020 Rail, 63" Lg: Qty 2

Rear Side Plate: Qty 2

Rear 8020 Rail, 55-5/8" Lg: Qty 2

Main Cross Bar: Qty 4

Cross Bar Around Fan: Qty 2

Cross Bar Around AC: Qty 2

Roof Rack Bracket: Qty 8

1/8" Thick Solar Panel
Spacer: Qty 16

1/4" Thick Solar Panel
Spacer: Qty 24

Splice Plates: Qty 2 total
New Racks Only Use the Top Splice Plate on each side

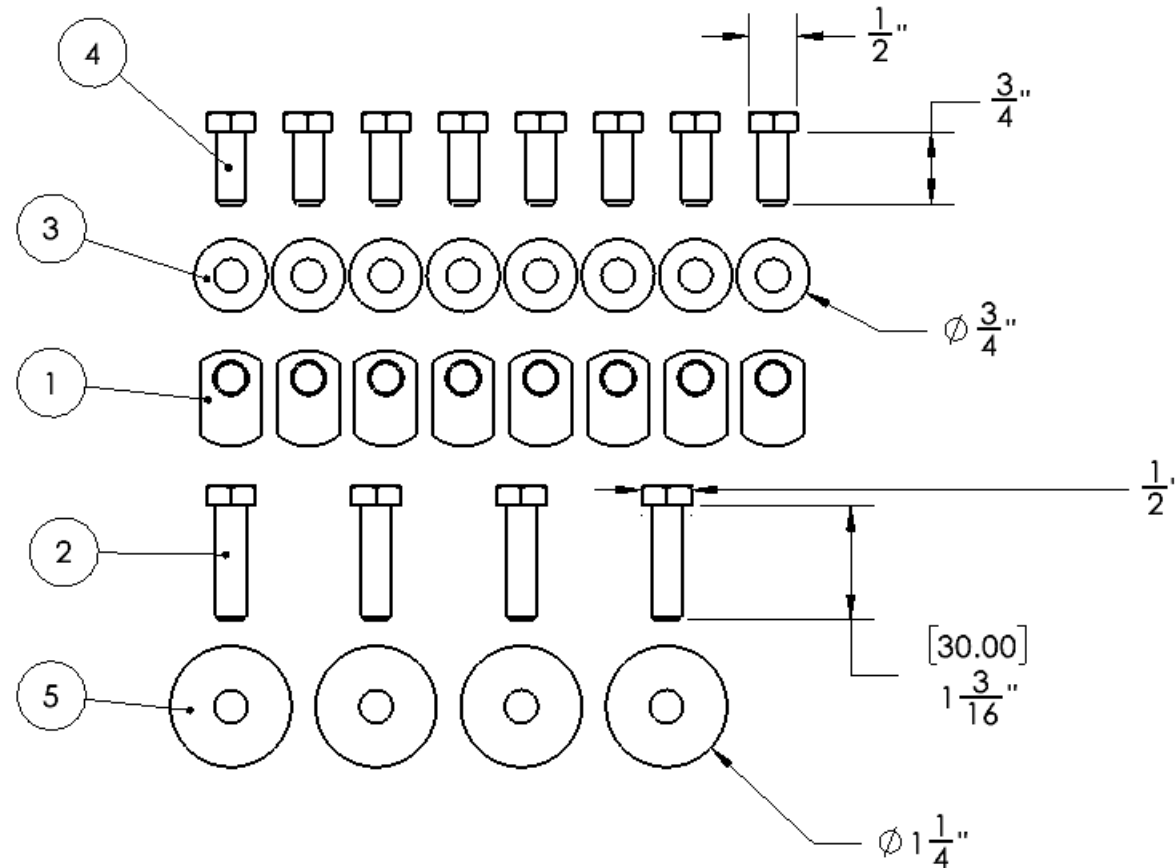
Hardware Kits

1. This rack kit comes with all the required hardware to complete the assembly and installation
2. Five separate types of hardware kits are provided which are highlighted below, and detailed on the next several pages
3. Do not mix hardware, once bags are opened take care not to mix hardware from one kit with another as some bolt sizes are very similar and may be hard to distinguish from others

Hardware Kit	Quantity
HSLD 148 NON EXT. RACK BRACKET HARDWARE, SET OF 4	2
HSLD 148 NON EXT. SIDE RAIL HARDWARE KIT	2
HSLD WIND FAIRING HARDWARE KIT	1
HSLD CROSS BAR HARDWARE KIT, 200W SOLAR	2
HSLD FAN OR AC CROSS BAR HARDWARE KIT	2

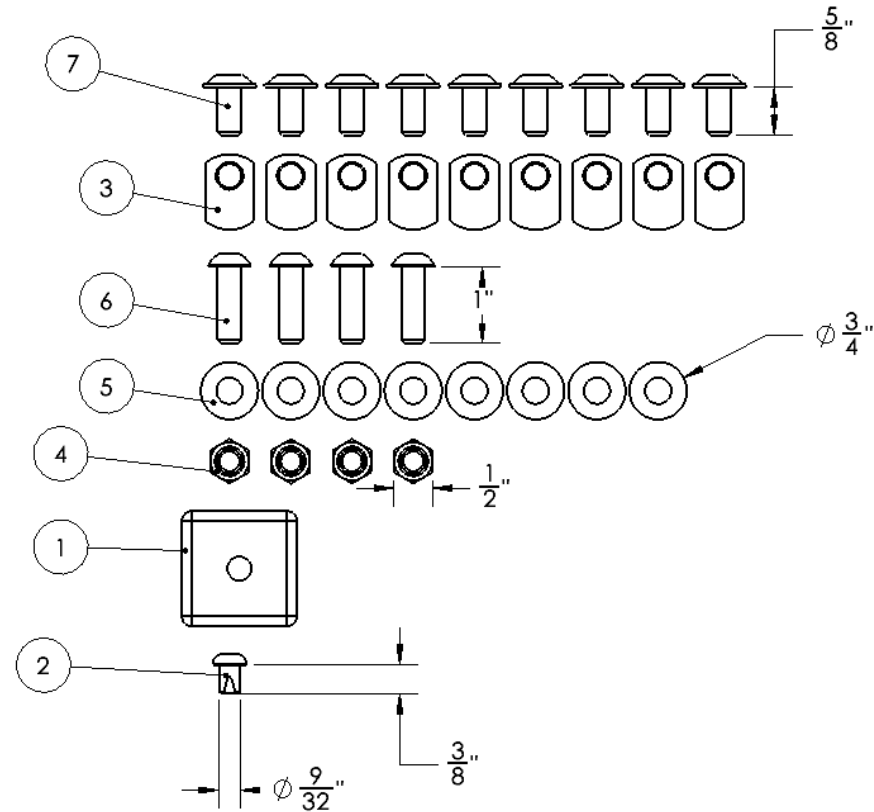
(2x) HSLD 148 NON EXT. RACK BRACKET HARDWARE, SET OF 4

ITEM NO.	Manufacturer	PART NUMBER	DESCRIPTION	MATERIAL	LENGTH	QTY.
1	8020	8020-3678	T-NUT, ECONOMY, 5/16 THREAD, SS	NA		8
2	ANY	91287A154	HEX BOLT, M8 X 30MM, 18-8 SS	NA		4
3	ANY	92141A030	FLAT WASHER, 5/16" SCREW SIZE, 0.344" ID, 0.75" OD, 18-8 SS	NA		8
4	ANY	92240A581	HEX BOLT, 5/16"-18 X 0.75" LG, 18-8 SS	NA		8
5	UNAKA GEAR CO	1003-MB10-03	FORD TRANSIT OVERSIZED WASHER, .343 ID X 1.25 OD, SS	AISI 304	1.250 IN.	4



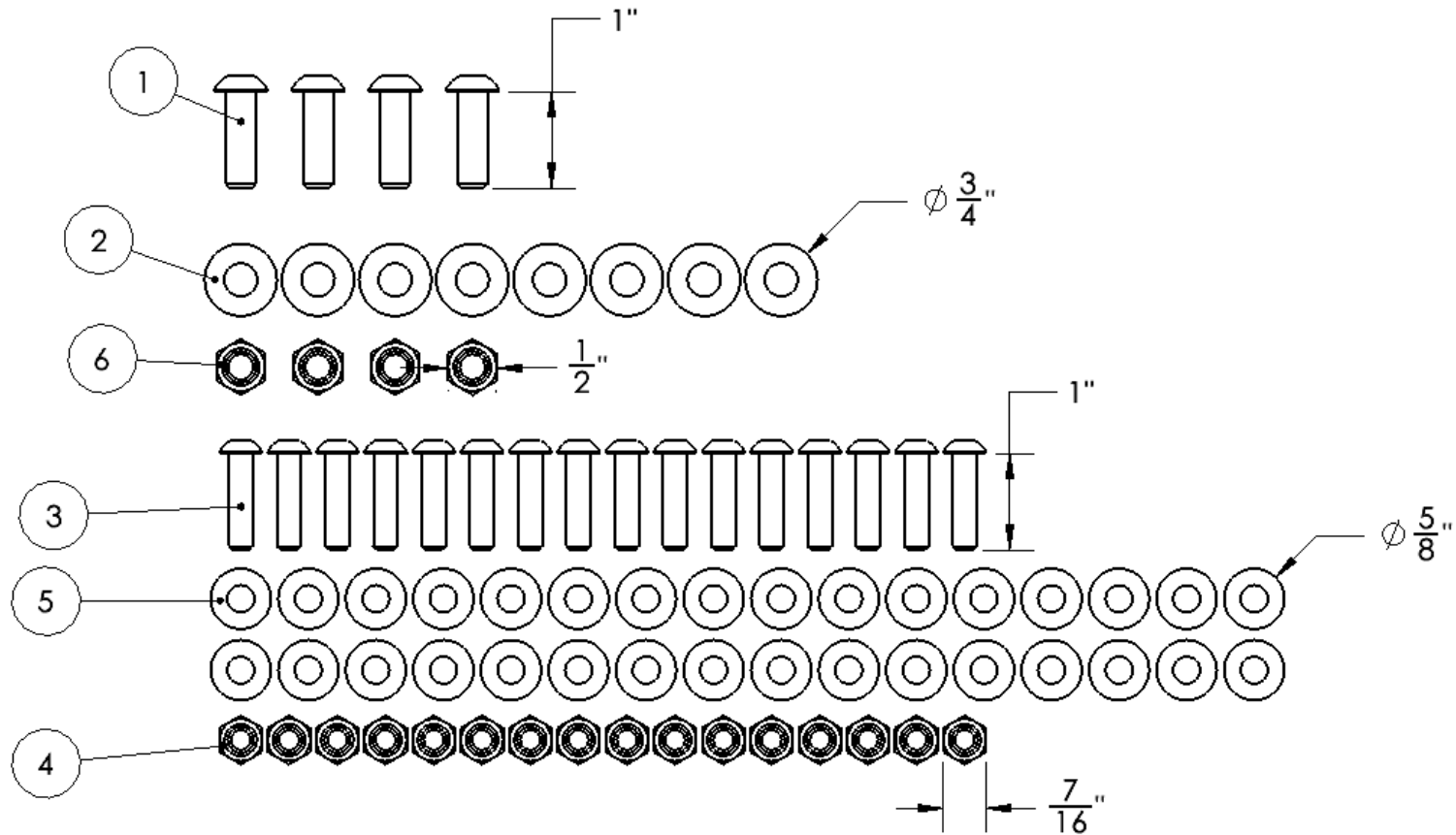
(2x) HSLD 148 NON EXT. SIDE RAIL HARDWARE KIT

ITEM NO.	Manufacturer	PART NUMBER	DESCRIPTION	MATERIAL	LENGTH	QTY.
1	8020	203001-PLAIN	END CAP, 15 SERIES, PLAIN, BLACK	NA		1
2	8020	8020-3267 SELF TAPPING END CAP SCREW	SELF TAPPING END CAP SCREW, M7 X 0.36"	NA		1
3	8020	8020-3678	T-NUT, ECONOMY, 5/16 THREAD, SS	NA		9
4	ANY	91831A030	LOCKNUT, 5/16-18, 18-8 S.S.	NA		4
5	ANY	92141A030	FLAT WASHER, 5/16" SCREW SIZE, 0.344" ID, 0.75" OD, 18-8 SS	NA <td	8	
6	ANY	92949A582	BHCS, 5/16-18 X 1" LG, FULLY THREADED, 18-8 S.S.	NA		4
7	ANY	97654A304	BHCS, FLANGED, 5/16 X 0.625" LG., S.S.	NA		9



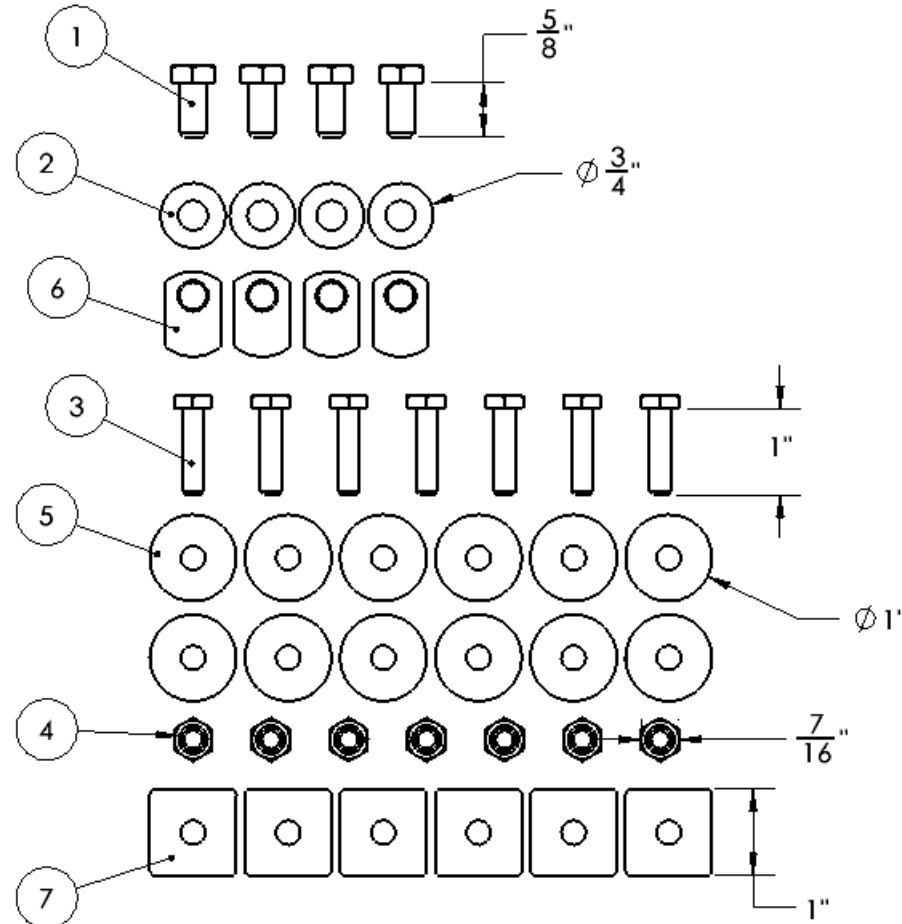
HSLD WIND FAIRING HARDWARE KIT

ITEM NO.	Manufacturer	PART NUMBER	DESCRIPTION	MATERIAL	LENGTH	QTY.
1	ANY	92949A582	BHCS, 5/16-18 X 1" LG, FULLY THREADED, 18-8 S.S.	NA		4
2	ANY	92141A030	FLAT WASHER, 5/16" SCREW SIZE, 0.344" ID, 0.75" OD, 18-8 SS	NA		8
3	ANY	92949A542	BHCS, 1/4-20 X 1" LG, SS	NA		16
4	ANY	91831A029	LOCKNUT, 1/4-20, 18-8 S.S.	NA		16
5	ANY	92141A029	WASHER, 1/4", 0.625" OD, 18-8 SS	NA		32
6	ANY	91831A030	LOCKNUT, 5/16-18, 18-8 S.S.	NA		4



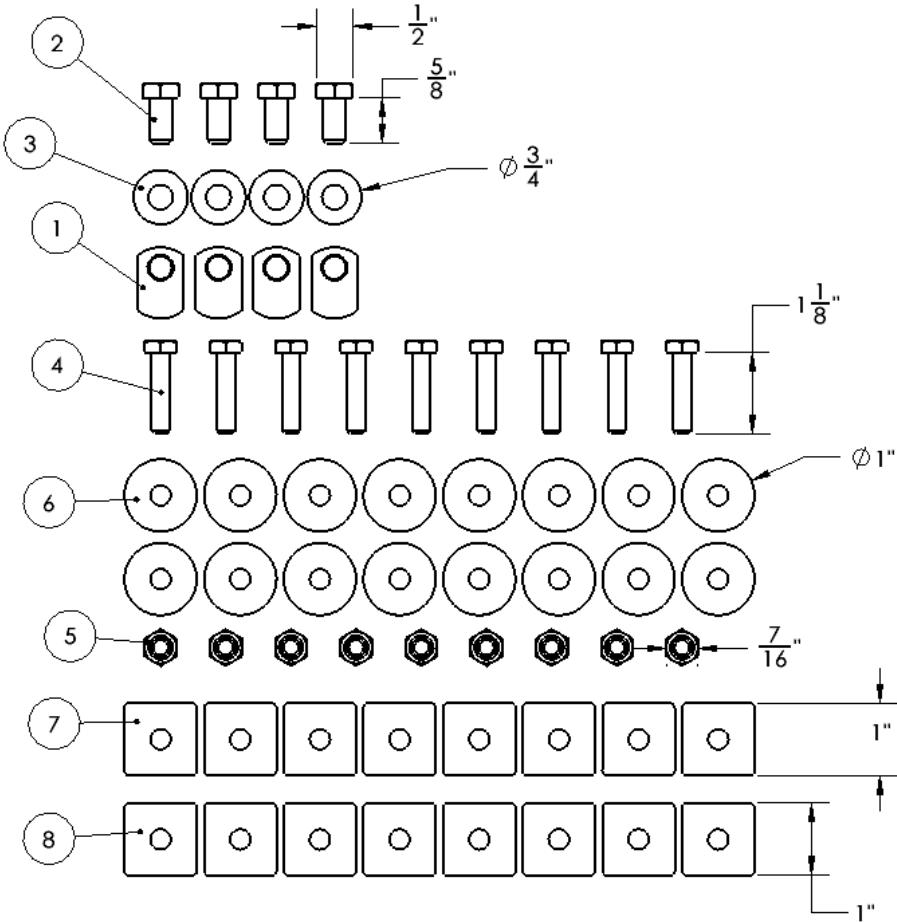
HSLD CROSS BAR HARDWARE KIT, 200W SOLAR

ITEM NO.	Manufacturer	PART NUMBER	DESCRIPTION	MATERIAL	LENGTH	QTY.
1	ANY	92240A580	HEX HEAD BOLT, 5/16"-18 X 0.625" LG, 18-8 SS	NA		4
2	ANY	92141A030	FLAT WASHER, 5/16" SCREW SIZE, 0.344" ID, 0.75" OD, 18-8 SS	NA		4
3	ANY	92240A542	HEX BOLT, 1/4-20 X 1" FULLY THREADED, 18-8 S.S.	NA		7
4	ANY	91831A029	LOCKNUT, 1/4-20, 18-8 S.S.	NA		7
5	ANY	90313A107	WASHER, 1/4" X 1" OD, 18-8 SS	NA		12
6	8020	8020-3678	T-NUT, ECONOMY, 5/16" THREAD, SS	NA		4
7	UNAKA	1003-MB53-02	FT EL 0.25" SOLAR PANEL SPACER	5052-H32		6



HSLD FAN OR AC CROSS BAR HARDWARE KIT

ITEM NO.	Manufacturer	PART NUMBER	DESCRIPTION	MATERIAL	LENGTH	QTY.
1	8020	8020-3678	T-NUT, ECONOMY, 5/16 THREAD, SS	NA		4
2	ANY	92240A580	HEX HEAD BOLT, 5/16"-18 X 0.625" LG, 18-8 SS	NA		4
3	ANY	92141A030	FLAT WASHER, 5/16" SCREW SIZE, 0.344" ID, 0.75" OD, 18-8 SS	NA		4
4	ANY	92240A545	HEX BOLT, 1/4-20 X 1-1/8" FULLY THREADED, 18-8 S.S.	NA		9
5	ANY	91831A029	LOCKNUT, 1/4-20, 18-8 S.S.	NA		9
6	ANY	90313A107	WASHER, 1/4" X 1" OD, 18-8 SS	NA		16
7	UNAKA	1003-MB53-02	FT EL 0.25" SOLAR PANEL SPACER	5052-H32		8
8	UNAKA	1003-MB54-02	FT EL 0.125" SOLAR PANEL SPACER	5052-H32		8



Step 1: Layout all parts on the floor of your workspace

1. Clear your work area, and layout all parts
2. Make notes of hardware types, locations, and quantities as needed



Step 2: Join the front and rear side plates

1. Join the front and rear side plates using 2 of the splice plates

New Racks Only Use the Top Splice Plate

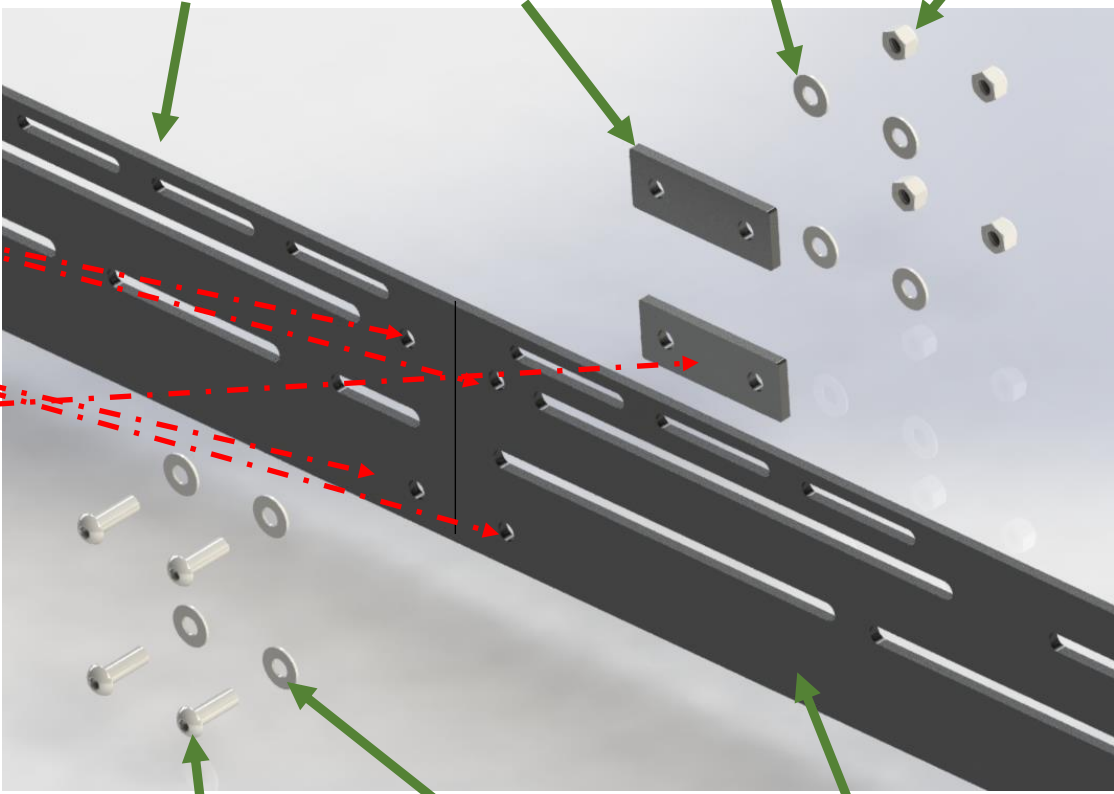
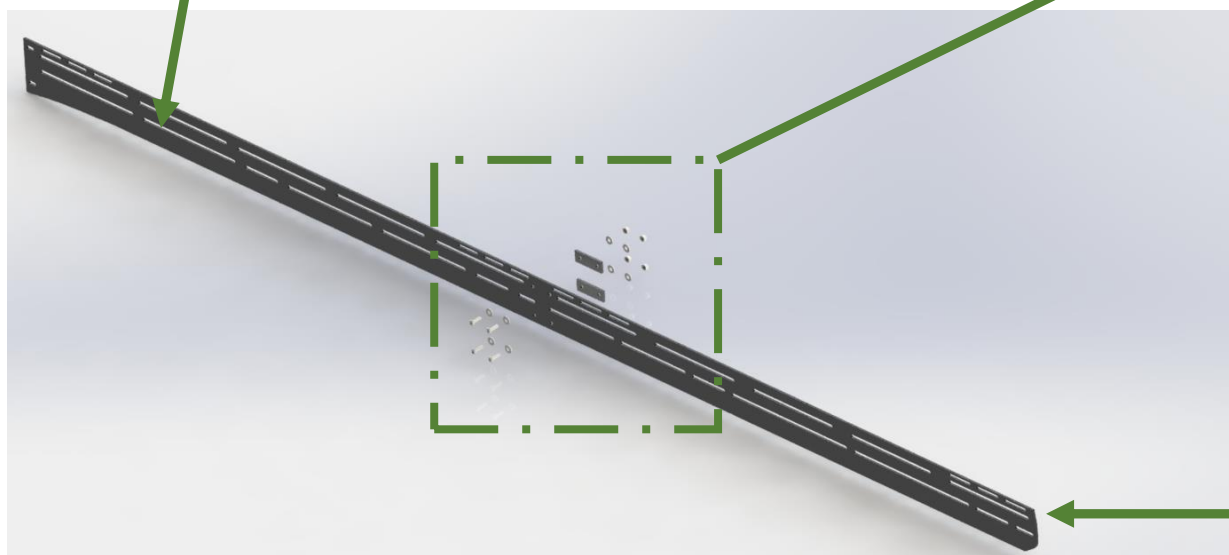
5/16" S.S. Washer
5/16-18 S.S. Nylock Nut

Front Side Plate Splice Plates

Top splice plate holes

Lower splice plate holes***This No Longer Is Used***

Front Side Plate



5/16-18 x 1" Lg S.S. BHCS

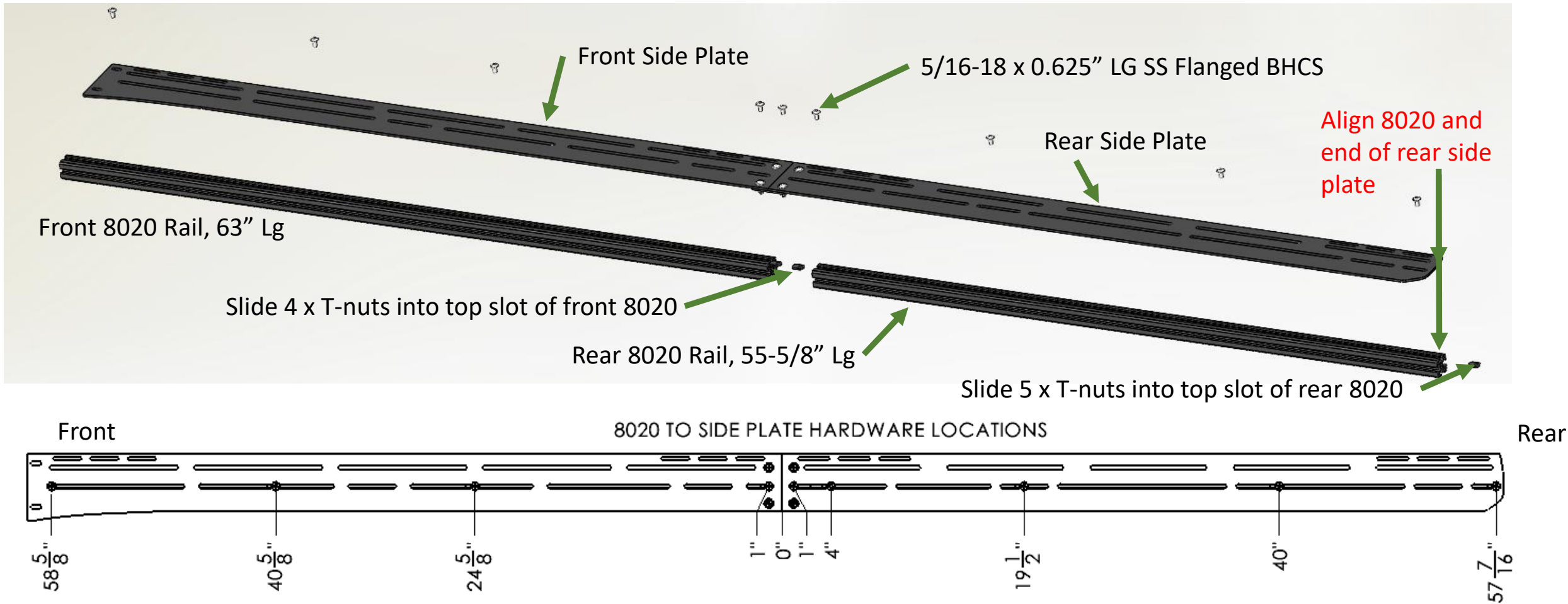
5/16" S.S. Washer

Rear Side Plate

Rear Side Plate

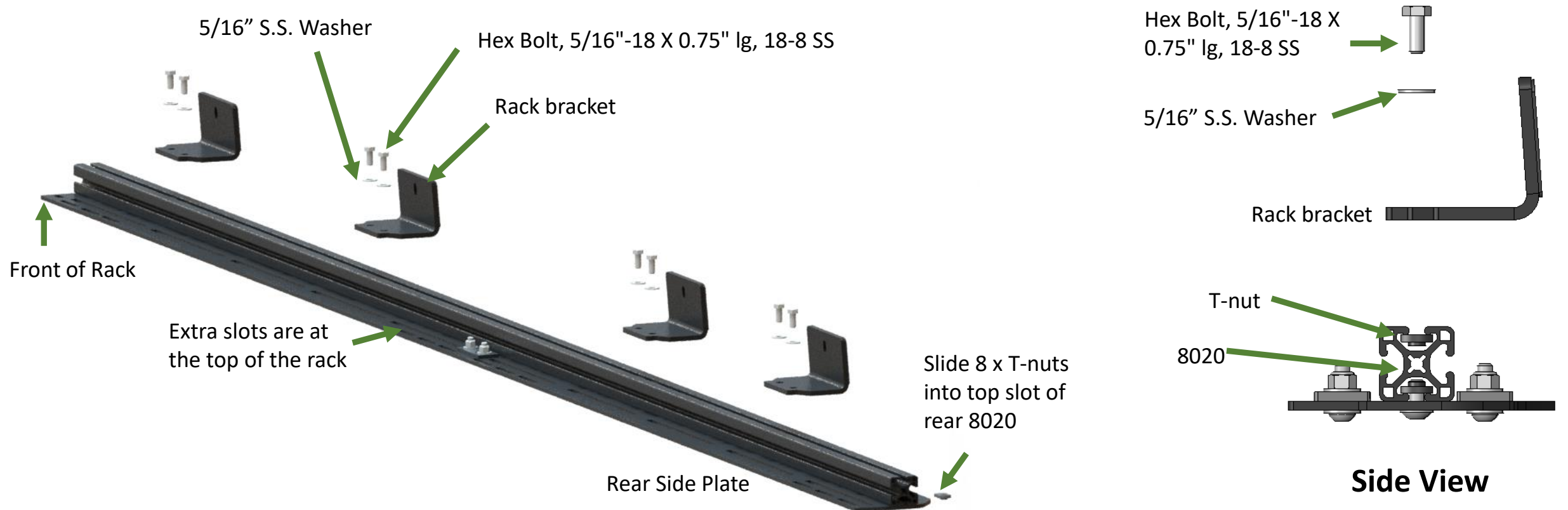
Step 2: Bolt 8020 rails to side plates

1. Place the front and rear 8020 pieces on the ground
2. Slide 5 x SS T-nuts into the top slot of the rear 8020, and slide Qty 4 x SS T-nuts into the front piece of 8020
3. Slide the T-nuts to the dimensions provided below
4. Carefully place the side rail assembly on top of the 8020, align the back of the rear side plate with the end of the rear 8020
5. Insert the bolts into the t-nuts, and tighten



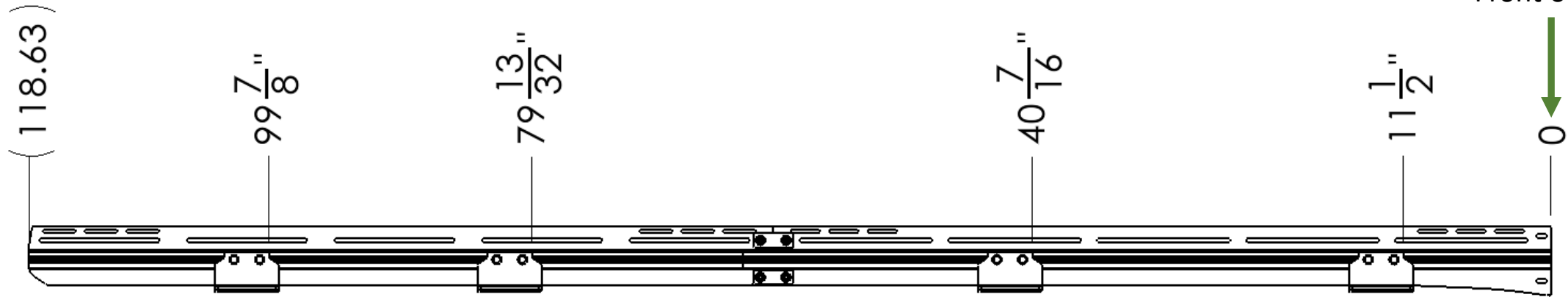
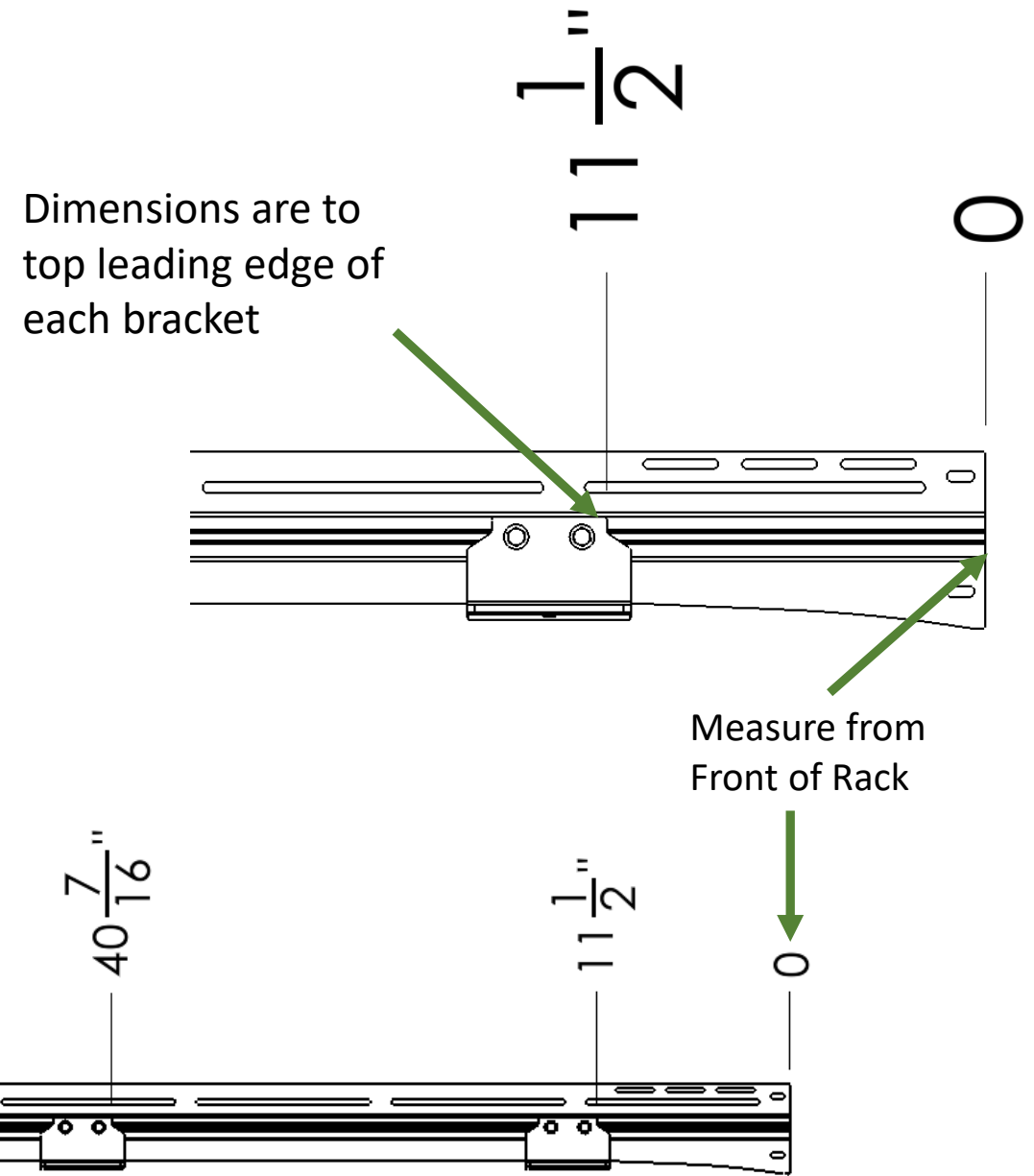
Step 3: Bolt rack brackets to 8020 rails

1. Place the side rail assembly on its back
2. Slide 8 x SS T-nuts into the upward facing slot and slide down to their approximate bracket locations (see next page)
3. Loosely bolt rack brackets to the 8020 rail
4. Slide the rack brackets down to the dimensions on the next page
 - a) These dimensions should be close, but brackets may need to be loosened and adjusted during installation to the roof
5. Snug up the bolts securing the rack bracket to the 8020 rail
 - a) Bracket positions should be close, but brackets may need to be loosened and adjusted during installation to the roof



Step 3: Rack bracket locations

1. Positioning the rack brackets to the position below should get the brackets close to their final location when the side rail assembly is placed on the roof of the van



Step 4: Assemble Passenger Side Rail

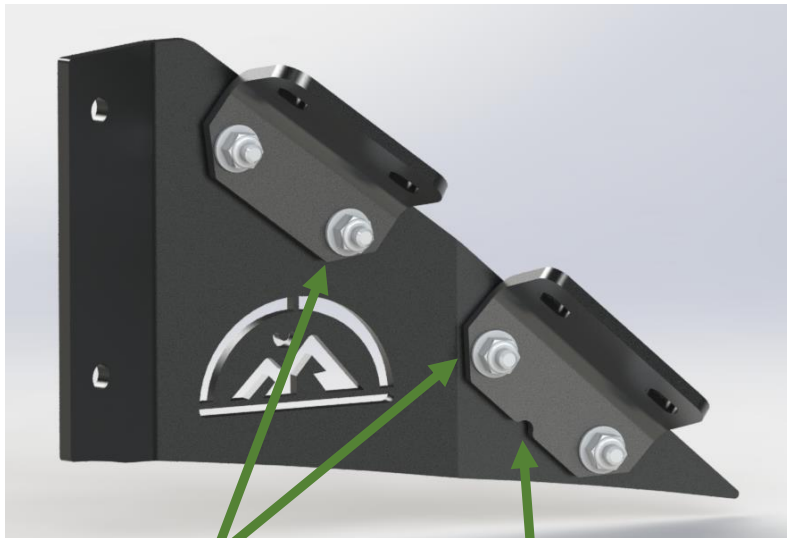
1. NOTE: The passenger side rail assembly is a mirror image of the driver side. Ensure you flip the orientation of the parts so that you do not make a 2nd driver side rail assembly
2. Repeat steps 2 and 3 to make the passenger side rail assembly



Step 5: Assemble Wind Fairing End Caps

1. Warning: Top and bottom end cap brackets look very similar. Bottom wind fairing end cap bracket has a round relief cut out on one side to help identify it
2. End cap brackets should be installed with the tab with the chamfered corners bolting to wind fairing end cap
3. Bolt top and bottom wind fairing brackets to driver side end cap. ***Leave the bolts just loose enough so the brackets can float around in their slots
4. Repeat process for passenger side end cap

Driver Side End Cap Assembled



Tab with chamfered end bolts to end cap

Identifying notch

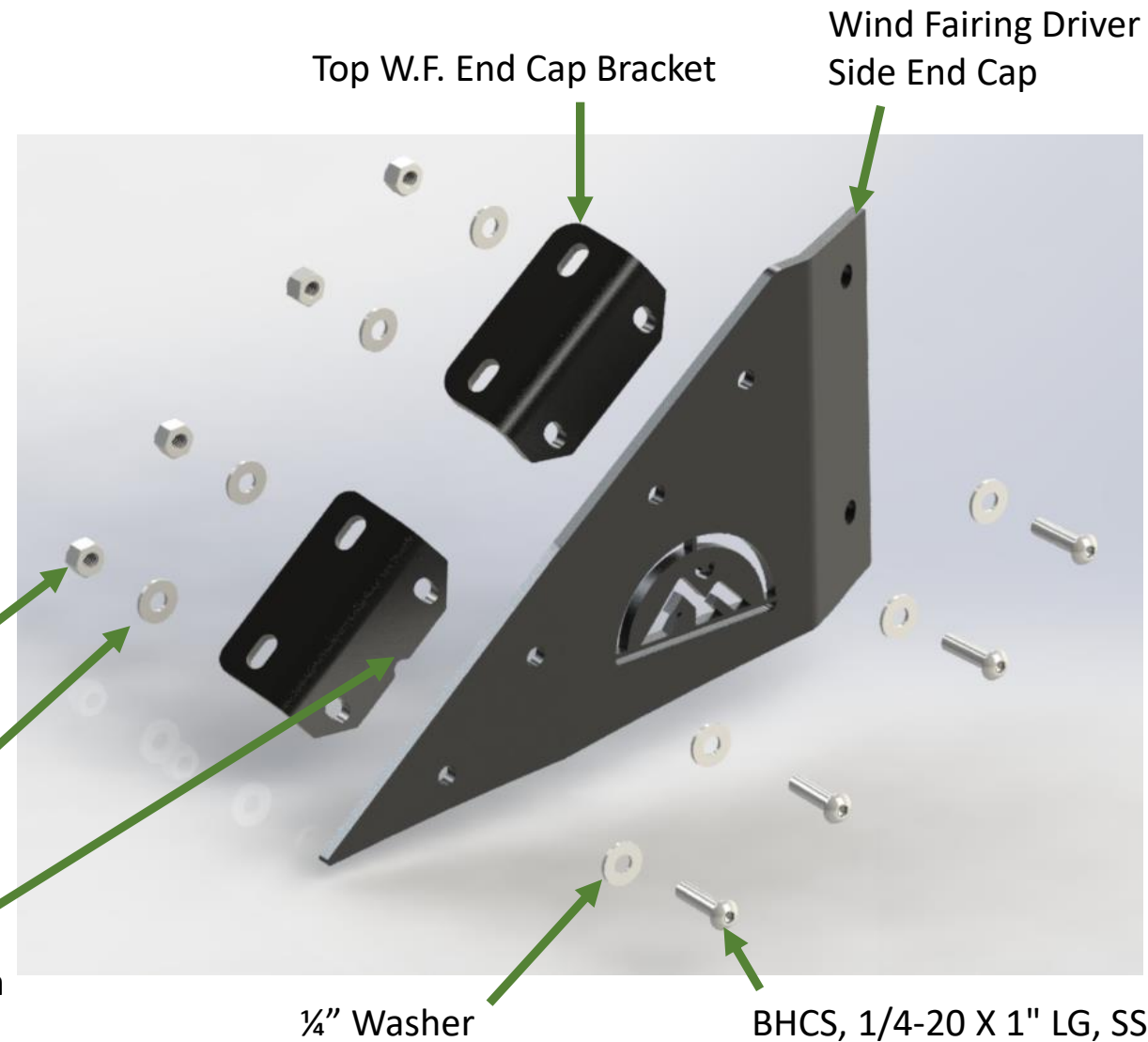
1/4-20 Nylock Washer

1/4" Washer

Bottom W.F. End Cap Bracket w/identifying notch

1/4" Washer

BHCS, 1/4-20 X 1" LG, SS



Step 6: Bolt wind fairing to end caps

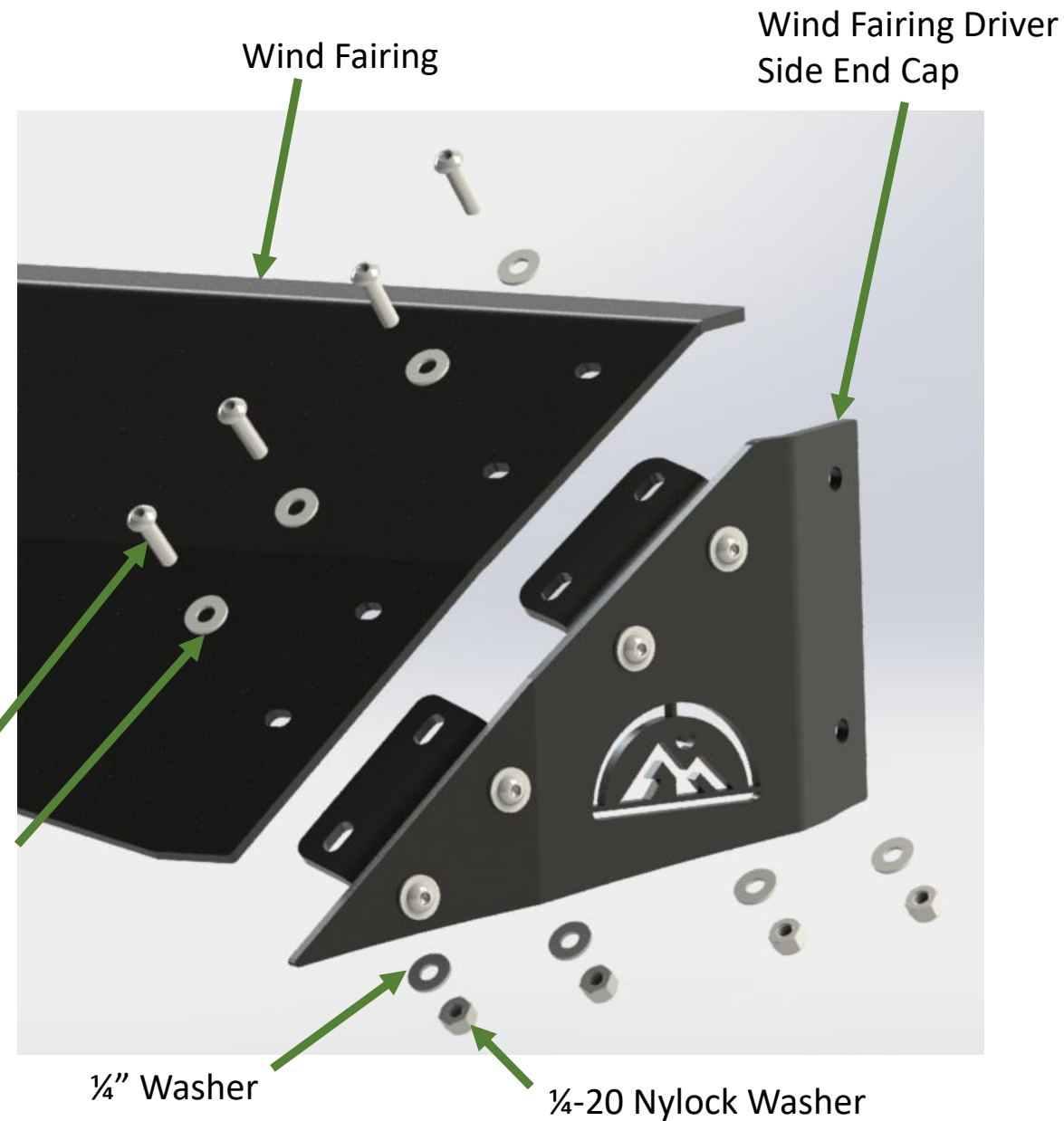
1. Hardware holding end cap brackets to the end cap still slightly loose
2. Loosely bolt the wind fairing to the wind fairing end cap assemblies
3. **Tighten the hardware carefully. Do not tighten hardware one at a time. Holding / position the wind fairing to align the edges of the fairing with the end cap as best you can. All edges may not be perfectly aligned due to manufacturing tolerances. Move between the bolts tightening them each a bit slowly until everything is nice and tight. If you tighten one bracket to much, it may not allow the adjustment slots in the brackets to compensate for manufacturing and installation tolerances
4. Repeat for the passenger side end cap
5. Install the bulb seal on the front edge of the wind fairing

Completed passenger side end cap / wind fairing



BHCS, 1/4-20 X 1" LG, SS

1/4" Washer



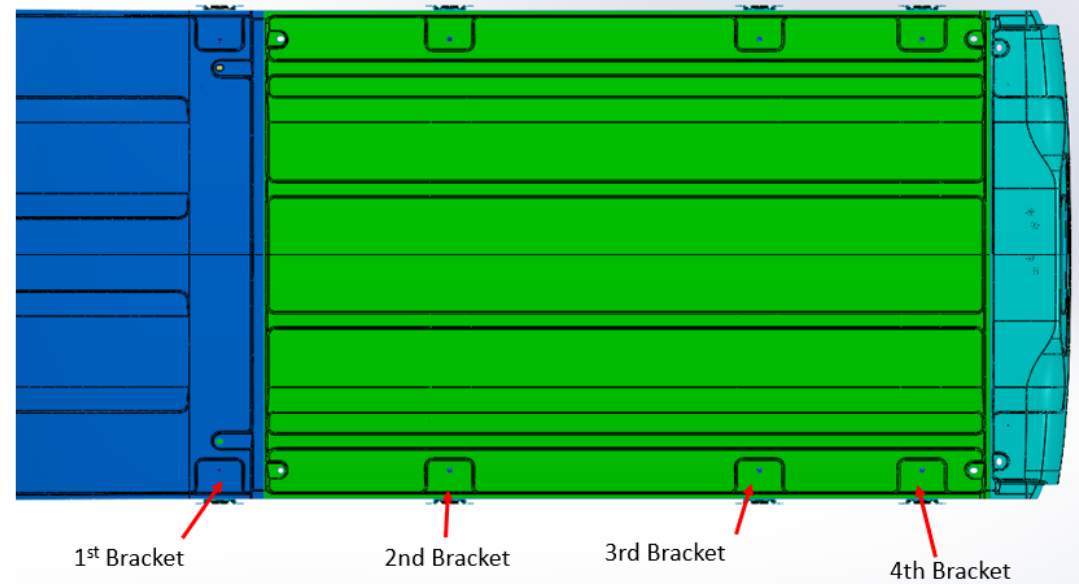
1/4" Washer

1/4-20 Nylock Washer

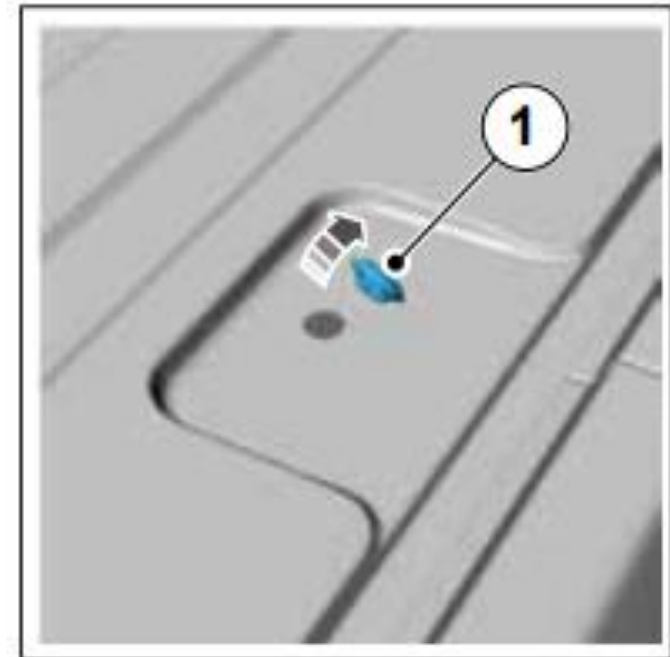
Step 7: Remove caps from van roof

Note: If the rack installation is being completed outside, before starting this step make sure you have plenty of time to get the rack installed, and to let the dicor set up before exposure to rain or water

1. Identify the rack bracket mounting locations
2. Carefully remove the rack mounting hole covers at the rack bracket locations
 - a) Other holes may be present on the roof, only remove the hole covers at the rack mounting pad locations
 - b) Apply light heat to the hole cover using a heat gun. **Caution as overheating the surrounding area could cause damage to the van.
 - c) Using a plastic scraper, break the outside edges around the cap
 - d) Use the plastic scraper to then remove the cover, applying more heat if necessary.
3. Remove any extra glue and clean with denatured alcohol



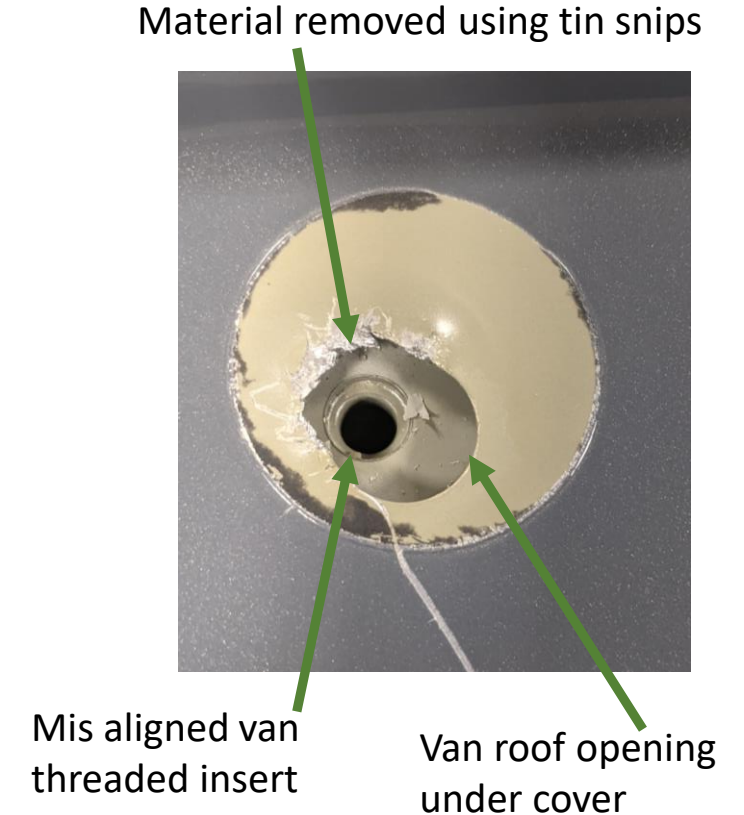
Remove Cap



Step 8: Check van threaded insert alignment

Ford does a lot right, but unless you are lucky, you will be evaluating Ford's manufacturing process during these next steps.

1. Using the M8 bolt provided, check the alignment of the van threaded insert by screwing it in by hand
 - a) ***Note all holes will be aligned so do not force it
 - b) The threaded insert is at a slight angle, so make sure when you are checking the alignment, the bolt is perpendicular to the threaded insert
 - c) In rare cases the van threaded insert may have too much paint in it and the bolt will not easily thread in. DO NOT force it, get a M8x1.25 hand tap, and run it through the threaded insert
2. Open up any misaligned holes so the M8 bolt can be threaded in, we recommend tin snips which won't make the cleanest hole, but will not make a big mess or leave a lot of metal shavings to clean up
 - a) Using tin snips, cut away just enough material to expose the hole. This can be done by cutting small V notches
 - b) Clean the cut metal to remove bent or sharp edges as desired, this will be painted and covered up, so it doesn't have to be perfect
 - c) Use denatured alcohol to clean the hole cut edges, and use a small foam brush to prime and paint the exposed metal cut edges



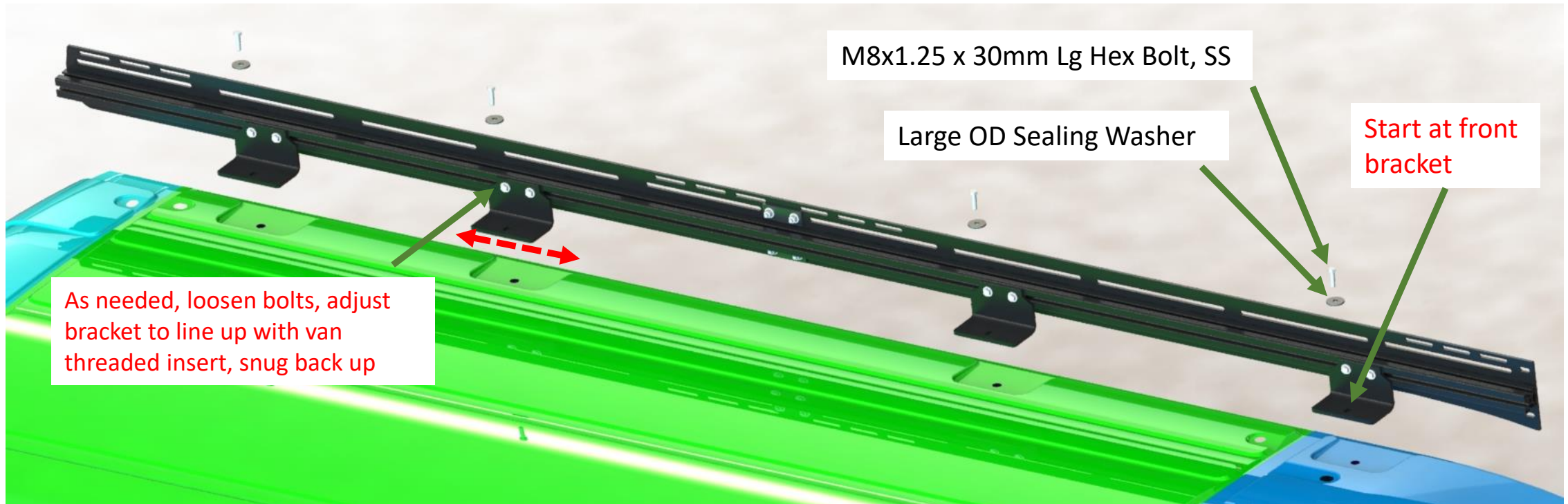
Finally, Lets Get the Rack On Your Van!

Congrats! You made it and are now ready to install your roof rack onto your van! I hope that your van was perfect and that you didn't have to open up any holes, but for those of you that opened up a bunch of them congrats on getting it done!

Step 9: Install the rack side rail assemblies

This step should be completed with 2 people using 2 ladders

1. Place one M8 bolt and large OD sealing washer at each rack bracket location
2. Lift the driver side rail assembly up and onto the roof **Use rags to protect the roof if you need to lay the rail assembly onto the van
3. Install the M8 bolt into the first roof rack bracket, leave just loose enough so the bracket can be wiggled forwards or backwards on its slot
4. Install the remainder of the M8 bolts, if a bracket does not line up with the threaded insert, loose the bolts and slide the bracket forward or backwards until the M8 bolt can be installed, then snug the bolts on the 8020 back up. Tighten the M8 bolt to the van threaded insert just loose enough so bracket can be adjusted if needed
5. Repeat these steps for the passenger side of the van

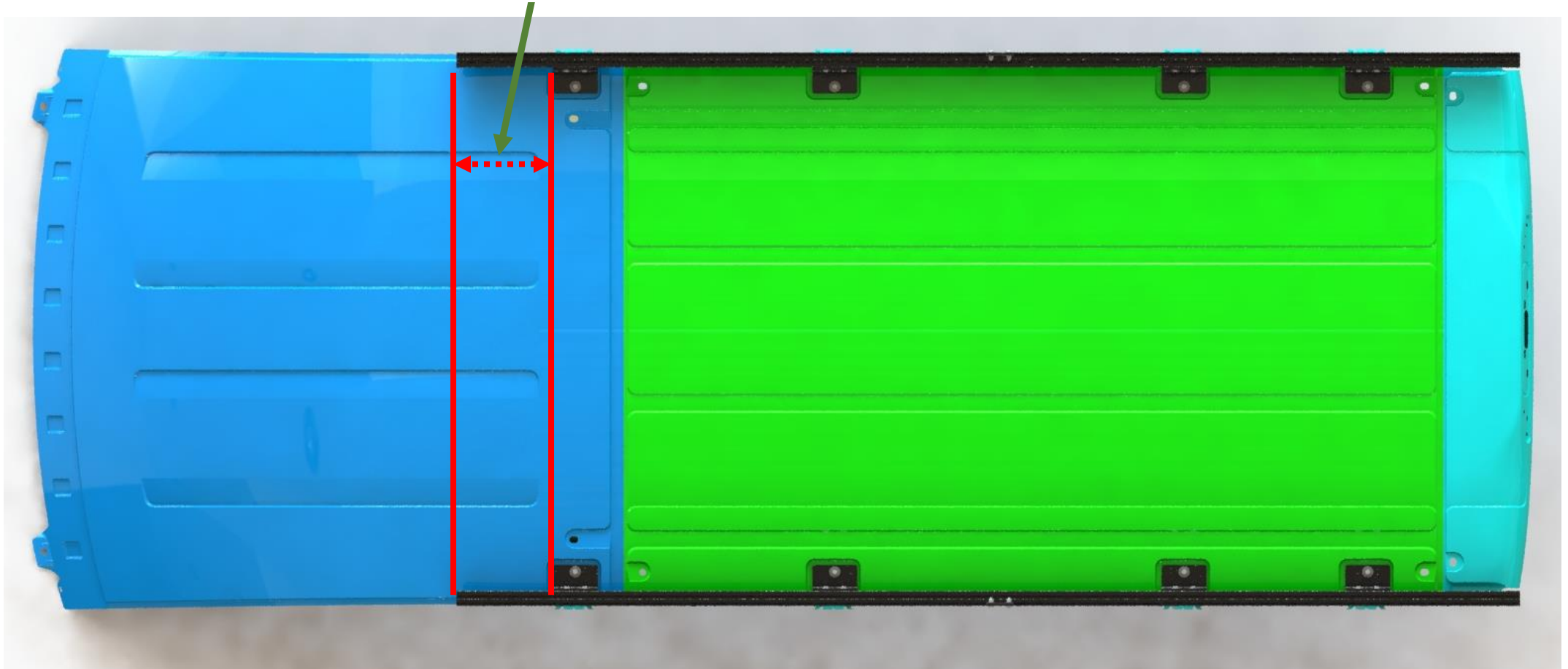


Step 9: Side Rail Positions

This step should be completed with 2 people using 2 ladders

1. Confirm side rail front to back alignment

Confirm that driver side and passenger side rails are extending the same amount from the front of the rack bracket. This was set to 11.5" in a previous step. If for some reason it is decided that 11.5" is not the desired amount due to personal installation variations or needs, just make sure they are even



Step 10: Install rack wind fairing

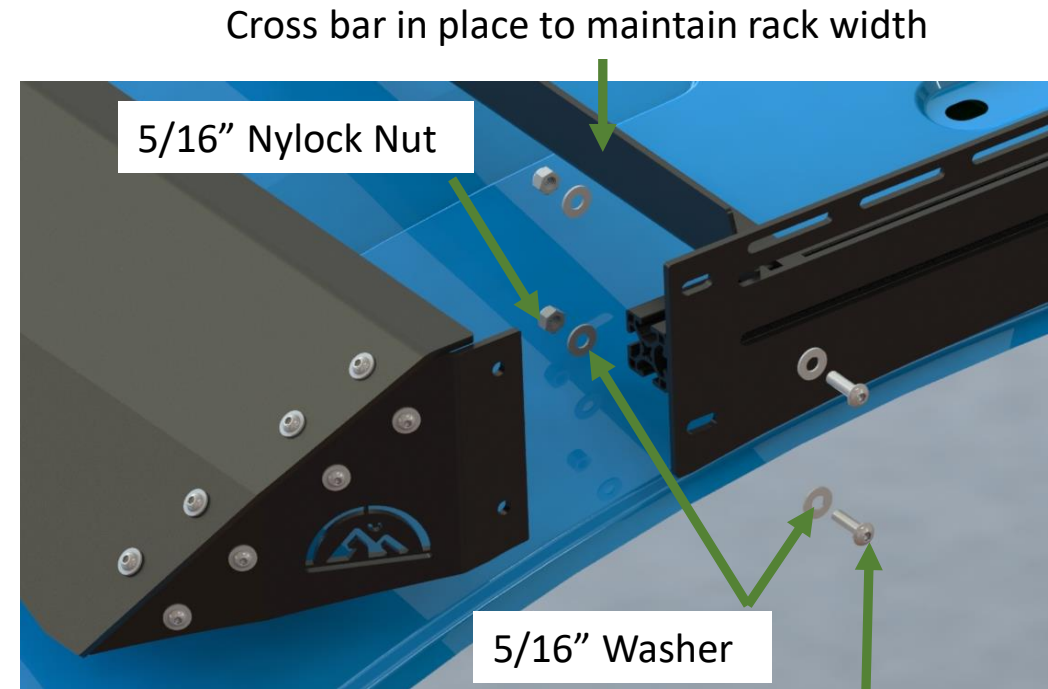
This step should be completed with 2 people using 2 ladders

Tip: Use rags as needed to protect the van if you need to sit the wind fairing on the van roof

Warning: Take extra precautions to not drop the wind fairing onto the wind shield, and down the front of the van

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

1. A cross bar should be installed towards the front of the rack to help maintain side rail spacing during this process
2. Lift the wind fairing up into place
3. Loosely bolt the wind fairing to the top and bottom slots on the side plates
4. Adjust the angle and position of the wind fairing so that the wind fairing bulb seal compresses onto the van roof
 - a) We generally position the wind fairing as far forward as possible
 - b) Snug up the wind fairing hardware
5. Entire rack can be slide forward or backwards if a better wind fairing fit is desired. This will require loosening the bolts that attach the 8020 rails to the rack brackets

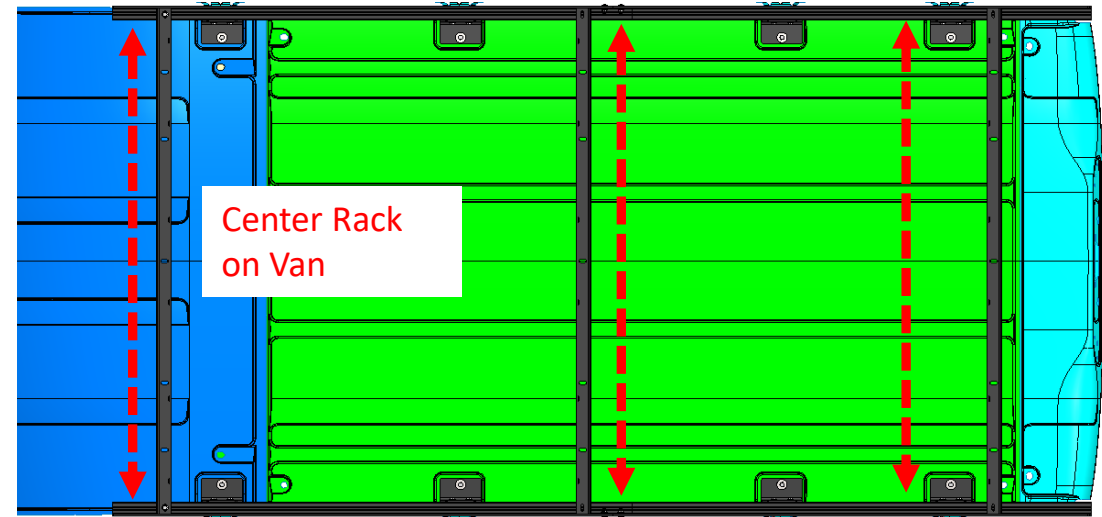


BHCS, 5/16-18 X 1" LG, FULLY THREADED, 18-8 S.S.

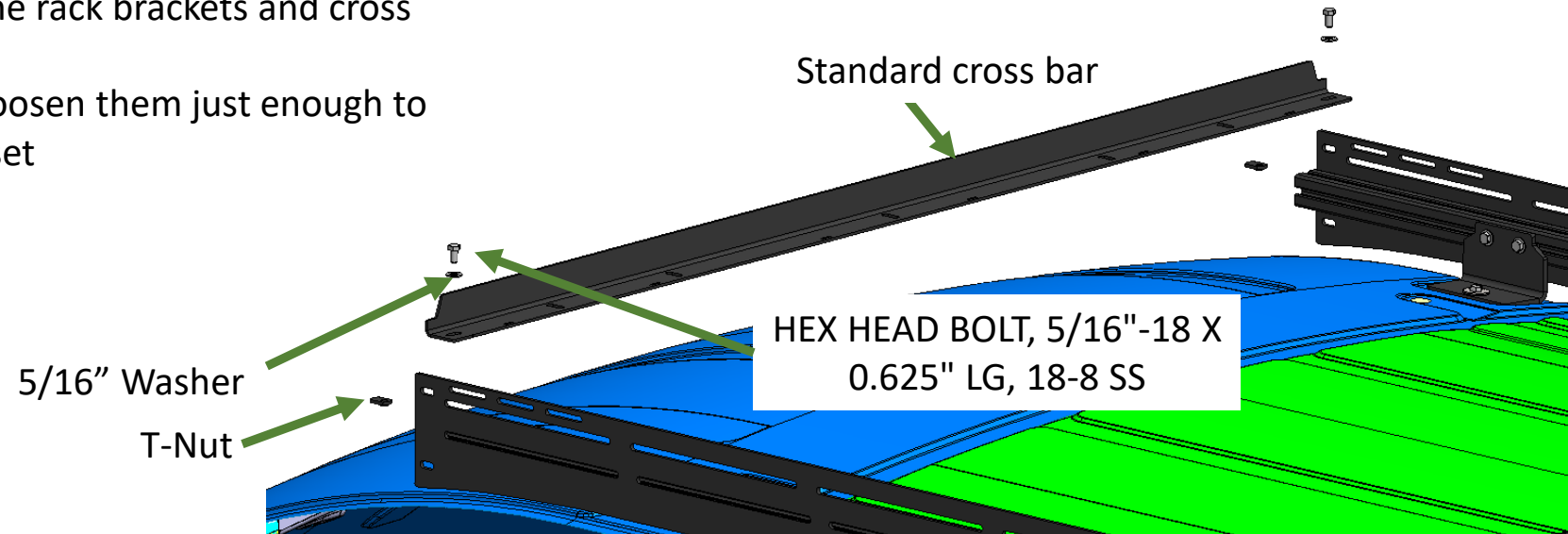
Step 11: Set side rail to side rail spacing

This step should be completed with 2 people using 2 ladders

1. Install 3 to 4 of the standard cross bars along the length of the rack
 - a) Do not use the cross bars for around the fan or AC unit
 - b) At a minimum place one towards the front, one towards the middle, and one towards the back
 - c) Do not place cross bars directly over a rack bracket
2. Slide one T-nut in the top of both the driver side and passenger side 8020 rails per cross bar. These t-nuts can be slide in from the front or back of the rack
3. Loosely bolt the cross bars to the 8020 rails
4. Once the 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 tight, but can still be removed, or adjusted forward or backwards. As you adjust, the rail to rail spacing, snug up the rack brackets and cross bar hardware
 - a) If the rack brackets are too tight, loosen them just enough to allow the rail to rail spacing to be set
5. Tighten rack brackets to van roof



Temporary cross bars near front, middle, and rear



Step 13: Dicor rack brackets sealing to roof

Each rack bracket already has a rubber gasket on the bottom, and the bolt secures the bracket to the van using a sealing washer which should keep most water out. That being said, we always Dicor the rack brackets to ensure no water can get into your van and we recommend that you do the same

Tip: For a clean Dicor installation, apply painters' tape on all 4 sides of the rack bracket

1. Per the manufacture's directions, apply Dicor to all 4 sides of the rack bracket and the hex bolt and sealing washer
2. When ready, remove the painters tape
3. Once Dicor is dry, remove the temporary cross bars

A piece of clear vinyl tubing and small hose clamp are used to Dicor the back of the bracket under the side rail assembly



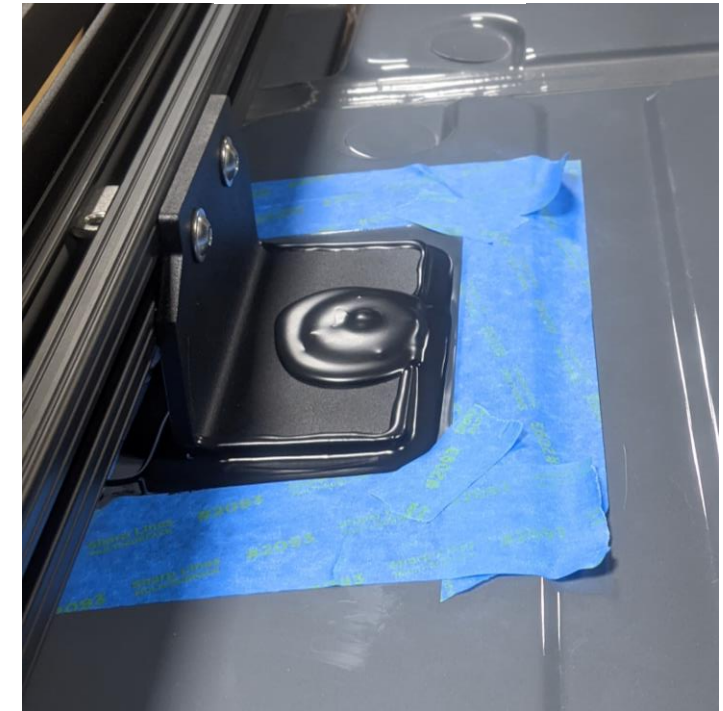
Before Dicor



Which 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.



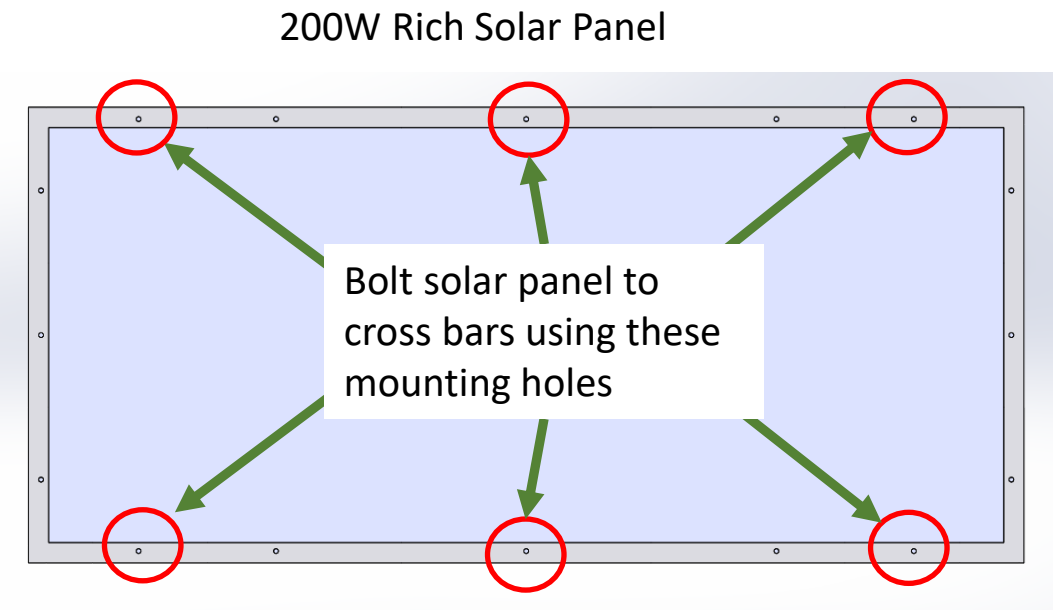
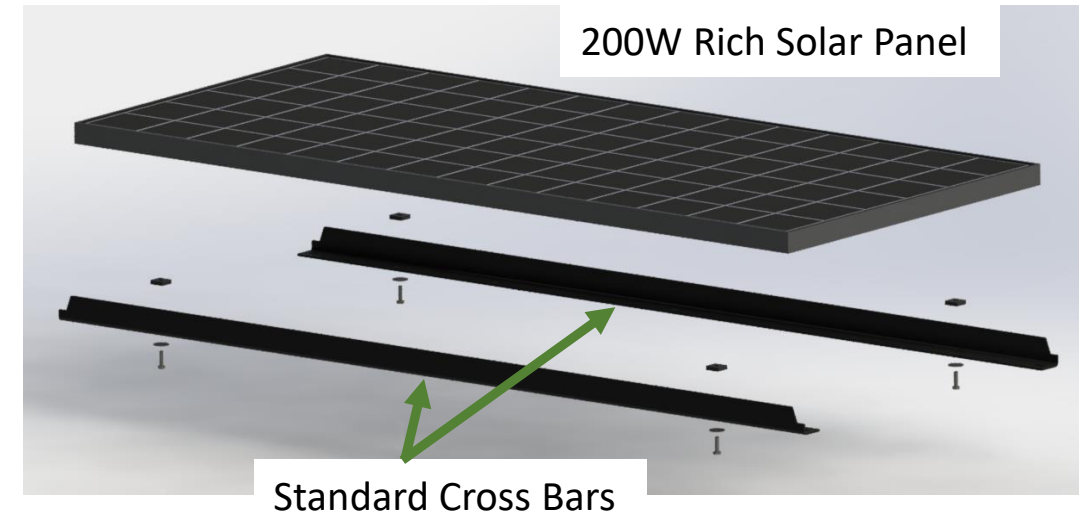
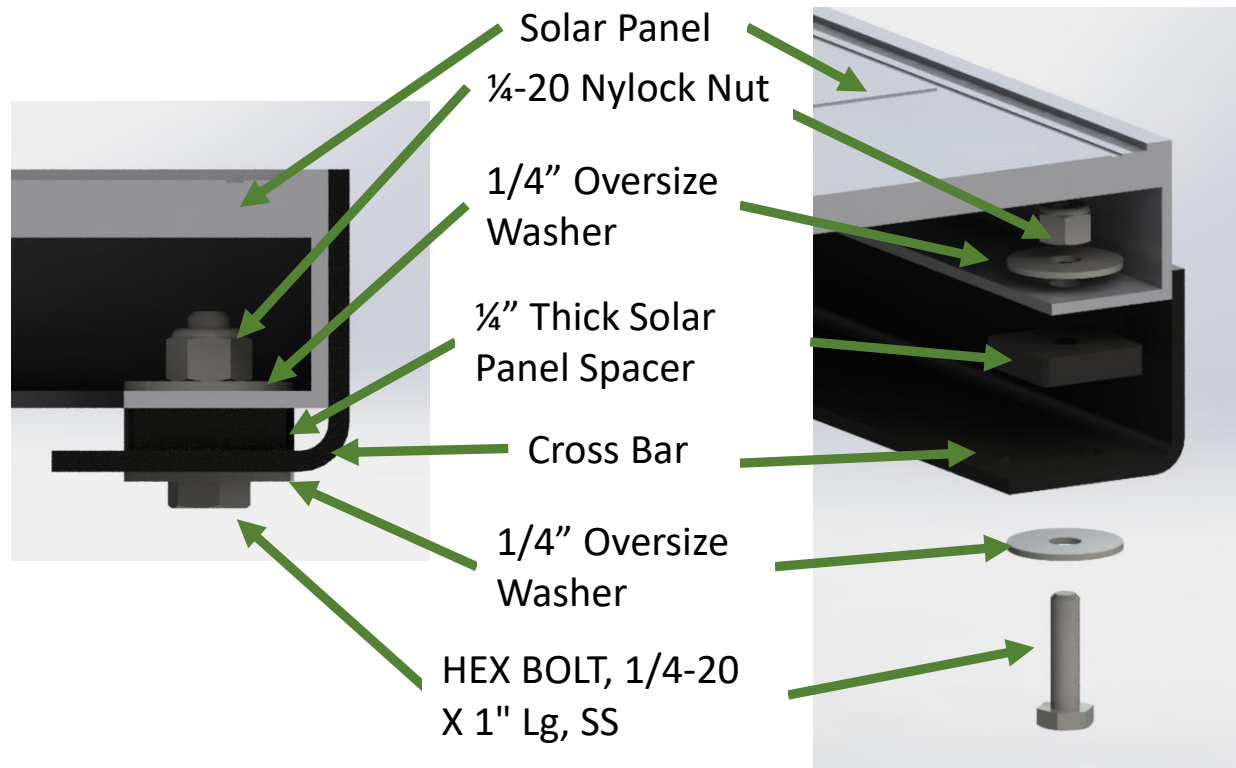
After Dicor



Step 13: Install solar panels to cross bars

1. Bolt your solar panels to your cross bars
2. Install the $\frac{1}{4}$ " spacers between the cross bar and the bottom of the solar panel
3. Center solar panels on cross bars before tightening hardware

**Below: Cut away view of the solar panel showing hardware installation

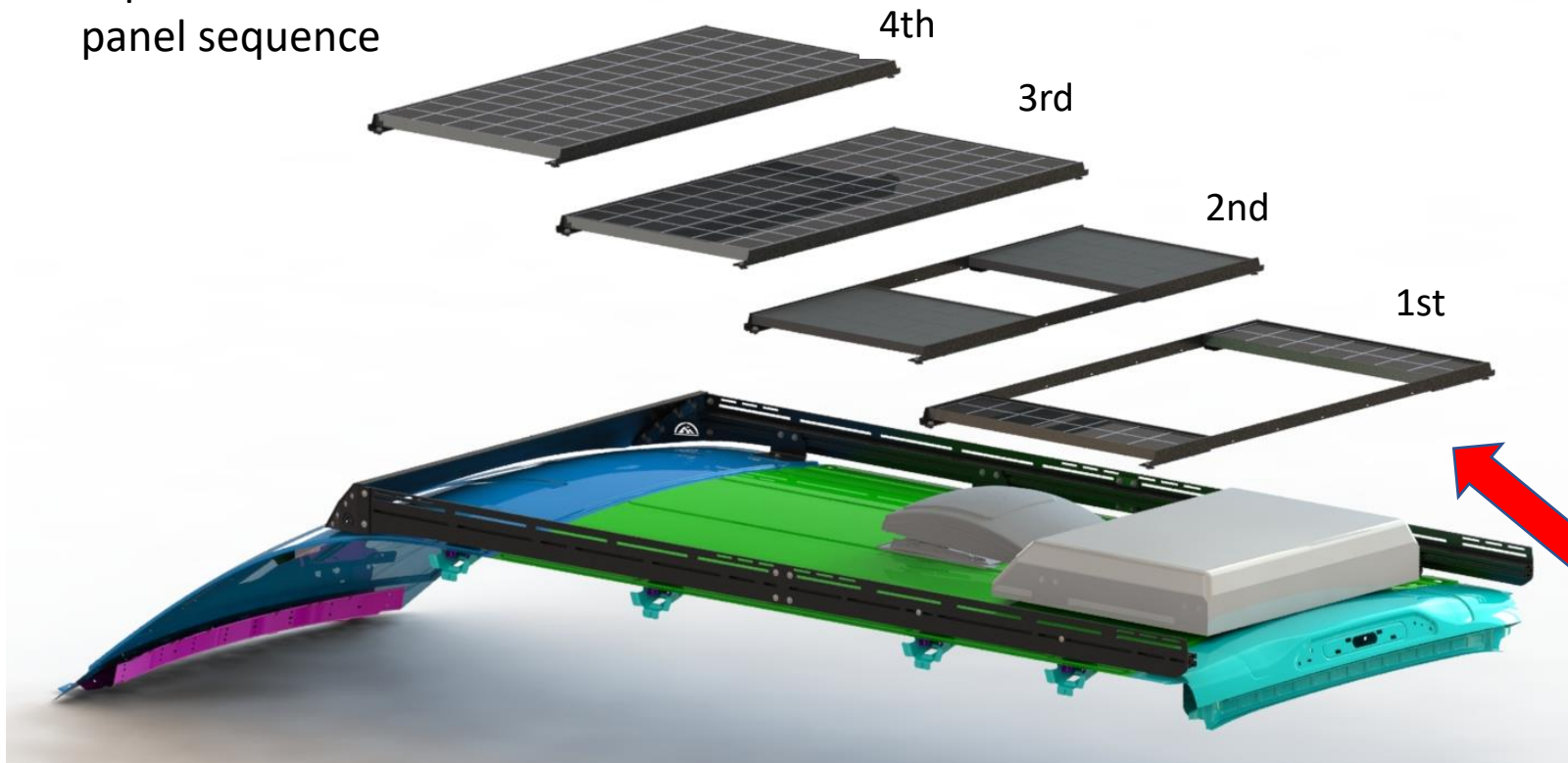


Step 13: Solar panel install sequence

This step should be completed with 2 people using 2 ladders

1. Install your solar panel assemblies in an order that makes sense for your rack
2. Do not bolt down the panel assemblies until all panels are on the roof
3. For the ExPlorist life rack using solar panel assemblies that go around the fan and AC units, we recommend installing those first, since it's a close fit around those units.

Explorist Life Rack
panel sequence



Lift the AC, and fan panel assemblies from the back of the van, with 1 person on each side. Place foam or a blanket over your AC or Fan if needed to protect them. The 200W panel assemblies can be loaded the same way if needed

Step 13: Install solar panel assembly to roof rack

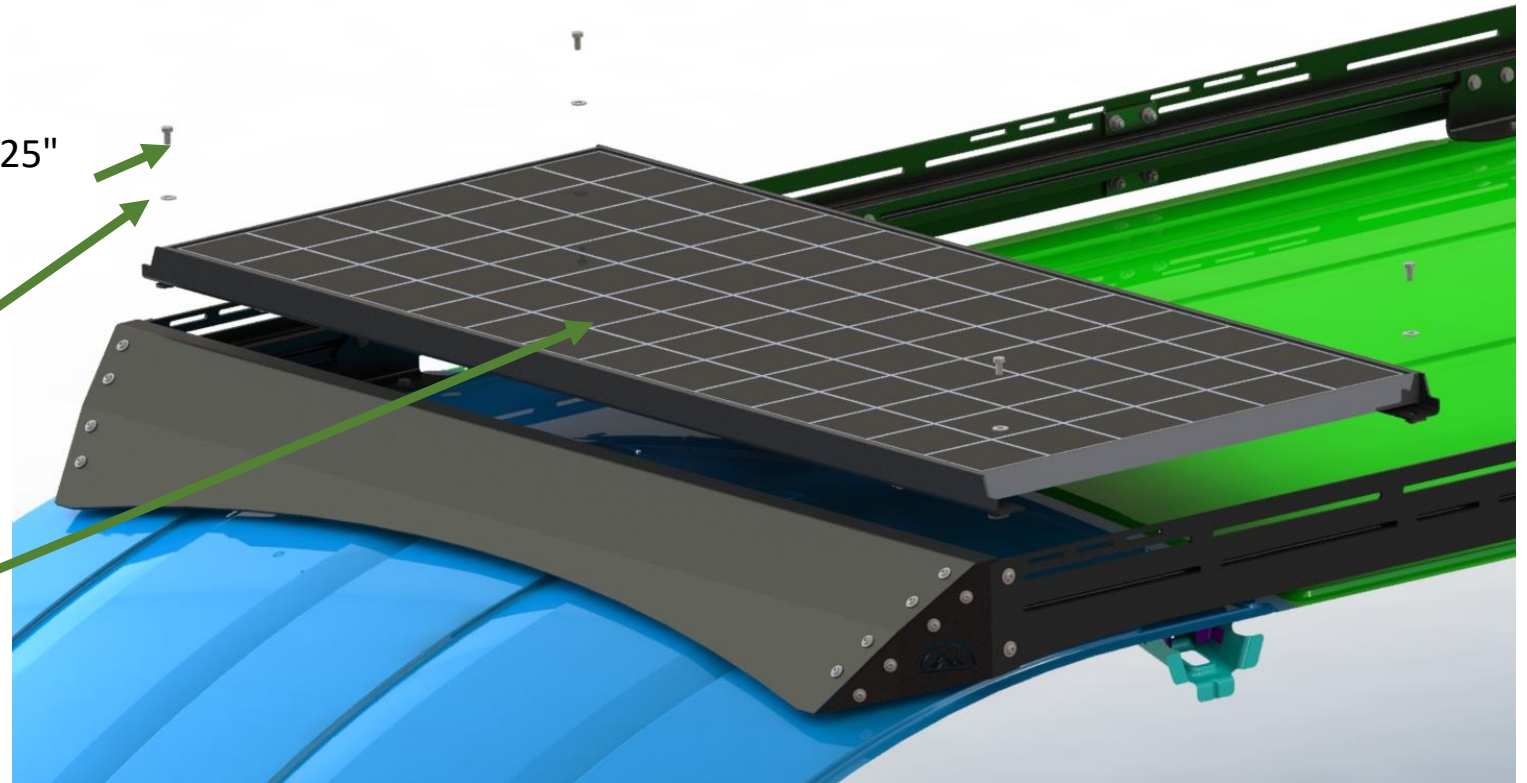
This step should be completed with 2 people using 2 ladders

1. Slide all required t-nuts for all solar panels into the top channel of the 8020. Each solar panel assembly gets 2 x t-nuts per side rail
2. Place the T-nuts in the general area that the solar panel will be installed
3. Carefully lift the solar panel assembly onto the rack, this should be done with 2 people to prevent damage to the solar panel, rack, or your van
4. Move solar panel to its final location
5. Repeat for the rest of the solar panels, adjust position of other panels as needed
6. With all panels in place, apply Loctite to the bolts, and bolt the panels in place

HEX HEAD BOLT, 5/16"-18 X 0.625"
LG, 18-8 SS

5/16" Washer

Solar Panel already
installed on cross
bars



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Installation Step Overview

1. Layout all parts on the floor of your workspace
 1. Make notes of hardware types, locations, and quantities as needed
2. Assemble side rail plates to 8020 rails creating side rail assembly
3. Assemble rack brackets to side rail assembly
4. Repeat steps 1 & 2 for passenger side rail assembly
5. Assemble wind fairing
6. Prep van roof for installation (remove bracket hole covers, etc)
7. Install side rail assemblies to van roof (may require loosening some hardware to position brackets and side rails) **Do not fully tighten rack brackets to van roof, allow slight movement
8. Loosely install wind fairing to side rails
9. Position several cross bars along the length of the rack


Installation Step Overview

9. Tighten rack brackets to van roof
10. Dicor rack brackets sealing to van roof
11. Confirm position of side rails and wind fairing, tighten all hardware
12. Remove cross bars from rack
13. Install solar panels to cross bars
14. Install solar panel & cross bar assemblies to van roof

Step 11: Align the roof rack side rails

This step should be completed with 2 people using 2 ladders

1. Place one M8 bolt and large OD sealing washer at each rack bracket location
2. Lift the driver side rail assembly up and onto the roof
3. Install the M8 bolt into the first roof rack bracket, leave just loose enough so the bracket can be wiggled forwards or backwards on its slot
4. Install the remainder of the M8 bolts, if a bracket does not line up with the threaded insert, loose the bolts and slide the bracket forward or backwards until the M8 bolt can be installed, then snug the bolts on the 8020 back up. Tighten the M8 bolt to the van threaded insert just loose enough so bracket can be adjusted if needed
5. Repeat these steps for the passenger side of the van



As needed, loosen bolts, adjust bracket to line up with van threaded insert, snug back up

M8x1.25 x 30mm Lg Hex Bolt, SS

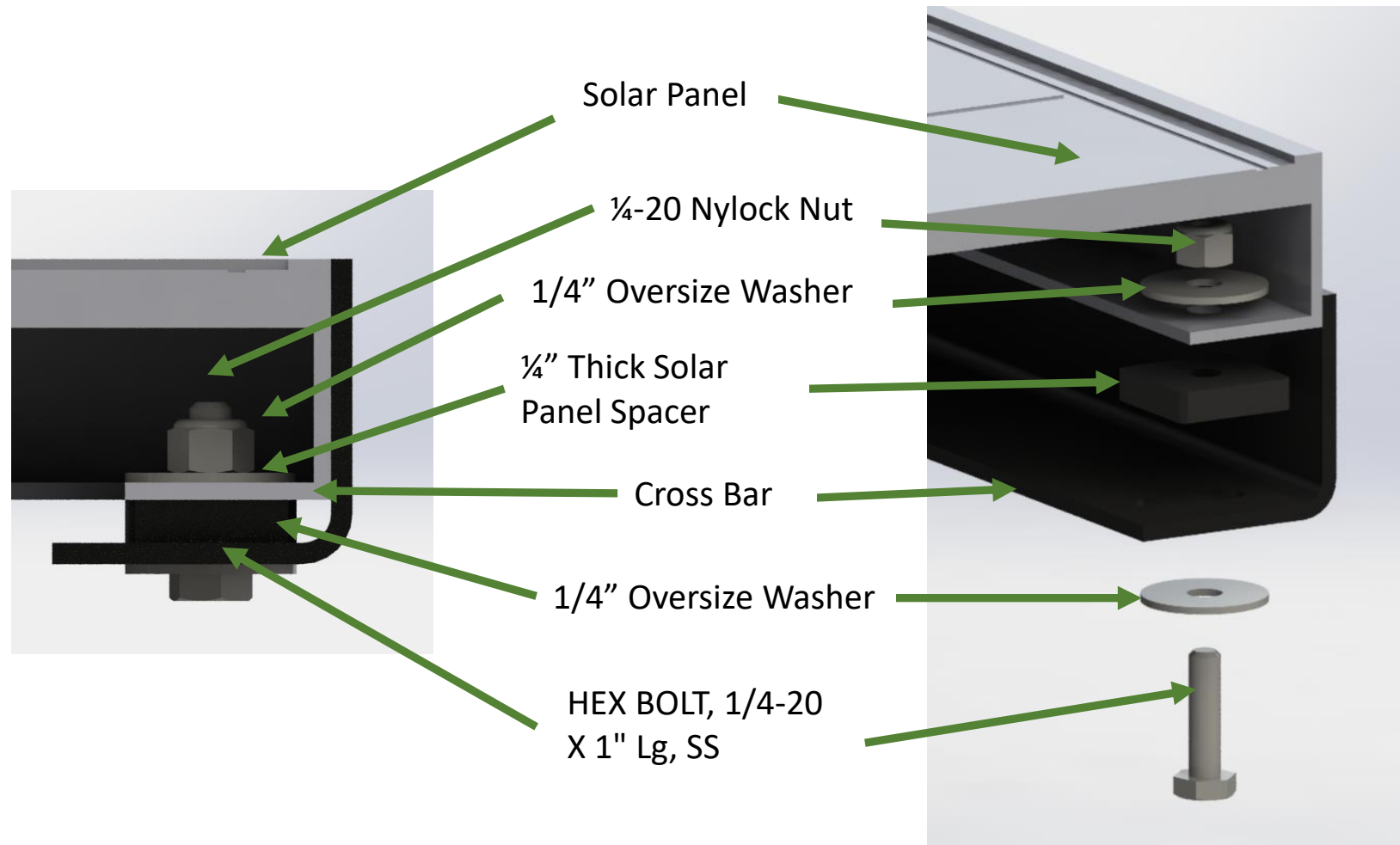
Large OD Sealing Washer

Start at front bracket



Step 13: Install solar panels to cross bars

1. Bolt your solar panels to your cross bars



Step 2: Bolt 8020 rails to side plates

1. The section view on this page shows a side view of the splice plate assembly, the 8020 to side plate assembly

