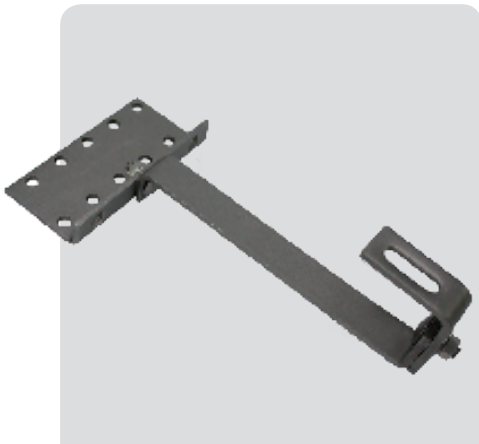




*Asphalt Shingle Roof Hook
Instruction Manual*





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Step One



Installation of Asphalt/Bitumen Shingle Roof Hook System: Schletter Part #400847-USA

Identify the structural joist system support for the roof decking system above. Typical joist spacing is 2 feet on center on wood 2x joists or truss joists (structural). Locate the wood rafter or joist below the roof deck. Location can be found either through a stud finder from above or from under deck access (attic in most cases of a 4:12 sloped roof). Blocking is not required if the center of the wood joist is located.

Step Two



Lift the shingle above, if this is an existing roof. Place the hook along the center of the joist below. Align the bottom hole closest to the "bent hook" at the asphalt self-adhesive line, as shown. Drill holes with a 7 mm bit for M8x80 or 5/16"x3-1/8" screws. Remove hook.



Step Three



Fill holes with Silicone or other approved water proof sealant, per Schletter recommended specifications. This will seal the penetration holes. Place the roof hook back in place with the holes aligning.

Step Four



Place a screw by hand in each hole to ensure the drilled and hook holes align. Begin partially screwing each screw to prevent twisting and misalignment.



Step Five



After securing all screws, tighten to the Torque as stated on the drawings. Next, cut a piece of self-adhesive asphalt waterproof membrane about 6.5" long x 4" wide (enough to extend over all edges of hook that is under the above shingle.) Per Schletter recommended specifications.

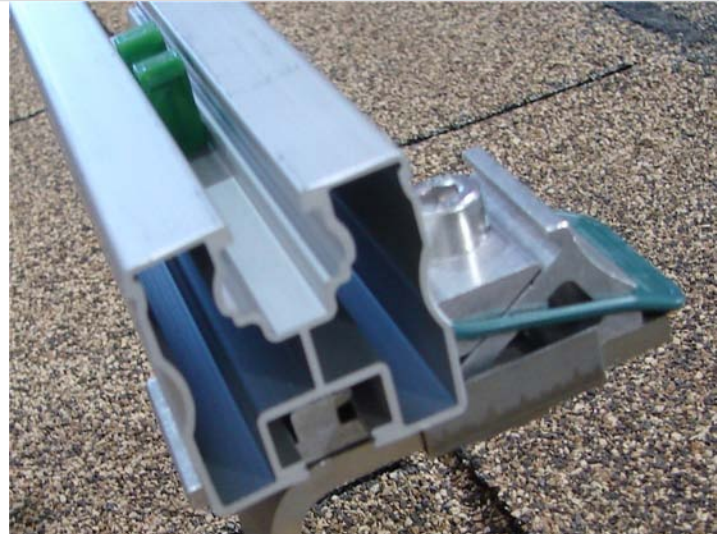
Step Six



Press the membrane all around every edge to adhere securely with no gaps, bulges, or folds. Replace the shingle above. Note: adjacent photo on right shows the pre-assembled KlickTop component assembly mounted on the Roof Hook. This is the standard method of connecting the roof hook to the rails / purlins. It generally arrives slightly tightened on the Roof Hook. You will need to tighten it later for rail installation.



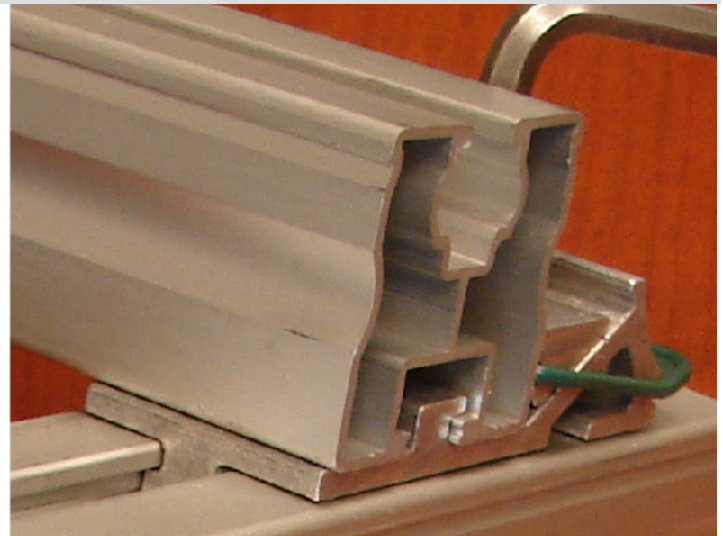
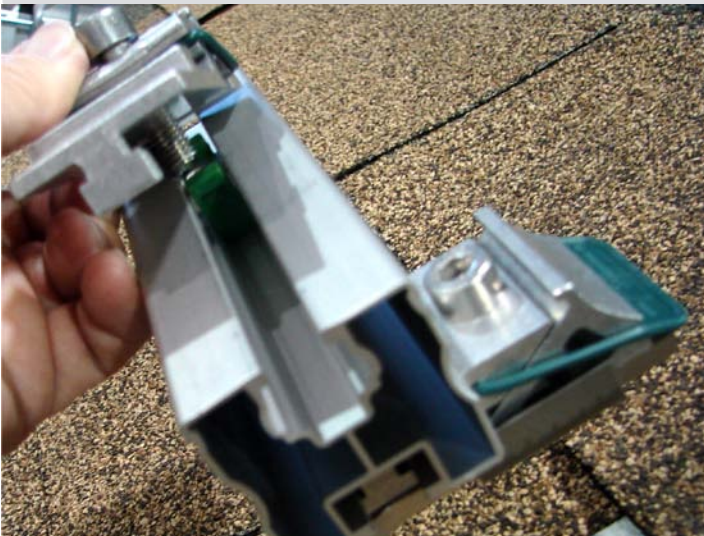
Step Seven



Installing Rail / Purlin System

LEFT: Mount the rail on the hook by sliding it, or hooking it, onto the KlickTop assembly as shown. After placing the rail on each roof hook, hand-tighten the 8mm Hex-head bolt with hex-type 6 mm Allen wrench. After all assemblies are in place, wrench-tighten the nut at the top per torque as stated on the drawings.

Step Eight



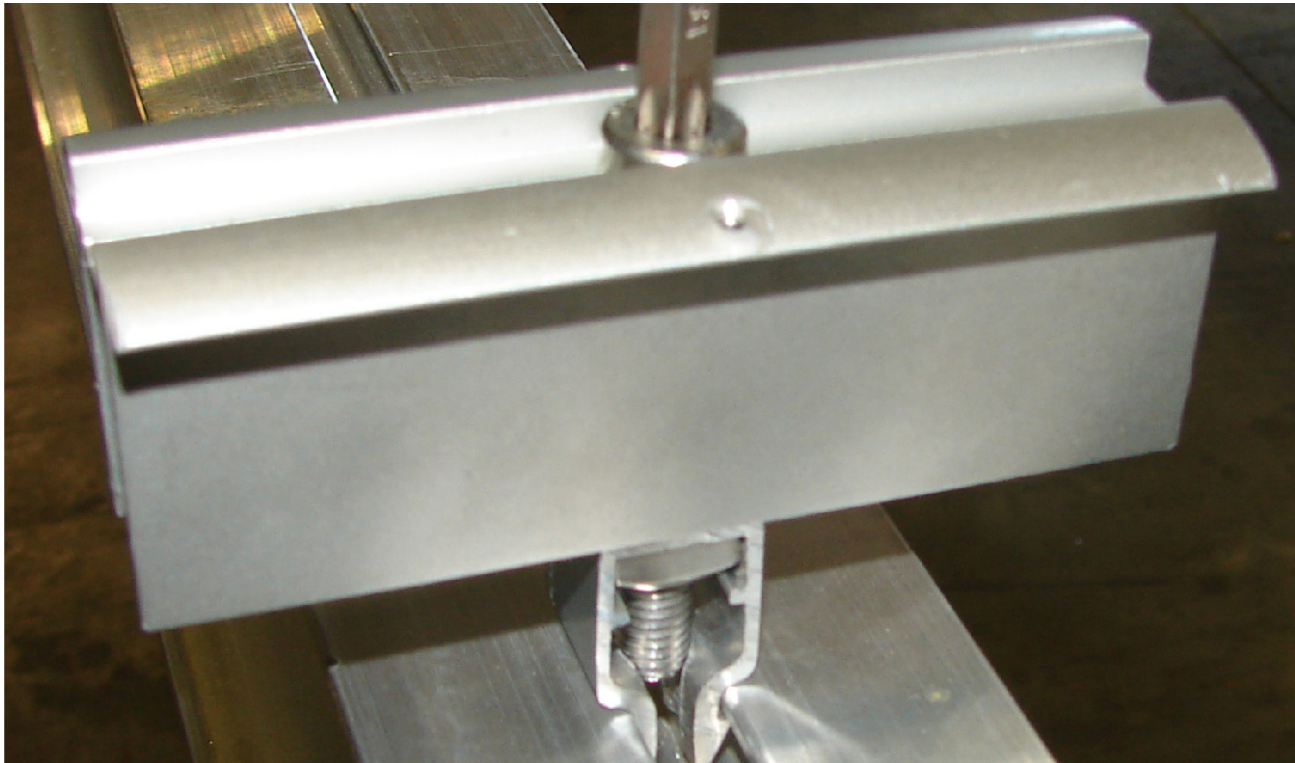
Installing Cross Rail System

If you have a cross-rail system, see the following on how to mount the cross rail with a KlickTop component connector. (If you do not have a cross-rail system, proceed to **Mounting Module Clamps**.)

The Klick component assembly (with the Nose) will be the connector between the rails. Slide it into place. Slide your rail into place on the KlickTop assembly as you did with the rail to the roof hook KlickTop above. Verify the placement with the dimensions on the drawings. The Klicktop assembly for the top rail is hand tightened with an Allen wrench; later torqued to the correct strength per the drawings.



Step Nine

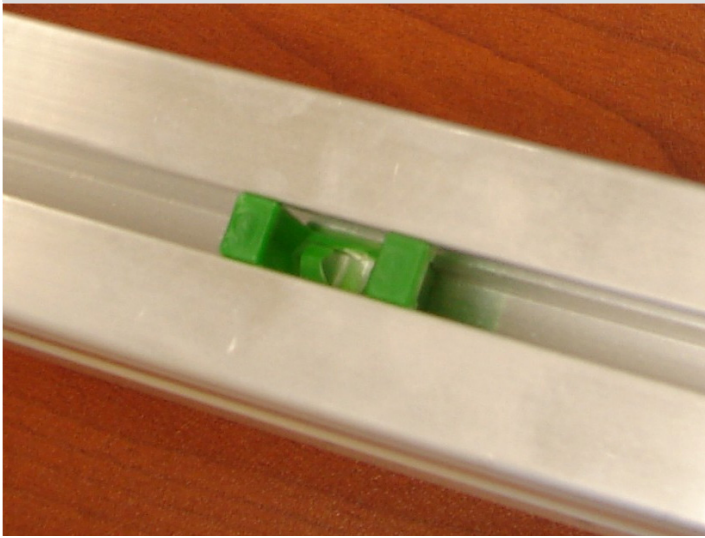


Mounting Module Clamps: Rapid 2+

The new Rapid2+ Module Clamp with a stainless steel grounding spike on each side of the middle clamp, grounds the modules on each side. The spikes penetrate the coating on the panel module. Each module must be grounded. This is the latest innovation at Schletter. The clamp presses into the rail with a click. When the modules are placed, the clamp is tightened per Torque Schedule on the drawings. See below: **Mounting the Module (by PV Installer)**.



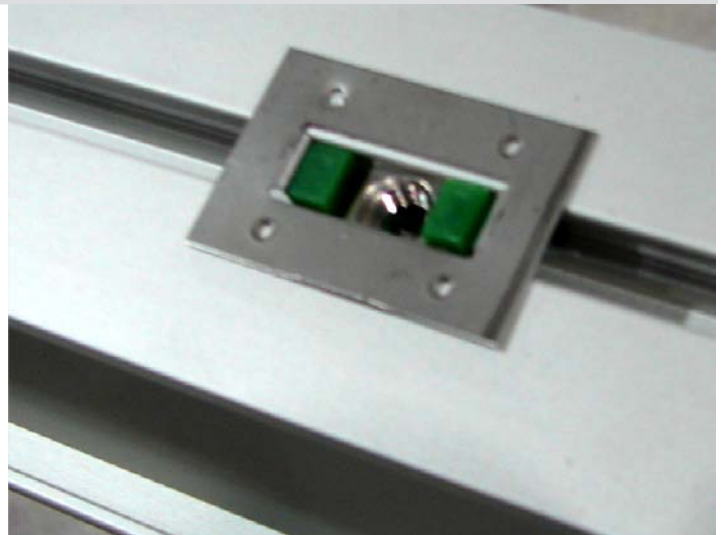
Step Ten



Mounting Module Clamps with Klickin Component

If you are mounting standard mounting clamps, you will mount the module clamps using the green colored **Klickin** component. The green Klickin and the snap in nut will be needed for the Module Clamps. First set in the green component. Next, set the 8 mm nut into the center of the green Klickin with the rounded edges down.

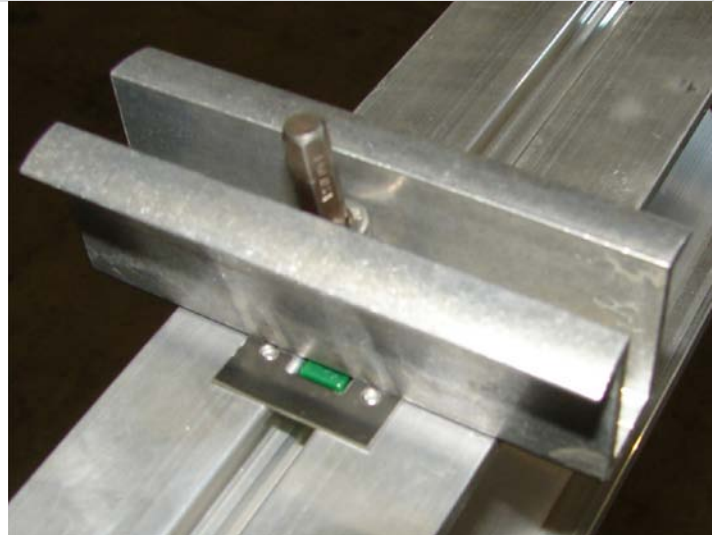
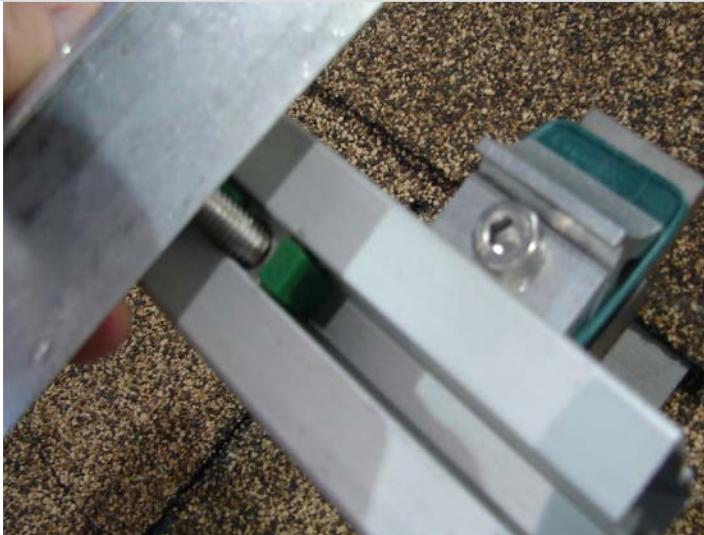
Step Eleven



Click-in the nut with very slight pressure. You are now ready for bolting in the module clamp assembly. The left photo also shows a Grounding Conductor Plate (GPC), which is ETL listed, placed under the module plate. This is currently used to ground module frames.



Step Twelve



Next, you will mount the module clamps on the rail in the positions of the Project drawings as supplied with your racking system. The M8 Hex-head bolt goes through the hole in the module clamp to the clicked-in bolt. There is a serrated washer between the clamp and the Hex-head bolt, which may be attached to the bottom of the head of the bolt, if it is not loose. This bolt goes through the clamp into the clicked-in bolt, and is hand tightened with the M6 Allen wrench to be prepared for the modules to be installed. The Rapid²⁺ Clamp will eliminate the click component and nut for rail mounting, as well as the need for a grounding plate.

Step Thirteen



Mounting the Module (by PV Installer)

Mounting of the PV system panels will be handled by the installer. The photo depicts a Schletter middle clamp attached on one side of a PV Solar Module.

Disclaimer:

The installer of each system and/or the contractor or developer of each project shall be responsible and liable for safe and proper installation of each system, and also to initiate, maintain and supervise all OSHA and safety programs and precautions for each project and project site, and to provide all required protection to prevent damage, injury, loss or death to any or all persons, property and work present or located on the project site. Schletter Inc. does not install any portion of its mounting systems and therefore will not have, and hereby specifically disclaims, any duty or responsibility for safe and proper installation of any mounting system or jobsite safety as to any jobsite where installation of any of its mounting systems occurs. Please follow the drawings, and report any issues or discrepancies to Schletter.