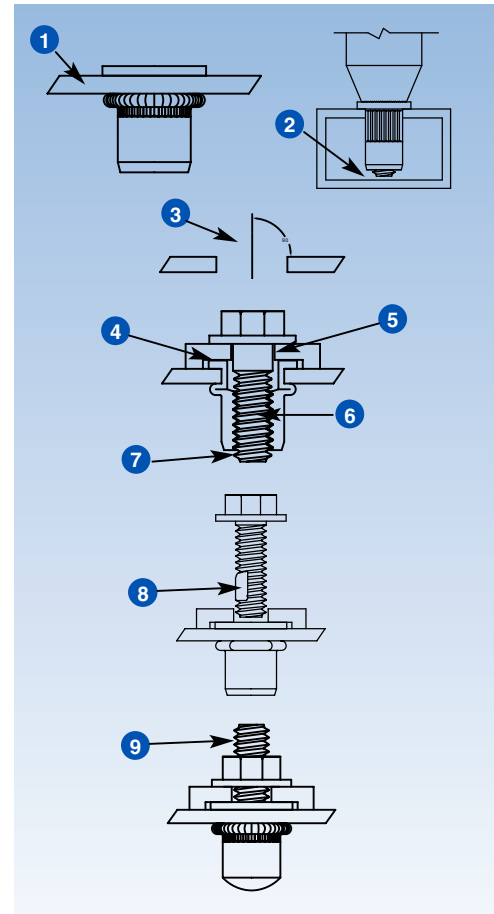


Rivnut® Application Information

Optimum Joint Design

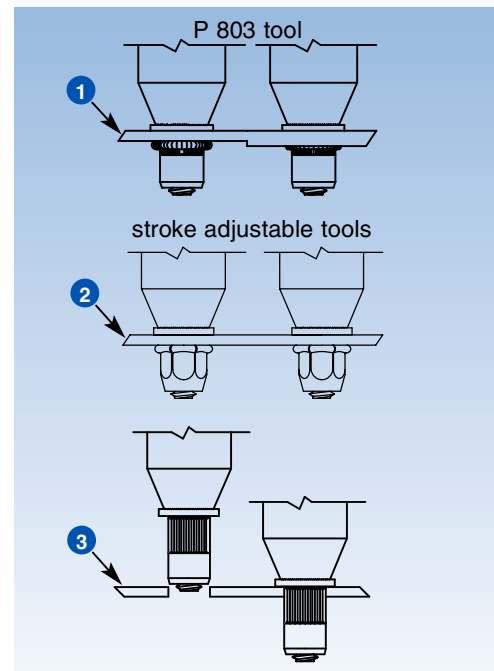
- 1 The parent material will be of a density and thickness to support the formation of the Rivnut's backside flange. See the Rivnut® selection matrix on page 33. Bollhoff suggests experimentation with various Rivnut® designs and grip ranges to determine the optimum joint design.
- 2 Parent material closed shapes such as tubing or extrusions require enough backside clearance for the Rivnut® to be inserted fully before installation.
- 3 The hole for the Rivnut® should be square to the parent material to assure a uniform backside flange formation. Hole size should be per the Rivnut® product tolerance and specification.
- 4 The mating part should contact the head of the Rivnut® to assure optimum torque performance of the joint.
- 5 Hole size in the mating part should be large enough for the mating fastener to enter the Rivnut® and allow the mating part to remain in contact with the head of the Rivnut®. Mating part hole formula should be screw diameter multiplied by 1.1. If the mating part hole needs to be enlarged for alignment purposes, use an elongated hole design to assure mating part contact with the head of the Rivnut®.
- 6 The mating screw should be Grade 5 or Metric Class 8.8 strength. Rivnut® fasteners are designed to meet the torque, tensile and clamp load requirements of these mating fasteners. Thread fit may be of 2A or 3A or Metric 6G design.
- 7 The mating screw's thread length should engage all threads of the Rivnut® to assure optimum torque strength.
- 8 If the application requires a mating screw with a nylon patch, micro-encapsulated adhesive, anaerobic adhesive or other thread-locking mechanism, a Rivnut® Hex body fastener in a Hex hole will be needed to resist the prevailing torque created by the locking mechanism.
- 9 Joint design for Rivstud® follows the same principles as mentioned above for Rivnut® fasteners. Mating nuts should be of Grade 5 or Metric Class 8.8 or lower, and of a Class 2B or Metric 6H thread fit.



Rivnut® Installation Information

Power Tools

- 1 Parent materials or applications that vary in thickness require the use of the P 803, EPK or PNK Installation Tools for proper installation. The pressure pull feature of these tools will install the product in single, multiple or variable thickness materials. If torque-controlled tools are used, Rivnut® EZ fasteners are recommended and must have lubrication added.
- 2 Parent materials and applications that are of a single material thickness can utilize either the P 803 or any of the stroke adjustable tools such as the P 330, C 302, and C 362. Tool adjustments for pressure and stroke are contained in the various Rivnut® tool manuals.
- 3 Installation sequence is best done by threading the Rivnut® onto the tool fully and then inserting into the hole. To determine which Rivnut® and thread size each tool is capable of installing please refer to the Rivnut® fastener/tool selection guide on page 31.



Rivnut® Installation Information

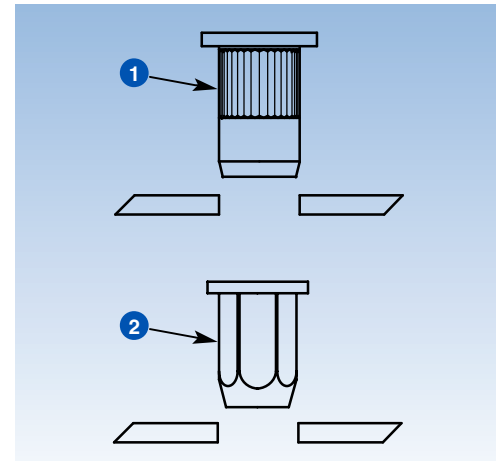
Automation

The following information should be considered when Rivnut® installation or joint assembly will be automated.

- 1 Rivnut® round fasteners will be the easiest to feed and insert into parent material holes using automation.
- 2 Hex body Rivnuts can also be installed using automation. See automation tooling on page 30.

100% sorting and inspection for presence of threads should be incorporated either in the automation feeding equipment or as an added process at Bollhoff to assure 100% installations. There is a cost added for Rivnut® product that will be 100% sorted/inspected.

Lubrication should not be specified on Rivnut® fasteners that will be automated as the lubrication will contaminate the feeding system. Mating screws should contain a dog point or other anti-cross thread point to prevent cross threading during screw assembly.



Rivnut® Selection Matrix

Typical parent material types and hole production methods can influence the selection of the Rivnut® design. Please use this matrix to select a Rivnut® design and then test the Rivnut® in your actual application before final specification. If two Rivnut® designs are suggested, try both designs as they each provide specific features and benefits.

Typical Parent Materials	Drilled Holes	Punched Holes	Pierced Holes	Molded Holes
Sheet Metals	EZ Round	EZ Hex/EZ Round		
Tubing	EZ Round		EZ Hex/EZ Round	
Aluminum Extrusions	EZ Round			
Magnesium Castings	EZ Round			EZ Hex/EZ Round
Hydroformed Tubing	EZ Round		EZ Hex/EZ Round	
Aluminum/Foam Core Panels	EZ Round			
SMC Plastic	Plusnut/EZ Round			
Blow Molded Plastic	Plusnut/EZ Round			
Rotational Molded Plastic	Plusnut			
Scrimp Molded Plastic	EZ Round			
Plastic Extrusions	Plusnut/EZ Round			
Injection Molded Plastic	Plusnut/EZ Round			Plusnut/EZ Round
Hand Layed Up Fiberglass	Plusnut/EZ Round			