

Installation Instructions

S-5!® Warning! Please use these products responsibly! Visit our website or contact your S-5! distributor for available load test results. The user and/or installer of these parts is responsible for all necessary engineering and design to ensure the S-5! clamps have been properly spaced and configured. **Notice to S-5! users:** Due to the many variables involved with specific panel products, climates, snow melt phenomena, and job particulars, the manufacturer cannot and does not express any opinions as to the suitability of any S-5! assembly for any specific application and assumes no liability with respect thereto. S-5! products are tested for ultimate holding strength on various profile types and materials. Visit www.S-5.com for more details. This document is an installation guide only and the photographs and drawings herein are for the purpose of illustrating installation, tools and techniques, not system designs. Information contained within is intended to apply to the document as a whole.

The S-5-U, S-5-S, S-5-E, S-5-B, and S-5-V clamps are made for standing seam profiles. For horizontal seam applications, the setscrew(s) must be accessible from the top for tightening. S-5-U clamps have two bolt holes to accommodate either vertical or horizontal seam applications; visit www.S-5.com for more details.

Tools Needed

- Screw Gun*
- T30 Torx Bit Tip (provided)
- Dial-Calibrated Torque Wrench
(For accurate tension values, do NOT use a clicking torque wrench; inquire with S-5! for proper tool sourcing)

To Install the S-5-U, S-5-S, S-5-E, S-5-B, and S-5-V

1. Partially thread the setscrews into the clamp by hand. (The S-5-U has four setscrew locations to make the clamp more versatile; however, only two setscrews are used per clamp. Both setscrews should always be loaded into the same side of the clamp.)
2. Determine how to position the clamp. When attaching to machine-folded seams (regardless of panel profile and geometry), S-5! clamps are designed to engage the seam as shown in Illustration A; with setscrew opposite seam fold. On many snap-together type seams, the setscrews are on the open (or overlap) side of the seam. On some seams, this aspect of clamp orientation is not critical.
3. Tighten the setscrews using a screw gun* and the included screw gun bit tip. Setscrews should be tensioned and re-tensioned as the seam material compresses, i.e. tighten the first setscrew, then the second; then repeat until each setscrew achieves the recommended torque. The setscrews will dimple the seam material but will not penetrate it. When relying on published load values, setscrew tension should be verified periodically using a calibrated torque wrench as indicated below to ensure the tool is consistently achieving the proper torque range. **Note:** See "Step 3 Note" at bottom of document on fitting S-5-U and S-5-V on certain vertical double-folds.

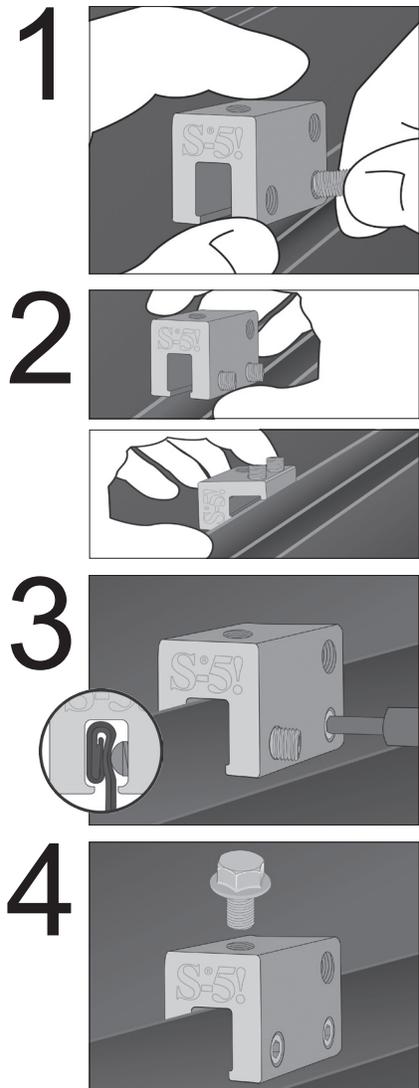
* For time-saving tool recommendations, call S-5!

Specified Torque	Inch Pounds	Foot Pounds	Nm
22ga steel	160–180	13–15	18–20
All other metals and thinner gauges of steel	130–150	11–12.5	15–17

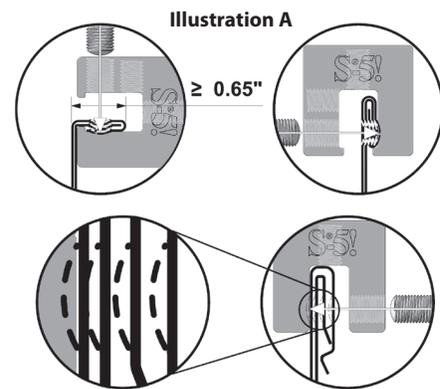
Once installed correctly, these clamps require no maintenance or re-inspection for the life of the roof.

4. For critical attachment applications utilizing an M8-1.25 X 16 mm Hex Flange Bolt, tighten the included M8 bolt to 160 inch pounds (13 foot pounds).

These instructions are for use by those experienced in the trade. Always follow appropriate safety precautions and use appropriate tools.



Above illustrations show S-5-U clamp on a vertical seam. Step 2 shows both vertical and horizontal applications.



(Top) S-5-U clamp on both vertical and horizontal seams. (Bottom) S-5-S on a snap together seam with blow up illustrating deformation of seam as setscrew is tightened **For horizontal seams equal to or greater than .65" use the S-5-U in its horizontal orientation.** **For horizontal seams equal to or less than .50" use the S-5-S mounted vertically.**

S-5-U Mini, S-5-S Mini, S-5-E Mini, S-5-B Mini, and S-5-V Mini Installation Instructions

To Install the S-5-U Mini, S-5-S Mini, S-5-E Mini, S-5-B Mini, and S-5-V Mini

1. Partially thread the setscrew into the clamp by hand.
2. Determine how to position the clamp. When attaching to machine-folded seams (regardless of panel profile and geometry), S-5!® clamps are designed to engage the seam as shown in Illustration A on the front page; with setscrew opposite seam fold. On many snap-together type seams, the setscrew is on the open (or overlap) side of the seam. On some seams, this aspect of clamp orientation is not critical.
3. Tighten the setscrew using a screw gun* and the included screw gun bit tip. The setscrew will dimple the seam material but will not penetrate it. When relying on published load values, setscrew tension should be verified periodically using a calibrated torque wrench as indicated below to ensure the tool is consistently achieving the proper torque range. **Note:** See "Step 3 Note" at bottom of document on fitting S-5-U Mini and S-5-V Mini on certain vertical double-folds.

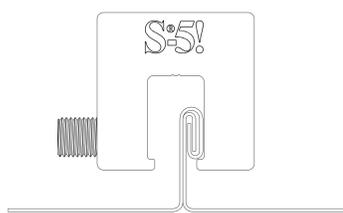
*For time-saving tool recommendations, call S-5!

Specified Torque	Inch Pounds	Foot Pounds	Nm
22ga steel	160–180	13–15	18–20
All other metals and thinner gauges of steel	130–150	11–12.5	15–17

Once installed correctly, these clamps require no maintenance or re-inspection for the life of the roof.

4. For critical attachment applications utilizing an M8-1.25 X 16 mm Hex Flange Bolt (sold separately), tighten the bolt to 160 inch pounds (13 foot pounds).

Step 3 Note: When installing S-5-U, S-5-V, S-5-U Mini, or S-5-V Mini on a vertical double fold, you may need to lift clamp in a manner that allows the lip of the clamp to engage the bottom of the seam and the setscrew(s) to fully engage the fold while tightening the setscrew(s). See clamp lip engagement in figure below. This will assist in making the clamp sit more vertically on the seam.



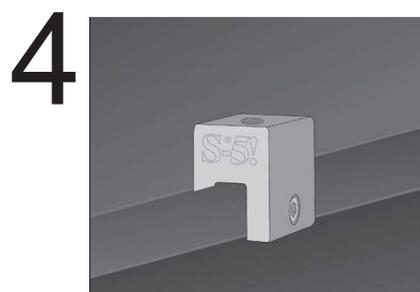
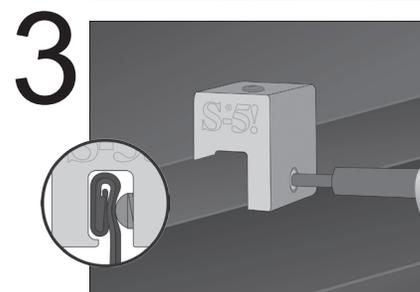
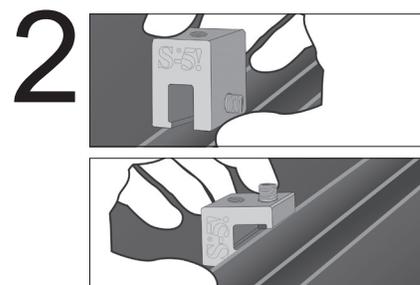
NOTE: Any S-5! warranty and/or calculation may be void if hardware is used that was not furnished by S-5! directly or through one of their licensed distributors

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

Products are protected by multiple U.S. and foreign patents. Visit the website at www.S-5.com for complete information on patents and trademarks. For maximum holding strength, setscrews should be tensioned and re-tensioned as the seam material compresses, i.e. tighten the first setscrew, then the second; then repeat until each setscrew achieves the recommended torque. 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. Consult the S-5! website at www.S-5.com for published data regarding holding strength.

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Above illustrations show S-5-E Mini clamp on a vertical seam. Step 2 shows S-5-E Mini on vertical applications and S-5-U Mini on horizontal applications.