

5th Gen Rav4



PRINSU PRO RACK



Applications installation instructions

These installation instructions apply to the following Prinsu products

– **Toyota Rav4** Prinsu PRO Rack | 2019-2023

IMPORTANT!

THANK YOU for purchasing this Prinsu product. Please read through this entire document before proceeding with installation. If you are not confident in your mechanical skills, please seek the help of a professional to perform the installation. Check your packages immediately upon arrival to ensure that everything listed is included, and to check for damage during shipping. **If anything is missing or damaged, or if you need technical assistance with any aspect of this installation, call Prinsu at (208) 528-0664 as soon as possible.**

NOTE:

We have a detailed installation video of the Original Prinsu Rack. Mounting will be the same as the Pro Rack. The video shows more detailed techniques of removing interior components. Video Link <https://www.youtube.com/watch?v=NoY4uCMRy34>

**Hardware Included**

5th Gen Rav4 Pro Roof Rack Mounting Hardware		
DESCRIPTION	QTY	TORQ
0.319"ID-3/4"OD x 7/8" Long Aluminum Spacer	4	N/A
0.319"ID-3/4"OD x 1" Long Aluminum Spacer	6	N/A
1/4"-20 x 2" Steel Hex Cap Screw Zinc	12	8 ft.-lbs
1/4" x 1" x 0.062" Steel Fender Washer	12	N/A
1/4"-20 0.020"- 0.280" Grip Range Yellow Zinc Flat 1"Length Steel Sherex™ CPB Rivet Nut	10	N/A
3/8" x 13/16" x 3/32" EPDM Washer	10	N/A

5th Gen Rav4 Pro Roof Rack Mounting Feet Hardware		
DESCRIPTION	QTY	TORQ
1/4"-20 x 1" Stainless Steel Button Head Socket Black Oxide	14	8 ft.-lbs
1/4" x .625" x .0625" Stainless Steel Flat Black Oxide Washer	14	N/A

5th Gen Rav4 Pro Crossbar Hardware (7 Pro Crossbars, 1 Clear Extrusion - 47")		
1/4"-20 x 1" Stainless Steel Button Head Socket Black Oxide	34	8 ft.-lbs
1/4" x .625" x .0625" Stainless Steel Flat Black Oxide Washer	34	N/A
Vibra-Tite 111 Low Strength Threadlocker Pack of 3 Tubes	1	N/A

5th Gen Rav4 Pro Wind Deflector Hardware		
DESCRIPTION	QTY	TORQ
1/4"-20 x 1/2" Stainless Steel Button Head Socket Black Oxide	10	8 ft.-lbs
1/4" x .625" x .0625" Stainless Steel Flat Black Oxide Washer	10	N/A
1/4"-20 Stainless Steel Dual Tab Spot Weld Nut N/A	10	N/A

Prinsu Plus Nut Install kit		
1/4"-20 x 2-1/4" Steel Tap Bolt Zinc	1	8 ft.-lbs
1/4" x .625" x .062" Steel Flat Washer	2	N/A
5/16"-18 x 1-1/8" Steel Coupling Nut Zinc	1	N/A
1/4"-20 0.020"- 0.280" Grip Range Yellow Zinc Flat 1"Length Steel Sherex™ CPB Rivet Nut	1	N/A

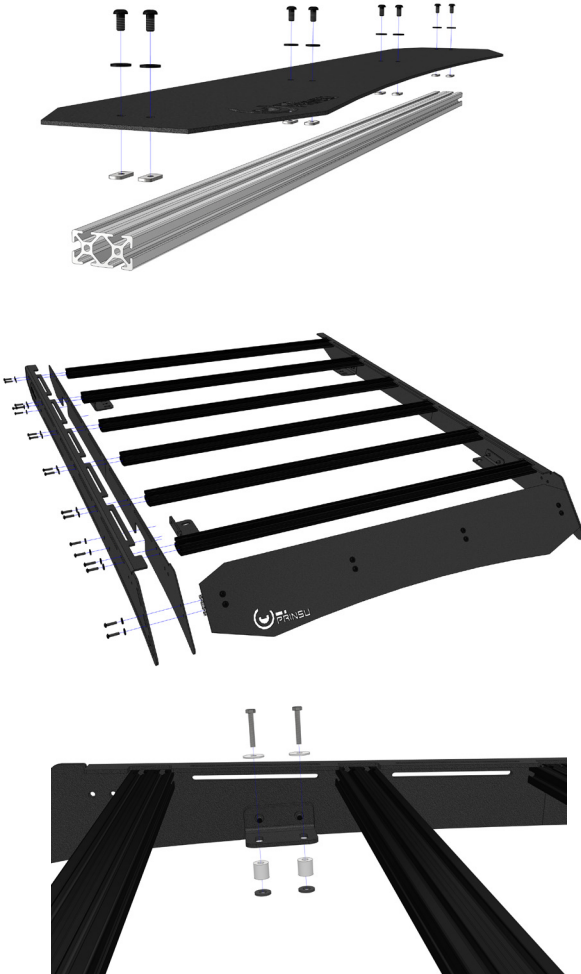
WEIGHT CAPACITY:

600lbs dynamic load capacity and
1,000lbs static load capacity



Tools Required

- 5/32 Allen
- 1/2 wrench
- 7/16 wrench/socket
- Drill and Sharp Drill bits
- Utility Knife
- Side cutting pliers
- 12mm socket/wrench
- 10mm socket/wrench
- Misc ratchet extensions
- T 20 Torque bit
- Small picks
- Plastic Pry tools



IMPORTANT!

All products built and designed by Prinsu Design Studio are intended for off-road use and should be assembled, installed, and used according to Prinsu Design Studio's recommendations. Prinsu Design Studio products should be used safely with good judgment towards others and the environment. By installing Prinsu Design Studio Products on your vehicle you assume all liability. Prinsu Design Studio will not be held liable for damages or loss associated with the installation or use of its products. Be smart, use good judgement, don't overload your vehicle to the point of inferior handling and maneuverability!

*** WARNING ***

Neither the seller nor the manufacturer will be liable for any loss, damage, or injury, directly or indirectly arising from the use of or inability to determine the use of these products. Before using, the user shall determine the suitability of the product(s) for its intended use(s), and the user shall assume all responsibility and risk in connection therewith.

Note for Dealers and Installers:

Read through all instructions before starting install. It is your responsibility to ensure instructions are given to the end user or client.

Sequence of Steps

1. Unpack Prinsu box and prep hardware and brackets

- Lay out a moving blanket on the floor and start laying out all your Prinsu parts.
- Verify you have 2 outer side rails, 2 inner rear side rails, 2 inner front side rails, 7 Pro crossbars, 1 silver cross bar, 1 wind deflector, noise reducing trim, and several hardware bags.
- Empty out the hardware bags, but keep them sorted and organized
- Put a washer on every bolt and a dab of vibra tite thread locker on the end of each bolt. Prepping all this hardware will make for a much smoother install.

2. Partially assemble Prinsu rack

- You'll see that the mounting feet are labeled. The sequence is as follows: 1, 2, 3. 1 will be installed in the front of the rack, 2 will be installed in the middle and three will be installed in the rear of the rack. 1 and 2 are not side specific, 3 is side specific. Use your 3/4 long black bolts to attach the mounting to the side rails in the order stated above.
- Install a crossbar in the front, one in the middle, and one in the rear of the rack. Cross bars are meant to be installed in the smaller slots in the side rail, make sure that you install the inner side rail between the outer side rail and the cross bar. Also don't install a cross bar over a mounting bracket just yet, you will need access to the mounting bracket to bolt the rack to the vehicle.

3. Remove factory Rack

- On each of the factory rails, there are two plastic covers that you can remove by prying outward with a flat head screwdriver.
- Remove the 10mm head bolts under the plastic cover piece. Once these bolts are removed you will be able to pull upward and remove the factory rails.

4. Remove the factory mounting brackets

- You will need to remove some interior components to access the nuts above the headliner to remove the factory mounting brackets. Our installation video that I linked above shows in great detail how to remove those components. I will generalize in this document.
- Starting on the passenger side front, Remove the grab handle. You'll need to remove the two plastic covers and pry the metal clips inwards to release the handle.

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- Remove the sun visor. Remove the plastic cover on the mounted side of the visor to be able to access the T 20 bolt. Now the visor will be able to snap free. The plastic holder for the sun visor can be removed by turning it counter clockwise to about the 10 o'clock position and pulling outwards.
 - Remove the A-Pillar plastic trim by pulling outwards.
 - Remove the B Pillar by pulling outwards on the sides and front.
 - Lastly remove the rubber door trim by pulling outwards.
 - Repeat this process on the driver side.
 - Next in the rear seat area you will have to remove the grab handle with the same technique as the front handles.
 - Also pull out the C pillar slightly by pulling outwards.
 - Remove the door seal as well by pulling outwards.
 - Now you will be able to reach up into the headliner with a 12mm socket to hold the nuts for the mounting brackets, using another 12mm socket turn the bolt head on the top of the factory mounting bracket. I generally use a deep socket with a 3 inch extension to be able to reach the nuts above the headliner.

5. Drilling holes and Identifying Prinsu mounting locations.

- The rear mounting hole for the factory rails will need to be drilled out to 3/8"
- Be careful not to drill too deep, and use a slow speed on the drill .
- Now set your partially assembled Prinsu rack on the vehicle and line up the rear mounting bracket with the rear hole that you just drilled.
- You will see there are some holes in the front that will not be used to secure your Prinsu rack, mark them with a X so that you can tell them apart from the holes that will be used.
- The unused holes will need to be sealed. I use a UV rated silicone tape and silicone over top of the tape. That way I have two layers of sealant, many have used a rubber plug in conjunction with silicone and that works great as well.
- Now remove the Prinsu rack and set it aside.

6. Plus nut Installation

- Grab your hardware bag with one plus nut, one bolt, a hex, coupler, and a couple of washers in it.
- Take the bolt, slide a washer on, the hex coupler, another washer, and thread the plus nut on tight up against the washer.
- Apply a small amount of RTV Silicone around the hole on the truck.
- Put the plus nut into the hole until the lip is all the way against the vehicle.
- To compress the plus nut, hold the hex coupler with a 1/2 wrench and tighten the bolt head with a 7/16 wrench or socket. Do NOT use an impact to compress the plus nut. Tighten to 26 inch lbs. Now remove the bolt and the plus nut is securely installed!
- Repeat this process for all the mounting holes.

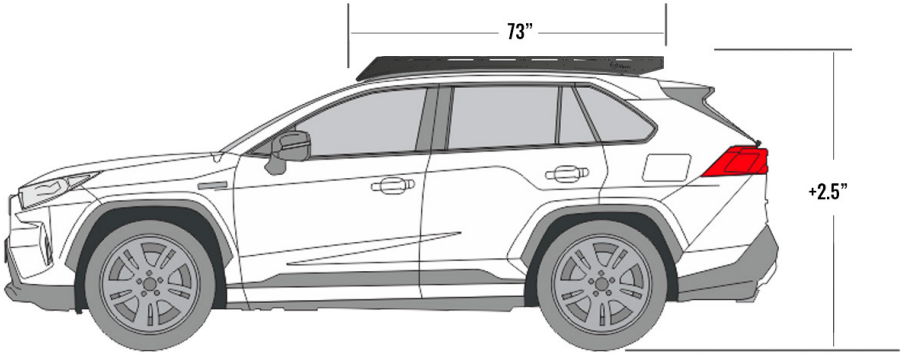
7. Prinsu Rack Install

- Take the rubber washers included in your kit and place one over each plus nut that you installed on the vehicle. Then place a black aluminum spacer on top of the rubber washer. The Shorter spacers will go on the front set of mounting holes. (two on each side)
- Now set the Prinsu rack on top of the aluminum spacers.
- Fill the inside of the spacer with the black RTV silicone.
- Start threading in your mounting bolts. Once all the bolts are started by hand go ahead and snug them up.

8. Install Remaining Cross bars and reassemble the interior.

- Lay the silver wind deflector flat on the ground and slide 5 of the silver T nuts in each of the slots. You can use a screwdriver to slide them into place and align them with the wind deflector.
- Once the T nuts are aligned with the wind deflector start the shorter black bolts in the holes. Once all the bolts are started and the wind deflector is flush on each end of the silver cross bar, snug them up with a 5/32 allen.
- Apply the noise reducing trim to the wind deflector and trim off the excess with some side cutting pliers.
- Install the remaining cross bars, You may have to loosen the crossbars on either side of the cross bar you're trying to install in order for it to fit properly.
- Next, re-assemble the interior components and that's a wrap!

USABLE PLATFORM AREA 22.25FT²



WEIGHT CAPACITY:

600lbs dynamic load capacity and 1,000lbs static load capacity

WARRANTY

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