



## Product Overview:

### Ram ProMaster 8020 Roof Rack Kit



Revision: 1

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The Unaka Gear Co Team is here to help. If you have issues or questions, please do not hesitate to contact us at [info@unakagearco.com](mailto:info@unakagearco.com).

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## 1. Rack Questions

We know there are many ways to build a rack so if you want something custom, need help with a rack layout, or if you have questions about our products please do not hesitate to reach out by emailing us at [info@unakagearco.com](mailto:info@unakagearco.com).

## 2. Disclaimers

**Installation:** The installation should be performed by qualified persons only.

**Roof Rack Load Rating:** Unaka Gear Co. encourages all customers to follow the vehicle manufactures guidelines with respect to the load capacity of their van roof. If the load capacity of the van roof is exceeded, this will void any warranty with respect to the roof rack.

**Roof Top Decks:** Unaka Gear Co. does not recommend building any sort of roof deck platform on your van roof. Vehicle roofs are high above the ground and any sort of fall can result in serious injury or death.

## 3. Rack Brackets and Rack Overview

### 3.1. How Many Sets of Unaka Brackets Do I Need?

When building a full 8020 rack kit we recommend utilizing all the mounting studs on the roof of the Ram ProMaster. There are some situations where customers do not utilize all the mounting t-studs but those are not covered in this manual. Table 1 lists the # of mounting studs each size ProMaster has and the # of sets of Unaka Brackets to build a full rack.

Table 1: Ram ProMaster Attachment Points & Unaka Bracket Sets Required

Van Size	# of Roof Rack Mounting Studs	Sets of Unaka Brackets to Build a Full Rack
1500 118 WB	6	3
1500 136 WB	6	3
2500 159 WB	8	4
3500 159 WB Extended	10	5

\*Note each set of Unaka Brackets comes with 2 mounting brackets. To build a full rack for a 2500 159 WB van you would need to purchase 4 sets which would give you 8 mounting points.

### 3.2. Roof Rack Load Rating

Even though the Unaka Gear Co rack mounts can support more weight per point, we DO NOT recommend that anyone to exceed the vehicle manufacturer's specifications. Ram ProMaster publishes the maximum loads per roof attachment points as well as the max allowable load for any rack. Go to their website here (<https://www.ramtrucks.com/ram-commercial/body-builders-guide.html>), select the model year, scroll over and select Ram ProMaster, then under the document drop downs select Design Recommendations and open the document. This document contains many design recommendations including the roof rack mount point dimensions and loading for that specific year.

Check the link above to confirm the load ratings for your specific year but most years have the following load rating. Each ProMaster mounting point can hold up to 25 kg (55 lbs.) with a max load of 150Kg (330 lbs.) per van roof no matter what size or the number of attachment points.

### 3.3. Roof Rack Terminology

Figure 1 shows a high level overview of the components that make up most roof racks. This image shows a rack made using 8020 side rails and cross bars but Uni-strut, aluminum angle, aluminum tubing, or other materials can be used just as easy with our Unaka roof rack brackets. Table 2 outlines the main parts that make up a roof rack highlighted in Figure 1.

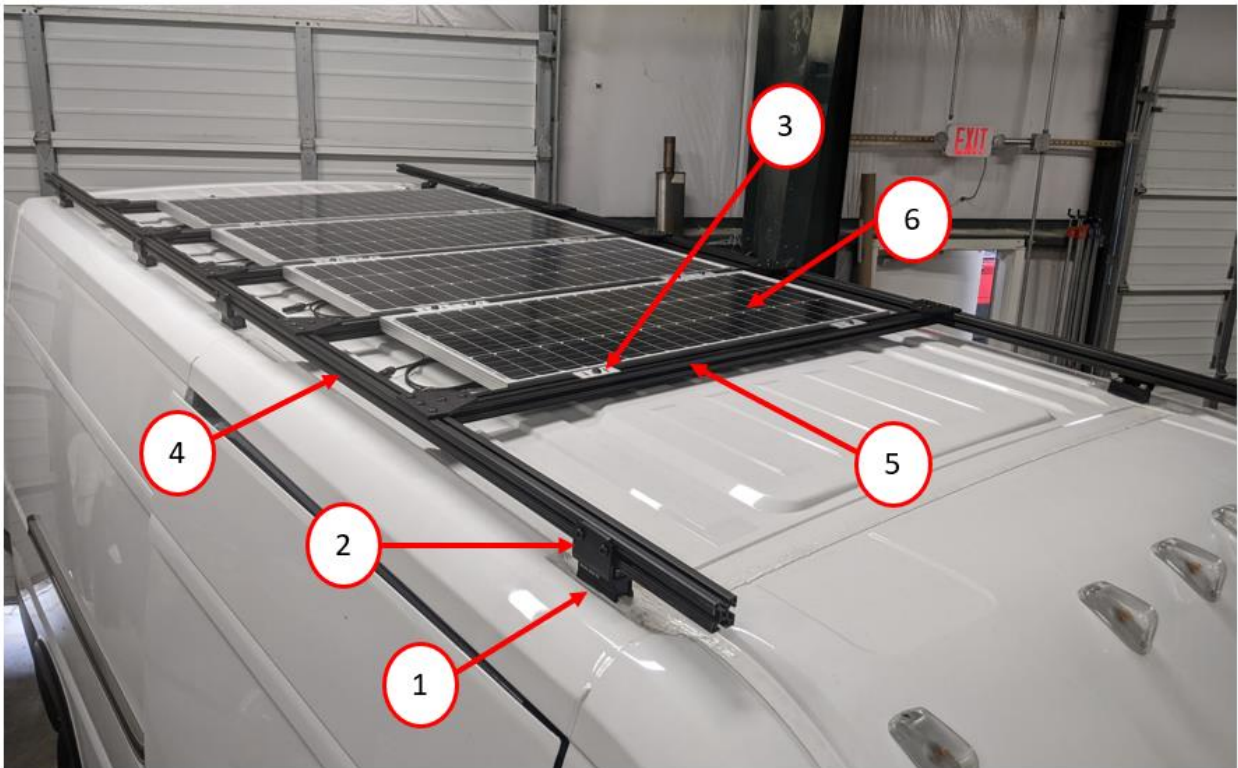


Figure 1: Roof rack overview and terminology

Table 2: Roof rack part breakdown

Item #	Item	Notes
1	Unaka Roof Rack Bracket	Sold in sets of 2, to build a small rack a minimum of 2 sets of brackets is required to give you 4 mounting points
2	Unaka 8020 Adapter	Sold separately as sets of 2, these make building an 8020 rack easy. **These are not required if using Uni-strut as your rail material**
3	Unaka Flush Mount Solar Panel Brackets	Our flush mounting solar panel brackets allow you to easily install your solar panels flush or near flush with the top of your 8020 side rails giving you a truly sleek look.
4	Side Rail	Side rails run along the length of your van. Side rails can be made using Uni-Strut, 8020, or other materials. This example shows 15 Series 8020 side rails.
5	Cross Bar	Cross bars run perpendicular to your side rails. These can be made from Uni-Strut, 8020, or other materials. They can sit flush with your side rails as shown in this example or they can sit on top of your side rails.
6	Solar Panel *Unaka Sells Solar Panels, contact us today!	The most common reason to install a rack is to mount solar panels without drilling extra holes in your van roof. Solar panel mounting depends on the size of the panels and your roof rack design.

## 4. Unaka 8020 Roof Rack Overview

This section goes over a few of the main components that make up a traditional 8020 roof rack kit. Reviewing this section before beginning the assembly process will help you identify the parts you are about to put together.

### 4.1. 8020 Side Rail Assemblies

Each side rail assembly is composed of 2 identical rail assemblies that are mirror images of each other about the center of the van. An example of a side rail assembly is shown in Figure 2. These identical rail assemblies are made up of two shorter pieces of extrusion that are joined with a four hole splice plate to make one longer solid side rail. Both ends of the side rail assemblies are capped off using plastic caps that are secured with self-tapping screws or push in plugs.

\*If you plan to use your rack to carry heavier loads, some customers choose to order an additional set of four hole splice plates to further stiffen up the joint on the side rail.

**TIP:** The plastic end caps are the very last thing to be installed on your rack. If you install these before the rack assembly is complete and you left out some t-nuts, then you will have to remove them to add more nuts.

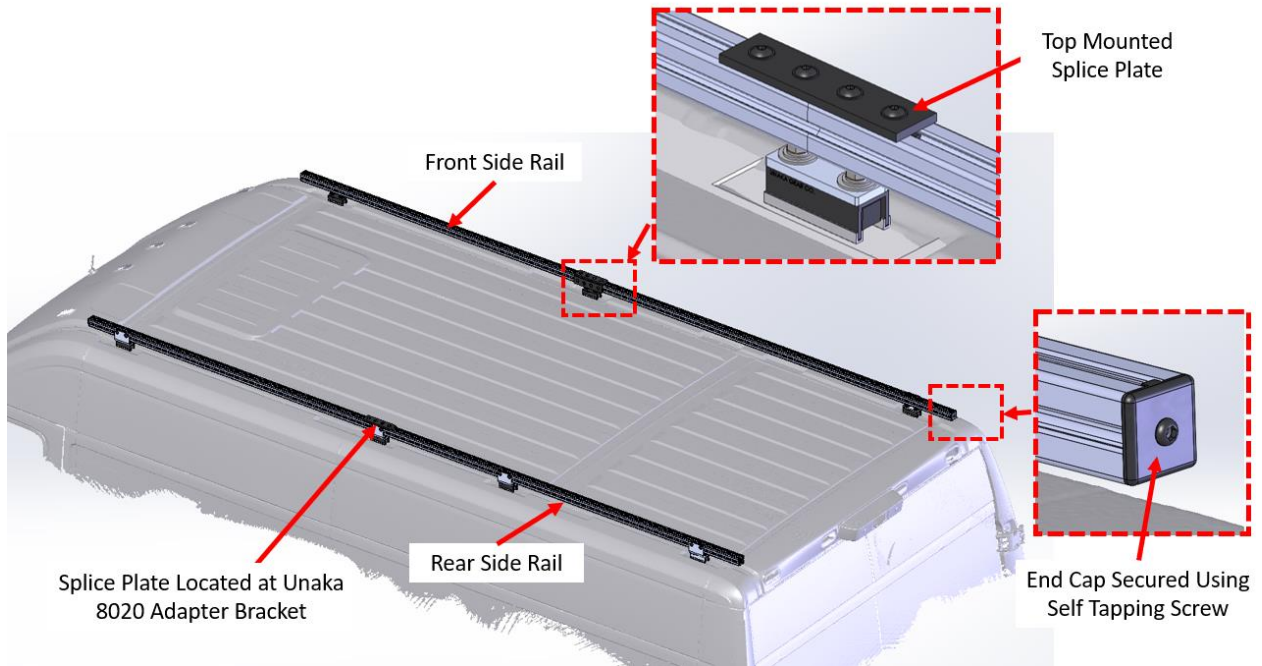


Figure 2: Ram ProMaster Side Rail Kit

Figure 2 shows the layout for a 159" WB Non-Extended ProMaster. This layout is identical for the other ProMaster sizes. The only thing that changes from one van size to the next is the length of the side rails, where the splice is located, and the quantity of Unaka ProMaster rack brackets and 8020 adapters that are used to secure the rails to the roof.

The length of the side rail pieces depends on the size of the van the rack is being made for. Complete parts lists for all three Ram ProMaster chassis sizes can be found in Table 3 for the 136" WB vans,

Description	PART #	Length	QTY Per Kit
15 SERIES ULTRA LITE BLACK ANODIZED	1515-UL-BLACK	63	2
15 SERIES ULTRA LITE BLACK ANODIZED	1515-UL-BLACK	56.75	2
15 Series 4 Hole Straight Flat Plate - Black	1005-MB01-01	NA	2
5/16-18 x .687" Flanged Button Head Socket Cap Screw (FBHSCS)	3607	NA	8
5/16-18 Slide-in Economy T-Nut - Offset Thread, SS	3678	NA	8
SELF TAPPING END CAP SCREW	8020-3267	NA	4
15 SERIES SQUARE PLAIN CAP BLACK	8020-2030-Plain	NA	4

Table 4 for the 159" WB Non Extended, and Table 5 for the 159" WB Extended.

Table 3: Ram ProMaster 136" WB Side Rail Parts List

**Product Overview:**

Ram ProMaster 8020 Rack Kit



Description	PART #	Length	QTY Per Kit
15 SERIES ULTRA LITE BLACK ANODIZED	1515-UL-BLACK	63	2
15 SERIES ULTRA LITE BLACK ANODIZED	1515-UL-BLACK	56.75	2
15 Series 4 Hole Straight Flat Plate - Black	1005-MB01-01	NA	2
5/16-18 x .687" Flanged Button Head Socket Cap Screw (FBHSCS)	3607	NA	8
5/16-18 Slide-in Economy T-Nut - Offset Thread, SS	3678	NA	8
SELF TAPPING END CAP SCREW	8020-3267	NA	4
15 SERIES SQUARE PLAIN CAP BLACK	8020-2030-Plain	NA	4

Table 4: Ram ProMaster 159" WB NON-Extended Side Rail Parts List

Description	PART #	Length	QTY Per Kit
15 SERIES ULTRA LITE BLACK ANODIZED	1515-UL-BLACK	79.25	2
15 SERIES ULTRA LITE BLACK ANODIZED	1515-UL-BLACK	63	2
15 Series 4 Hole Straight Flat Plate - Black	1005-MB01-01	NA	2
5/16-18 x .687" Flanged Button Head Socket Cap Screw (FBHSCS)	3607	NA	8
5/16-18 Slide-in Economy T-Nut - Offset Thread, SS	3678	NA	8
SELF TAPPING END CAP SCREW	8020-3267	NA	4
15 SERIES SQUARE PLAIN CAP BLACK	8020-2030-Plain	NA	4

Table 5: Ram ProMaster 159" WB EXTENDED Side Rail Parts List

Description	PART #	Length	QTY Per Kit
15 SERIES ULTRA LITE BLACK ANODIZED	1515-UL-BLACK	91	2
15 SERIES ULTRA LITE BLACK ANODIZED	1515-UL-BLACK	67	2
15 Series 4 Hole Straight Flat Plate - Black	1005-MB01-01	NA	2
5/16-18 x .687" Flanged Button Head Socket Cap Screw (FBHSCS)	3607	NA	8
5/16-18 Slide-in Economy T-Nut - Offset Thread, SS	3678	NA	8
SELF TAPPING END CAP SCREW	8020-3267	NA	4
15 SERIES SQUARE PLAIN CAP BLACK	8020-2030-Plain	NA	4

Note that part number 1005-MB01-01 is equivalent to 8020 part # 4305-Black which is black anodized, or to Frame World part # BLB-28 which is black powder coated.

#### 4.2. 8020 Cross Bar Assemblies

Our roof rack cross bar assemblies typically include one 8020 cross bar, some mounting brackets, and the hardware required to assemble them as shown in Figure 4. There are many different types and styles of brackets that can be used to secure the cross bar to the side rails, but Unaka standardizes on the 5 hole flat L-brackets. The flat L-brackets allow the full space to be utilized between the cross bars without having anything that might overhang or cover up the corner of a solar panel.



Figure 3: Unaka standard cross bar assembly with 5 hole flat L-brackets

These cross bar assemblies come in a standard width version that uses a 56.75" long cross bar and a wide version that uses a 60.25" long cross bar. Table 6 and Table 7 include the complete parts list for our standard and our wide cross bar assemblies.

Table 6: Standard Cross Bar Parts List

Description	PART #	Length	QTY
STANDARD CROSS BAR, 15 SERIES ULTRA LITE BLACK ANODIZED	1515-UL-BLACK	56.75	1
15 Series 5 Hole - "L" Flat Plate	1005-MB02-01	NA	2
5/16-18 x .687" Flanged Button Head Socket Cap Screw (FBHSCS)	3607	NA	10
5/16-18 Slide-in Economy T-Nut - Offset Thread, SS	3678	NA	10

Table 7: Wide Cross Bar Parts List

Description	PART #	Length	QTY
STANDARD CROSS BAR, 15 SERIES ULTRA LITE BLACK ANODIZED	1515-UL-BLACK	60.25	1
15 Series 5 Hole - "L" Flat Plate	1005-MB02-01	NA	2
5/16-18 x .687" Flanged Button Head Socket Cap Screw (FBHSCS)	3607	NA	10
5/16-18 Slide-in Economy T-Nut - Offset Thread, SS	3678	NA	10

**Cross Bar Assembly Notes:**

- Each flat 5 hole L-bracket uses 5 flanged button head cap screw bolts and 5 t-nuts.
- Before bolting any L-brackets to the cross bar assembly, check to see if any additional t-nuts need to be inserted into any of the extrusion slots to mount other parts of the rack, the wind fairing, or flush mount solar panel brackets.



### 4.3. Standard Versus Wide Side Rail Mounting

The 8020 side rail assemblies can be mounted two different ways to the Unaka 8020 adapters which allow you to use the standard width cross bar of 56.75" long or the wide cross bar that is 60.25" long. If you plan to use the 56.75" long standard cross bar assembly, then you must install your side rails using the standard side rail mounting method below. If you plan to use the wide cross bar assembly that uses a 60.25" long cross bar, then you must install your side rails using the wide side rail mounting method below.

#### 4.3.1. Standard Side Rail Mounting

The standard side rail mounting bolts the 8020 side rails to the inside of the Unaka 8020 adapters as shown in Figure 4. This makes a slightly narrower rack which some perceive as being stealthier. Depending on the quantity of cross bars being used, this can slightly reduce the material cost of the rack kit. The standard side rail mounting method sets your allowable space between the rails to be 56.75" which is set by our standard cross bar assemblies. This becomes your allowable space to mount your solar panels so if your panels are wider than 55.75" then you may want to consider the wide mounting method.

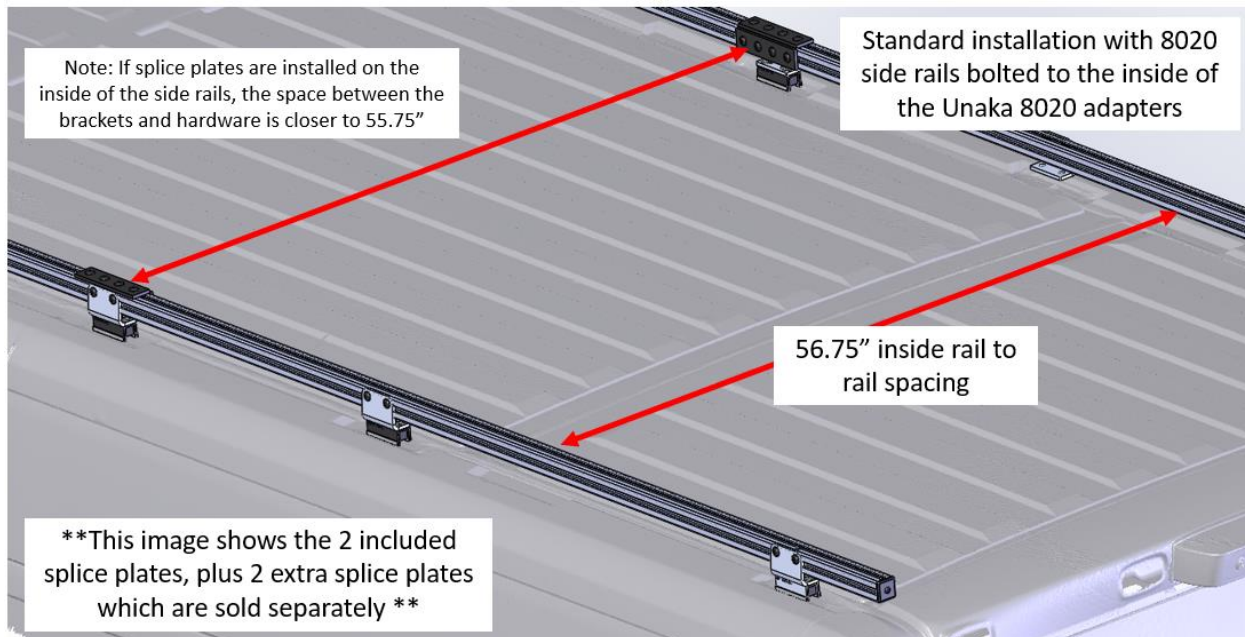


Figure 4: Standard 8020 Side Rail Mounting

Note that the amount of clearance between the splice plates if mounted to the inside of the side rails is closer to 55.75", not 56.75".

#### 4.3.2. Wide Side Rail Mounting

If your rack set up needs a few extra inches of rail-to-rail clearance or total width you can mount your side rails to the outside of the of the Unaka 8020 adapters as shown in Figure 5. Mounting your side rails on the outside of your Unaka 8020 adapters sets your allowable space between the rails to be 60.25" which is set by our wide cross bar assemblies. This becomes your maximum allowable space between the rails. The average useable space for your solar panels to fit is closer to 59.25" since the Unaka 8020 adapters now occupy some of that space between the rails at their specific locations.

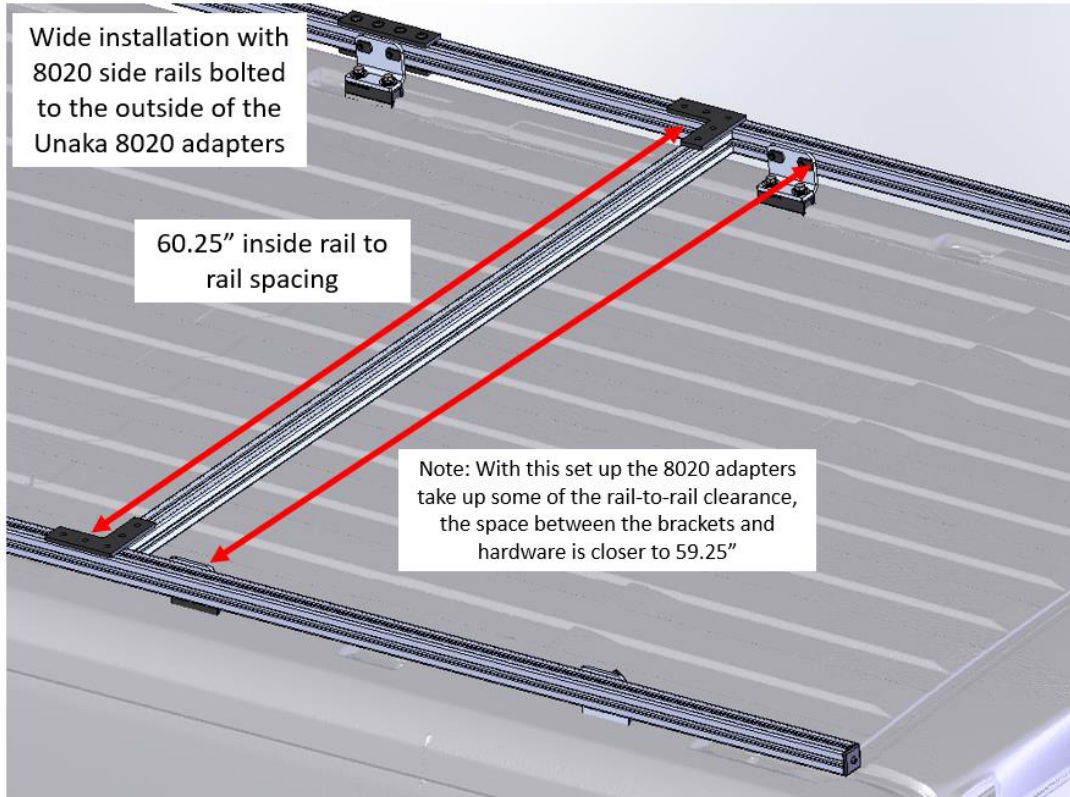


Figure 5: Wide 8020 side rail mounting

## 5. 8020 Rack Accessories

Most likely you are building your rack to install solar panels, a deck (which we do not recommend), or maybe you have other plans. The following accessories help increase functionality, improve the installation process, and give it the finishing touches your van truly deserves.

### 5.1. Flush Mount Solar Panel Brackets

Our custom designed flush mount solar panel brackets are one of our most popular accessories to go with a Unaka roof rack kits or your own DIY rack. These brackets are designed to give you the cleanest and easiest solar panel installation possible when used with 8020 or Uni-Strut roof racks. If you haven't checked these out head over to [UnakaGearCo.com](http://UnakaGearCo.com) or [click here](#) to check them out! Note hardware for these brackets is sold separately.



Figure 6: Flush Mount Solar Panel Brackets



Figure 7: Flush mount solar panel brackets, set of 4

## 5.2. Unaka Ram ProMaster Wind Fairing

As a standard option with our rack kits, the Unaka Ram ProMaster wind fairing is a great way to finish off your 8020 roof rack kit. Each wind fairing comes with the five mounting brackets pre-installed, and the hardware required to bolt your wind fairing down to an 8020 cross bar which is not included.

If you haven't checked these out head over to [UnakaGearCo.com](http://UnakaGearCo.com) or [click here](#) to check it out!



Figure 8: Unaka ProMaster Wind Fairing

**Installation Note:** Slide the 5 T-nuts provided with your wind fairing into the top slot of the front cross bar extrusion. This should be done before any corner brackets or L-brackets are bolted to the cross bar assembly.

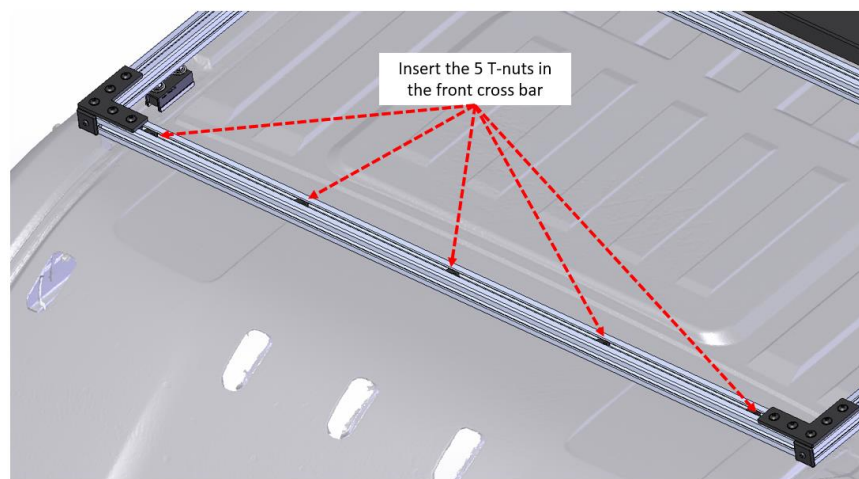


Figure 9: Add the 5 wind fairing t-nuts before assembling front cross bar

### 5.3. Awning Brackets

Whether you want a Thule Hide Away awning, or a Fiamma F45s awning we have you covered. Not only can we provide you with your awning, we can also provide you with our Unaka Awning Mounting Brackets. [Click here for more information.](#)

### 5.4. Tie Down Rings

Our tie down rings can be used to secure additional items to your roof rack. These can be positioned anywhere on your roof rack that you have space to install them. [Click here for more information.](#)



Figure 10: 15 Series 8020 Tie Down

Note these come with standard t-nuts which would have to be slide into position during installation. If you want the full flexibility to move these around as needed, or to install them after your rack is complete, consider purchasing some drop in t-nuts.

#### 5.5. Additional Accessories Available or Coming Soon

Head over to [UnakaGearCo.com](http://UnakaGearCo.com) to check out additional rack accessories or email us @ [info@unakagearco.com](mailto:info@unakagearco.com) if you have specific questions on products that are coming soon.

Available Upon Request

- Ram ProMaster Ladder

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