

Quick Mount PV[®]

Your ***Solution*** in Mounting Products
 Solar • H₂O • Conduit • HVAC • Custom

Shake Mount Specifications - 5/16" - PV -

Quick Mount PV[®] is an all-in-one waterproof flashing and mount to anchor photovoltaic racking systems, solar thermal panels, air conditioning units, satellite dishes, or anything you may need to secure to a new or existing roof. It is made in the USA of all aluminum and includes stainless steel hardware. It works with all standard racks, installs seamlessly and saves labor by not needing to cut away any roofing, will out live galvanized 2 to 1, and is a better low-profile mount.

Split Lock Washer 5/16" (Not a theft-prevention feature)

Fender Washer 5/16" x 1"

EPDM Rubber Washer 60 Durometer 5/16"

Sealing Washer 5/16"

Hanger Bolt 5/16" x 6"

1 1/4" Machine, 1 3/4" Spacer, 3" Lag

Mount & Flashing Aluminum

Mount 1 1/4" x 1 1/4" x 2 1/4" Beveled Block

Flashing .05" thick

For shake roofs:

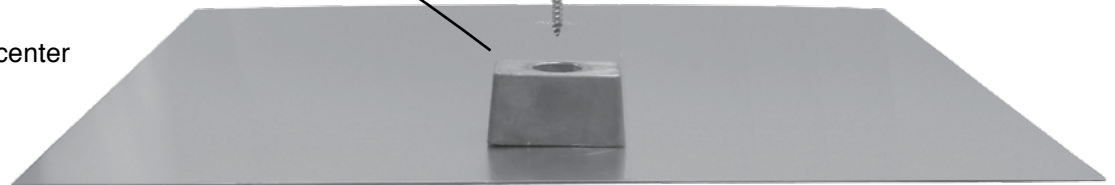
flashing is 18" x 18"

mount is attached 6" off center



ESR-2835

(2) Hex Nuts 5/16"



Lag pull-out (withdrawal) capacities (lbs) in typical lumber:

	Specific gravity	Lag Bolt Specifications	
		5/16" shaft per 3" thread depth	5/16" shaft per 1" thread depth
Douglas Fir, Larch	.50	798	266
Douglas Fir, South	.46	705	235
Engelmann Spruce, Lodgepole Pine (MSR 1650 f & higher)	.46	705	235
Hem, Fir	.43	636	212
Hem, Fir. (North)	.46	705	235
Southern Pine	.55	921	307
Spruce, Pine, Fir	.42	615	205
Spruce, Pine, Fir (E of 2 million psi and higher grades of MSR and MEL)	..50	798	266

Sources: Uniform Building Code; American Wood Council

Notes: 1) Thread must be embedded in a rafter or other structural roof member.

2) Pull-out values incorporate a 1.6 safety factor recommended by the American Wood Council.

3) See IBC for required edge distances.

936 Detroit Ave Suite D, Concord, CA. 94518

Phone: (925) 687-6686 Fax: (925) 687-6689

Email: info@quickmountpv.com www.quickmountpv.com

Know Your Roof

It is a good idea to do a thorough roof evaluation prior to your project installation. At this time you should do a layout on the roof confirming everything on the drawing will fit as it is intended. Any irregularities should be noted now, so that you can deal with them simply on install day. The quality of the roofing should be determined, so that any repairs or replacement can happen before or in conjunction with the installation. On a shake roof it is important to know as much as possible about: the age of roof, the type of substrate (skip sheathing, plywood, or oriented strand board [OSB]), the rafter size, the spacing and span, the age of the roof structure, who roofed it, who built it, etc. It is also important to know about the shakes themselves: species, grade, exposure size, length etc.

Photos should be taken of all of the roof variables and associated with the job file for any future reference either short term or long. Typically the building owner can look in a file and find the roofer and or roofing specs. If not, take a piece to the roofing yard, they can usually recognize the type and the rough vintage. Officially, the roofing manufacturer's instructions supersede our instructions, as our product is weaving into theirs. As there are so many small shake manufacturers, they really don't provide instructions, they provide grading. The industry provides "standards and best practices". The best place to get reference materials for shakes is through the "Cedar Shake & Shingle Bureau". Their website is <http://www.cedarbureau.org>. They have a plethora of drawings and guidelines for new repair, or retrofit of Shake and Shingle roofs. Get their manual if you intend to do shake installs more than once.

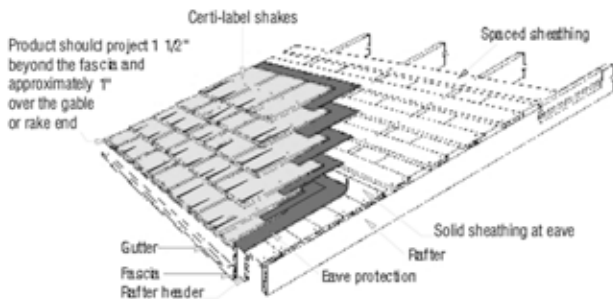
On a roof that has a material and labor warranty in place (new roof), it is recommended to at least consult the roofer of record. Often the roofing contractor will void the labor portion of their warranty if another trade modifies their work. Give the roofing contractor the option of handling the roofing modifications, or at least give them the opportunity to inspect and approve the modifications you make. There will be fees to this roofer, but if it maintains the labor warranty it should be good money spent.

Product Selection

Shakes are typically installed with a 10" exposure or a 7 1/2" exposure. They are also installed over skip sheathing, or solid sheathing. 10" over solid is standard West Coast while 7 1/2" skip is common on the East Coast. The Shake Mount fits both. On the 10" it is installed with 5" exposed over course 1, 10" under course 2, and 3" **under the paper** and course 3. On the 7 1/2" it is installed with 7 1/2" exposed over course 1, 7 1/2" under course 2, and 3" **under the paper** and course 3.

Retrofitting into an existing Shake Roof requires finesse and a Shingle Ripper. Typically the two or three Shakes are removed from directly above the mount. This enables you to find the rafter and confirm that you are sliding the flashing **under the paper**. If the shakes that the mount sits on are excessively irregular surface, it is best to grind down the highs with a sander. Once the mount is installed, slide the Shakes back into position with some adhesive top side and bottom, to keep them in place as you don't want to drive any nails through the flashing you just installed. Attempting to remove Shakes without a Shingle Ripper is like opening a can of soup with a toothbrush.

Felt Paper is required under shakes per the drawing below. It is commonly found on the West Coast, but many old timers are still putting in Shakes on the East Coast with the old paperless method. If you run into a paperless Shake Roof and you're not an old timer willing to go sleepless on rainy nights, find one that is, and subcontract it.



How Many Mounts Per Module?

There are two questions that must be asked when adding anything to a roof.

1. Can the roof / building / foundation handle the additional load?
2. What is to keep the new load from blowing away?

It is assumed that a licensed solar installer can answer these questions. If he / she can't, he / she will need to find somebody that can. A licensed engineer is the easiest solution. Some of the racking manufacturers have guides to calculating a code compliant install as well. Many variables must be considered and determined to complete the calculation. The spacing between mounts has the variables of: strength of rail, distance between parallel rails, cantilever of modules over rails, pull out strength of mount, slope of roof, height of roof, wind zone, roof type, structural integrity of roof framing, etc. The only values in the variables above that we can provide is pull out strength and shear of mount. We provide structural test reports on all of our mounts as needed. You will need to gather the rest of the applicable information and do the calculations for your specific project.

Further Resources

In the process of all the research we have done, we came up with what we call the "Wheel of Accountability". It is a graphical look at the many official entities that govern how waterproofing should be done. At our web site you can click on any wedge of the wheel and get the code snippets that pertain to that entity's focus on roof penetrations.

Please don't hesitate to use it to your advantage. And of course if you have any feed back pro or con, let us have it. Take photos of your jobs using Quick Mount Products and submit them to us at info@quickmountpv.com, we'll put them up in our web gallery. Put Photo Gallery in the Subject line.

Product Includes

The units are sold in 12 packs. Each 12 pack includes the mounting hardware and the mount with flashing to install 12 mounts, with written instructions.

Alternative Attachment Methods

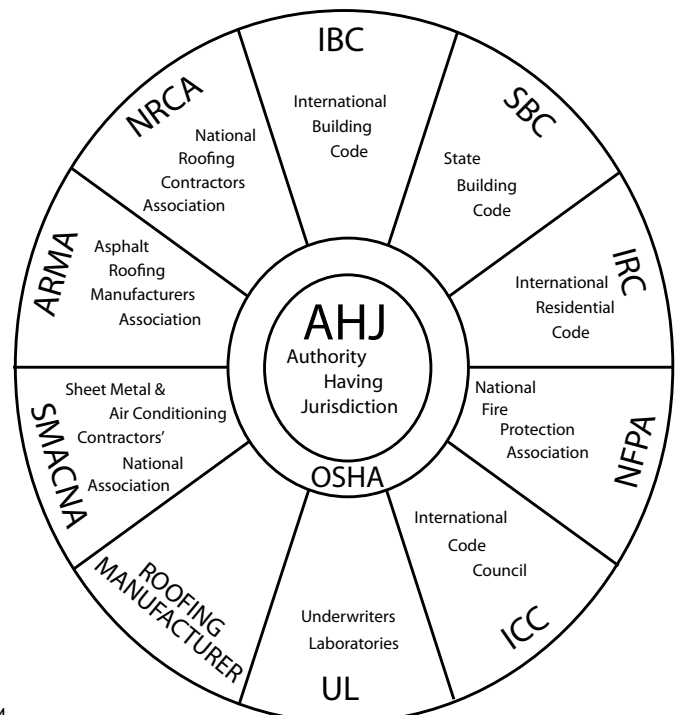
The Shake Mount is intended to be attached into a lumber rafter. Mounts are usually laid out based on the location of the rafters. In some cases it is desired to place a mount where there is no rafter. In this case it is possible to place a block between rafters, then lag into the block. In the case of metal rafters, lumber blocking the rafters is a solution, but should be done per the building's engineer of record.

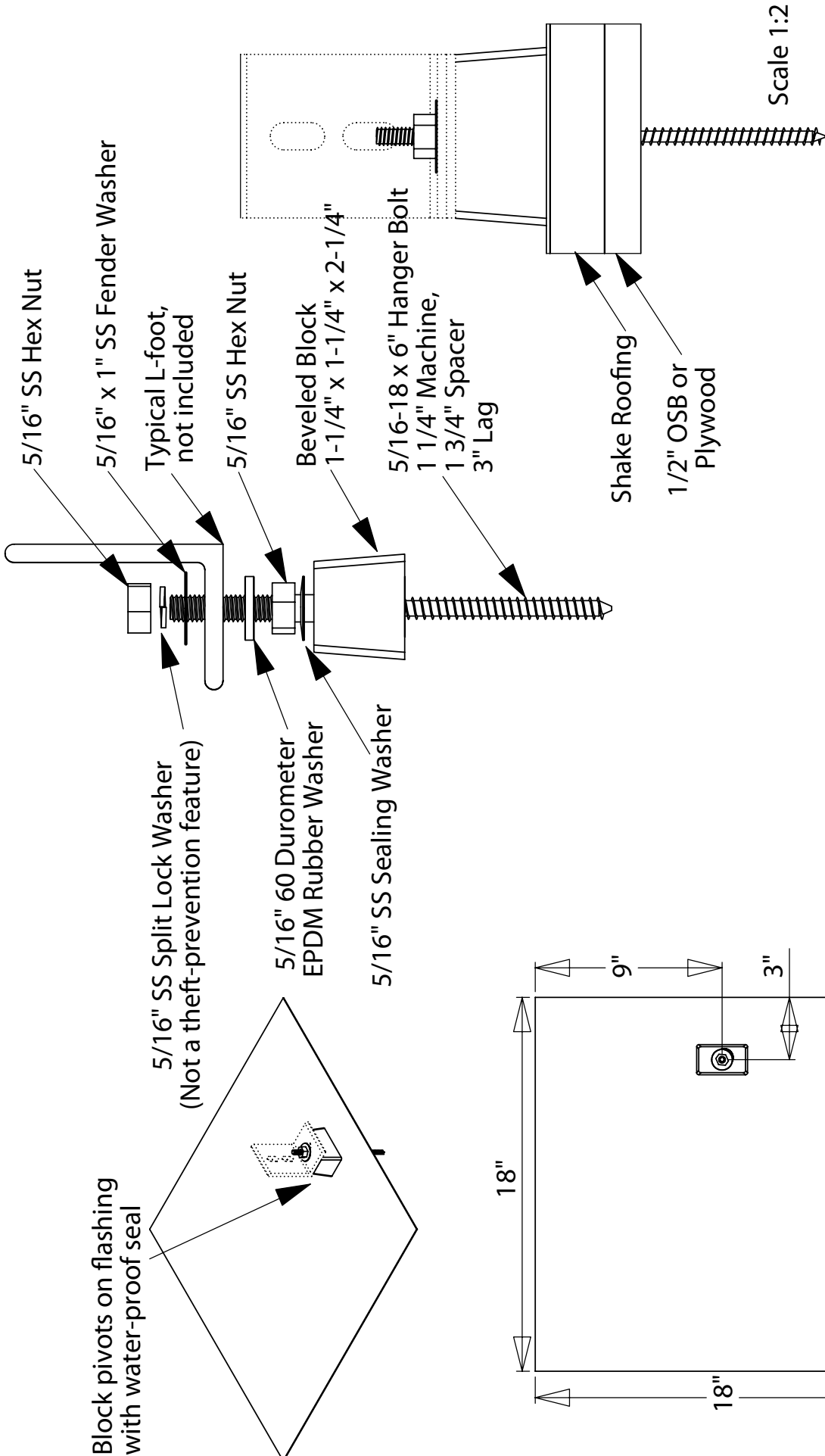
Shared Rail

On a shared rail system, where the mounts must be in an exact spot. It is important to make sure the unit is flashed properly. Normally the vertical placement is guided by the exposed front edge of the shingle. When the flashing must be shifted to catch a shared rail, it is advised to shift the mount up the roof only leaving less flashing over course 1, and more flashing under course 3. If it is necessary to shift downward, it is advised to move down a whole course and then shift up accordingly. If there is no other solution than to shift the mount down the shake, then it is imperative to maintain the integrity of the roof by installing additional paper to span over the top of the flashing and under the paper of course 3 above.

Sealants

It is important to put a compatible sealant into any and all holes drilled into a roof. Most roofing manufactures list a suggested, approved sealant in their specifications. In the freeze-thaw zones, it is important to follow the manufacturers' rules for freeze-thaw conditions. Use the properly rated sealant for each specific application and condition. Some that may be more appropriate for asphalt/composition roofs include Geocell 2300 and ChemLink M-1 but be sure to do your own research to confirm a compatible and appropriate sealant with the materials you are working with.





Scale 1:2

TITLE:	QM-PV-Shake 5/16"
COMMENTS	FILE NAME QMLC_EXP_3125
DATE	1/10/11
REVISION	3
DRAWN BY	F.K.

Quick Mount PV
 Your Solution in Mounting Products
 Solar • H₂O • Conduit • HVAC • Custom

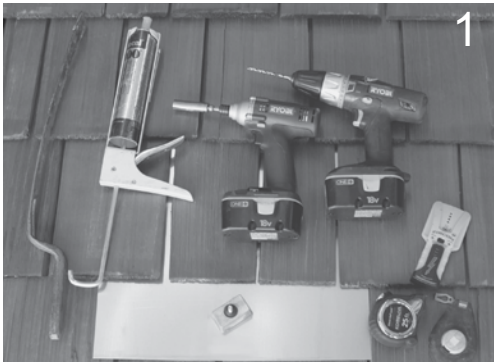
Scale 1:7

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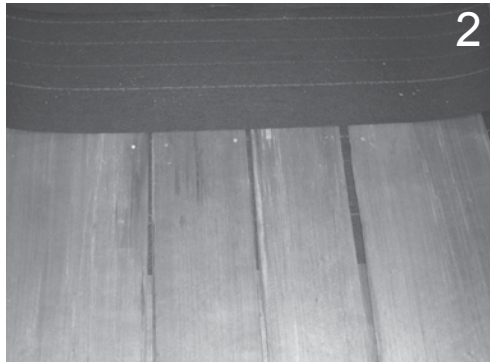
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SHAKE MOUNTING INSTRUCTIONS - 5/16" - PV -

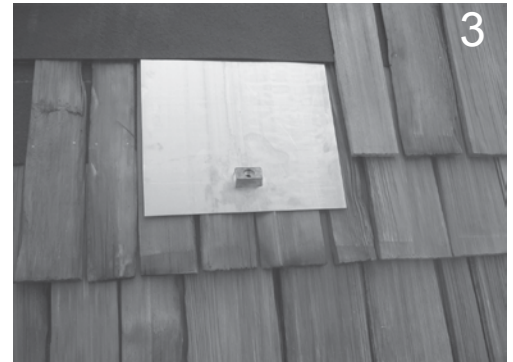
Installation Tools Required: Tape Measure, Roofing Bar, Chalk Line, Stud Finder, Caulking Gun, 1 Tube of Appropriate Sealant, Drill with 1/4" long bit, Drill or Impact Gun with 1/2" Deep Socket.



1 Locate, choose, and mark centers of rafters to be mounted. Select each row course of roofing for placement of Quick Mounts.



2 Remove shakes directly above mount with the Roofing Bar, to expose felt paper.



3 Find the rafter center and level out any high spots with a grinder. Slide Mount into desired position on shakes and mark center for drilling.



4 Using drill with 1/4" long bit, drill pilot hole into roof and rafter, taking care to drill square to the roof. Do not use Mount as a drill guide.



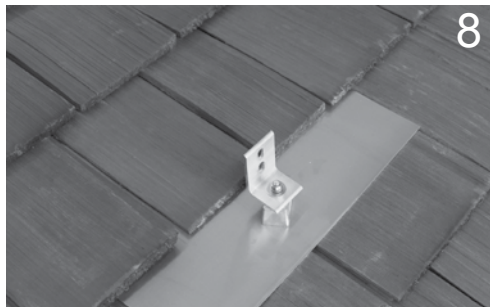
5 Clean off any saw dust, and fill hole with Sealant.



6 Slide Mount back into position. Prepare Hanger Bolt with 1 Hex Nut and 1 Sealing Washer, insert through Block into hole and drive Hanger Bolt into rafter, tightening to 13 foot Pounds.



7 Insert EPDM Rubber Washer over Hanger Bolt and into hole in Block.



8 Using the Rack Kit Hardware, secure the rack of your choice (see 9*). Tighten to 13 foot pounds.

9 * You are now ready for the rack of your choice. Follow all the directions of the rack manufacturer as well as the module manufacturer.

All roofing manufacturers' written instructions must also be followed by anyone modifying a roof system. Please consult the roof manufacturers' specs and instructions prior to touching the roof.