

# Switchback Carrier Rack System

## Installation Instructions



## Introduction

Thank you for purchasing the Rocky Mountain Westy **Switchback Carrier Rack System**. We pride ourselves in developing the most versatile and robust solutions for all your Vanagon needs. We believe that in the modular design of our **Switchback Carrier Rack System** you will find our rack system to be the singular answer to your various hauling needs. From bicycles to storage boxes to spare tires to High Lift Jacks, Rocky Mountain Westy has you covered.



## **Before You Get Started**

Because the **Switchback Carrier Rack System** is designed to be a modular system, this instruction manual is written in the same fashion. In this guide you'll find installation instructions for all of the **Switchback Carrier Rack** components and modules. Take a few minutes to read through the entirety of the instructions for **your particular modules** to familiarize yourself with the installation process. While there is nothing in the installation of the **Switchback Rack System** that would be damaged by doing any of the steps out of order, it's always better to have a clear idea of what you're doing next to keep this process a frustration free experience.

Also, take the small amount of time to gather the personal safety equipment and tools that you will need for this installation. We **highly** recommend the use of safety glasses and gloves. All of the rack components and hardware has been smoothed to a fine finish, however this installation may require the drilling of a hole in your swing-out carrier which may leave fine metal shavings or sharp edges. Use your common sense and be safe.

### **Tools Required:**

Center punch  
¼" and 9/16" drill bits  
Small detail paint brush and black paint  
8, 13, 19, 22mm combination wrenches  
5/16" allen wrench

### **Hardware included in full rack system:**

½" X 13 X 1-¼" Buttonhead Socket Cap Screws  
½" X 13 Thin Nylock Locknuts  
½" X 1 Flat Washers  
½" X 12" Threaded Rods  
Draw Latch  
Bump Stop  
M5 X 0.8 X12 Hex Cap Screws  
M5 X 0.8 Nylock Locknuts  
M5 Flat Washers  
M8 X 1.25 X 20 Carriage Bolts  
M8 X 1.25 Nylock Locknuts  
M8 Flat Washers  
M8 X 1.25 X 70 Carriage Bolts



### Step 1. Prepare Your Swing (All installations)



The first step is to determine if you have an early style or late style Rocky Mountain Westy swing. The early style has two holes in the connecting strap as illustrated above. The current style has three holes to accommodate the Switchback Carrier. If you have a current style swing, there are no mods to make and you're ready to install your Switchback. If you have an earlier style swing with only two holes, you'll need to drill a 9/16" hole in the connecting strap. Here's how:

Measure exactly 3-¾" from the bottom edge of the lower hole and make a mark. Now measure and mark the exact center of the connecting piece. After double checking your measurements, mark the spot where these two measurements converge

**Note:** The photo below shows the measurement on a swing that already has a hole drilled. If you have an old style swing it will not have this hole.



We recommend unlatching your swing at this point and swiveling it away from the van so as not to damage your rear hatch. With your center punch, make a small divot to center a drill bit. Now drill a  $\frac{1}{4}$ " pilot hole straight through your mark on the swing.



Follow up with the 9/16" drill bit. Take your time and drill at a slow speed to better control the drill.



Take a small detail paint brush and daub some black paint (we use enamel paint) inside of the new hole to provide corrosion protection. Let dry.

**You're now ready to install your Switchback Rack System.**

At this point in the installation procedures we break into various categories depending on which modules of the Switchback Rack System you are installing. It may be of interest to you to see just how versatile the Switchback Carrier Rack System can be. Please feel free to read through the entirety of the instructions to see what the Switchback can do for you.

If you are installing the **Upper Switchback Rack only**, you will be using the **Upper Switchback Rack Instructions only**.

If you are installing the **Lower Switchback Rack only**, you will be using the **Lower Switchback Rack Instructions only**.

If you are installing both the **Upper and Lower Switchback Racks**, you will be using the both the **Upper and Lower Rack Instructions**.

You may also be installing the **Switchback Rack Rung Kits, Finisher Plates or Lower Rack Bracketry**. Please see the corresponding sections of this instruction manual for complete installation walkthroughs.

**Note: The photos in these instructions show the installation of both Switchback Racks simultaneously. If you are installing either the upper OR lower rack only, use the photos as a reference and follow the set of instructions that suits your application.**

## Upper Switchback Rack Installation Instructions

Find the ½" X 13 X 1-¼ buttonhead bolts and the three small O-rings in the hardware kit. Slide the o-rings onto the bolts until they are approximately ¼" from the head. Now take the **center spine** and examine the slots in the back. You'll notice that the slots are perfectly shaped to accept the head of the buttonhead bolts when offered sideways. See the picture below for reference:



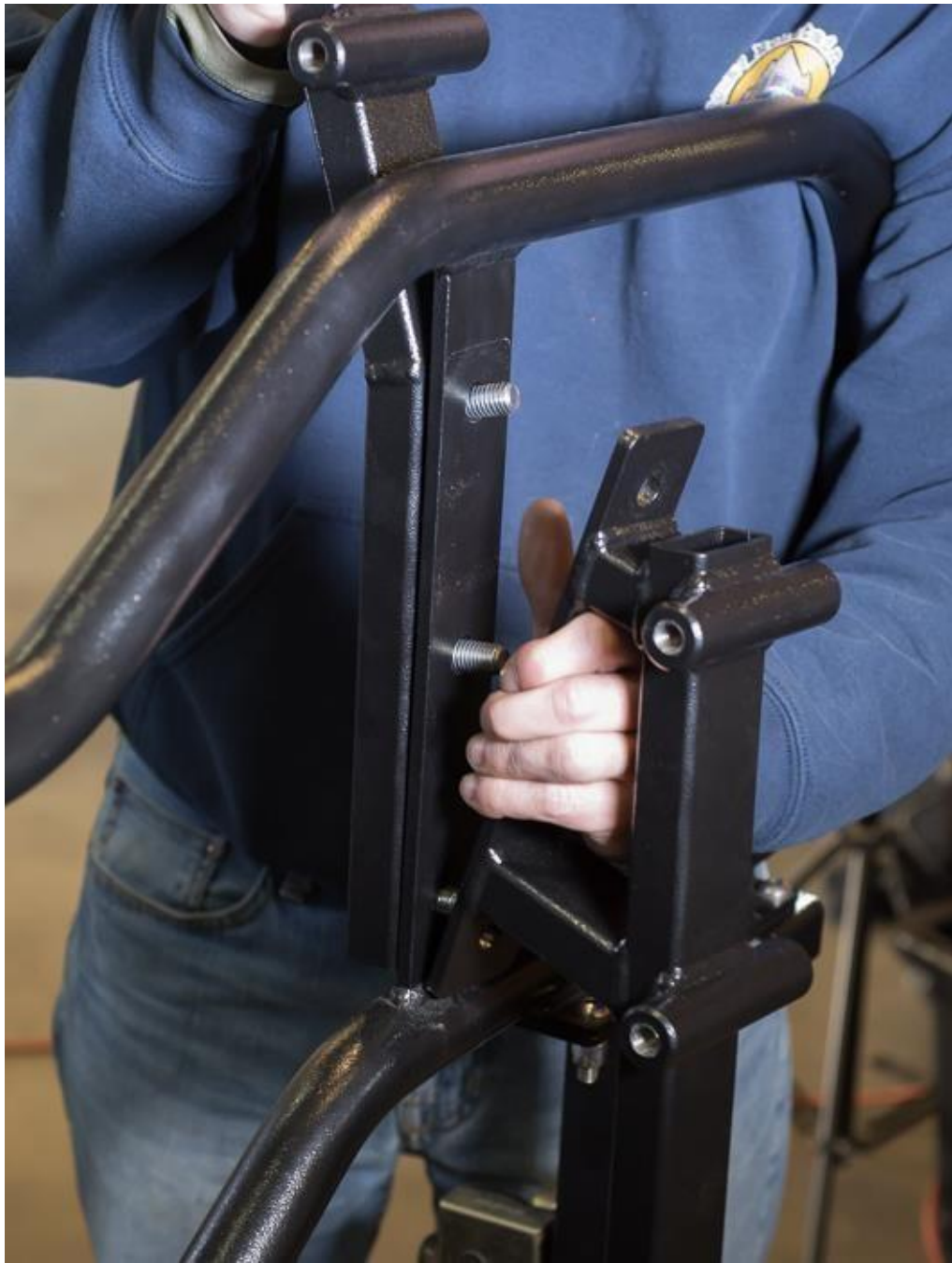
Insert all three buttonhead bolts into the **center spine** and twist them so that the length of the bolt is perpendicular to the **spine**. At this point the o-ring should be outside the slot in the spine and the head of the bolt should be inside. Push the o-ring toward the head of the bolt so that it will hold the bolt in place in a handsfree fashion. Repeat with all three bolts. See the picture below for reference:





Locate the  $\frac{1}{2}$ " washers and  $\frac{1}{2}$ " thin nylock nuts and have them ready to install.

Have the **lower center spine** ready to install. Offer the **upper center spine** (with bolts) from the front side (van side) of the swing, slide the lower spine over the bolts, and install the washers and nuts. See the picture below for reference:



Now tighten the bolts to the thin nylock nuts using a 5/16th allen wrench inserted into the buttonhead and a 19mm wrench on the thin nylock nut. Be careful here: due to limited space available, RMW uses nuts that are thinner on the flats than usual and there is a risk of the wrench sliding off and damaging the powdercoat. Take your time in tightening. Once all three are snugged, tighten firmly.



## Installing the Upper Switchback Upper Latch Mechanism



Plate B





Locate “Plate A”, the rubber bump stop and the two silver bump stop shims. Install the bump stop by inserting its stud into “Plate A” as shown in the photo below. We’ve included the shims to orient the bump stop relative to the hatch. You may or may not need to install them depending on your van and configuration. We recommend starting with one shim and seeing where your bump stop rests on the hatch when the installation of the Switchback rack is complete. The other shim is easily added if needed. Secure the bump stop with an M5 washer and M5 nut. See the following picture for reference.



Locate the latch mechanism, two M5 washers and two M5 nylock nuts. Install the latch onto “Plate A” in the orientation illustrated in the picture below:

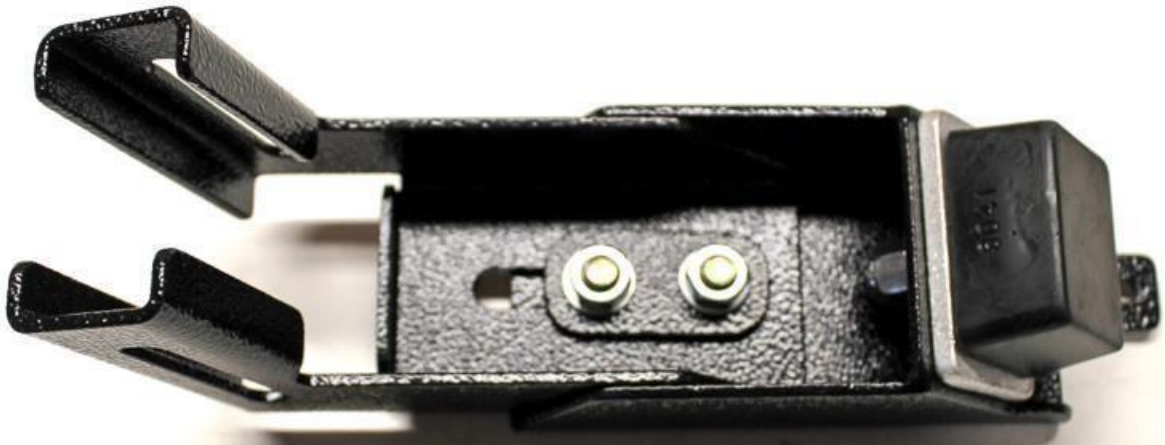


Find two M8 X 1.25 X 20 carriage bolts, two M8 washers, two M8 nylock nuts in the hardware set.

Slide “Plate A”, “Plate B” and the small two-hole backing plate together in the orientation shown below.



Slide the carriage bolts into the square holes and secure them loosely with washers and nuts.





Slide the entire latch mechanism over the top of the Upper Center Spine in the orientation shown.



Locate two M8 X 1.25 X 70 bolts, two M8 washers and two M8 x 1.25 nylock nuts. Thread them through the latch mechanism and upper center spine as shown.



The assembly will look like this when viewed from the bottom.



Now gently close your swing and note where the rubber bump stop and latch meet your rear hatch. Wipe the paint on these areas clean with an alcohol pad (wet wipe) or soap and water (let dry). We've provided a strip of 3M adhesive tape to protect the paint of your hatch. Cut a piece and apply it to the hatch where your bump stop will rest. Cut another piece and apply it over the top edge of the hatch where the latch will grab.

You can now adjust the upper latch mechanism so that the bump stop rests against the hatch when closed and the latch is slightly tensioned when locked. The latch is designed to support the top of the spine and keep it from rattling. Do not tension the latch so tight that it flexes the spine toward the van!

Finally, to seal out dust and moisture, insert the three included plastic plugs into the holes through which you used the allen wrench.

Congratulations! You've just finished the installation of the **Switchback Rack Upper Spine**. Your **Upper Switchback Rack** is now ready to mount additional **Switchback Rack Rung Kits** or other accessories! See the associated products for an ever expanding selection of Rocky Mountain Westy mounts.



## Lower Switchback Rack Installation Instructions

*Please take note that the pictures in this instruction set show the mounting of both the upper and lower Switchback Racks. We will be concentrating on the **Lower Rack** here.*

Locate the **lower center spine**,  $\frac{1}{2}$ " X 13 X 1-1/4" bolts, (3) 1/2" washers and (3)  $\frac{1}{2}$ " X 13 nylock nuts.

Position the center spine over the three holes in the swing as shown in the photos.



Insert the  $\frac{1}{2}$ " X 13 bolts through the swing and **center spine** from the van side of the swing.



Install  $\frac{1}{2}$ " washers and  $\frac{1}{2}$ " nylock nuts over the bolts and tighten evenly. Please note that the nylock nuts provided are thin sided to provide clearance between rack components. During the tightening process, please take care that your wrench is well seated on the nut so that it does not slip and damage the powder coat of your rack.



Congratulations! After a final tightening of the fasteners, you've just completed the installation of your Lower Switchback Rack Spine. See the following pages if you also purchased the Switchback Rack Rung Kits and Lower Rack Bracket Kit. **Lower**



## Switchback Rack Rung Kit Installation

Locate the 12" pieces of threaded rod included in your rung kit(s). These are the inner supports for the rungs of your Switchback Rack.

Thread the threaded rod into the **center spine** about an inch to start.





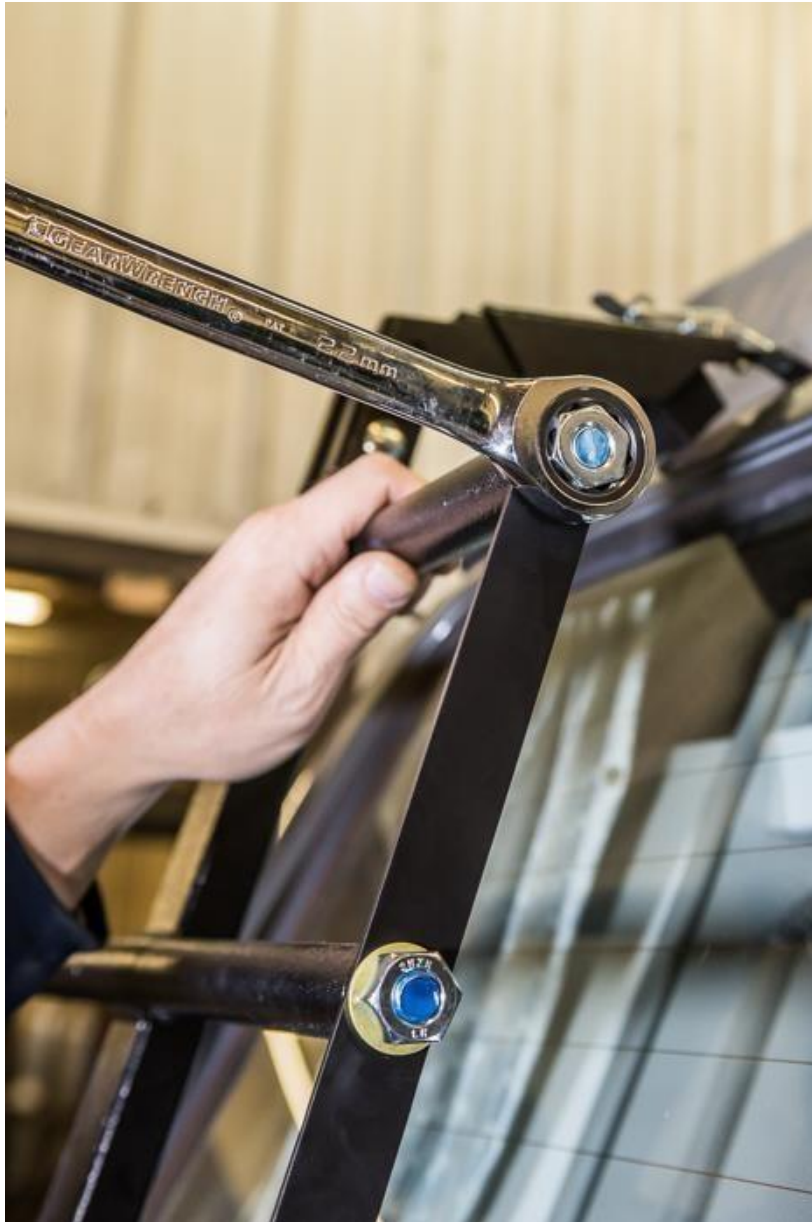
Now locate the powdercoated metal rungs in your component kit. Slide a rung onto each of the threaded rods that you installed into the center spine.



If you purchased side finisher plates with your Switchback rack, slide them on now.

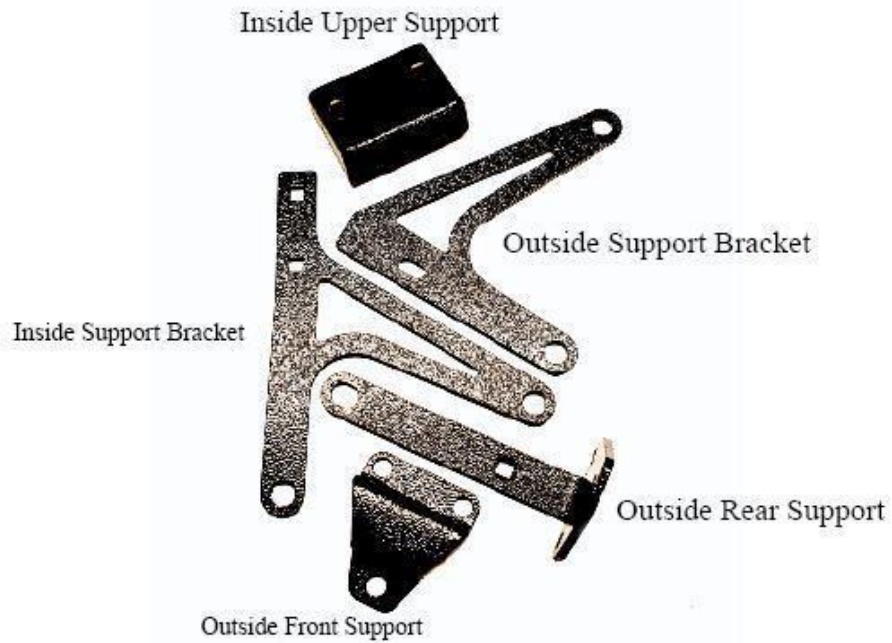


If you purchased the Lower Switchback Rack Side Bracket Kit, please refer to the instructions below to install the bracketry BEFORE installing the nuts and washers of your rung kit. If you did not purchase the side bracket set, install a ½" washer and ½" nylock nut on each of the threaded inner rung supports. Turn the threaded rod in or out of the spine until the threaded rod is flush with the outside of the nut when the nut is fully tightened. This may take a couple attempts to get things flush.



## Lower Switchback Rack Side Bracket Kit

### Lower Switchback Rack Brackets and Supports



Outside = Toward the Outside of the Van

Inside = Toward the Center of the Van

Front = Front of the Van

Rear = Rear of the Van



If you purchased the Lower Switchback Rack Side Bracket Kit, we'll start with a little disassembly.

Move to the center side of the swing. You will see that there are four buttonhead screws that attach the latch post to the swing itself. To install the **Lower Switchback Rack inside upper support**, you need to remove the two buttonhead screws on the center side of the assembly (circled in picture below).





Position the **inside upper support** under the latch post flange with the short slotted holes (facing you in the picture below) facing the center of the van. Insert the two buttonhead screws from the top through the latch post flange and **inside upper support** and install the washers and nuts from the bottom. Do not fully tighten these yet.



You can see the finished orientation in the photo below.



Find the **inside support bracket** and slide it over the threaded rod of the two lowest rungs on the **Lower Switchback rack** as illustrated in the photo above. Now install the two M8 carriage bolts through the **inside support bracket** and **inside upper support** as shown in the photo below. Install M8 washers and M8 nylock nuts onto these carriage bolts. Again, do not yet tighten fully.



Slide ½" washers and thread ½" nuts over the remaining rungs on the center side of the rack. Now move to the swing pivot side of the rack at the outside of your van.

Locate the **outside support bracket**, **outside rear support** and the **outside front support**. Slide the **outside support bracket** over the lower two rungs as pictured below.





Insert three M8 x 1.25 x 20 carriage bolts into the square holes in the **outside rear support**. Slide the **outside rear support** over the lower rung as shown below (note: installed carriage bolts are not shown in photo)



Open the swing. Take the **outside front support** and, from the van side of the swing pivot post, slide it onto the carriage bolts. This can be a little fiddly. Have patience and you can do it. See photos below for reference.





Slide the M8 washers and M8 X 1.25 thread nylock nuts over the carriage bolts.



Loosely tighten all three fasteners.



Move back to the rack side of the swing. Install ½" washers and nylock nuts on each of the remaining rungs. Finish the installation of the **Switchback Lower Rack** by ensuring that everything is straight before performing a final torque on all fasteners.

If you purchased rungs for your Switchback Rack please see the procedure below to install them.

## **Rocky Mountain Westy Switchback Rack Carrier System Rung Kit Instructions:**

Thank you for purchasing the Rocky Mountain Westy Switchback Carrier System Rung Kit. These heavy duty rungs are at the heart of the Switchback Rack's versatility. With easy one fastener installation, they can be added to or moved to different locations on the carrier to create the perfect configuration for all your adventures.

Installation is pretty straight forward. Insert the threaded rod into the carrier spine at the location that will best suit your needs. Start by threading it in only about an inch or so.





Now slide the aluminum rung body over the threaded rod.





Install the ½" X 13 Washer and Nut onto the threaded rod and begin tightening them down. Screw the threaded rod in or out of the center spine so that, when the nut is fully tightened, the end of the rod will be flush with the outside of the nut.



Rocky Mountain Westy has included a flexible rubber cap for the ends of each rung. Once the rung nut is tightened, the cap is easily placed over the nut to provide protection and an attractive finished result.

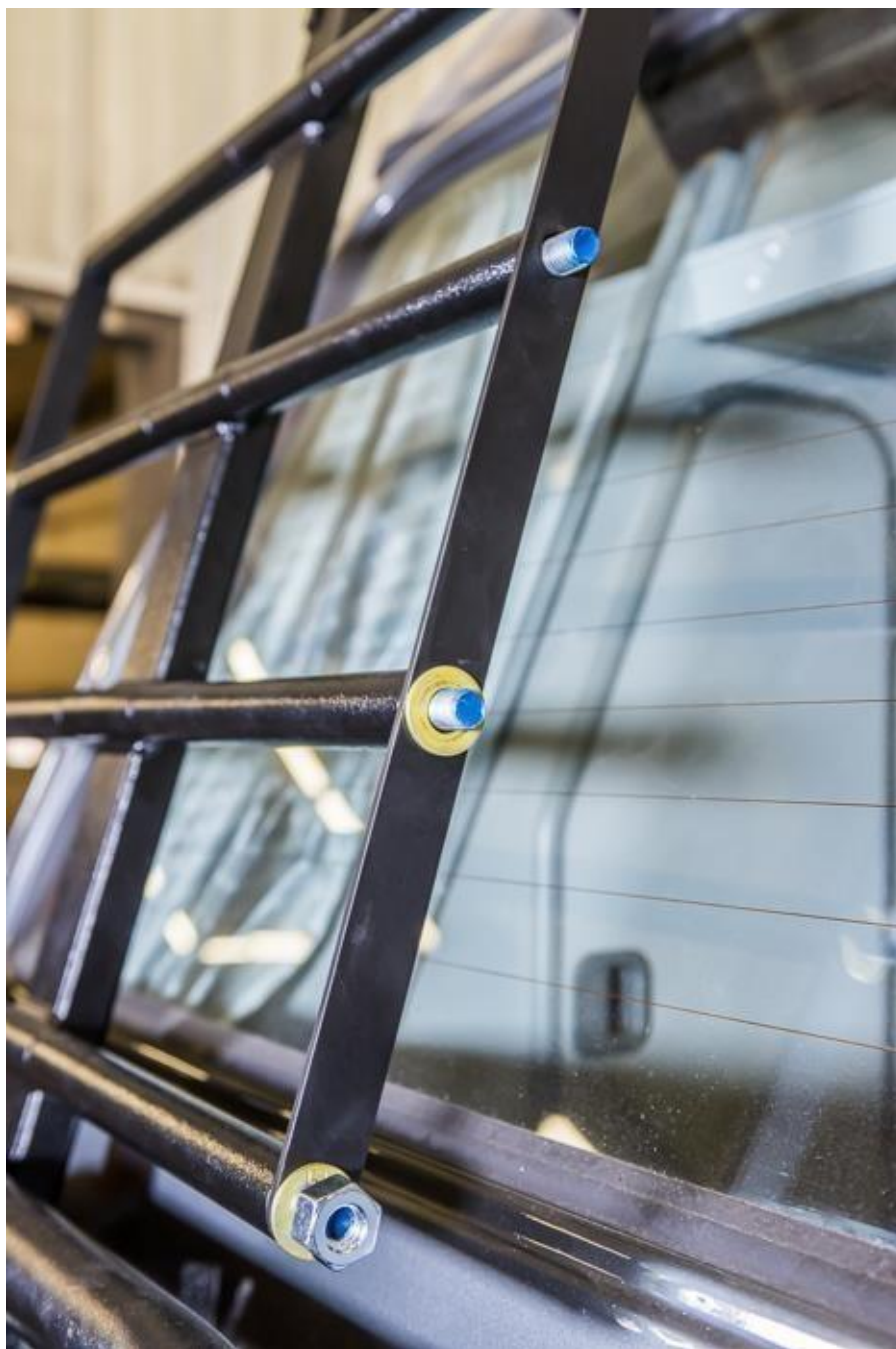


## Switchback Rack Upper and Lower Side Finisher Plates

Installing the Switchback Rack **side finisher plates** is simplicity itself. Simply remove the ½” nuts and washers from the rungs of your Switchback Rack. (If you are currently installing the rung kits, slide the finisher plate over the threaded rungs before installing the washers and nuts). There will be one washer and nut per rung. Slide the rung tubes onto the rung supports you are selecting to install and then slide a **finisher plate** over the rod ends.



Install a washer and nut onto each of the threaded rods but do not tighten. Thread the rod in or out of the **center spine** until it will be flush with the outside edge of the nut when the nut is tightened.



Tighten the nylock nuts, checking that the end of the threaded rod is flush. If necessary, loosen the nut, screw the rod in or out to adjust its effective length and retighten nuts.



Rocky Mountain Westy has included a flexible rubber cap for the ends of each rung. Once the rung nut is tightened, the cap is easily placed over the nut to provide protection and an attractive finished result.