

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
0.319"ID-3/4"OD x 7/8" Long Aluminum Spacer	4
0.319"ID-3/4"OD x 1" Long Aluminum Spacer	6
1/4"-20 x 2" Steel Hex Cap Screw Zinc	12
1/4" x 1" x 0.062" Steel Fender Washer	12
1/4"-20 0.020"- 0.280" Grip Range Yellow Zinc Flat 1"Length Steel Sherex™ CPB Rivet Nut	10
3/8" x 13/16" x 3/32" EPDM Washer	10
	10
5th Gen Rav4 Pro Roof Rack Mounting Feet Hardware	
DESCRIPTION	QTY
1/4"-20 x 1" Stainless Steel Button Head Socket Black Oxide	14
1/4" x .625" x .0625" Stainless Steel Flat Black Oxide Washer	14
	28
5th Gen Rav4 Pro Crossbar Hardware (7 Pro Crossbars, 1 Clear Extrusion - 47")	
DESCRIPTION	QTY
1/4"-20 x 1" Stainless Steel Button Head Socket Black Oxide	34
1/4" x .625" x .0625" Stainless Steel Flat Black Oxide Washer	34
Vibra-Tite 111 Low Strength Threadlocker Pack of 3 Tubes	1
	69
5th Gen Rav4 Pro Wind Deflector Hardware	
DESCRIPTION	QTY
1/4"-20 x 1/2" Stainless Steel Button Head Socket Black Oxide	10
1/4" x .625" x .0625" Stainless Steel Flat Black Oxide Washer	10
1/4"-20 Stainless Steel Dual Tab Spot Weld Nut N/A	10
	30
Prinsu Plus Nut Install kit	
DESCRIPTION	QTY
1/4"-20 x 2-1/4" Steel Tap Bolt Zinc	1
1/4" x .625" x .062" Steel Flat Washer	2
5/16"-18 x 1-1/8" Steel Coupling Nut Zinc	1
1/4"-20 0.020"- 0.280" Grip Range Yellow Zinc Flat 1"Length Steel Sherex™ CPB Rivet Nut	1
	5

**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

Note for Dealers and Installers:

It is your responsibility to ensure instructions are given to the end user or client.

IMPORTANT!

If your Prinsu product comes as unpainted, bare steel or aluminum. You will want to either powder coat or paint prior to final installation, however it is very important to PRE-INSTALL the unpainted product first, following these instructions, BEFORE painting or powder coating any of the components! This will ensure that all parts are correct and any incidental trimming or drilling will have been done prior to coating. Also, it will give you a practice run to familiarize yourself with the process, to lessen the likelihood of damaging the finish during final installation. Prinsu is NOT RESPONSIBLE for paint or powder coating costs, damage to paint or powder coating, or costs associated with inadvertently painting or powder coating components that are defective or were shipped or assembled in error. It is the customer's responsibility to pre-install and verify that all parts are correct prior to paint or powder coat

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.

- 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 longer spacers will go on the middle 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!



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