



setscrews. Repeat this process as the opposite side of your assembly. Caution: Do not over-tighten one side or the other. Be sure clamp and setscrews engage 6" insert.

4. String a line from each clamp on the end and install the remaining clamps along the string line.

**In order to function properly, the inserts should spread the rib slightly. The insert locations may be visible from the exterior side of the roof panel; this is unavoidable and should be expected (the panel clips also telegraph through).**

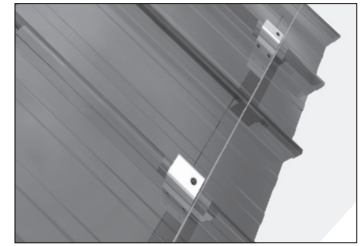
### To Install the S-5-KHD (Retrofit)

Use these instructions for retrofit installations or those that are not new construction (not all retrofits can be accommodated with this product). Due to the limiting factors, the only applications that are recommended are snow retention or other assemblies that can be located within 3–6" from the eave. For these installations, the 3" S-5-KHD insert is used.

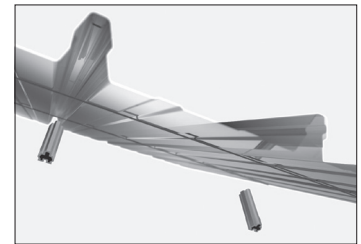
1. Inspection: A site survey is required to determine if the roof is pinned/attached at the end of the roof panel (eave) or the ridge. Next, measure the distance from the eave up to the first clip, do this on the inside of the seam.
  - A. If the roof is pinned at the eave and there is more than 3–4" of clearance from the roof edge to the clip, this product can be used.
  - B. If the roof is pinned at the ridge and there is 5–6"+ clearance, the product can most likely be used. Sufficient space is needed to allow for thermal expansion between the clip and the 3" S-5-KHD insert (1.5" min.).
2. Installation: Slide the 3" insert in from the bottom of the panel (or eave); if your situation is explained in 1A, then you may slide it up as far as you would like. This process is done by lightly tapping the insert with a hammer, if needed. If the insert twists during this process, use a crescent wrench to rotate the insert back into place before tapping it all the way in. A large punch can be used to tap the insert all the way into place. Be sure to place all the inserts the same distance from the eave.
3. Center the clamp over the insert. Be certain the top bolt hole is in the proper orientation for the product or ancillary being attached. Tighten the setscrews on each side of the clamp evenly, by alternating tightening on each side of the clamp until the specified tension for all setscrews. Repeat this process at the opposite side of your assembly. Caution: do not over-tighten one side or the other. Be sure clamp and setscrews engage 3" insert.

**Note:** When using this product with ColorGard® in a retrofit installation, be certain of the bolt hole orientation for Punched or Unpunched ColorGard.

**\*Be sure the project has been engineered, and note that this product can be combined with the S-5-K Grip and S-5-GX 10 insert if multiple rows are required.**



**Use a string line to properly align clamps**



**Slide the 3" insert in the bottom of the panel**



**Example of correctly installed S-5-KHD clamp**

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**S-5!® Warning! Please use this product responsibly!**

S-5!® Warning! Please use this product responsibly! Products are protected by multiple U.S. and foreign patents. For maximum holding strength, setscrews should be tensioned and re-tensioned as the seam material compresses. Clamp setscrew tension should be verified using a calibrated torque wrench between 160 and 180 inch pounds when used on 22ga steel, and between 130 and 150 inch pounds for all other metals and thinner gauges of steel. For published data regarding holding strength, fastener torque, patents, and trademarks, visit the S-5! website at [www.S-5.com](http://www.S-5.com). Copyright 2014, Metal Roof Innovations, Ltd. S-5! products are patent protected. S-5! aggressively protects its patents, trademarks, and copyrights. Version 043014.