

# Series 100 Roof Mount System FAQ

## Overview

**Q. Is the Series 100 roof mount system compatible with other racking manufacturer's roof attachment products?**

A. Yes. Currently, SnapNrack is supportive of customers using Series 100 Standard Rails and module mounting hardware with QuickMount PV roof mounts, specifically their QBlock and QBase. Installation of SnapNrack Standard Rails and mounting components can be accomplished using the SnapNrack All Purpose L Foot mounted directly to these roof attachments. Attachment to QuickMount's QBlock will require a 5/16" SS flange nut and attachment to the QBase will require a 5/16" SS bolt.

It is important to note that SnapNrack has completed all structural engineering analysis and signoffs by evaluating Series 100 as a complete system, including roof attachments, rail, module attachments and modules. We have not completed structural engineering testing or signoffs for installing Series 100 with other mounting system products, including QuickMount PV. The Series 100 UL 2703 Listing also only covers mounting system installations with SnapNrack products. Therefore, we are not able to provide any third-party documentation approving an application with other manufacturer's roof attachments.

**Q. How can I determine if my standing seam roof is compatible with SnapNrack's Seam Clamp?**

A. The [Seam Clamp Engineering Letter](#) on our website that will let you know if your metal roof panel has been tested with our Standard Seam Clamps or Wide Base Seam Clamp. The Approved Profile List in the engineering letter shows images of the metal roof panel seams' profiles and the seam clamps as tested along with the supporting information to further identify the metal roof panel. If you are unable to find your particular metal roof panel we would not be able to technically support the installation of our Seam Clamp on that roof seam since the load capacity has not been tested. However, you can contact Technical Support at 877.732.2860 or [appeng@snapnrack.com](mailto:appeng@snapnrack.com) to have one of our Technical Support Team assist you in selecting the Seam Clamp that would be the appropriate attachment for your situation if written documentation of its performance is not required.

**Q. Does SnapNrack have a solution for a roof mounted "monolithic" tilted array with multiple module rows in the same plane?**

A. Unlike our Series 200 ground mount system, the tilt solution for the Series 100 roof mount system is limited to a single row of modules.

## Installation Practices

### Q. What size lag screw do I use for installing the Series 100 roof attachments?

A. Our pre-engineered mounting systems are designed to use 5/16" stainless steel lag screws.

### Q. What is the minimum embedment for the lag screws?

A. The minimum embedment for lag screws into the roof framing member is 2-1/2". Some roofs need different length lag screws based on the distance between the roof framing member and the roof attachment, therefore you will need to take into account the other roofing elements (eg roof sheathing, roofing material, roofing paper, etc.) and select the appropriate lag screw. SnapNrack sells 5/16" x 3-1/2" stainless steel lag screws (part #014-06508) and 5/16" x 5" (part #014-06509).

### Q. What size pilot hole should I drill for the lag screw?

A. The recommended pilot hole size for 5/16" lag screws in common roof framing members is 3/16".

### Q. What is the best way to orient the modules on the mounting system to best utilize the mounting system materials?

A. Typically, it is best to orient the modules so that the long side of the module is parallel to the roof framing member direction. This allows the rails to be installed on the long side of the module and perpendicular to the roof framing member. Installing rails on the long side of the modules requires fewer rails per area of the array. In most residential roofs the framing members are running up the slope, so the long side of the module is perpendicular to the ridgeline (portrait orientation).

### Q. How do I determine the distance between roof attachments?

A. The distance or spacing between roof attachments is determined by the maximum rail span value and the spacing of the structural element that you are attaching to. The maximum rail spans can be found in the [Structural Engineering Report](#) (identified as [Structural Engineering Letters](#) on our website) prepared for SnapNrack by a Professional Structural Engineer. The maximum rail span values are primarily determined by environmental factors such as wind and snow loads. The selection of the maximum rail span has been simplified and made easy through the use of our online [Series 100 Configuration Tool](#), which automatically selects the rail span based on the environmental conditions and rafter spacing specific to your site.

**Q. What are the proper torque settings for the bolts in the Series 100 system?**

A. Unless otherwise noted, bolts are to be torqued to the following specifications:

Black hardware: Torque between 8 to 10 ft-lbs

Silver hardware: Torque between 10 to 16 ft-lbs

Note: Care should be taken not to over tighten bolts.

**Q. Are washers required for lag bolts used to attach bases to roof rafters?**

A. Yes. The washer is a part of the UL 2703 Listing for the assembly and is necessary to more evenly distribute the forces applied around the hole in the base, as well as prevent the base from rotating as the lag is drawn tight.

**Q. What is the maximum module overhang from the rail?**

A. The module overhang is determined by the module manufacturer and can usually be found in their installation manual. As a rule of thumb, that dimension is usually around 25% of the module length but should not exceed 30%.

**Q. What is the maximum rail end overhang (cantilever) from the last roof attachment in the module row?**

A. The maximum rail end overhang is 34% of the maximum rail span.

**Q. How can I best determine which SnapNrack roof attachment to install for a given roof type?**

A. Refer to the [Roof Application Guide](#) matrix on our website.

**Q. What is the gap between modules when using your Mid Clamps?**

A. Mid Clamps space the modules  $\frac{1}{2}$ " apart.

**Q. Is there a way to attach your Array Edge Screen on modules that do not have a lower lip on their frame?**

A. Yes. We have a product named "Add-A-Lip Box Frame Adapter" that clamps to the module frame much like our module clamps and provides a lip to accept the Array Edge Screen Edge Clip. You will need one (1) adapter at each clip location where module frame does not have a lower lip.

**Q. How many roof attachment fasteners (eg. lag screws or self-drilling screws) are required when installing 4-Hole Bases for Standoffs?**

A. Per the Structural Engineering Report, a minimum of two (2) and up to four (4),  $\frac{1}{4}$ "-20 lag screws with a minimum embedment of 2-1/4" is required. It is recommended that the lags be installed in opposite corners (diagonally) in the base.

**Q. How many roof attachment fasteners (eg. lag screws or self-drilling screws) are required when installing 6-Hole Bases for HD Standoffs?**

A. Per the Structural Engineering Report, a minimum of two (2) and up to six (6), 5/16” lag screws with a minimum embedment of 2-1/2” is required. It is recommended that the lags be installed in the middle two (2) holes in the base.

**Q. Does SnapNrack have a provision for a “shared rail” installation where two modules share a single rail running parallel to the edge being supported?**

A. No. SnapNrack rail can only support one (1) module.

**Q. Can a mid clamp and module be located on a rail at the same location as a rail splice?**

A. Yes.

**Q. Can a rail splice be installed in a cantilever section of a rail?**

A. No. Any section of rail that is spliced should be supported by a roof attachment on both sides.

**Q. Can a rail splice be installed in the top channel of a rail?**

A. No. The rail splice installs in the side channel.

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**Q. Do you recommend leaving a gap at splices?**

A. Yes. It is required to leave a 0.1” - 0.2” gap between rail ends to allow for thermal expansion and contraction. Also, the [Splice Design - Thermal Expansion](#) tech bulletin defines the maximum continuous spliced rail length for a given temperature range.

**Q. Can I install the roof attachment directly to the roof decking or is it necessary to install the fastener into a roof structural member?**

A. Our structural engineering and UL 2703 Listing are based on the fastener(s) being installed into a structural member and not just the roof deck. This provides the resistance to pullout necessary for wind loads that may be experienced by the installed solar system and assures that the attachments are made into a solid and reliable element of the roof structure since the thickness and integrity of the roof decking is not always easily verifiable.

**Q. Your Series 100 UL Installation Manual indicates that the Composition L Foot Mount can be attached in any orientation. Are there any limitations to this that I should be aware of when installing?**

A. The Flashed L Foot Mount can be oriented in any of the four (4) directions that are at 90 degrees from each other (ie. 0 , 90, 180 270 degrees). Also noteworthy is that the Composition L Foot Mount has a 92 degree angle to horizontal to compensate for the angle created by the overlapping of the comp shingles. This angle is preset for the orientation with the vertical positioned on the downslope of the base. If the L Foot is located in any other position, the angle of the L Foot may need to be adjusted by bending it utilizing the “live hinge” feature.

**Q. What is the maximum height allowed for the Standoffs?**

A. The maximum height allowed for the 1-Hole and 4-Hole Base Standoffs is 10” (not including 1” Spacers for leveling), and 18” for the 6-Hole HD Standoff Base.

UL Listing/Engineering, AHJ’s (Building Departments), Design

**Q. How do I determine if the module I am installing has been UL Listed with a SnapNrack mounting system?**

A. [UL has an Online Certification Directory](#) that covers the UL Listing details for SnapNrack’s products. This directory lists all the modules that have been tested and Listed with SnapNrack’s mounting systems. Access the most current version of the [UL 2703 Certificate of Compliance](#).

**Q. Where can I find the Structural Engineering Reports to submit to the Building Department?**

A. Find [Structural Engineering Letters](#) for each of the 50 States on our website.

**Q. How do I go about developing a configuration and Bill of Material (BOM) for a tilt up system?**

A. We offer tilt kits, including a 10 deg tilt kit with 5-1/2” & 10” Standoffs (Item Number 242-92112) as well as a 10 deg - 45 deg Variable Hardware Kit (Item Number 242-92067) which utilizes our standard rail as the rear leg. You can find these kits listed in our [Price List & Catalog](#). If you need further assistance in developing your Bill of Material (BOM) you can contact the Technical Support team at 877.732.2860 or [appeng@snapnrack.com](mailto:appeng@snapnrack.com).

The Configuration Tool does not have any mechanism for inputting a tilt up and directs the customer to contact Technical Support for assistance in designing tilt up applications.

## Configuration Tool

**Q. What is the Topographic Condition box and how do I determine what condition pertains to my project?**

A. For any building where a topographic factor is applied (e.g. top of a hill, exposed mesa, coastal site next to a large body of water), the calculated roof attachment spacing might exceed what is allowed for the given site condition. These particular geographical sites may pose unusually high wind conditions that exceed the standard parameters used in our structural engineering. In these cases, which are outside the scope of our pre-engineered solution, the Configuration Tool would not be appropriate to determine your mounting system configuration. A licensed Professional Engineer would need to evaluate the exact topographic conditions for the specific site.

**Q. What can I do if the design conditions for my project are outside the limitations of the Configuration Tool parameters (eg. snow loads greater than 120 psf, excessive wind loads, building heights over 60 ft, etc.)?**

A. In most cases a licensed Professional Engineer will need to assist you with your design. SnapNrack's Technical Support team can provide a few Professional Engineer resources that are familiar with our mounting systems.