

Blind Rivet Nuts and Studs

RIVNUT®



Blind threaded fasteners and tools designed for the assembly of sheet metals, tubular structures and plastics.

BOLLHOFF



Bollhoff, the specialist in assembly technology

Bollhoff is dedicated to provide innovative fastening and assembly systems to almost every industrial manufacturing segment such as:

Automotive, Heavy Truck, Transportation, Appliance, Electronics, Electrical, Plastics, Furniture, Communications, Shipbuilding, Marine, Construction, Farm Machinery, Food Processing Machinery, Aerospace and Office Equipment.

Our customers are as diverse as our products.



Bollhoff, the international service provider

Bollhoff production and sales facilities currently are located in 15 countries throughout the world. Our global presence enables us to service our multinational customers with local manufacturing, engineering, quality, sales and service support.

Our presence in North America is anchored by our facility in Kendallville, Indiana and enjoys the distinction as the originator of the globally recognized and trademarked Rivnut® brand fastener.



Bollhoff, a partner for productivity and innovation

Bollhoff is continuously working with our customers to innovate our products and installation systems to provide the ultimate in efficiency and quality. We maintain close links with international universities to maintain our leadership position in research and development.

Rapid changes in customer production techniques and the move to assemble new lightweight materials such as hydro-formed tubing, high strength steel, composites, aluminum extrusions and magnesium castings are the focus of our engineering expertise.



Bollhoff, state-of-the-art manufacturing

In our six global manufacturing facilities, Bollhoff is dedicated to utilizing the latest state-of-the-art equipment to produce high quality innovative products. High speed cold forming, CNC turning, plastic injection molding and metal injection molding are manufacturing techniques that are at the core of our competence.

Bollhoff employees enjoy the highest level of professional training in their respective positions. Therefore, everyone at Bollhoff is prepared to meet the challenges of our customers.



Bollhoff, commitment to quality

All Bollhoff production and warehouse facilities are certified to International ISO9000 and QS9000 standards. Our laboratories are certified to Fastener Quality Act requirements. Production facilities utilize FMEA and SPC processes to assure our products meet customer quality requirements.

Bollhoff also understands the special needs of automated assembly and assures the highest degree of quality utilizing laser and vision system inspection equipment.

The Bollhoff commitment to quality is our first priority.

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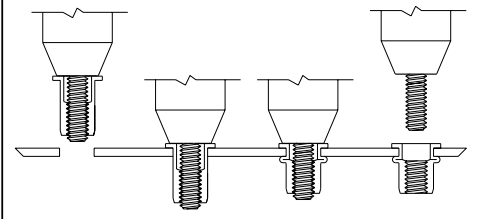
All information provided in this catalog is intended as a guideline only. Bollhoff Rivnut® Inc. recommends customer testing of actual application components, fasteners and tools to verify the design and reliability of the customer's actual application.

Warranty: Bollhoff Rivnut® Inc. warrants to the original retail purchaser and installer that the products contained in this catalog will be free from defects in material and workmanship, provided that they are used in accordance with the guidelines contained in this catalog. Bollhoff will at its sole option repair, replace or rework the products at a cost not to exceed the invoice price of the products. This warranty is in lieu of all other warranties, expressed or implied, and in no way will Bollhoff be held liable for incidental or consequential damages arising from any defect or failure in its products.

Rivnut® – The Original



How the Rivnut® works: 1) Thread Rivnut® onto the tool mandrel, 2) place in the hole, 3) pull the tool trigger and the tool mandrel retracts causing the unthreaded portion of the Rivnut® to expand behind the parent material riveting itself in place.



UNITED STATES PATENT OFFICE

2,149,199

TUBULAR RIVET

“Rivnut® – The Original blind installed internally threaded rivet, was invented (patent #2,149,199) in 1936 for the purpose of attaching a rubber aircraft wing de-icer extrusion to the leading edge of the wing. The Rivnut® riveted the aluminum wing skin to the inner aluminum spar and then accepted a mating screw to attach the rubber de-icer.

The Rivnut® fastener was given a military specification of MS27130 and an aerospace standard of NAS1329 and NAS1330. Use of the Rivnut® expanded within the military and aerospace markets, and soon became popular in general industry because of its many design and assembly advantages.”

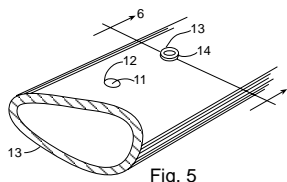


Fig. 5

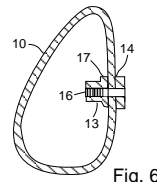


Fig. 6

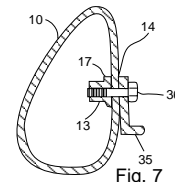


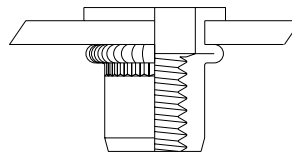
Fig. 7

Rivnut® – The Original

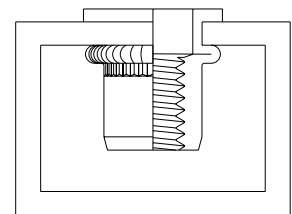
Design and Assembly Advantages

- Installs blind in sheet metal, plastics and tubular materials.
- Can be used as a rivet to assemble two or more materials and as a nut for the attachment of a mating part with a screw.
- Installs into galvanized or pre-painted materials without damaging surface finishes.
- Installs mechanically without deforming the parent material.
- Installs with noncapital investment lightweight handheld pneumatic power tools at any location on an assembly line.
- Installs before or after a finish is applied to a product.
- Installs into material as thin as .020 (0.5mm) providing strong loadbearing threads.
- Installs at a rate of 20 pieces per minute with pneumatic power tools.
- Installs with inexpensive hand tools for field repair or consumer kit installation.
- Installs with semi-skilled labor with minimal training.
- Is ideal for automated assembly due to a balanced geometric shape.
- Installation is environmentally friendly and produces no harmful gasses, heat, dust or electromagnetic fields to affect workers.
- Installs into a wide range of material thicknesses due to a wide grip range tolerance.
- Meets Grade 5 and Metric class 8.8 mating screw proof loads.

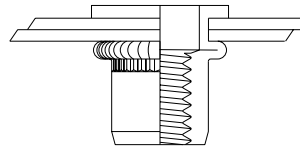
sheet metals



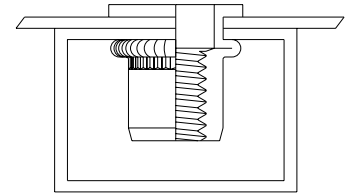
tubing



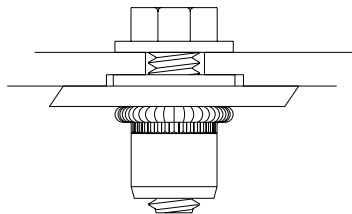
riveting



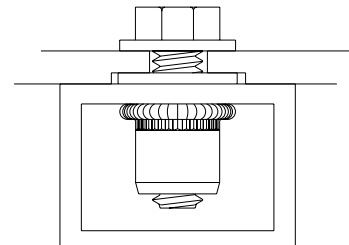
riveting



assembly



assembly

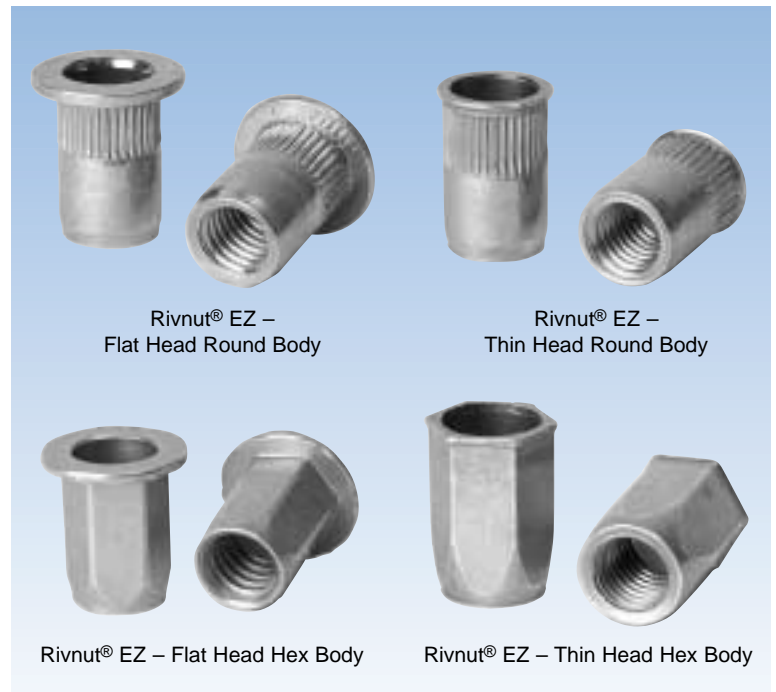


Rivnut® EZ – The Innovation

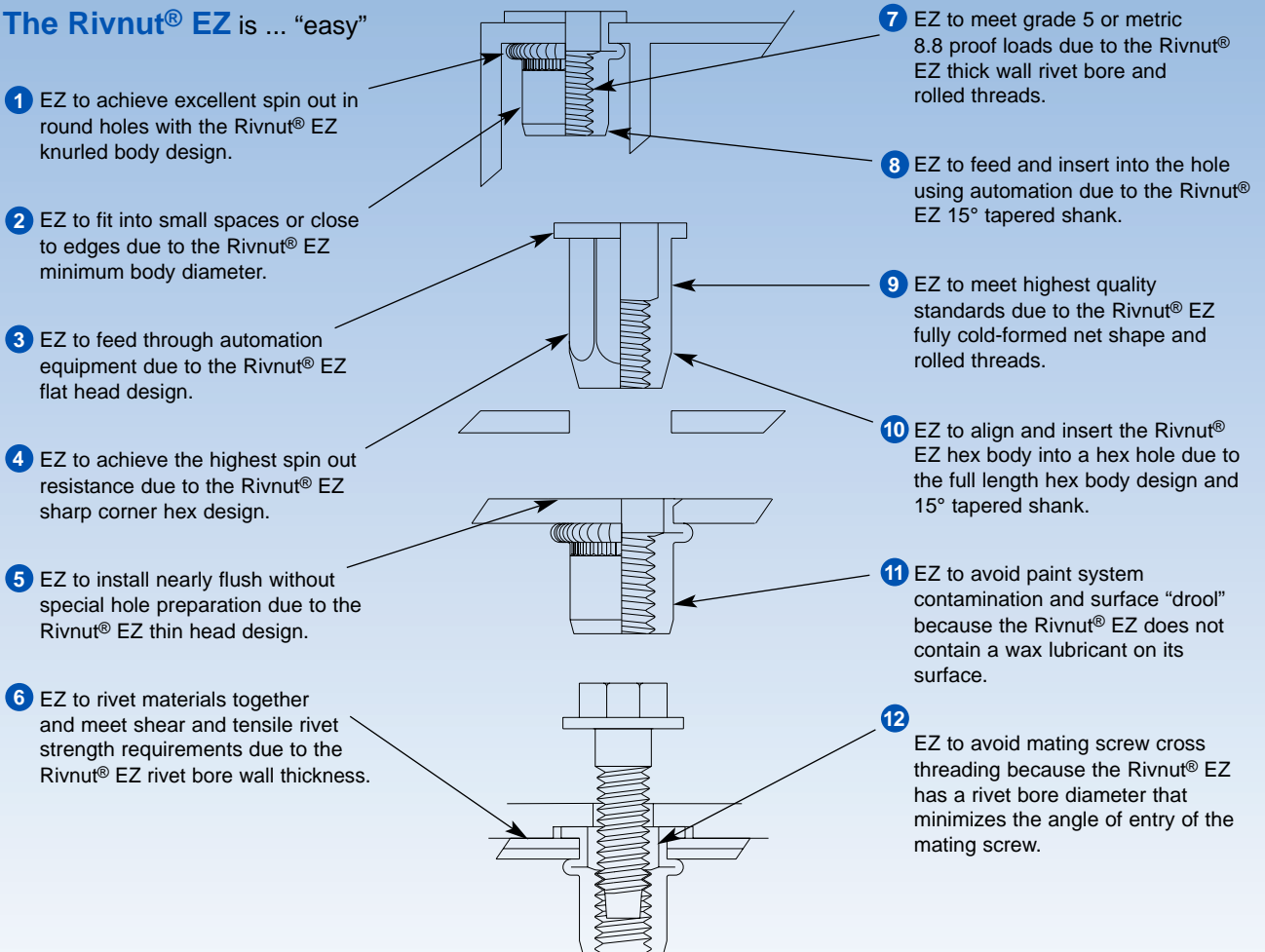
Rivnut®, the Original, has several design variations to meet specific customer requirements. Closed end, keyed head, ribbed body, hex body, heavy hex body and special head shapes all contribute to the breadth of the Rivnut® product line.

Manufacturers are increasing their use of lightweight alloys, tubular structures and plastics to improve strength to weight ratios. They are also demanding increased quality and improved assembly processes including automation.

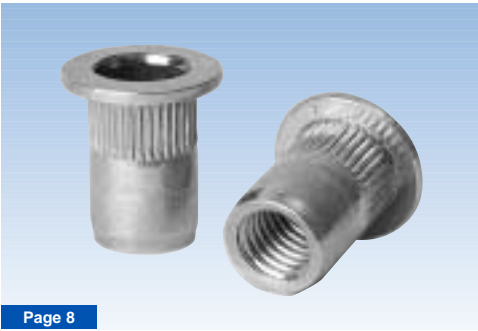
Bollhoff recognizes these needs and has developed the new Rivnut® EZ product line. The new Rivnut® EZ features a flat head round knurled body and thin head round knurled body for drilled or punched holes and a flat head hex and thin head hex body for punched hex holes. Several design features have been incorporated into the new Rivnut® EZ.



The Rivnut® EZ is ... “easy”



Rivnut® Product Overview



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Rivnut® EZ – Flat Head Round Body

- Fully cold-formed, knurled body for increased spin-out resistance
- Flat head and tapered shank for automation and hole insertion ease
- Minimum body diameter and counter-bore for minimum application space packaging and mating screw cross-thread avoidance
- Internal rolled threads for increased thread strength
- Ideal for drilled and round punched holes in sheet metal, tubing and extrusions

Rivnut® EZ – Thin Head Round Body

- Fully cold-formed, knurled body for increased spin-out resistance
- Thin head for nearly flush installation in standard punched and drilled holes
- Tapered shank for hole insertion ease
- Minimum body diameter and counter-bore for minimum application space packaging and mating screw cross-thread avoidance
- Internal rolled threads for increased thread strength
- Ideal for drilled holes in sheet metal, tubing and extrusions



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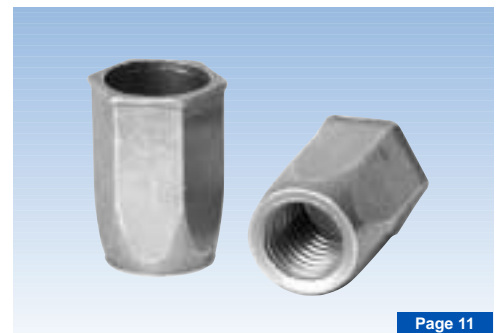
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Rivnut® EZ – Flat Head Hex Body

- Fully cold-formed, sharp corner Hex body with round counterbore for ultimate spin-out resistance
- Flat head and tapered shank for automation and hole insertion ease
- Minimum body size and counter-bore for minimum application space packaging and mating screw cross-thread avoidance
- Internal rolled threads for increased thread strength
- Ideal for punched holes in sheet metal and hydroformed tubing

Rivnut® EZ – Thin Head Hex Body

- Fully cold-formed, sharp corner Hex body with round counterbore for ultimate spin out resistance
- Thin head for nearly flush installation in standard punched holes
- Tapered shank for hole insertion ease
- Minimum body size and counter-bore for minimum application space packaging and mating screw cross-thread avoidance
- Internal rolled threads for increased thread strength
- Ideal for punched holes in sheet metal and hydroformed tubing



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Rivnut® PN – Plusnut®

- Fully cold-formed, slotted body for the widest grip range
- Four large backside "legs" for ultimate pull out strength
- Large diameter, flat head for load bearing in soft materials
- Ideal for plastics and thin sheet metal applications where ultimate pull-out strength is required
- Internal rolled threads for increased thread strength

Rivnut® Product Overview

Rivnut® PN – Plusnut® Pre-Bulbed

- Fully cold-formed, pre-bulbed slotted body
- Pre-bulbing of the slotted body enables the PN Plusnut to be installed using inexpensive hand-held, torque-type tooling for kitting and consumer installation
- Internal rolled threads for increased thread strength
- Ideal for plastics and thin sheet metal



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Rivnut® – Flat Head Round Body Open End and Closed End

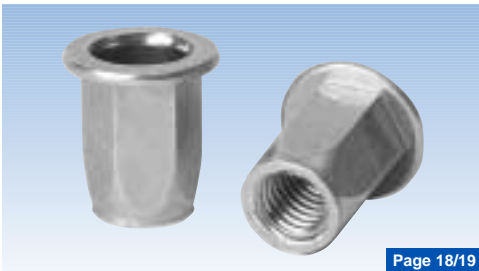
- Cold-formed body with minimum body diameter and counter-bore for minimum application space packaging and mating screw cross-thread avoidance
- Thick wall construction for ultimate tensile and push-out strength
- Ideal for leg-leveling screw applications
- Closed end version for sealed threads

Rivnut® – Countersunk Head Round Body

- Cold-formed body with minimum body diameter and counter-bore for minimum application space packaging and mating screw cross-thread avoidance
- Countersunk head design for completely flush installation in countersunk holes
- Thick wall construction for ultimate tensile and push-out strength



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Rivnut® – Flat Head Hex Body

- Cold-formed, sharp-cornered Hex body for ultimate spin-out resistance
- Minimum body size and counter-bore for minimum application space packaging and mating screw cross-thread avoidance
- Thick wall construction for ultimate tensile and push-out strength
- Heavy hex design for increased tensile loads

Rivstud® – Flat Head Round Body

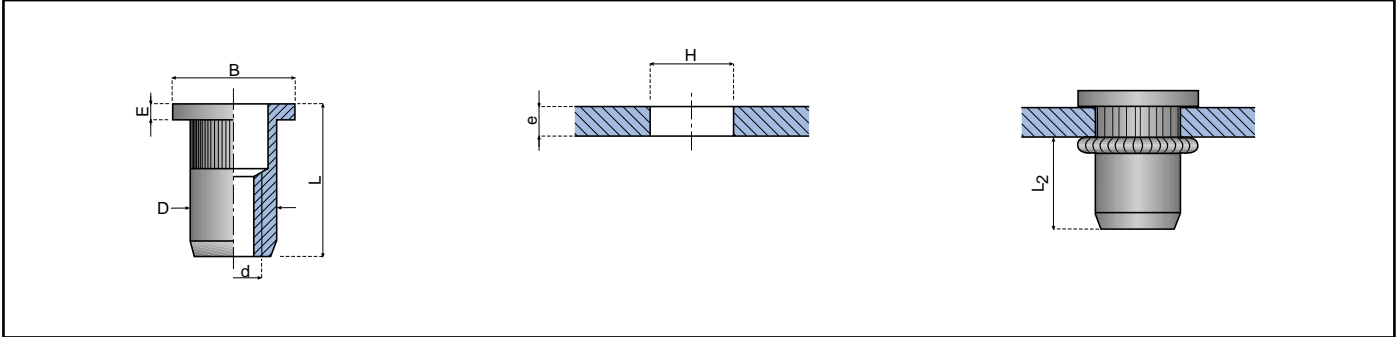
- Protruding threaded stud enables mating part to be suspended in vertical orientation
- Fully cold-formed knurled body for increased spin-out resistance
- Flat head and tapered shank for automation and hole insertion ease



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Rivnut® EZ – Flat Head Round Body

The Rivnut® EZ – Flat Head Round Body features a knurled body and is designed for use in drilled or punched round holes. The knurled body provides exceptional spin-out resistance by digging into the parent material upon installation. The Rivnut® EZ is designed to be used with inch Grade 5 or metric Class 8.8 mating hardware.



Class 2B or Metric Class 6H threads
 Steel C1010-1008
 Zinc yellow dichromate plating per ASTM B633 Fe/Zn 8 TYII

ALL DIMENSIONS SHOWN IN INCHES

d Thread Size	e Grip Range	H Hole Size		D Body Diameter	E Head Height	B Head Diameter	L Overall Length	L ₂ Installed Length	Product Code
		Min.	Max.						
6-32	0.027-0.125	0.234	0.238	0.2335	0.032	0.354	0.445	0.228	62111611125
8-32	0.027-0.125	0.234	0.238	0.2335	0.032	0.354	0.445	0.228	62111811125
8-32	0.125-0.224	0.234	0.238	0.2335	0.032	0.354	0.551	0.228	62111811223
10-32	0.027-0.125	0.272	0.276	0.2715	0.038	0.406	0.543	0.315	62112011125
10-32	0.125-0.224	0.272	0.276	0.2715	0.038	0.406	0.650	0.315	62112011223
1/4-20	0.027-0.125	0.332	0.336	0.3315	0.057	0.475	0.594	0.354	62112511125
1/4-20	0.125-0.224	0.332	0.336	0.3315	0.057	0.475	0.701	0.354	62112511223
5/16-18	0.027-0.125	0.413	0.417	0.4125	0.062	0.665	0.744	0.496	62113111125
5/16-18	0.125-0.224	0.413	0.417	0.4125	0.062	0.665	0.850	0.496	62113111223
3/8-16	0.030-0.140	0.492	0.496	0.4915	0.088	0.781	0.906	0.583	62113711140
3/8-16	0.140-0.240	0.492	0.496	0.4915	0.088	0.781	1.012	0.583	62113711250

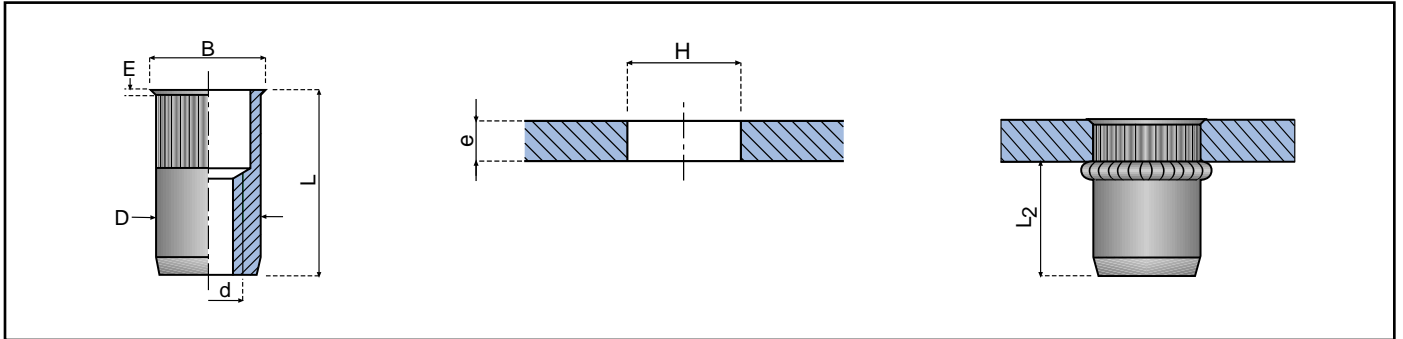
ALL DIMENSIONS SHOWN IN MILLIMETERS

M3x0.5	0.7-3.2	5.94	6.04	5.92	0.81	9.00	11.30	5.8	62110311032
M4x0.7	0.7-3.2	5.94	6.04	5.92	0.81	9.00	11.30	5.8	62110411032
M4x0.7	3.2-5.7	5.94	6.04	5.92	0.81	9.00	14.00	5.8	62110411057
M5x0.8	0.7-3.2	6.91	7.01	6.89	0.97	10.31	13.80	8.0	62110511032
M5x0.8	3.2-5.7	6.91	7.01	6.89	0.97	10.31	16.50	8.0	62110511057
M6x1.0	0.7-3.2	8.43	8.53	8.41	1.46	12.07	15.10	9.0	62110611032
M6x1.0	3.2-5.7	8.43	8.53	8.41	1.46	12.07	17.80	9.0	62110611067
M8x1.25	0.7-3.2	10.49	10.59	10.47	1.58	16.90	18.90	12.6	62110811032
M8x1.25	3.2-5.7	10.49	10.59	10.47	1.58	16.90	21.60	12.6	62110811057
M10x1.50	0.76-3.56	12.50	12.60	12.48	2.23	19.80	23.00	14.8	62111011035
M10x1.50	3.56-6.06	12.50	12.60	12.48	2.23	19.80	25.70	14.8	62111011060

Note 1: Other dimensions, finishes or design variations are available upon request.

Rivnut® EZ – Thin Head Round Body

The Rivnut® EZ – Thin Head Round Body is designed for use in drilled or punched round holes. The knurled body provides exceptional spin-out resistance by digging into the parent material upon installation. The Thin Head design installs virtually flush in standard holes eliminating the need for special hole preparation to assure a flush fit of the mating part. The Rivnut® EZ is designed to be used with inch Grade 5 and metric class 8.8 mating hardware.



Class 2B or Metric Class 6H threads
 Steel C1010-1008
 Zinc yellow dichromate plating per ASTM B633 Fe/Zn 8 TYII

ALL DIMENSIONS SHOWN IN INCHES

d	e	H		D	E	B	L	L ₂	Product Code
Thread Size	Grip Range	Hole Size Min.	Hole Size Max.	Body Diameter	Head Height	Head Diameter	Overall Length	Installed Length	
6-32	0.027-0.125	0.234	0.238	0.2335	0.012	0.261	0.425	0.228	62121611125
8-32	0.027-0.125	0.234	0.238	0.2335	0.012	0.261	0.425	0.228	62121811125
8-32	0.125-0.224	0.234	0.238	0.2335	0.012	0.261	0.531	0.228	62121811223
10-32	0.027-0.125	0.272	0.276	0.2715	0.016	0.311	0.520	0.315	62122011125
10-32	0.125-0.224	0.272	0.276	0.2715	0.016	0.311	0.626	0.315	62122011223
1/4-20	0.027-0.125	0.332	0.336	0.3315	0.016	0.371	0.551	0.354	62122511125
1/4-20	0.125-0.224	0.332	0.336	0.3315	0.016	0.371	0.658	0.354	62122511223
5/16-18	0.027-0.125	0.413	0.417	0.4125	0.016	0.453	0.685	0.496	62123111125
5/16-18	0.125-0.224	0.413	0.417	0.4125	0.016	0.453	0.791	0.496	62123111223
3/8-16	0.030-0.140	0.492	0.496	0.4915	0.020	0.531	0.845	0.583	62123711140
3/8-16	0.140-0.240	0.492	0.496	0.4915	0.020	0.531	0.940	0.583	62123711250

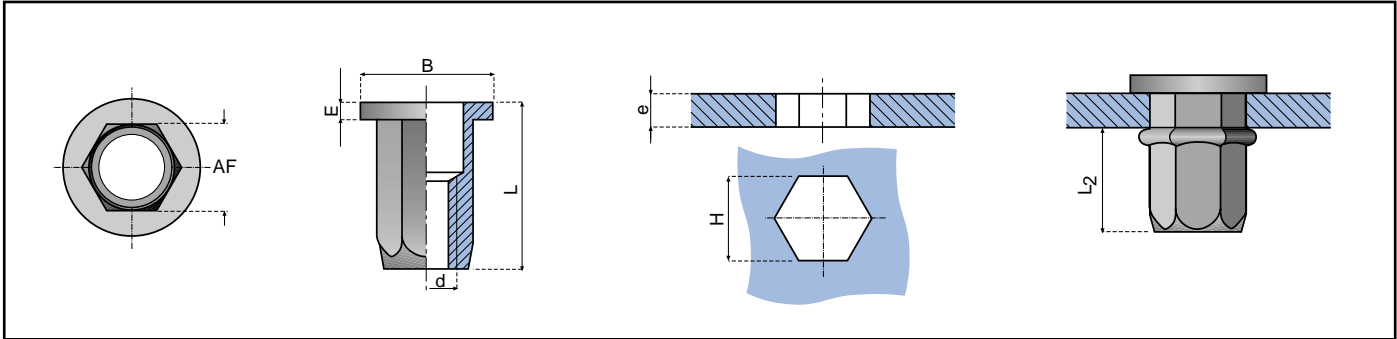
ALL DIMENSIONS SHOWN IN MILLIMETERS

M3x0.5	0.7-3.2	5.94	6.04	5.92	0.30	6.64	10.80	5.8	62120311032
M4x0.7	0.7-3.2	5.94	6.04	5.92	0.30	6.64	10.80	5.8	62120411032
M4x0.7	3.2-5.7	5.94	6.04	5.92	0.30	6.64	13.50	5.8	62120411057
M5x0.8	0.7-3.2	6.91	7.01	6.89	0.40	7.91	13.20	8.0	62120511032
M5x0.8	3.2-5.7	6.91	7.01	6.89	0.40	7.91	15.90	8.0	62120511057
M6x1.0	0.7-3.2	8.43	8.53	8.41	0.40	9.43	14.00	9.0	62120611032
M6x1.0	3.2-5.7	8.43	8.53	8.41	0.40	9.43	16.70	9.0	62120611067
M8x1.25	0.7-3.2	10.49	10.59	10.47	0.40	11.50	17.40	12.6	62120811032
M8x1.25	3.2-5.7	10.49	10.59	10.47	0.40	11.50	20.10	12.6	62120811057
M10x1.50	0.76-3.56	12.50	12.60	12.48	0.50	13.50	21.50	14.8	62121011035
M10x1.50	3.56-6.06	12.50	12.60	12.48	0.50	13.50	23.90	14.8	62121011060

Note 1: Other dimensions, finishes or design variations are available upon request.

Rivnut® EZ – Flat Head Hex Body

The Rivnut® EZ – Flat Head Hex Body is designed for use in hex punched holes. The full length hex body provides operator line of sight for hex body to hex hole alignment and insertion. The sharp corner hex body and round internal counterbore provide the ultimate in spin-out resistance. The Rivnut® EZ is designed to be used with inch Grade 5 and metric Class 8.8 mating hardware.



Class 2B or Metric Class 6H threads
 Steel C1010-1008
 Zinc yellow dichromate plating per ASTM B633 Fe/Zn 8 TYII

ALL DIMENSIONS SHOWN IN INCHES

d Thread Size	e Grip Range	H Hole Size Across Flats		AF Across Flats Max.	E Head Height Ref.	B Head Diameter Ref.	L Overall Length Ref.	L ₂ Installed Length Ref.	Product Code
		Min.	Max.						
8-32	0.027-0.125	0.236	0.240	0.2350	0.039	0.354	0.402	0.197	62211811125
10-32	0.027-0.125	0.276	0.280	0.2745	0.039	0.394	0.571	0.354	62212011125
1/4-20	0.027-0.125	0.354	0.361	0.3535	0.059	0.512	0.638	0.394	62212511125
5/16-18	0.027-0.125	0.433	0.440	0.4320	0.059	0.630	0.717	0.433	62213111125
3/8-16	0.030-0.140	0.512	0.519	0.5110	0.079	0.748	0.906	0.591	62213711140

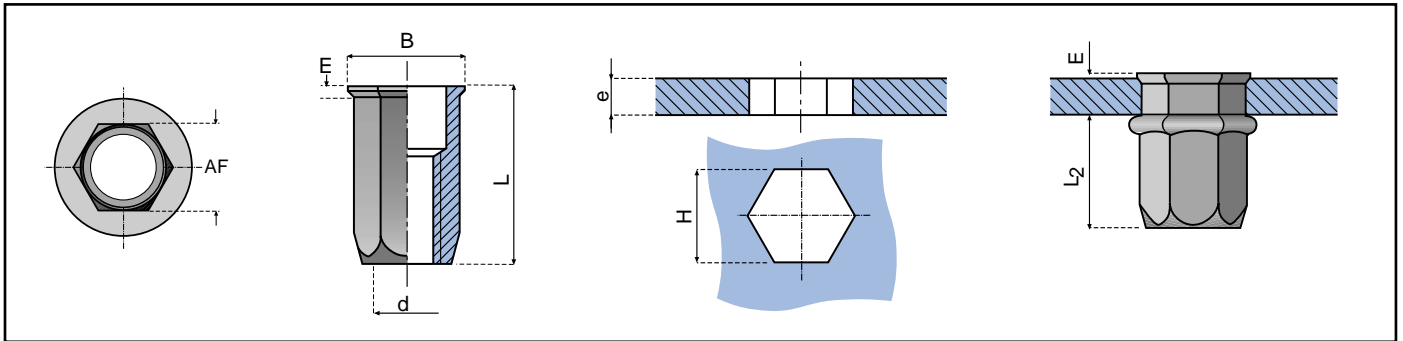
ALL DIMENSIONS SHOWN IN MILLIMETERS

M4x0.7	0.5-3.0	6.0	6.1	5.97	1.0	9.0	10.0	5.0	62210411030
M5x0.8	0.5-3.0	7.0	7.1	6.97	1.0	10.0	14.0	9.0	62210511030
M6x1.0	0.5-3.0	9.0	9.1	8.97	1.5	13.0	16.0	10.0	62210611030
M8x1.25	0.5-3.0	11.0	11.1	10.97	1.5	16.0	18.0	11.0	62210811030
M10x1.50	1.0-3.5	13.0	13.1	12.97	2.0	19.0	23.0	15.0	62211011035

Note 1: Other dimensions, finishes or design variations are available upon request.

Rivnut® EZ – Thin Head Hex Body

The Rivnut® EZ – Thin Head Hex Body is designed for use in hex punched holes. The Thin Head design installs virtually flush without special hole preparation, assuring a flush fit for the mating component. The Rivnut® EZ is designed to be used with inch Grade 5 and metric Class 8.8 mating hardware.



Class 2B or Metric Class 6H threads
 Steel C1010-1008
 Zinc yellow dichromate plating per ASTM B633 Fe/Zn 8 TYII

ALL DIMENSIONS SHOWN IN INCHES

d	e	H		AF	E	B	L	L ₂	Product Code
		Hole Size Across Flats Min.	Max.						
Thread Size	Grip Range			Across Flats Max.	Head Height Ref.	Head Diameter Ref.	Overall Length Ref.	Installed Length Ref.	
8-32	0.027-0.125	0.236	0.240	0.2350	0.012	0.260	0.374	0.197	62221811125
10-32	0.027-0.125	0.276	0.280	0.2745	0.016	0.311	0.524	0.354	62222011125
1/4-20	0.027-0.125	0.354	0.361	0.3535	0.016	0.390	0.591	0.394	62222511125
5/16-18	0.027-0.125	0.433	0.440	0.4320	0.016	0.457	0.669	0.433	62223111125
3/8-16	0.030-0.140	0.512	0.519	0.5110	0.020	0.559	0.843	0.591	62223711140

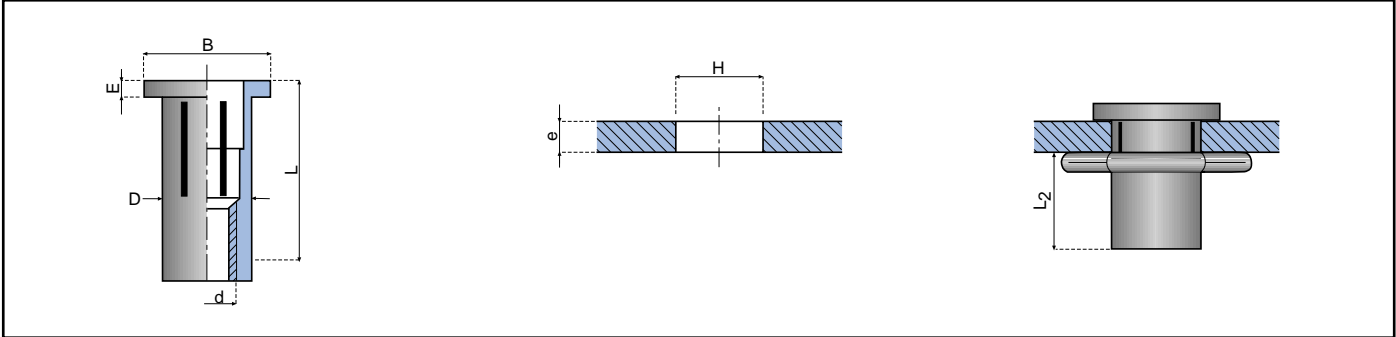
ALL DIMENSIONS SHOWN IN MILLIMETERS

M4x0.7	0.5-3.0	6.0	6.1	5.97	0.30	6.6	9.5	5.0	62220411030
M5x0.8	0.5-3.0	7.0	7.1	6.97	0.40	7.9	13.3	9.0	62220511030
M6x1.0	0.5-3.0	9.0	9.1	8.97	0.40	9.9	15.0	10.0	62220611030
M8x1.25	0.5-3.0	11.0	11.1	10.97	0.40	11.6	17.0	11.0	62220811030
M10x1.50	1.0-3.5	13.0	13.1	12.97	0.50	14.2	21.4	15.0	62221011035

Note 1: Other dimensions, finishes or design variations are available upon request.

Rivnut® PN – Plusnut®

The Rivnut® PN – Plusnut® has been designed to provide the ultimate pull out strength in thin sheet metals and plastic. Its slotted body splits into four legs providing a wide load-bearing surface on the backside of the parent material. The Rivnut® PN – Plusnut® also features the widest grip range of any blind threaded nut. A grip ID mark is included on the head of the fastener for grip range identification.



Class 2B or Metric Class 6H threads
Steel C1010-1008
Cadmium plating per QQ-P-416

ALL DIMENSIONS SHOWN IN INCHES

d	e	H		D Body Diameter Max.	E Head Height Ref.	B Head Diameter Ref.	L Overall Length Ref.	L ₂ Installed Length Ref.	Grip ID Mark	Product Code
		Hole Size Min.	Hole Size Max.							
6-32	0.020-0.150	0.209	0.214	0.208	0.032	0.438	0.688	0.335		S6P150
6-32	0.150-0.270	0.209	0.214	0.208	0.032	0.438	0.797	0.335	1 RAD	S6P270
8-32	0.020-0.150	0.242	0.247	0.241	0.038	0.438	0.694	0.340		S8P150
8-32	0.150-0.270	0.242	0.247	0.241	0.038	0.438	0.819	0.340	1 RAD	S8P270
10-32	0.020-0.175	0.273	0.278	0.272	0.038	0.500	0.819	0.425		S10P175
10-32	0.175-0.320	0.273	0.278	0.272	0.038	0.500	0.959	0.425	1 RAD	S10P320
1/4-20	0.020-0.280	0.347	0.352	0.346	0.058	0.625	1.058	0.505		S25P280
1/4-20	0.280-0.500	0.347	0.352	0.346	0.058	0.625	1.292	0.505	1 RAD	S25P500
5/16-18	0.020-0.280	0.438	0.443	0.437	0.062	0.750	1.203	0.570		S31P280
5/16-18	0.280-0.500	0.438	0.443	0.437	0.062	0.750	1.437	0.570	1 RAD	S31P500
3/8-16	0.020-0.280	0.515	0.522	0.514	0.088	0.875	1.306	0.605		S37P280
3/8-16	0.280-0.500	0.515	0.522	0.514	0.088	0.875	1.525	0.605	1 RAD	S37P500

ALL DIMENSIONS SHOWN IN MILLIMETERS

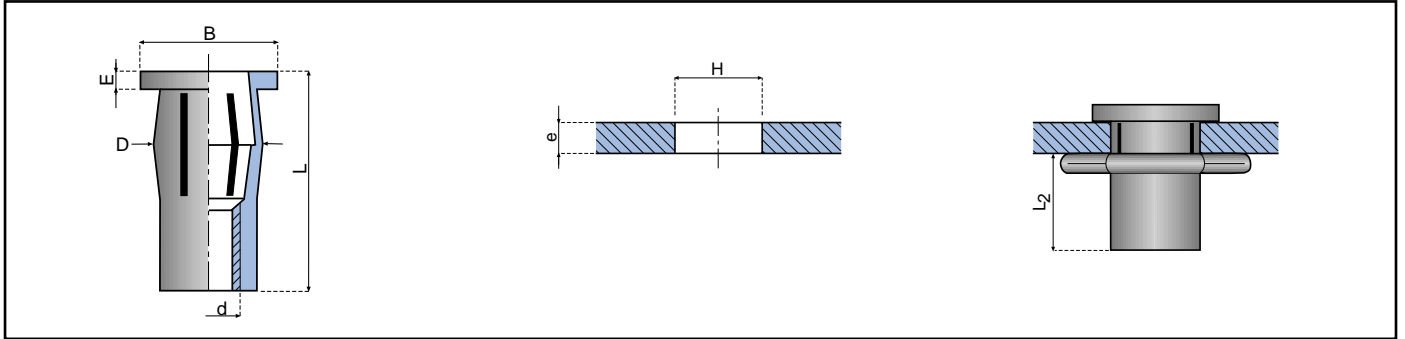
M4x0.7	0.50-3.80	6.13	6.25	6.12	0.96	11.1	17.6	8.6		SM4P3.80
M4x0.7	3.80-6.85	6.13	6.25	6.12	0.96	11.1	20.8	8.6	1 RAD	SM4P6.85
M5x0.8	0.50-4.45	7.48	7.62	7.47	0.96	12.7	22.0	9.9		SM5P4.45
M5x0.8	4.45-8.10	7.48	7.62	7.47	0.96	12.7	24.8	9.9	1 RAD	SM5P8.10
M6x1.0	0.50-7.10	8.80	8.93	8.79	1.50	15.9	26.9	12.8		SM6P7.10
M6x1.0	7.10-12.70	8.80	8.93	8.79	1.50	15.9	32.8	12.8	1 RAD	SM6P12.70
M8x1.25	0.50-7.10	11.11	11.50	11.10	1.57	19.0	30.5	14.5		SM8P7.10
M8x1.25	7.10-12.70	11.11	11.50	11.10	1.57	19.0	36.5	14.5	1 RAD	SM8P12.70
M10x1.50	0.50-7.10	13.07	13.26	13.06	2.24	22.2	33.2	15.8		SM10P7.10
M10x1.50	7.10-12.70	13.07	13.26	13.06	2.24	22.2	38.7	15.8	1 RAD	SM10P12.70

Note 1: The product on this page is made from Steel ("S" prefix in product code) with Cadmium plating. It is also available in Stainless Steel ("SS" for the prefix) or Aluminum ("A" for the prefix).

Note 2: Countersunk head, other dimensions, finishes or design variations are available upon request.

Rivnut® PN – Plusnut® Pre-Bulbed

The Rivnut® PN – Plusnut® Pre-Bulbed has been designed to be installed using torque controlled hand or power tools. A simple torque hand tool (shown on page 29) can be packaged with this fastener for customer installation. Use of the C 350 power tool (shown on page 27) can install this fastener in variable thickness plastic materials such as those produced by rotational or blow molding. A grip ID mark is included on the head of the fastener for grip range identification.



Class 2B or Metric Class 6H threads
Steel C1010-1008
Cadmium plating per QQ-P-416

ALL DIMENSIONS SHOWN IN INCHES

d	e	H		D	E	B	L	L ₂	Grip ID Mark	Product Code
		Min.	Max.							
Thread Size	Grip Range	Hole Size		Body Diameter Max.	Head Height Ref.	Head Diameter Ref.	Overall Length Ref.	Installed Length Ref.		
10-32	0.020-0.175	0.312	0.317	0.310	0.038	0.500	0.80	0.425		S10PB175
10-32	0.175-0.320	0.312	0.317	0.310	0.038	0.500	0.94	0.425	1 RAD	S10PB320
1/4-20	0.020-0.280	0.386	0.391	0.384	0.058	0.625	1.03	0.505		S25PB280
1/4-20	0.280-0.500	0.386	0.391	0.384	0.058	0.625	1.26	0.505	1 RAD	S25PB500
5/16-18	0.020-0.280	0.484	0.489	0.482	0.062	0.750	1.18	0.570		S31PB280
5/16-18	0.280-0.500	0.484	0.489	0.482	0.062	0.750	1.41	0.570	1 RAD	S31PB500
3/8-16	0.020-0.280	0.562	0.569	0.560	0.088	0.875	1.27	0.605		S37PB280
3/8-16	0.280-0.500	0.562	0.569	0.560	0.088	0.875	1.49	0.605	1 RAD	S37PB500

ALL DIMENSIONS SHOWN IN MILLIMETERS

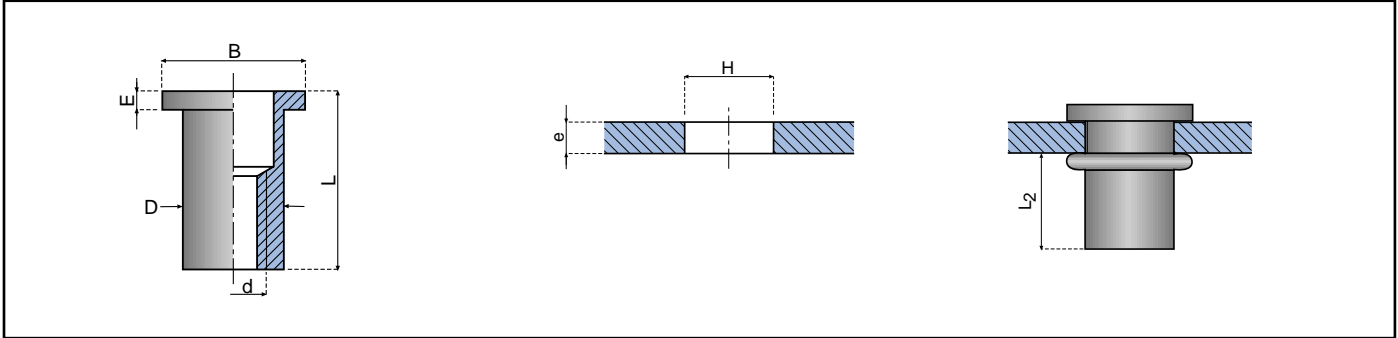
M6x1.0	0.50-7.10	9.80	9.93	9.76	1.50	15.9	26.2	12.8		SM6PB7.10
M6x1.0	7.10-12.70	9.80	9.93	9.76	1.50	15.9	32.0	12.8	1 RAD	SM6PB12.70
M8x1.25	0.50-7.10	12.29	12.42	12.25	1.57	19.0	30.0	14.5		SM8PB7.10
M8x1.25	7.10-12.70	12.29	12.42	12.25	1.57	19.0	35.8	14.5	1 RAD	SM8PB12.70
M10x1.50	0.50-7.10	14.27	14.45	14.23	2.24	22.2	32.3	15.4		SM10PB7.10
M10x1.50	7.10-12.70	14.27	14.45	14.23	2.24	22.2	37.8	15.4	1 RAD	SM10PB12.70

Note 1: The product on this page is made from Steel ("S" prefix in product code) with Cadmium plating. It is also available in Stainless Steel ("SS" for the prefix) or Aluminum ("A" for the prefix).

Note 2: Other dimensions, finishes or design variations are available upon request.

Rivnut® – Flat Head Round Body Open End (inch)

The Rivnut® – Flat Head Round Body has been designed to be used in round drilled or punched holes. It features a thick wall construction for high push out loads and riveting strength. The Rivnut® is designed to be used with inch Grade 5 mating hardware. A grip ID mark is included on the head of the fastener for grip range identification.



Class 3B threads
Steel C1010-1008
Cadmium plating per QQ-P-416

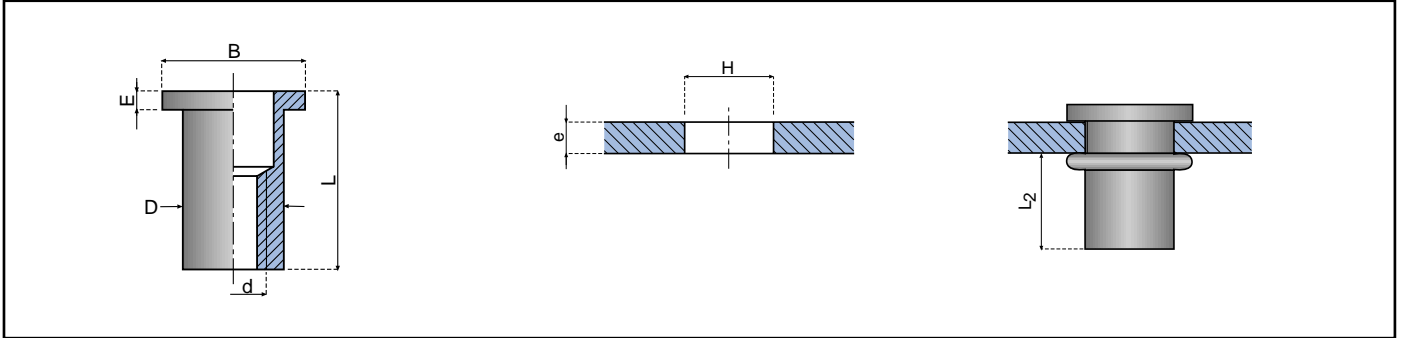
d Thread Size	e Grip Range	H Hole Size		D Body Diameter Max.	E Head Height Ref.	B Head Diameter Ref.	L Overall Length Ref.	L ₂ Installed Length Ref.	Grip ID Mark	Product Code
		Min.	Max.							
6-32	0.010-0.075	0.190	0.193	0.189	0.032	0.325	0.470	0.300	1 RAD	S6-75
6-32	0.075-0.120	0.190	0.193	0.189	0.032	0.325	0.532	0.315	3 RAD	S6-120
8-32	0.010-0.075	0.222	0.226	0.221	0.032	0.357	0.470	0.300	1 RAD	S8-75
8-32	0.075-0.120	0.222	0.226	0.221	0.032	0.357	0.532	0.315	3 RAD	S8-120
8-32	0.120-0.160	0.222	0.226	0.221	0.032	0.357	0.532	0.270	5 RAD	S8-160
10-32	0.010-0.080	0.251	0.256	0.250	0.038	0.406	0.569	0.380		S10-80
10-32	0.080-0.130	0.251	0.256	0.250	0.038	0.406	0.632	0.390	1 RAD	S10-130
10-32	0.130-0.180	0.251	0.256	0.250	0.038	0.406	0.679	0.390	2 RAD	S10-180
10-32	0.180-0.230	0.251	0.256	0.250	0.038	0.406	0.741	0.395	3 RAD	S10-230
1/4-20	0.020-0.080	0.333	0.338	0.332	0.058	0.475	0.683	0.450		S25-80
1/4-20	0.080-0.140	0.333	0.338	0.332	0.058	0.475	0.745	0.450	1 RAD	S25-140
1/4-20	0.140-0.200	0.333	0.338	0.332	0.058	0.475	0.808	0.450	2 RAD	S25-200
1/4-20	0.200-0.260	0.333	0.338	0.332	0.058	0.475	0.870	0.445	3 RAD	S25-260
5/16-18	0.030-0.125	0.414	0.423	0.413	0.062	0.665	0.812	0.505		S31-125
5/16-18	0.125-0.200	0.414	0.423	0.413	0.062	0.665	0.937	0.555	1 RAD	S31-200
5/16-18	0.200-0.275	0.414	0.423	0.413	0.062	0.665	0.999	0.540	2 RAD	S31-275
5/16-18	0.275-0.350	0.414	0.423	0.413	0.062	0.665	1.094	0.560	3 RAD	S31-350
3/8-16	0.030-0.115	0.491	0.500	0.490	0.088	0.781	0.932	0.585		S37-115
3/8-16	0.115-0.200	0.491	0.500	0.490	0.088	0.781	1.026	0.595	1 RAD	S37-200
3/8-16	0.200-0.285	0.491	0.500	0.490	0.088	0.781	1.119	0.605	2 RAD	S37-285
3/8-16	0.285-0.370	0.491	0.500	0.490	0.088	0.781	1.213	0.615	3 RAD	S37-370
1/2-13	0.050-0.150	0.626	0.635	0.625	0.085	0.906	0.991	0.605		S50-150
1/2-13	0.150-0.250	0.626	0.635	0.625	0.085	0.906	1.116	0.630	1 RAD	S50-250
1/2-13	0.250-0.350	0.626	0.635	0.625	0.085	0.906	1.226	0.640	2 RAD	S50-350
1/2-13	0.350-0.450	0.626	0.635	0.625	0.085	0.906	1.335	0.650	3 RAD	S50-450

Note 1: The product on this page is made from Steel ("S" prefix in product code) with Cadmium plating. It is also available in Stainless Steel ("SS" for the prefix), Aluminum ("A" for the prefix), or Alloy Steel ("CH" for the prefix).

Note 2: Other dimensions, finishes or design variations are available upon request.

Rivnut® – Flat Head Round Body Open End (metric)

The Rivnut® – Flat Head Round Body has been designed to be used in round drilled or punched holes. It features a thick wall construction for high push out loads and riveting strength. The Rivnut® is designed to be used with metric Class 8.8 mating hardware. A grip ID mark is included on the head of the fastener for grip range identification.



Class 6H threads
Steel C1010-1008
Cadmium plating per QQ-P-416

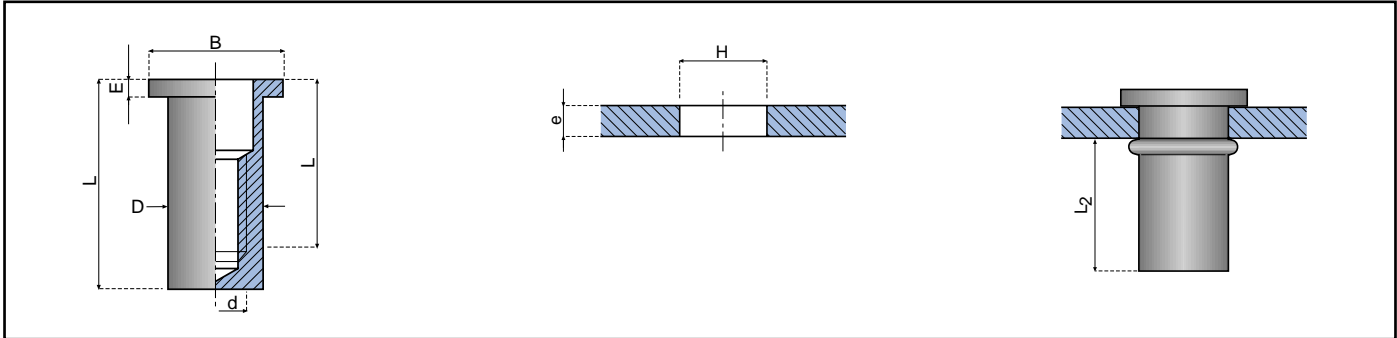
d	e	H		D Body Diameter Max.	E Head Height Ref.	B Head Diameter Ref.	L Overall Length Ref.	L ₂ Installed Length Ref.	Grip ID Mark	Product Code
		Hole Size Min.	Hole Size Max.							
M3x0.5	0.25-1.00	3.94	4.01	3.94	0.63	6.7	8.6	5.6		SM3-1.0
M3x0.5	1.00-1.75	3.94	4.01	3.94	0.63	6.7	9.4	5.6	1 RAD	SM3-1.75
M4x0.7	0.25-2.00	5.62	5.74	5.62	0.81	9.0	11.8	7.1		SM4-2.0
M4x0.7	2.00-3.00	5.62	5.74	5.62	0.81	9.0	12.8	7.1	1 RAD	SM4-3.0
M4x0.7	3.00-4.00	5.62	5.74	5.62	0.81	9.0	13.8	7.1	2 RAD	SM4-4.0
M5x0.8	0.25-2.00	7.20	7.30	7.14	1.22	11.2	15.7	10.1		SM5-2.0
M5x0.8	2.00-3.50	7.20	7.30	7.14	1.22	11.2	17.2	10.1	1 RAD	SM5-3.5
M5x0.8	3.50-5.00	7.20	7.30	7.14	1.22	11.2	18.7	10.1	2 RAD	SM5-5.0
M5x0.8	5.00-6.50	7.20	7.30	7.14	1.22	11.2	20.2	10.1	3 RAD	SM5-6.5
M6x1.0	0.75-2.00	8.50	8.60	8.44	1.47	13.4	17.0	10.6		SM6-2.0
M6x1.0	2.00-3.50	8.50	8.60	8.44	1.47	13.4	18.5	10.6	1 RAD	SM6-3.5
M6x1.0	3.50-5.00	8.50	8.60	8.44	1.47	13.4	20.0	10.6	2 RAD	SM6-5.0
M6x1.0	5.00-6.50	8.50	8.60	8.44	1.47	13.4	21.5	10.6	3 RAD	SM6-6.5
M8x1.25	1.00-3.00	10.50	10.70	10.49	1.57	16.7	19.6	11.8		SM8-3.0
M8x1.25	3.00-5.00	10.50	10.70	10.49	1.57	16.7	21.6	11.8	1 RAD	SM8-5.0
M8x1.25	5.00-7.00	10.50	10.70	10.49	1.57	16.7	23.6	11.8	2 RAD	SM8-7.0
M8x1.25	7.00-9.00	10.50	10.70	10.49	1.57	16.7	25.6	11.8	3 RAD	SM8-9.0
M10x1.50	1.00-3.00	12.50	12.70	12.45	2.23	19.5	22.2	13.2		SM10-3.0
M10x1.50	3.00-5.50	12.50	12.70	12.45	2.23	19.5	24.7	13.2	1 RAD	SM10-5.5
M10x1.50	5.50-8.00	12.50	12.70	12.45	2.23	19.5	27.2	13.2	2 RAD	SM10-8.0
M10x1.50	8.00-10.50	12.50	12.70	12.45	2.23	19.5	29.7	13.2	3 RAD	SM10-10.5
M12x1.75	1.00-3.00	15.50	15.70	15.47	2.23	22.8	26.2	16.4		SM12-3.0
M12x1.75	3.00-5.50	15.50	15.70	15.47	2.23	22.8	28.7	16.4	1 RAD	SM12-5.5
M12x1.75	5.50-8.00	15.50	15.70	15.47	2.23	22.8	31.2	16.4	2 RAD	SM12-8.0
M12x1.75	8.00-10.50	15.50	15.70	15.47	2.23	22.8	33.7	16.4	3 RAD	SM12-10.5

Note 1: The product on this page is made from Steel ("S" prefix in product code) with Cadmium plating. It is also available in Stainless Steel ("SS" for the prefix), Aluminum ("A" for the prefix), or Alloy Steel ("CH" for the prefix).

Note 2: Other dimensions, finishes or design variations are available upon request.

Rivnut® – Flat Head Round Body Closed End

The Rivnut® – Flat Head Round Body Closed End has been designed to be used in round drilled or punched holes. It features a thick wall construction for riveting strength and a closed end to seal the threads. The Rivnut® is designed to be used with inch Grade 5 hardware. A grip ID mark is included on the head of the fastener for grip range identification.



Class 3B threads
Steel C1010-1008
Cadmium plating per QQ-P-416

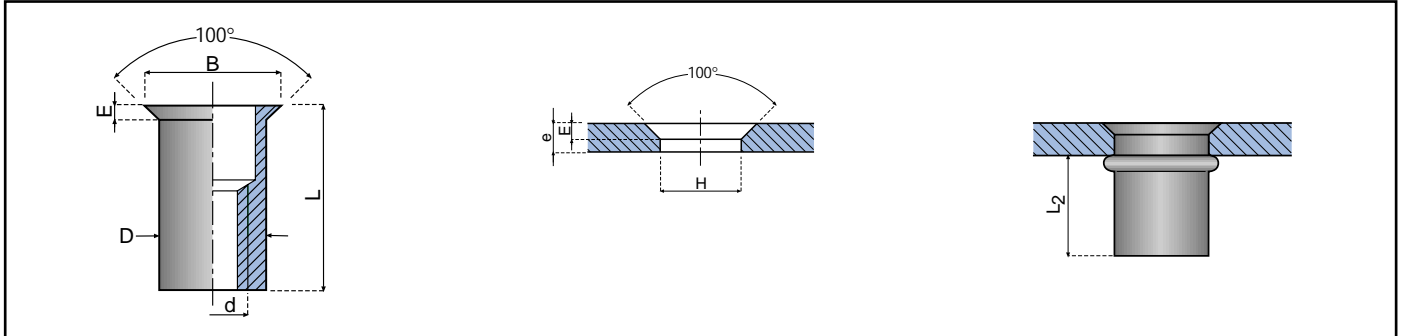
d	e	H		D	E	B	L	L ₂	Grip ID Mark	Product Code
		Hole Size Min.	Hole Size Max.							
6-32	0.010-0.075	0.190	0.193	0.189	0.032	0.325	0.657	0.490	1 RAD	S6B75
6-32	0.075-0.120	0.190	0.193	0.189	0.032	0.325	0.657	0.440	2 RAD	S6B120
8-32	0.010-0.075	0.222	0.226	0.221	0.032	0.357	0.657	0.490	1 RAD	S8B75
8-32	0.075-0.120	0.222	0.226	0.221	0.032	0.357	0.657	0.440	3 RAD	S8B120
8-32	0.120-0.160	0.222	0.226	0.221	0.032	0.357	0.782	0.520	5 RAD	S8B160
10-32	0.010-0.080	0.251	0.256	0.250	0.038	0.406	0.819	0.630		S10B80
10-32	0.080-0.130	0.251	0.256	0.250	0.038	0.406	0.881	0.640	1 RAD	S10B130
10-32	0.130-0.180	0.251	0.256	0.250	0.038	0.406	0.929	0.640	2 RAD	S10B180
10-32	0.180-0.230	0.251	0.256	0.250	0.038	0.406	0.991	0.645	3 RAD	S10B230
1/4-20	0.020-0.080	0.333	0.338	0.332	0.058	0.475	0.995	0.760		S25B80
1/4-20	0.080-0.140	0.333	0.338	0.332	0.058	0.475	1.058	0.760	1 RAD	S25B140
1/4-20	0.140-0.200	0.333	0.338	0.332	0.058	0.475	1.120	0.760	2 RAD	S25B200
1/4-20	0.200-0.260	0.333	0.338	0.332	0.058	0.475	1.183	0.755	3 RAD	S25B260
5/16-18	0.030-0.125	0.414	0.423	0.413	0.062	0.665	1.249	0.940		S31B125
5/16-18	0.125-0.200	0.414	0.423	0.413	0.062	0.665	1.343	0.960	1 RAD	S31B200
5/16-18	0.200-0.275	0.414	0.423	0.413	0.062	0.665	1.405	0.950	2 RAD	S31B275
5/16-18	0.275-0.350	0.414	0.423	0.413	0.062	0.665	1.499	0.965	3 RAD	S31B350
3/8-16	0.030-0.115	0.491	0.500	0.490	0.088	0.781	1.369	1.020		S37B115
3/8-16	0.115-0.200	0.491	0.500	0.490	0.088	0.781	1.463	1.030	1 RAD	S37B200
3/8-16	0.200-0.285	0.491	0.500	0.490	0.088	0.781	1.556	1.040	2 RAD	S37B285
3/8-16	0.285-0.370	0.491	0.500	0.490	0.088	0.781	1.650	1.050	3 RAD	S37B370
1/2-13	0.050-0.150	0.626	0.635	0.625	0.085	0.906	1.413	1.030		S50B150
1/2-13	0.150-0.250	0.626	0.635	0.625	0.085	0.906	1.538	1.055	1 RAD	S50B250
1/2-13	0.250-0.350	0.626	0.635	0.625	0.085	0.906	1.647	1.060	2 RAD	S50B350
1/2-13	0.350-0.450	0.626	0.635	0.625	0.085	0.906	1.756	1.070	3 RAD	S50B450

Note 1: The product on this page is made from Steel ("S" prefix in product code) with Cadmium plating. It is also available in Stainless Steel ("SS" for the prefix), Aluminum ("A" for the prefix), or Alloy Steel ("CH" for the prefix).

Note 2: Other dimensions, metric thread sizes, finishes or design variations are available upon request.

Rivnut® – Countersunk Head Round Body

The Rivnut® – Countersunk Head Round Body has been designed to be used in round drilled or punched holes. It features a thick wall construction for high push out and riveting strength. It also includes a 100° countersunk head for applications requiring a completely flush installation. A grip ID mark is included on the head of the fastener for grip range identification.



Class 3B threads
Steel C1010-1008
Cadmium plating per QQ-P-416

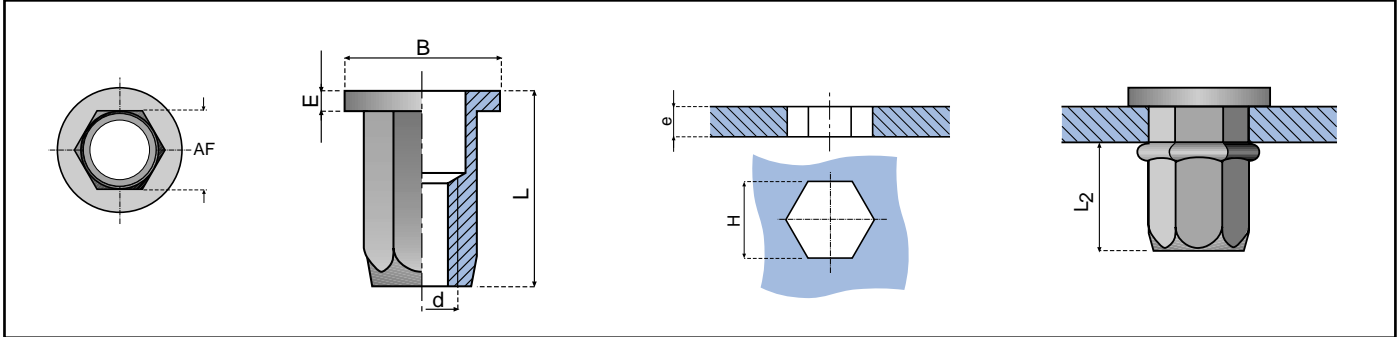
d	e	H		D Body Diameter Max.	E Head Height Ref.	B Head Diameter Ref.	L Overall Length Ref.	L ₂ Installed Length Ref.	Grip ID Mark	Product Code
		Hole Size Min.	Hole Size Max.							
6-32	0.065-0.106	0.190	0.193	0.189	0.063	0.323	0.500	0.325		S6-106
6-32	0.106-0.161	0.190	0.193	0.189	0.063	0.323	0.500	0.280	2 RAD	S6-161
8-32	0.065-0.106	0.222	0.226	0.221	0.063	0.355	0.500	0.325		S8-106
8-32	0.106-0.161	0.222	0.226	0.221	0.063	0.355	0.500	0.280	2 RAD	S8-161
8-32	0.161-0.201	0.222	0.226	0.221	0.063	0.355	0.562	0.290	4 RAD	S8-201
10-32	0.065-0.116	0.251	0.256	0.250	0.065	0.391	0.578	0.395		S10-116
10-32	0.116-0.166	0.251	0.256	0.250	0.065	0.391	0.625	0.385	1 RAD	S10-166
10-32	0.166-0.216	0.251	0.256	0.250	0.065	0.391	0.687	0.400	2 RAD	S10-216
10-32	0.216-0.266	0.251	0.256	0.250	0.065	0.391	0.734	0.390	3 RAD	S10-266
1/4-20	0.089-0.151	0.333	0.338	0.332	0.089	0.529	0.687	0.440		S25-151
1/4-20	0.151-0.211	0.333	0.338	0.332	0.089	0.529	0.750	0.440	1 RAD	S25-211
1/4-20	0.211-0.271	0.333	0.338	0.332	0.089	0.529	0.812	0.440	2 RAD	S25-271
1/4-20	0.271-0.331	0.333	0.338	0.332	0.089	0.529	0.875	0.435	3 RAD	S25-331
5/16-18	0.106-0.181	0.414	0.423	0.413	0.104	0.656	0.844	0.540		S31-181
5/16-18	0.181-0.256	0.414	0.423	0.413	0.104	0.656	0.937	0.560	1 RAD	S31-256
5/16-18	0.256-0.331	0.414	0.423	0.413	0.104	0.656	1.000	0.550	2 RAD	S31-331
5/16-18	0.331-0.406	0.414	0.423	0.413	0.104	0.656	1.093	0.565	3 RAD	S31-406
3/8-16	0.125-0.211	0.491	0.500	0.490	0.124	0.770	0.938	0.580		S37-211
3/8-16	0.211-0.296	0.491	0.500	0.490	0.124	0.770	1.031	0.590	1 RAD	S37-296
3/8-16	0.296-0.381	0.491	0.500	0.490	0.124	0.770	1.125	0.600	2 RAD	S37-381
3/8-16	0.381-0.466	0.491	0.500	0.490	0.124	0.770	1.219	0.615	3 RAD	S37-466
1/2-13	0.125-0.226	0.626	0.635	0.625	0.124	0.906	0.984	0.610		S50-226
1/2-13	0.226-0.326	0.626	0.635	0.625	0.124	0.906	1.094	0.620	1 RAD	S50-326
1/2-13	0.326-0.426	0.626	0.635	0.625	0.124	0.906	1.218	0.640	2 RAD	S50-426
1/2-13	0.426-0.526	0.626	0.635	0.625	0.124	0.906	1.312	0.635	3 RAD	S50-526

Note 1: The product on this page is made from Steel ("S" prefix in product code) with Cadmium plating. It is also available in Stainless Steel ("SS" for the prefix), Aluminum ("A" for the prefix), or Alloy Steel ("CH" for the prefix).

Note 2: Other dimensions, metric thread sizes, finishes or design variations are available upon request.

Rivnut® – Flat Head Hex Body (inch)

The Rivnut® – Flat Head Hex Body is provided in both a standard and heavy hex design. The heavy hex design features a larger body diameter that results in increased thread strength and torque capability. The hex body design provides the ultimate in spin-out resistance when used in a hex hole. The Rivnut® is designed to be used with Grade 5 mating hardware. A grip ID mark is included on the head of the fastener for grip range identification.



Class 3B threads
Steel C1010-1008
Cadmium plating per QQ-P-416

STANDARD HEX

d	e	H		AF	E	B	L	L ₂	Grip ID Mark	Product Code
		Hole Size	Across Flats							
Thread Size	Grip Range	Min.	Max.	Across Flats Max.	Head Height Ref.	Head Diameter Ref.	Overall Length Ref.	Installed Length Ref.		
10-32	0.010-0.085	0.224	0.229	0.223	0.043	0.344	0.387	0.200		S10H85
10-32	0.085-0.135	0.224	0.229	0.223	0.043	0.344	0.449	0.210	1 RAD	S10H135
1/4-20	0.020-0.085	0.297	0.302	0.296	0.043	0.437	0.449	0.245		S25H85
1/4-20	0.085-0.145	0.297	0.302	0.296	0.043	0.437	0.512	0.250	1 RAD	S25H145
5/16-18	0.030-0.105	0.369	0.374	0.368	0.048	0.562	0.610	0.375		S31H105
5/16-18	0.105-0.175	0.369	0.374	0.368	0.048	0.562	0.688	0.380	1 RAD	S31H175
3/8-16	0.030-0.115	0.438	0.443	0.437	0.058	0.656	0.683	0.400		S37H115
3/8-16	0.115-0.205	0.438	0.443	0.437	0.058	0.656	0.776	0.405	1 RAD	S37H205

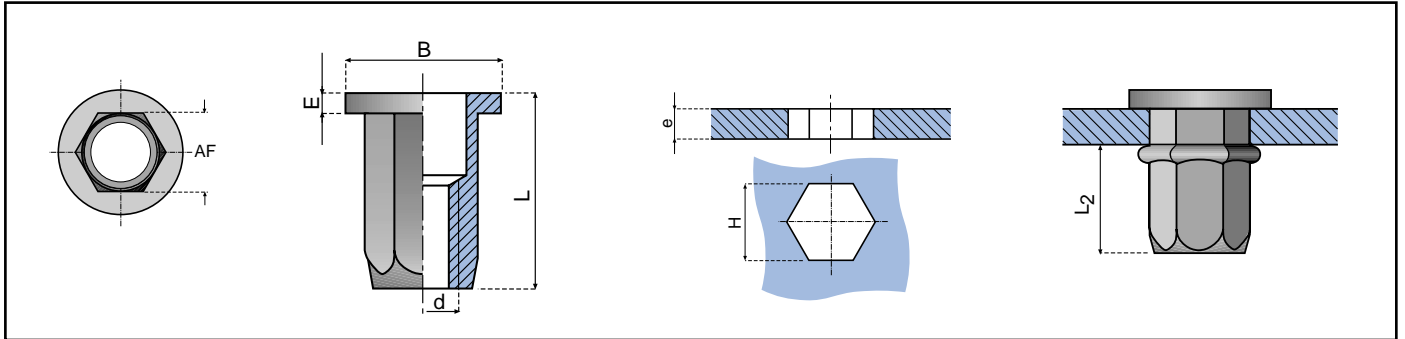
HEAVY HEX

1/4-20	0.020-0.080	0.313	0.318	0.312	0.058	0.469	0.558	0.340		S25H80
1/4-20	0.080-0.150	0.313	0.318	0.312	0.058	0.469	0.636	0.345	1 RAD	S25H150
5/16-18	0.020-0.100	0.398	0.403	0.397	0.062	0.594	0.687	0.405		S31H100
5/16-18	0.100-0.180	0.398	0.403	0.397	0.062	0.594	0.765	0.405	1 RAD	S31H180
3/8-16	0.020-0.125	0.469	0.478	0.468	0.088	0.688	0.791	0.450		S37H125
3/8-16	0.125-0.230	0.469	0.478	0.468	0.088	0.688	0.900	0.450	1 RAD	S37H230

Note 1: Other dimensions, finishes or design variations are available upon request.

Rivnut® – Flat Head Hex Body (metric)

The Rivnut® – Flat Head Hex Body provides the ultimate in spin-out resistance when used in a hex hole. The Rivnut® is designed to be used with metric Class 8.8 mating hardware. A grip ID mark is included on the head of the fastener for grip range identification.



Class 6H threads
Steel C1010-1008
Cadmium plating per QQ-P-416

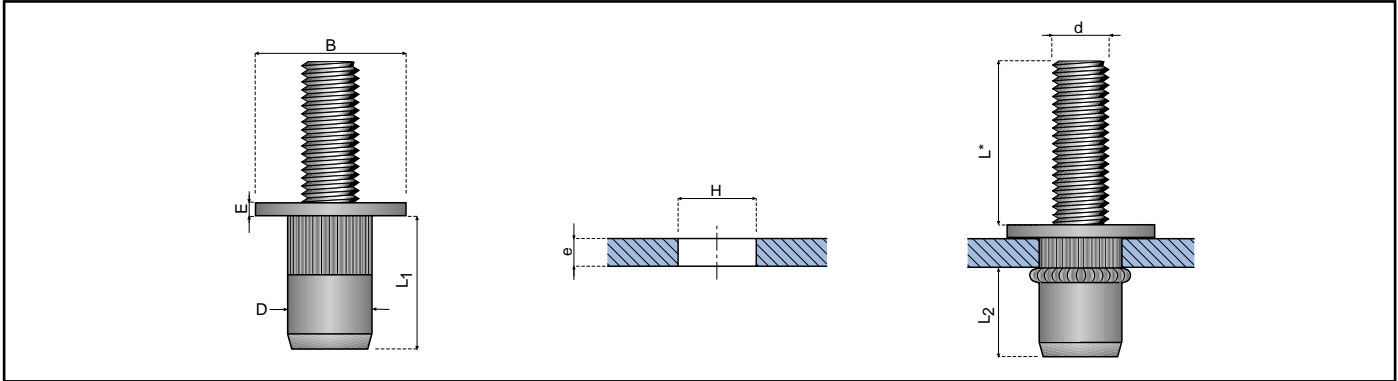
STANDARD HEX

d	e	H		AF	E	B	L	L ₂	Grip ID Mark	Product Code
		Hole Size Across Flats								
Thread Size	Grip Range	Min.	Max.	Max.	Head Height Ref.	Head Diameter Ref.	Overall Length Ref.	Installed Length Ref.		
M5x0.8	0.50-2.15	6.36	6.50	6.35	1.09	9.5	11.4	6.7		SM5H2.15
M5x0.8	2.15-3.55	6.36	6.50	6.35	1.09	9.5	13.0	6.7	1 RAD	SM5H3.55
M6x1.0	0.50-2.15	7.54	7.66	7.52	1.09	11.1	11.4	6.2		SM6H2.15
M6x1.0	2.15-3.65	7.54	7.66	7.52	1.09	11.1	13.0	6.2	1 RAD	SM6H3.65
M8x1.25	0.50-2.55	10.11	10.23	10.08	1.57	15.1	17.4	10.4		SM8H2.55
M8x1.25	2.55-4.55	10.11	10.23	10.08	1.57	15.1	19.4	10.4	1 RAD	SM8H4.55
M10x1.50	0.75-2.95	11.91	12.14	11.89	1.57	17.5	17.5	13.1		SM10H2.95
M10x1.50	2.95-5.20	11.91	12.14	11.89	1.57	17.5	19.8	13.1	1 RAD	SM10H5.20

Note 1: Other dimensions, finishes or design variations are available upon request.

Rivstud® – Flat Head Round Body

The Rivstud® – Flat Head Round Body features a knurled body and is designed to be used in round drilled or punched holes. The Rivstud® features a Rivnut® body with a welded-in-place mating stud and can be used as an alternative to weld or clinch studs. It is also useful to support heavy components on a vertical surface before final assembly is made. The Rivstud® is designed to be used with mating Grade 5 or metric Class 8.8 hardware.



Metric Class 6G threads
 Steel shell C1010-1008
 Steel stem
 Zinc yellow dichromate plating per ASTM B633 Fe/Zn 8 TY11

d	e	H		E	B		L ₂	L*	
Thread Size	Grip Range	Hole Size Min.	Hole Size Max.	Head Height Ref.	Head Diameter Ref.	Length Max.	Installed Length Max.	Installed Stud Length Ref.	Product Code
M5x0.8	0.5-3.0	7.0	7.1	1.0	10.0	11.0	5.5	15.0	37327050115
M5x0.8	0.5-3.0	7.0	7.1	1.0	10.0	11.0	5.5	20.0	37327050120
M5x0.8	0.5-3.0	7.0	7.1	1.0	10.0	11.0	5.5	25.0	37327050125
M6x1.0	0.5-3.0	9.0	9.1	1.5	13.0	13.0	7.5	15.0	37327060115
M6x1.0	0.5-3.0	9.0	9.1	1.5	13.0	13.0	7.5	20.0	37327060120
M6x1.0	0.5-3.0	9.0	9.1	1.5	13.0	13.0	7.5	25.0	37327060125
M8x1.25	0.5-3.0	11.0	11.1	1.5	16.0	14.0	8.5	20.0	37327080120
M8x1.25	0.5-3.0	11.0	11.1	1.5	16.0	14.0	8.5	25.0	37327080125

*In min. grip to determine actual installed stud length subtract min. grip of part from the actual application grip and subtract that dimension from the installed stud length ref. dimension shown.

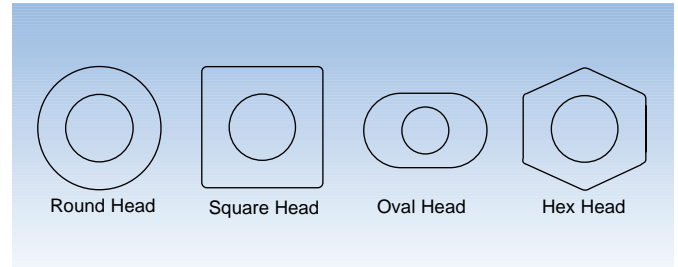
Note 1: Other dimensions, finishes or design variations are available upon request.

Rivnut® – Special Design Parameters

The standard Rivnut® fasteners shown in this catalog will meet a wide range of application requirements. When a special dimension, head shape or secondary feature is required. Bollhoff Rivnut® welcomes the opportunity to design a special Rivnut® fastener to meet customer requirements. Please see the basic special design parameters indicated below.

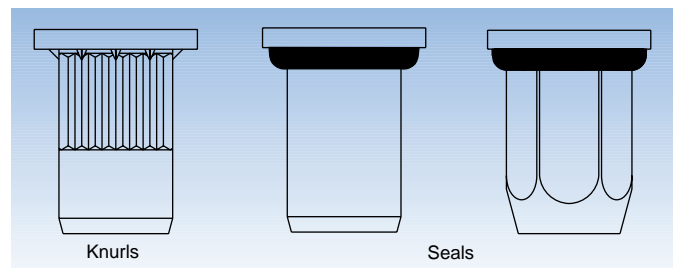
Head Shape or Size

Rivnut® heads can be produced in round, square, hex or oval to fit into corresponding recesses in the parent material to increase spinout resistance. Round head diameters can be increased to provide greater load-bearing surface. Head height can be increased to meet gasket-sealing requirements or be designed to meet requirements for compression limiting within the mating part.



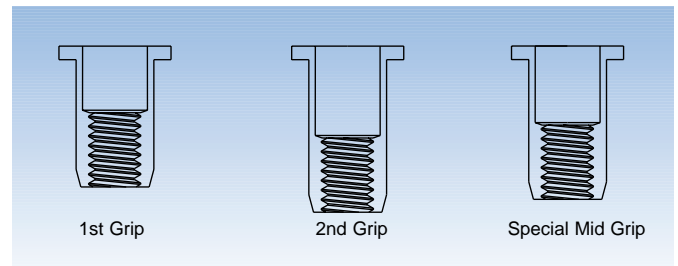
Underhead Knurls or Seals

Various underhead knurls can be incorporated under the head of the Rivnut® to increase spinout resistance. PVC foam seals can be pre-applied to the under head of the Rivnut® to provide a seal against water, air, dust and non petroleum-based liquids. Rubber “O” rings can be applied to an under head ring groove to seal petroleum-based liquids and certain chemicals.



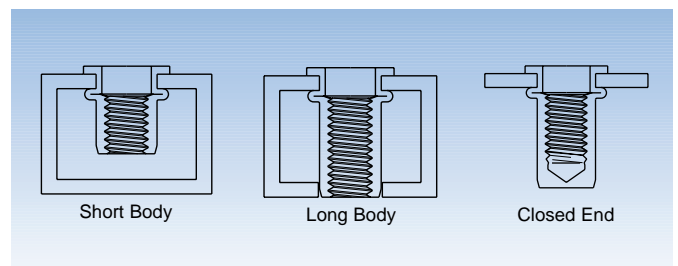
Grip Range

The grip range of the Rivnut® is set to specific minimum and maximum dimensions as shown in this catalog. The starting point of the grip range can be adjusted to meet application requirements, provide increased pull-out resistance or help to reduce the number of different grip fasteners required for the application. In the example at the right a 1st and 2nd grip part is shown. The special mid grip part can be designed to replace both standard parts.



Length and Closed Ends

The length of the Rivnut® can be reduced to allow the Rivnut® to fit into limited access applications or increased to provide additional threads. The length of the Rivnut® can also be increased to engage the opposite side of an extrusion to increase torsional stability. The Rivnut® can incorporate a closed end design to prevent leakage of air, gas, dust or water past the threads.



Finish

Finishes applied to the Rivnut® fastener should be of an electroplated process to assure dimensional control of the threads and adhesion to the body under the expansion loads of the backside flange. The standard finish for Rivnut® fasteners is zinc with yellow dichromate. Additional corrosion resistance can be provided using alloy electroplating finishes such as TinZinc or ZincNickel. Current technology of Dip Spin process coatings have had difficulty maintaining dimensional control on threads and adhesion issues on the body during installation. Bollhoff Rivnut® does not recommend Dip Spin process coatings.

Rivnut® – Special Designs

Examples of Rivnut® special design fasteners

Rivnut® with a large diameter head with under head and shank knurls provides large bearing surface and exceptional spin out in plastics. This fastener is ideal for applications in thermo plastic and other glass reinforced plastic materials.



Rivnut® square head with a rivet flange bore on the shank end enables this fastener to function as a threaded semi-tubular rivet. The rivet flange bore is expanded captivating the fastener in the parent material. Mating fasteners can then be threaded into the head and the shank end of the fastener.



Rivnut® with a special "Racetrack" head design fits into a rectangular recess to prevent spin-out resistance. This fastener also includes a closed end to prevent leakage through the internal threads.



Rivnut® with hex body and 7/16-20 threads for use in seat belt bracket applications. The 7/16-20 threads are the specified thread for seat belt bolt applications. The heavy hex body resists spin out forces applied by the mating shoulder bolt seat belt fastener.



Rivnut® with a secondary floating nut is ideal for applications with mating part alignment issues. This fastener also features a knurled body for increased spin out resistance and a secondary shear sleeve applied to the counterbore to increase shear strength.



Rivnut® with a pre-applied PVC foam sealed head is designed to seal against dust, water, air and non-petroleum based liquids. The PVC foam seal is bonded to the fastener and seals the circumference of the hole during the installation of the fastener.



Rivnut® with a forming head and recessed seal installs from the back side of the application and provides exceptional pull-out resistance. This fastener also includes a special recessed head with integrated seal to assure metal to metal contact of the flange to the parent material and sealing of the flange to the parent material.



Rivnut® PN – Plusnut® with a large diameter head and knurls under head provides exceptional spin-out and pull-out in plastics. This fastener is designed for use in blow molded plastics. The large head provides increased bearing surface for the mating part.



Rivnut® – Special Designs

Examples of Rivnut® special design fasteners

Rivnut® hex nut with rivet flange head can be installed with a press into applications with two-sided access. The hex body provides excellent spin-out resistance. Multiple fasteners can be installed with simple fixturing, hand loading and a press.



Rivnut® AV anti-vibration fastener is made from thermoplastic elastomer and is installed with the mating screw. It incorporates a steel washer molded into the head. The internal metal molded-in-place nut portion contacts the underside of the washer during tightening of the mating screw so clamp load can be achieved.



Rivnut® with under cut head and seal assures metal to metal contact and sealing against air, water, dust and non-petroleum based liquids. Metal to metal contact assures a “hard joint” in comparison to soft joint surface applied seals.



Rivnut® closed end and body grooves for use with epoxy potting compound for applications in paper, aluminum and plastic core honeycomb sandwich panels. The hole is drilled, surrounding hex cells are perforated and the epoxy is injected. The fastener is installed and the epoxy adheres to the grooves in the fastener.



Rivnut® with oval head and tapered shank. This fastener is used in a plastic radiator mounting structure. The oval head fits into a matching oval recess to prevent spin out. The smooth body eliminates stress fracturing concerns and is excellent for use in SMC plastic.



Rivnut® special with shank end rivet flange can be installed into a sandwich panel of honeycomb or styrofoam. Threading the mating fastener into the rivet flange end enables the load to be applied to the entire panel improving pull-out resistance.



Rivnut® Unilock® fasteners feature an end of shank crimped prevailing torque locking element that meets MIL-N-25027 thread locking requirements. The “keyed” underhead projection fits into a mating key hole slot in the parent material preventing spin out under prevailing torque thread locking.



Rivnut® Thin Head knurled fastener features a thin head design to install flush in a hole with a minimal chamfer. Body knurls provide additional spin-out resistance.



Rivnut® Power Tools

P 803 Spin Pull to Pressure Pneumatic/Hydraulic Tool

The P 803 tool installs the Rivnut® or Rivstud® by pull to pressure control. Once the pull to pressure force is set the P 803 will install the Rivnut® or Rivstud® into single, multiple or variable thickness materials without further adjustment.

■ Installation Sequence

- Press the Rivnut® or Rivstud® fastener threads against the tool mandrel for automatic spin on.
- Insert the fastener into the hole in the parent material and pull the trigger.
- The P 803 installs the fastener and automatically reverses.

■ Features

- Single stage trigger controls complete installation sequence
- Automatic timed reverse spin and stop for maximum speed
- Installs 20 to 30 pieces per minute
- Ergonomic grip and balance for operator comfort
- Weight: 4.4 lbs. (2.0kg)
- Max. Stroke: .275 in. (7,0mm)
- Max. Pull Force: 3800 lbs. (17kN)
- 80 PSI (5.5 BAR) of clean dry air required for operation

■ Tool Part Number: 2368 0301 000



P 330 Spin Pull to Stroke Pneumatic/Hydraulic Tool

The P 330 tool installs the Rivnut® and Rivstud® by pull to stroke distance control. The stroke of the tool is set to install the fastener in a specific material thickness.

■ Installation Sequence

- Press the Rivnut® or Rivstud® fastener threads against the tool mandrel for automatic spin on.
- Insert the fastener into the hole in the parent material and pull the lower trigger installing the fastener.
- Pull the upper reverse trigger completing the installation.

■ Features

- Rocker Style forward and reverse trigger
- Installs 10 to 15 pieces per minute
- Balanced for operator comfort
- Installs the widest range of Rivnut® and Rivstud® fasteners
- Weight: 6.2 lbs. (2.8kg)
- Max. Stroke: .275 in. (7,0mm)
- Max. Pull Force: 4,700 lbs. (21.0 kN)
- 75 PSI (5.2 BAR) of clean dry air required for operation

■ Tool Part Number: 2361 5301 000



Note 1: See page 31 for a fastener/tool selection guide

Note 2: Part Numbers for tools shown on this page are for the tool only. Specific pull up studs or mandrels and nose anvils to be used with different thread size fasteners can be ordered separately by contacting Bollhoff Rivnut® Inc. or our Authorized Distributor.

Rivnut® Power Tools

EPK Electronically Operated Spin Pull to Pressure Pneumatic/Hydraulic Tool

The EPK tool installs the Rivnut® or Rivstud® fastener by pull to pressure control. Once the pull to pressure force is set the EPK tool will install the fastener into single, multiple or variable thickness materials without further adjustment. The EPK tool features integrated process monitoring of stroke and pressure installation to assure quality installations.

■ Installation Sequence

- Press the Rivnut® or Rivstud® fastener against the tool mandrel for automatic spin on.
- Insert the fastener into the hole in the parent material and pull the trigger.
- The tool installs the fastener and automatically reverses.

■ Features

- Electronic Controls with process monitoring
- Installs 20 to 30 pieces per minute
- Available in pistol or inline version
- Tool Weight (pistol version): 5.1 lbs. (2.3 kg)
- Max. Stroke: .250 in. (6,5 mm)
- Max. Pull Force: 4,700 lbs. (21 kN)
- 90 PSI (6.0 BAR) of clean dry air
- 230V-single phase 50/60HZ



PNK Pneumatic Logic Operated Spin Pull to Pressure Pneumatic/Hydraulic Tool

The PNK tool installs the Rivnut® or Rivstud® fastener by pull to pressure control. Once the pull to pressure force is set the PNK tool will install the fastener into single, multiple or variable thickness materials without further adjustment. The PNK tool incorporates an air logic control module to assure proper installation.

■ Installation Sequence

- Press the Rivnut® or Rivstud® fastener against the tool mandrel for automatic spin on.
- Insert the fastener into the hole in the parent material and pull the trigger.
- The PNK tool installs the fastener and automatically reverses.

■ Features

- Pneumatic air logic controls
- Installs 20 to 30 pieces per minute
- Available in pistol or inline version
- Tool Weight (pistol version): 3.8 lbs. (1.7kg)
- Max. Stroke: .250 in. (6,5mm)
- Max. Pull Force: 4,700 lbs. (21 kN)
- 90 PSI (6.0 BAR) of clean dry air required for operation



Note 1: See page 31 for a fastener/tool selection guide

Note 2: Part Numbers for tools shown on this page are for the tool only. Specific pull up studs or mandrels and nose anvils to be used with different thread size fasteners can be ordered separately by contacting Bollhoff Rivnut® Inc. or our Authorized Distributor.

Rivnut® Power Tools

C 302 P Spin Pull to Stroke Pneumatic Tool

The C 302 P tool installs the Rivnut® or Plusnut® by pull to stroke distance control. Once the stroke distance is set, the tool will install the fastener into a specific material thickness. The C 302 P tool is completely pneumatic. The long stroke capability of the C 302 P enables it to install the Plusnut® fastener. The C 302 P tool may also be set up to install the fastener by pull to pressure upset.

■ Installation Sequence

- 1/4 turn the Rivnut® or Plusnut® fastener onto the tool mandrel.
- Place the fastener into the hole in the parent material and pull the trigger to the first stop for installation.
- Pull the trigger to the final stop to reverse from the installed fastener.

■ Features

- Installs both Rivnut® and Plusnut® fasteners
- Fully pneumatic tool for maintenance simplicity
- Installs 15 to 20 pieces per minute
- Weight: 6.1 lbs. (2.8 kg)
- Max. Stroke: .500 in. (12,7 mm)
- Max. Pull Force: 6000 lbs. (26.7 kN)
- 75 PSI (5.2 BAR) of clean lubricated air required for operation



C 302 H Inline Air Logic Spin Pull to Stroke Pneumatic Tool

The C 302 H Inline tool installs the Rivnut® or Plusnut® by pull to stroke distance control. Once the stroke distance is set the tool will install the fastener in a specific material thickness. The C 302 H tool is completely pneumatic and is controlled with air logic to assure proper installation. The tool is designed to be suspended over the application. The C 302 H Inline tool may also be set up to install the fastener by pull to pressure upset.

■ Installation Sequence

- Install the Rivnut® or Plusnut® onto the tool mandrel by pulling the trigger.
- Place the fastener into the hole in the parent material and pull the trigger again.
- The tool will install the fastener and automatically reverse.

■ Features

- Installs both Rivnut® and Plusnut® fasteners
- Fully pneumatic tool for maintenance simplicity
- Install 15 to 20 pieces per minute
- Weight of Tool: 7.2 lbs. (3.3 kg)
- Max. Stroke: .500 in (12,7 mm)
- Max. Pull Force: 6000 lbs. (26.7 kN)
- 75 PSI (5.2 BAR) of clean lubricated air required for operation



Note 1: See page 31 for a fastener/tool selection guide

Note 2: Part Numbers for tools shown on this page are for the tool only. Specific pull up studs or mandrels and nose anvils to be used with different thread size fasteners can be ordered separately by contacting Bollhoff Rivnut® Inc. or our Authorized Distributor.

Rivnut® Power Tools

C 362 Spin Pull to Stroke Pneumatic/Hydraulic Tool

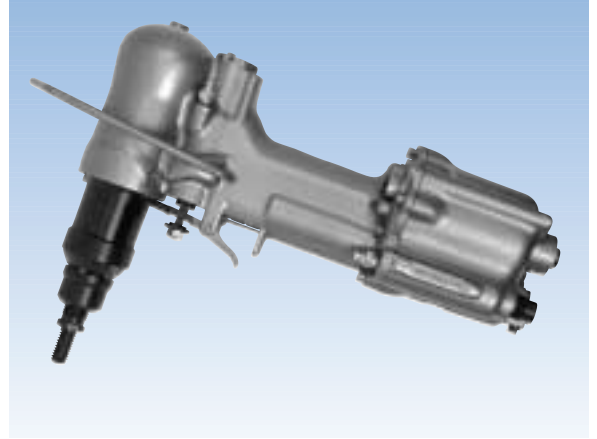
The C 362 tool installs the Rivnut® by pull to stroke distance control. Once the stroke distance is set the tool will install the Rivnut® in a specific material thickness. The C 362 tool features a 10,000 pound (44.5 kN) pulling force enabling it to install the largest size Rivnut® products.

■ Installation Sequence

- Install the Rivnut® onto the tool mandrel by squeezing the trigger to the first stop.
- Place the fastener into the hole in the parent material and pull and hold down the trigger to the final stop for installation and reverse. Release the trigger.

■ Features

- Weight: 11.5 lbs. (5.2 kg)
- Max. Stroke: .370 in. (9,4 mm)
- Max. Pull Force: 10,000 lbs. (44.5 kN)
- 80 PSI (5.5 BAR) of clean lubricated air required for operation



C 900 Spin Pull to Stroke Pneumatic/Hydraulic Tool

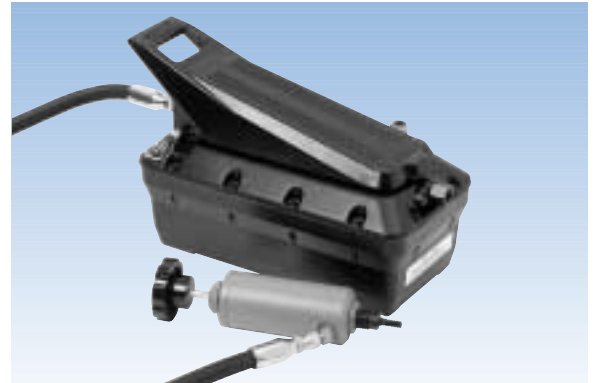
The C 900 tool installs the Rivnut® by pull to stroke distance control. The stroke distance is set and the tool installs the Rivnut® in a specific material thickness. The C 900 tool incorporates a hydraulic intensifier with a manual thread on thread off knob.

■ Installation Sequence

- Thread the Rivnut® fully onto the tool mandrel.
- Place the fastener into the hole and activate the pedal trigger on the intensifier unit.
- Unthread the tool mandrel from the installed Rivnut® by turning the knob.

■ Features

- Tool Weight: 4.2 lbs. (1.9 kg)
- Max. Stroke: .750 in. (19,0 mm)
- Max. Pull Force: 10,000 lbs. (44.5 kN)
- 80 PSI (5.5 BAR) of clean dry air required



C 350 Spin/Spin Torque Stall Pneumatic Tool

The C 350 tool installs the Rivnut® EZ product by rotational torque stall. A specific RPM tool is required for different thread size fasteners*. The tool will install the fastener into single, variable or multiple thickness materials. Rivnut® EZ fasteners must have an additional lubricant for installation with the C 350 tool.

■ Installation Sequence

- Thread the Rivnut® onto the tool mandrel.
- Place the fastener into the hole in the parent material and pull the trigger until the tool stalls.
- Push the reverse button on the top of the tool.

■ Features

- Tool Weight: 2.8 lbs. (1.3 kg)
- Tool RPM: 400, 600, 1000, 2200 RPM
- 80 PSI (5.5 BAR) of clean lubricated air required



Note 1: See page 31 for a fastener/tool selection guide

Note 2: Part Numbers for tools shown on this page are for the tool only. Specific pull up studs or mandrels and nose anvils to be used with different thread size fasteners can be ordered separately by contacting Bollhoff Rivnut® Inc. or our Authorized Distributor.

* The appropriate RPM tool will need to be selected for the different thread size fasteners. Please contact Bollhoff Rivnut® Inc. or our Authorized Distributor for details.

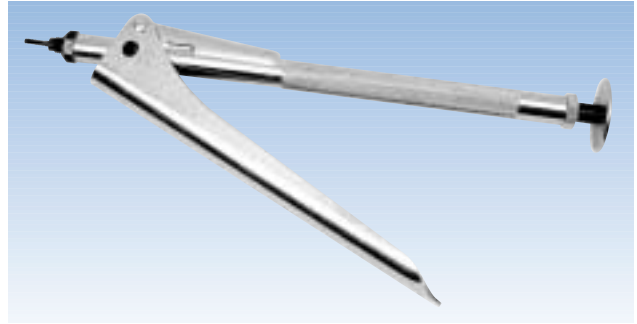
Rivnut® Hand Tools

C 6000 Lever Type Hand Tool

The C 6000 is a lever type hand tool that is operator pressure controlled and designed to install Rivnut® fasteners. It features a plunger rotation knob for spin on and spin off of the Rivnut®.

■ Installation Sequence

- Retract the plunger knob fully and hold the threads of the Rivnut® against the mandrel.
- While holding the Rivnut® steady push the plunger in threading the Rivnut® fully onto the mandrel with the head against the anvil.
- Place the Rivnut® into the hole and squeeze the handles of the tool together until the Rivnut® forms its backside flange.
- Pull the plunger from the tool unthreading from the installed Rivnut®.

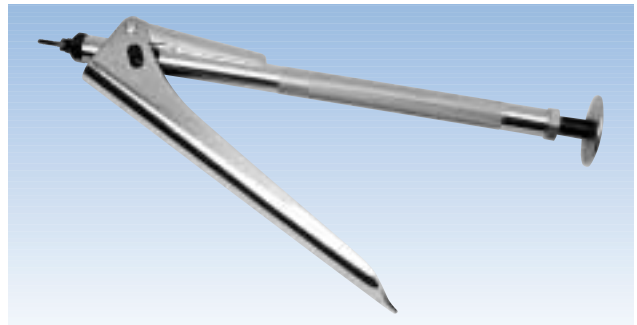


C 7000 Single Lever Type Hand Tool

The C 7000 is a lever type hand tool that is operator pressure controlled and designed to install Plusnut® fasteners. It features a plunger rotation knob for spin on and spin off of the Plusnut®.

■ Installation Sequence

- Retract the plunger knob fully and hold the threads of the Plusnut® against the tool mandrel.
- While holding the Plusnut® steady push the plunger in threading the Plusnut® fully onto the tool mandrel with the head against the anvil nosepiece.
- Place the Plusnut® into the hole and squeeze the handles of the tool together until the Plusnut® forms its backside legs against the parent material.
- Pull the plunger from the tool unthreading from the installed Plusnut®.

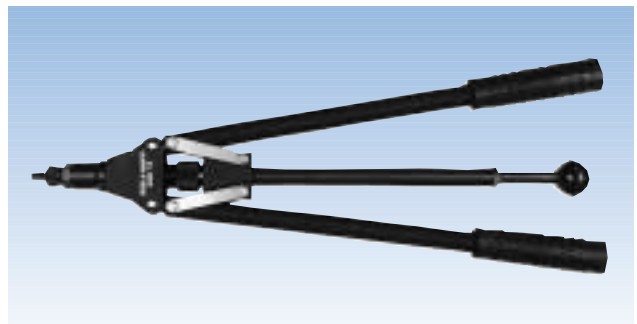


BRK 10 Double Lever Type Hand Tool

The BRK 10 is a double lever type hand tool that is stroke distance controlled by means of an adjustable stop. Once the stroke distance is set the tool will install the Rivnut® or Rivstud® in a single thickness material. The tool also features a plunger rotation knob for spin on and spin off of the product.

■ Installation Sequence

- Retract the plunger knob fully and hold the threads of the Rivnut® against the tool mandrel.
- While holding the Rivnut® steady push the plunger in threading the Rivnut® onto the tool mandrel with the Rivnut® head against the tool anvil nose piece.
- Place the Rivnut® into the hole and squeeze the handles of the tool together until the mechanical stroke stop of the tool is reached.
- Pull the plunger from the tool unthreading from the installed product.



Note 1: See page 31 for a fastener/tool selection guide

Note 2: Part Numbers for tools shown on this page are for the tool only. Specific pull up studs or mandrels and nose anvils to be used with different thread size fasteners can be ordered separately by contacting Bollhoff Rivnut® Inc. or our Authorized Distributor.

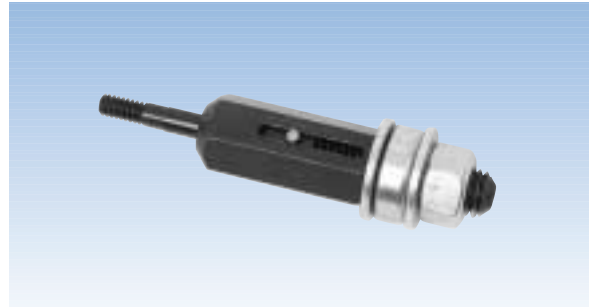
Rivnut® Hand Tools

C 1000 Wrench Type Stroke Tool

The C 1000 wrench type tool installs the Rivnut® and Plusnut® fasteners by using two simple wrenches. As the nut on the top of the tool is turned the shaft of the tool exerts a linear pull stroke on the fastener.

■ Installation Sequence

- Thread Rivnut® onto tool mandrel.
- Hold tool body with wrench.
- Turn nut with wrench until Rivnut® is installed.

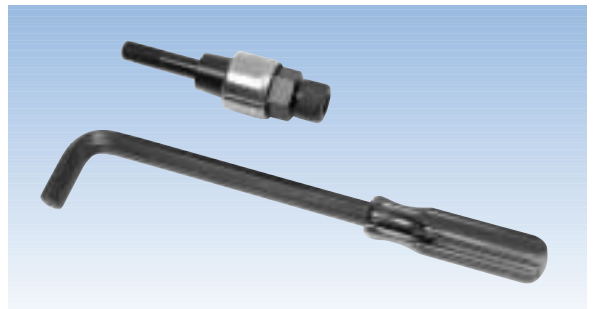


C 722 Wrench Type Stroke Tool

The C 722 wrench type tool installs the Rivnut® PN – Plusnut® using a simple wrench to hold the tool and a hex key to apply torque. As the hex key is turned the tool exerts a linear pull stroke to install the Rivnut®.

■ Installation Sequence

- Thread Rivnut® PN – Plusnut® onto tool mandrel.
- Hold hex nut with wrench.
- Tighten screw mandrel with hex key wrench.

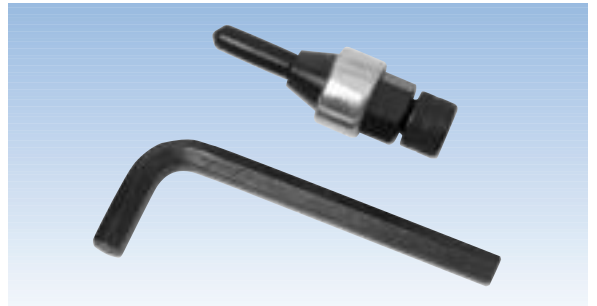


C 845 Wrench Type Stroke Tool

The C 845 wrench type tool installs the Rivnut® using a simple wrench to hold the tool and a hex key to apply torque. As the hex key is turned the tool exerts a linear pull stroke to install the Rivnut®.

■ Installation Sequence

- Thread Rivnut® onto tool mandrel.
- Hold hex nut with wrench.
- Tighten screw mandrel with hex key wrench.

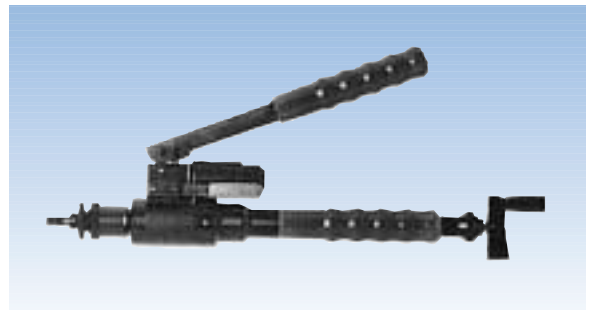


ES 51 Hydraulic Lever Pump Hand Tool

The ES 51 installs the Rivnut® by stroke distance control. The tool is operated by pumping a lever attached to a hydraulic cylinder that exerts a pull stroke on the fastener. Spin on and spin off is accomplished by rotating the central shaft spin knob. The ES 51 can exert enough force to install the largest sizes of Rivnut® fasteners easily.

■ Installation Sequence

- Hold Rivnut® to tool mandrel and turn the spin knob
- Pump lever to install Rivnut®
- Press release lever
- Reverse the spin knob



Note 1: See page 31 for a fastener/tool selection guide

Note 2: Part Numbers for tools shown on this page are for the tool only. Specific pull up studs or mandrels and nose anvils to be used with different thread size fasteners can be ordered separately by contacting Bollhoff Rivnut® Inc. or our Authorized Distributor.

Rivnut® Automation Tools

ASH Spin Pull to Pressure Pneumatic/Hydraulic Automation Tool

The ASH (Automatic Setting Head) installs the Rivnut® by pull to pressure control. Once the pressure is set the ASH will install the fastener into single, variable or multiple thickness materials without further adjustment. The ASH is available in "pick and place" and self feeding versions. The tool features process monitoring to assure proper part feeding, automatic thread on, stroke distance, and pressure pull. A single tool or complete system including process monitoring is available for robotic or fixtured applications.

■ Installation Sequence

- Rivnut® self feeds and is threaded onto tool mandrel.
- The fastener is placed in the hole and automatic installation and reversal is activated.

■ Features

- Installs 20 pieces per minute
- Auto feed or pick and place capability
- Full electronic controls and process monitoring
- Quick change mandrel requires no tools
- Axis compensator for robotic installations
- Slip shaft for cross-thread detection



CFA 803 Pressure Control Robotic Installation Tool

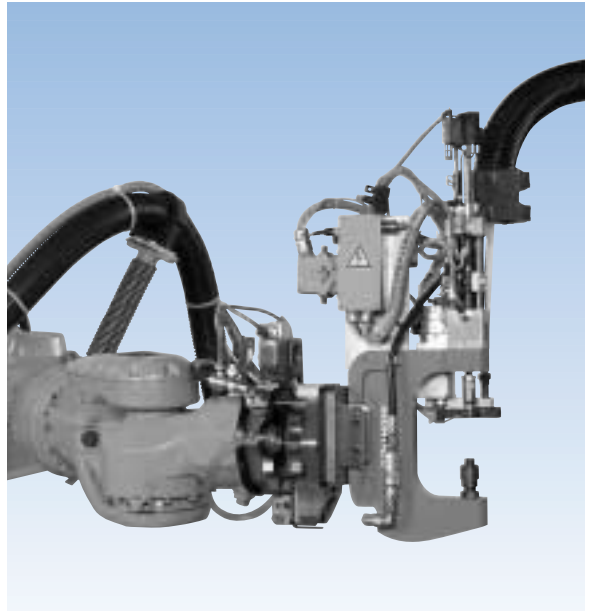
The CFA 803 installs the Rivnut® by applying a pressure force to its backside shank. Once the pressure is set the CFA 803 will install the Rivnut® in single, variable and multiple thickness materials without adjustment. The CFA 803 is self feeding and contains no threaded mandrel so spin-on spin-off time is eliminated resulting in 30 to 40 pieces per minute installation. Various C-Frames configurations are available to fit customer applications. Full process monitoring of part feeding, stroke and pressure installation assure quality installations

■ Installation Sequence

- Rivnut® self feeds and is placed on insertion shaft.
- The fastener is placed in the hole in the parent material and the rear hydraulic cylinder applies a pressure load to the rear shank of the Rivnut® installing it.
- Tool is cycled to the next location.

■ Features

- Self feeding system without thread on thread off mandrel
- Process monitoring for quality installations
- Installs product in any orientation
- Patented hex Rivnut® orientation device
- Installs 30 to 40 pieces per minute



Note 1: See page 31 for a fastener/tool selection guide

Note 2: Part Numbers for tools shown on this page are for the tool only. Specific pull up studs or mandrels and nose anvils to be used with different thread size fasteners can be ordered separately by contacting Bollhoff Rivnut® Inc. or our Authorized Distributor.

Fastener/Tool Selection Guide

The following Fastener/Tool Selection Guide indicates the fastener and thread size capability of each Bollhoff tool. This chart covers products made from Steel only. For assistance in selecting tools to install aluminum or stainless steel products please contact Bollhoff Rivnut® Inc. or our Authorized Distributor.

To use the guide please do the following:

- Locate the fastener type in the top row of the chart.
- Locate the tool you are interested in along the left hand column.
- Select the intersecting data block. Each block contains the range of thread sizes that the tool will install of that particular fastener type.
- An "X" in the data block indicates that the tool has not been designed to install that fastener type.

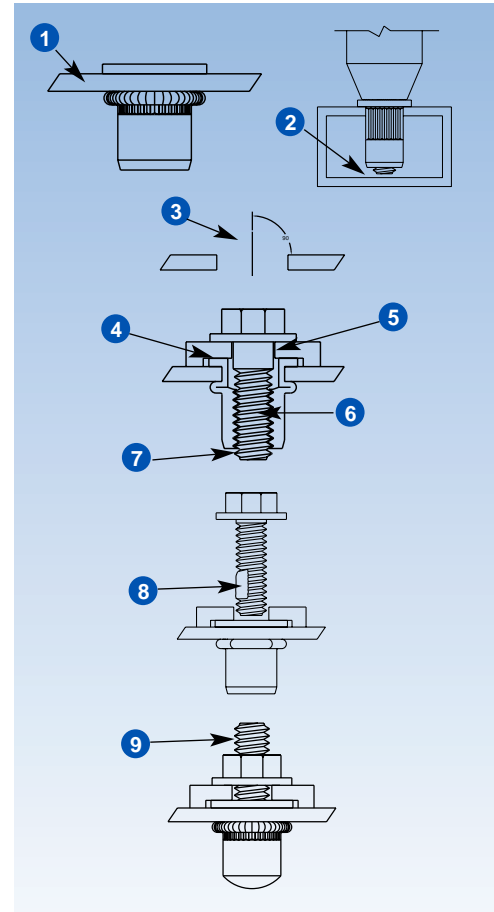
	Rivnut® EZ Round Body Steel	Rivnut® EZ Hex Body Steel	Rivnut® PN Plusnut Steel	Rivnut® PN Pre-bulbed Plusnut Steel	Rivnut® Round Body Steel	Rivnut® Hex Body Steel	Rivstud® Steel
P 803	#6 – 5/16 M3 – M8	#8 – 5/16 M4 – M8	X	X	#6 – 1/4 M3 – M6	#10 – 1/4 M5 – M6	M5 – M8
P 330	#6 – 3/8 M3 – M10	#8 – 3/8 M4 – M10	X	X	#6 – 5/16 M3 – M8	#10 – 5/16 M5 – M8	M5 – M8
PNK	#6 – 5/16 M3 – M8	#8 – 5/16 M4 – M8	X	X	#6 – 1/4 M3 – M6	#10 – 1/4 M5 – M6	M5 – M8
EPK	#6 – 3/8 M3 – M10	#8 – 3/8 M4 – M10	X	X	#6 – 5/16 M3 – M8	#10 – 5/16 M5 – M8	M5 – M8
C 302	#6 – 3/8 M3 – M10	#8 – 3/8 M4 – M10	#6 – 3/8 M4 – M10	#10 – 3/8 M6 – M10	#6 – 5/16 M3 – M8	#10 – 5/16 M5 – M8	X
C 362	#10 – 3/8 M5 – M10	#10 – 3/8 M5 – M10	X	X	#10 – 1/2 M5 – M12	#10 – 3/8 M5 – M10	X
C 900	#10 – 3/8 M5 – M10	#10 – 3/8 M5 – M10	#10 – 3/8 M5 – M10	#10 – 3/8 M6 – M10	#10 – 1/2 M5 – M12	#10 – 3/8 M5 – M10	X
C 350*	#6 – 3/8 M4 – M10	#8 – 3/8 M4 – M10	X	X	X	X	X
ASH	#6 – 3/8 M3 – M10	#8 – 3/8 M4 – M10	X	X	#6 – 5/16 M3 – M8	#10 – 5/16 M5 – M8	M5 – M8
CFA 803	#6 – 5/16 M3 – M8	#8 – 5/16 M4 – M8			#6 – 1/4 M3 – M6	#10 – 1/4 M5 – M6	M5 – M8
BRK 01	#6 – 1/4 M3 – M6	#8 – 1/4 M4 – M6	X	X	M3 – M5	X	X
C 6000	#6 – 1/4 M4 – M6	#8 – 1/4 M4 – M6	X	X	#6 – #10 M3 – M6	#10 M5 – M6	X
C 7000	#6 – #10 M3 – M5	#8 – #10 M4 – M5	#6 – #10 M4 – M5	#10	#6 – #10 M4 – M5	#10 M5	X
BRK 10	#10 – 3/8 M5 – M10	#10 – 3/8 M5 – M10	X	X	M5 – M8	M5 – M8	X
EXP	#6 – 3/8 M3 – M10	#8 – 3/8 M4 – M10	X	#10 – 3/8 M6 – M10	X	X	X
C 1000	X	X	#6 – 1/4 M4 – M6	#10 – 1/4 M6	X	X	X
C 722	5/16 – 3/8 M8 – M10	5/16 – 3/8 M8 – M10	5/16 – 3/8 M8 – M10	5/16 – 3/8 M8 – M10	5/16 – 1/2 M8 – M12	5/16 – 3/8 M8 – M10	X
C 845	#6 – 1/4 M3 – M6	#8 – 1/4 M4 – M6	X	X	#6 – 1/4 M3 – M6	#10 – 1/4 M5 – M6	X
ES 51	1/4 – 3/8 M6 – M10	1/4 – 3/8 M6 – M10	X	X	1/4 – 5/16 M6 – M8	1/4 – 5/16 M6 – M8	X

* The C 350 tool can be used to install the Rivnut® EZ round and hex body fasteners. The fasteners MUST have a lubrication added to them to be installed with this tool. Please contact Bollhoff Rivnut® Inc. or our Authorized Distributor for details.

Rivnut® Application Information

Optimum Joint Design

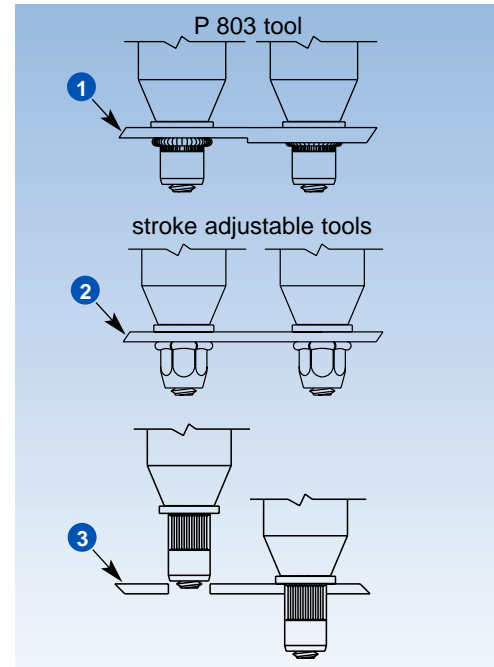
- 1 The parent material will be of a density and thickness to support the formation of the Rivnut's backside flange. See the Rivnut® selection matrix on page 33. Bollhoff suggests experimentation with various Rivnut® designs and grip ranges to determine the optimum joint design.
- 2 Parent material closed 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

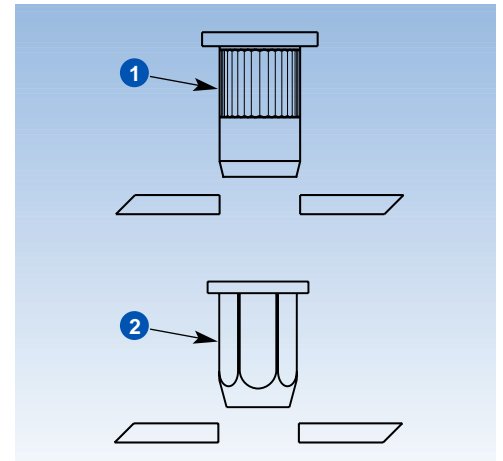
Automation

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			

Rivnut® Mechanical Properties

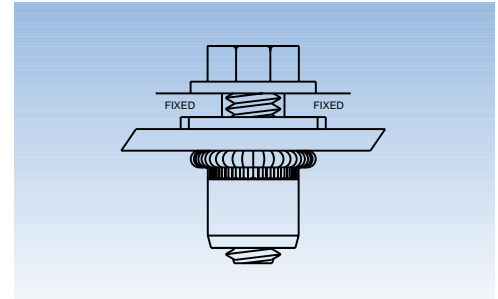
Please note that the test data provided are averages of multiple tests. This data is provided for comparative information only. Test data will vary with each actual application. Bollhoff suggests that tests are performed on actual application components before a Rivnut® fastener is specified.

Assembly Torques for Rivnut® and Rivstud® Fasteners

The following assembly torques are suggested for corresponding mating fasteners based on international fastening standards for Grade 5 and Metric Class 8.8 fasteners. Inch sizes shown in inch pounds, metric sizes shown in Newton meters.

Type	6-32	8-32	10-32	1/4-20	5/16-18	3/8-16	1/2-13
Steel Rivnut	12	22	36	75	156	276	660

Type	M4	M5	M6	M8	M10	M12
Steel Rivnut	2.5	5.0	8.6	21.0	42.0	72.0

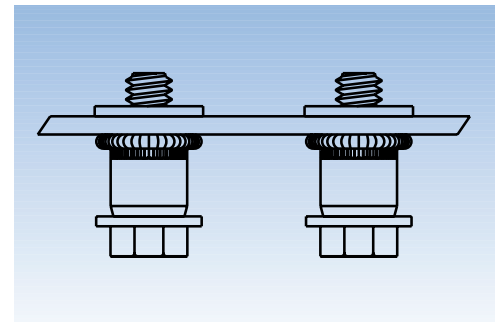


Spin-Out Torques for Steel Rivnut® Fasteners in Steel Sheet Metal

Inch sizes shown in inch pounds, metric sizes shown in Newton meters.

Type	Mat Tks	6-32	8-32	10-32	1/4-20	5/16-18	3/8-16	1/2-13
EZ Round	.030	19	19	21	39	60	230	
EZ Hex	.030		35	71	110	170	290	

Type	Mat Tks	M3	M4	M5	M6	M8	M10	M12
EZ Round	.76 mm	2.2	2.2	2.4	4.4	6.6	26.9	
EZ Hex	.76 mm		4.0	8.1	12.6	19.4	32.8	

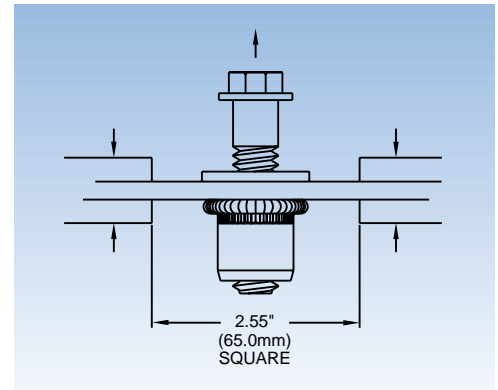


Pull-Out Strength for Rivnut® Fasteners in Steel Sheet Metals

Inch sizes shown in pounds, metric sizes shown in Kilo Newtons.

Type	Mat Tks	6-32	8-32	10-32	1/4-20	5/16-18	3/8-16	1/2-13
EZ Round	.030	330	330	385	480	500	590	
EZ Hex	.030		345	415	435	450	460	
Plusnut	.030	500	575	690	1215	1500	1675	

Type	Mat Tks	M3	M4	M5	M6	M8	M10	M12
EZ Round	.76 mm	1.47	1.47	1.71	2.14	2.22	2.62	
EZ Hex	.76 mm		1.54	1.85	1.93	2.00	2.05	
Plusnut	.76 mm		2.56	3.07	5.40	6.67	7.45	

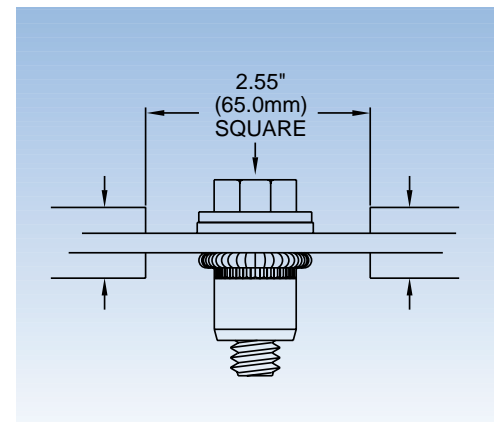


Push-Out Strength for Rivnut® Fasteners in .125 Thick Steel

Inch sizes shown in pounds, with metric sizes shown in Kilo Newtons.

Type	Mat Tks	1/4-20	5/16-18	3/8-16	1/2-13
EZ Round	.120	950	1650	1900	
EZ Hex	.120	1875	2150	2250	
Rivnut®	.120	2025	2800	3600	3775

Type	Mat Tks	M6	M8	M10	M12
EZ Round	3 mm	4.2	7.3	8.4	
EZ Hex	3 mm	8.3	9.5	10.0	
Rivnut®	3 mm	9.0	12.4	16.0	16.5



Quality Specifications

Bollhoff Rivnut® Inc. is certified to QS 9000/ISO 9001 quality standards

MS 27130	Aerospace Rivnut® Fasteners
NAS 1330	Aerospace Rivnut® Fastener
NAS 1329	Aerospace Rivnut® Fasteners
MIL-N-25027	Aerospace Rivnut® Fasteners with Thread Locking
MIL-I-45208	Inspection Requirements and Tests for Electronic and Electrical Equipment
MIL STD 202	Inspection Requirements and Tests for Electronic and Electrical Equipment
DOD-D-1000	Drawings, Engineering and Associated Lists
MIL-5-7742	Screw Threads, Standard Aeronautical
ASTM B 316	Rivets, Solid (Aluminum Alloy) Rivet Wire and Rod
ASTM B 134	Wire, Brass
ASTM A 493/A 580	Wire, Steel, Corrosion-Resisting
MIL-A-8625	Surfaces, Anodic Coatings for Aluminum and Aluminum Alloys
QQ-P-416	Plating, Cadmium (Electro Deposited)
ASTM B 633	Plating, Zinc (Electro Deposited)
QQ-P-416	Plating, Cadmium (Electro Deposited)
ASTM B 633	Plating, Zinc (Electro Deposited)
QQ-P-35	Passivation for Austenetic, Ferritic and Martensitic Corrosion-Resistant Steel
ASTM A 547	Seamfree Aircraft Quality Steel
DOP-P-16232	Zinc Phosphate Coating

Rivnut® Surface Finishes and Materials

- Zinc/Yellow Dichromate of .0003 (8um) thickness per ASTM B633 Fe/Zn 8 TYII.
- Zinc, tin alloy plating at .0003 (8um) thickness.
- Cadmium per QQ-P-416.
- Additional electroplated finishes can be applied to Rivnut® fasteners. See page 21 or contact Bollhoff Rivnut® Inc. or our Authorized Distributor for details.
- Steel C1010-1008
- Aluminum 6053
- Stainless Steel 302

Metric Conversion Formulas

Inch to Metric Conversion inch dim. x 25.4	Metric to Inch Conversion metric dim. x .03937	Pounds to Kilo Newtons pounds x .00445
Kilo Newtons to Pounds KN x 224.72	Inch Pounds to Newton Meters inch lbs. x .11298	Newton Meters to Inch Pounds Nm x 8.851
Foot Pounds to Newton Meters Foot lbs. x 1.3558	Newton Meters to Foot Pounds Nm x .7376	

Böllhoff International

Fastening and Assembly Technology

North America

Böllhoff Rivnut®, Inc., Kendallville, IN, USA; Branch – Portsmouth, NH
Böllhoff S.A. de C.V., Mexico City, Mexico

Central Europe

Böllhoff GmbH, Bielefeld with branches
in Bielefeld, Braunschweig, Dormagen, Hamburg,
Leipzig, Munich, Nuremberg and Stuttgart, Germany
Böllhoff Systemtechnik, Bielefeld, Germany
Böllhoff & Co., Montagetechnik, Bielefeld and Sonnewalde, Germany
German Powder Systems, Bielefeld, Germany
Böllhoff GmbH, Linz, Austria

Northern Europe

Böllhoff Fastenings Ltd., Birmingham, Great Britain

Western Europe

Böllhoff Oталu s.a., La Ravoire, Ivry, France
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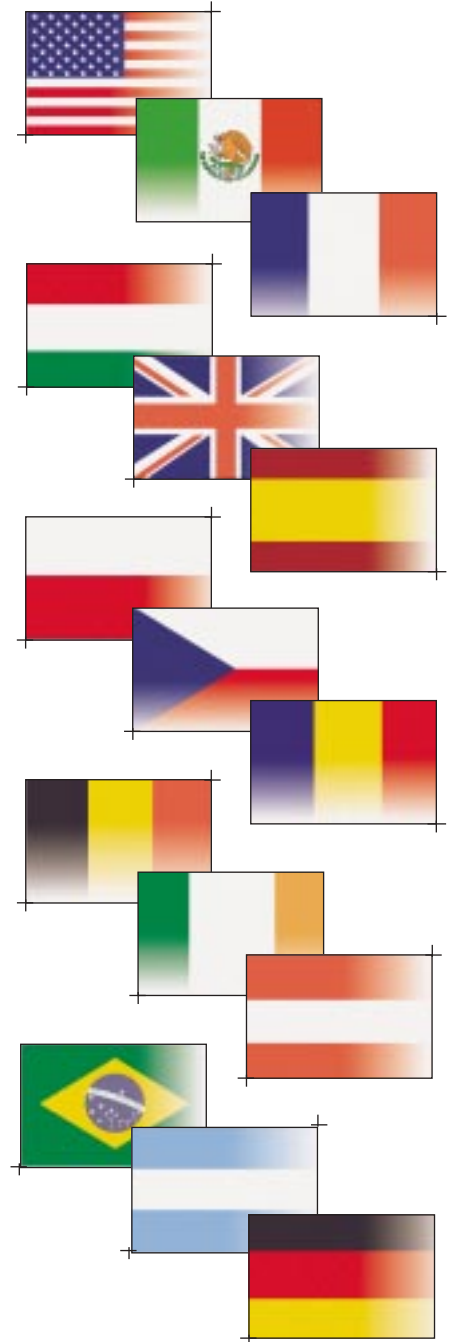
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