

BFGoodrich

Rivnut®-Plusnut®



Design Guide

Engineered Fastening Systems



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Engineered Fastening Systems



Research and Development

With over 50 years of experience, the BFGoodrich RIVNUT Research and Development Lab is constantly working on new challenges and concepts for the benefit of our customers. From computer-aided design to dynamic testing and producing product samples, BFGoodrich is dedicated to serving your needs with practical, dependable solutions for your fastening applications. That's why RIVNUTS are specified on everything from lawn furniture to space vehicles.



Customer Service

The mission of our highly-trained customer service professionals is to enter your order correctly, schedule production, and ship it on time. Additionally, BFG maintains world-wide inventories, which allow us to fill your requirements quickly and effectively.



Manufacturing/ Quality Assurance

Our new state-of-the-art manufacturing facility is dedicated to the production of RIVNUT fasteners and installation tools. BFG's high quality standards provide stringent control and traceability from incoming raw materials to finished products.



Our flexible manufacturing operation allows us to produce customized fasteners to meet your specific application requirements. BFGoodrich RIVNUTS can be produced from aluminum, brass, steel, stainless steel and other high-strength materials.

Tool Servicing

BFGoodrich's installation tools are designed specifically for the RIVNUT fastener. Our staff of highly trained technicians is dedicated to the maintenance and repair of BFG installation tools, assuring long tool life and reliability for your operation.



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BFGoodrich RIVNUT Fasteners . . .

The All-Job Fasteners

What is a RIVNUT?

A RIVNUT fastener is a tubular rivet with internal threads. It can be installed in seconds from one side of the work. No finishing work is required on a RIVNUT fastener once it is installed. It is ready to use with clean threads available for screw attachments.

How does a RIVNUT work?

A hand or power tool pull-up stud engages the threads of the RIVNUT fastener and exerts a pull, causing the shank to expand tightly against the material being fastened. This process is called "upsetting".

Where do you use RIVNUT Fasteners?

Everywhere a strong, easy-to-install blind fastener is required. For over 50 years, machinery, equipment, and aerospace and defense industries have used the efficient, quick RIVNUT fastener to solve tough fastening problems.

Why use a RIVNUT Fastener?

Because a one-piece blind rivet that provides a nut plate and requires no finishing solves problems. The RIVNUT fastener is made to exacting tolerances. You get far fewer assembly line hangups and much less downtime. There is a complete selection of types and materials. AND paired with BFGoodrich's fine installation tools, they make a reliable total fastening system. Backed by expert engineering, laboratories and application problem-solving, RIVNUT fasteners are available through knowledgeable representatives.



SPECIFICATIONS

BFGoodrich RIVNUT® fasteners and PLUSNUT® fasteners qualify under all, or part, of the following:

MIL-I-45208 MIL STD 202	Inspection system requirements test methods for electronic and electrical component parts.
DOD-D-1000	Drawings, engineering and associated lists.
MIL-S-7742	Screw threads, standard aeronautical.
ASTM B316 (except temper)	Rivets, solid (aluminum alloy), and aluminum alloy rivet wire and rod.
ASTM A576	Steel bars, carbon, cold finished and hot rolled (general purpose) steel: chemical composition and hardenability.
QQ-W-321	Wire, brass.
ASTM A276 ASTM A580	Wire, steel, corrosion-resisting.
MIL-A-8625	Surfaces anodic coatings, for aluminum and aluminum alloys.
QQ-P-416	Plating, cadmium (electrodeposited).
ASTM B633	Zinc coating, electrodeposited.
QQ-S-365	Silver plating, electrodeposited.
QQ-P-35	Passivation, treatments for austenetic, ferretic, and martensetic corrosion resisting steel (fastening devices).

BFGoodrich Rivnut brand metal fasteners meet the requirements of NAS1329, NAS1330, MS27130 standards, and a wide range of ordnance drawings. NAS1329 and NAS1330 standards include fasteners with thread locking requirements to MIL-N-25027. BFGoodrich fasteners meet these requirements. Copies of NAS1329 and NAS1330 are available upon request.



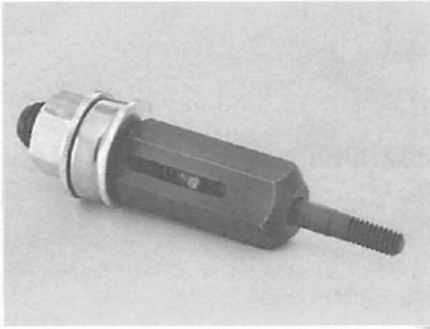
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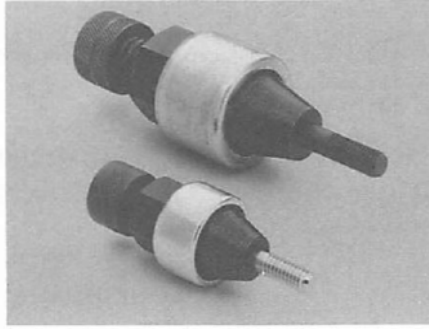
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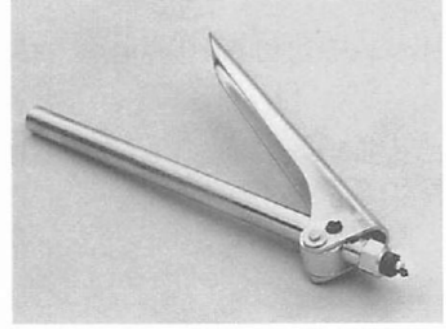
Types of RIVNUT® installation tools*



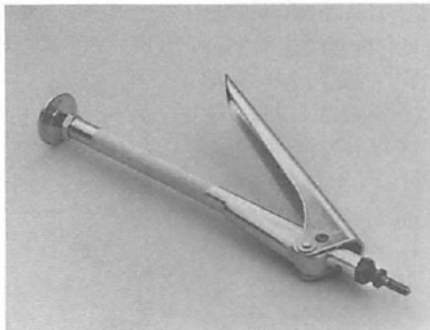
C-1000 (for field repair and experimental use)
Designed for Plusnut fasteners only.



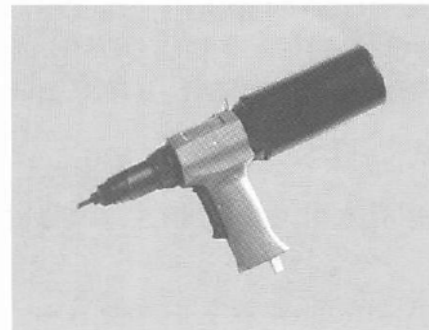
C-722/845 (for field repair and experimental use)
Designed for Rivnut and large sized Plusnut fasteners.



C-3600 (key seating tool)
Hand-operated speed header tool that nips a keyway in thin metal. For use with keyed Rivnut fasteners.



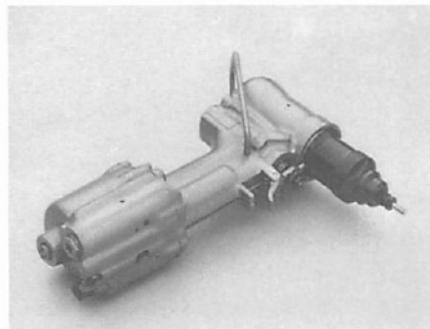
C-6000/7000 (for low production) C-6000 hand-operated speed header for Rivnut® fasteners. C-7000 hand-operated speed header for Plusnut® fasteners.



C-300 (for light to medium production) Air-operated hydraulic tool for light to medium production.



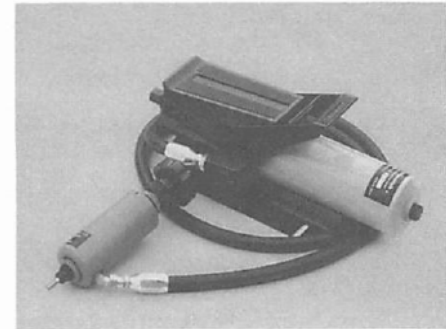
C-302 (for high production) Air-operated pistol grip header for high production use.



C-362 (for high production) Pneumatic-hydraulic header for high production use.



C-410 (for medium production) Electrically-operated, pistol grip header for medium production.



C-900 (for low production) Pneumatic-hydraulic hand-held header, with foot-operated pump for low production use.

BFGoodrich offers a variety of Rivnut® Plusnut® header tools from hand-operated for experimental, field repair, and light production use, to power tools for low, medium and high production use.

A maintenance and repair facility is dedicated to servicing BFGoodrich Rivnut® power

tools and employs skilled technicians who can not only service BFGoodrich installation tools, but can provide customers of Rivnut products with on-site tool set-up, maintenance, and repair instruction, which is all part of the Rivnut® total fastening system.

*Detailed tool information can be found on pages 36-43.

Types of RIVNUT® fasteners



1. Standard
The precision engineered blind fastener that has been solving problems for over 50 years.



2. Hex
Heavy duty for high thread strength and high torque-out resistance. Standard is lightweight for high tensile strength, smaller sizes.



3. PLUSNUT® fastener
For rigid fastening in sheet metal, fiberglass and plastics.



4. Ribbed
Resists torque-out and vibration.



5. Unilock® fastener
The crimped thread end keeps screws from loosening under vibration.



6. Seal-head
Alloy steel fasteners sealed by fuel-resistant rubber "O" rings. Approved for primary aircraft structures.



7. Closed end
Used to provide the critical seal that keeps gas and liquid from escaping through the fastening point. Keeps dirt out.



8. Keyed
For use where unusual torque or vibration is a problem.



9. Fillister head
For use where stand-off or spacer is required.



10. Thinhead Ribbed®
Eliminate countersunk hole preparation. Provides a flush fit. Gives sure anti-rotation.



11. LPR®
When fastener head height or protrusion is an important design consideration.



12. Teardrop®
Single lug fastener providing positive torque-out, without the need for a keyway or special hole preparation (Unilock® thread locking available).

Most types of BFGoodrich RIVNUT fasteners are available with flat heads or 100° countersunk heads. Although RIVNUT fasteners are most commonly made of steel, stainless steel, aluminum or brass, RIVNUTS can be supplied in a wide variety of special materials, thread forms, thread locking capabilities, head styles, sizes and lengths.



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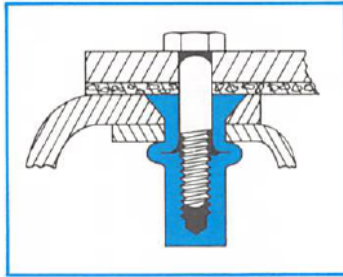
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Have a fastening problem? The RIVNUT® blind fastener is the solution.

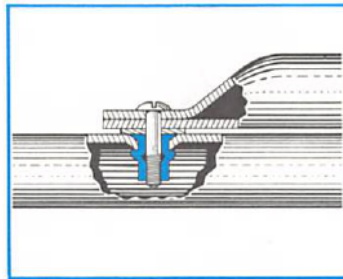
Oil reservoir cover

The closed end RIVNUT fastener extends into the reservoir, acts as a nut plate and requires no welding, grinding or tapping of holes.



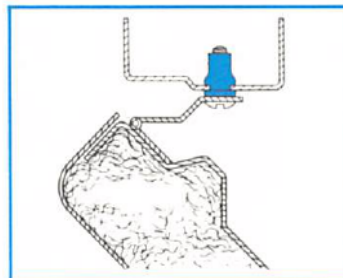
Folding furniture

The pivot point in tubular furniture is a natural spot for the quickly-installed, good-looking RIVNUT fastener.



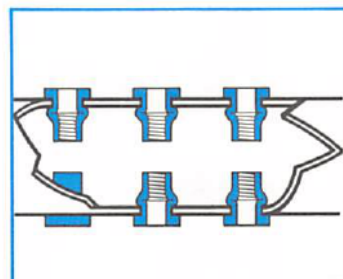
Appliance doors

RIVNUT fasteners can be installed after assembly and solve blind fastening problems.



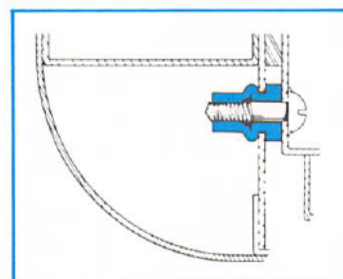
Satellite "paddle wheels"

The RIVNUT fastener, with its outstanding vibration resistance and reliability, holds the energy-producing solar cells on satellite arms.



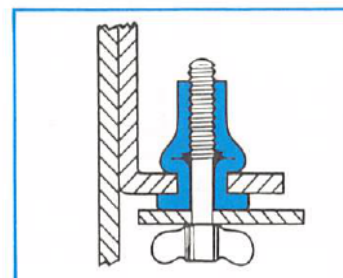
Power shovel cab

The RIVNUT fastener is used to simplify construction of the removable cab and provide easier servicing.



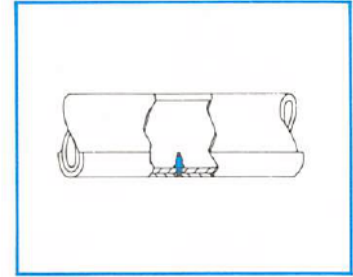
Air conditioners

A RIVNUT fastener under the bottom panel permits a wing nut attachment that provides easy accessibility to the fan and controls.



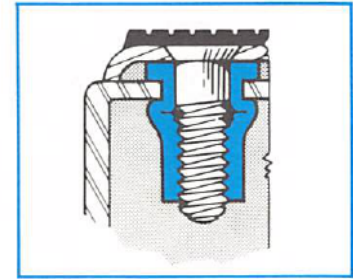
Helicopter landing skid

High strength, vibration-resistant UNILOCK rivets of alloy steel serve as a nut plate for the attachment of replaceable landing "shoes."



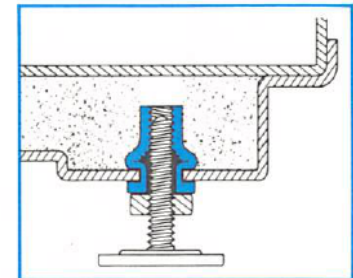
Boat step pads

The RIVNUT fastener in the coaming permits easy mounting and replacement, while installation from the interior gives neater design.



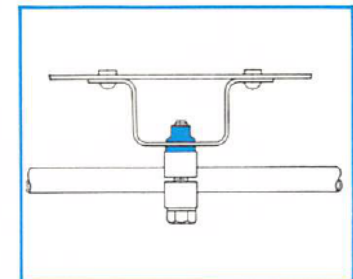
Appliance leveling feet

In metal too thin to tap, the RIVNUT fastener provides a nut plate for the screw that adjusts the feet.



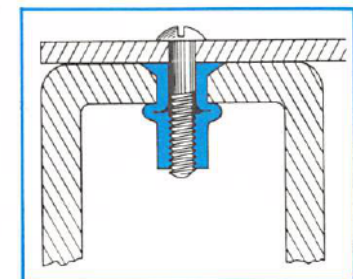
Aircraft hydraulic lines

The RIVNUT fastener anchors the hydraulic line support in an aircraft while weighing less and costing less than an anchor nut.



Overhead door hinges

The RIVNUT fastener, with 6 to 8 strong threads, makes an effective, low-cost nut plate in a hollow metal frame.



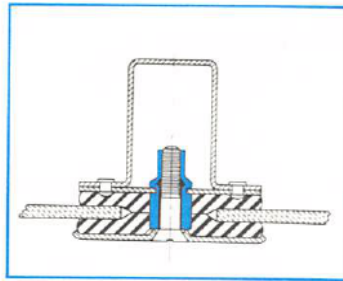
Bottle Sterilizers

RIVNUT fasteners secure terminals and provide water tight nut plates with fewer parts, which means faster production.



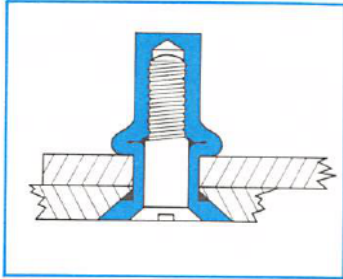
Helicopter window panels

The RIVNUT fastener secures the plastic window panel to the framework and forms a seal that withstands vibrations and weather.



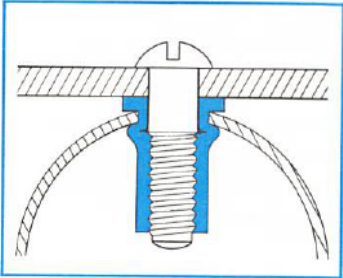
Aircraft fuel tanks

The "O" ring seal on a precision Seal-Head RIVNUT fastener provides the crucial liquid tight rivet.



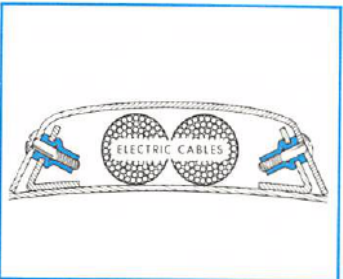
Barbecue cart

The flat panel is blind fastened securely to the tubular leg with a quick-installing RIVNUT fastener.



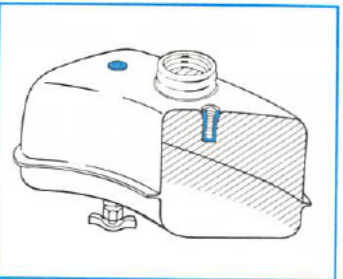
Missile cable covers

Vibration resistant RIVNUT fasteners provide sturdy and reliable nut plates for the control cable cover and allow easy accessibility.



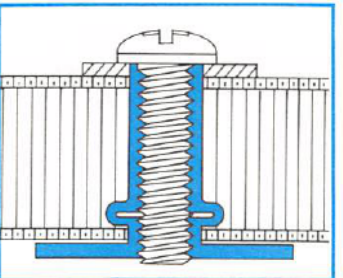
Mower fuel tanks

The closed end RIVNUT fastener makes a liquid-tight seal and provides a sturdy, multiple thread nut plate.



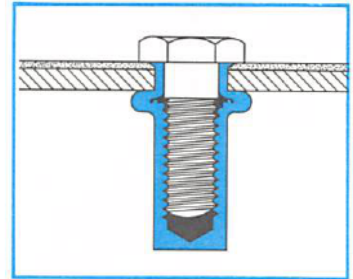
Aircraft interiors

The Maxihead™ Rivnut® with the thread locking feature secures aircraft galley equipment to honeycomb/sandwich walls, eliminating costly potted-in-place fasteners.



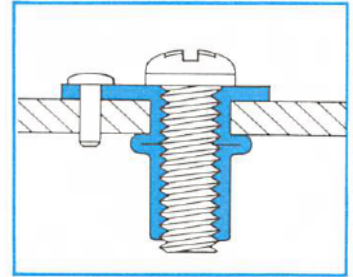
Printed-circuit board attachment

The Thinhead Ribbed Rivnut® fastener eliminates the need for counter-sunk holes.



Aircraft fuel-cleanout port access holes

The Teardrop™ Rivnut® fastener with the Unilock® thread locking feature is designed for high-torque anchor nut fastening applications, such as the attachment of cover-



plates on aircraft fuel-tank cleanout ports.

More RIVNUT fastener applications

Outdoor lighting fixtures

RIVNUT fasteners replace weldments on fixture-holding bands.

Instrument panels

Equipment is mounted securely to metal framework. RIVNUT fasteners are installed from one side of the work.

Equipment housing

The RIVNUT fastener acts as a nut plate for the attachment of a protective cover.

Automotive components

The steel HEX RIVNUT fastener, with positive torque-out resistance, offers exceptional strength and easy assembly.

Paper carton machinery

The RIVNUT fastener provides crucial flush application and strong, reusable threads.

Phone booth assembly

The RIVNUT fastener is used to fasten translucent plastic signs, kick plates and roof sections.

Outside mirror mount

The RIVNUT fastener provides a nut plate in metal that is too thin to tap.

Clutch mounting bracket

The high-strength HEX RIVNUT fastener acts as a bracket nut plate.

Room air conditioner

The vibration resistant RIVNUT fastener holds the fan motor to the sheet metal.

Power steering installation

The RIVNUT fastener with its high torque-out, high strength is needed for blind fastening power steering units to the sheet metal.

Automobile luggage racks

The low-cost RIVNUT fastener makes a nut plate that requires no finishing work.

Storm doors

Easy installation of RIVNUT fasteners solved the fastening problem on storm doors.

What's your problem?

For assistance in solving your application problem, send an inquiry to:

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2705 Marion Drive
Kendallville, IN 46755
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FAX 219-347-9429



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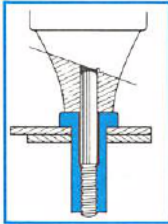
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RIVNUT® fastener installation is quick and easy.



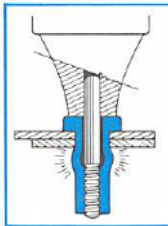
Step 1

The RIVNUT fastener is threaded onto the mandrel of an installation tool.



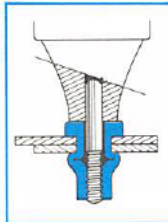
Step 2

The RIVNUT fastener, on the tool mandrel, is inserted into the hole drilled for installation.



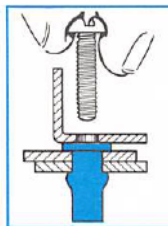
Step 3

The mandrel retracts and pulls the threaded portion of the RIVNUT fastener shank toward the blind side of the work, forming a bulge in the unthreaded shank area.



Step 4

The RIVNUT fastener is clinched securely in place. The mandrel is unthreaded, leaving the internal RIVNUT threads intact.



Blind nut plate

The properly installed RIVNUT fastener makes an excellent blind nut plate for simple screw attachments.

Surface installation



The flat head RIVNUT fastener is used when head thickness won't interfere with surface contour or possible attachments to the RIVNUT.

Flush installation



When the metal to be fastened is thinner than the RIVNUT head, and a flush surface installation is required, the metal may be dimpled and a flat head RIVNUT fastener used.

Countersunk installation



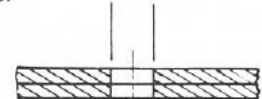
When the metal to be fastened is thicker than the head of the RIVNUT fastener, a 100° countersunk head RIVNUT may be used to give a flush surface installation.

Machine Countersunk Installation

A precision hole and countersink can best be obtained by these simple steps:

Step 1

Drill an undersized hole with a lead drill.



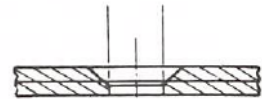
Step 2

Countersink the hole.



Step 3

Drill correct diameter hole with sharp finish drill.



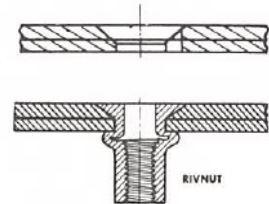
Step 4

If keyed RIVNUT fastener is to be used, cut a keyway with a round file or guided drill.



Step 5

Install RIVNUT fastener.

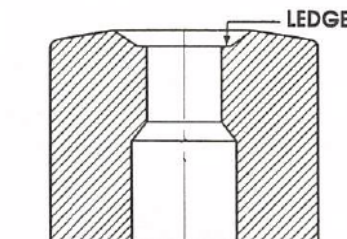
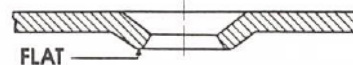


Dimple Countersink Installation

Metal thinner than a RIVNUT fastener head thickness requires a dimple countersink installation.

The ideal bulge on any RIVNUT fastener installation will always be formed against a flat under-surface. The bell-mouth that results from ordinary dimpling will not permit proper formation of the RIVNUT fastener bulge. RIVNUT fasteners upset against this sharp edge will form a weak bulge, a spread shank, and may possibly shear.

To provide a flat surface in the dimpling operation, a ledge at the bottom of the dimpling die must be used. The "flat" on the dimple will save costly deburring before dimpling and enables the RIVNUT fastener to form normally, providing maximum strength.



Dimple or press countersink hole. Note ledge at the bottom of the dimpling die.

Material/Equipment preparation procedures

Keyed RIVNUT fastener

Standard BFGoodrich Key Cutter tool will cut keyways in 3/32" aluminum 1/16" mild steel, 1/32" stainless steel. To cut keyways in metal too thick for this tool, use a small round file or guided drill. Drawings for guided drill bushings are available from BFGoodrich.

Standard BFGoodrich Key Cutter Tools are not available for metric thread RIVNUTS. For cutting keyways a round file or guided drill bushing may be used.

Drawings for Guided Drill Bushings are available from BFGoodrich. For flat head keyed RIVNUTS request Drawing SK4893. For countersunk head keyed RIVNUTS request Drawing SK4894.

Torque without key

Ribbed shank RIVNUT fasteners in round holes or keyless RIVNUT fasteners in hexagonal holes are excellent substitutes for keyed RIVNUT fasteners, and eliminate matching keys to keyways.

Important:

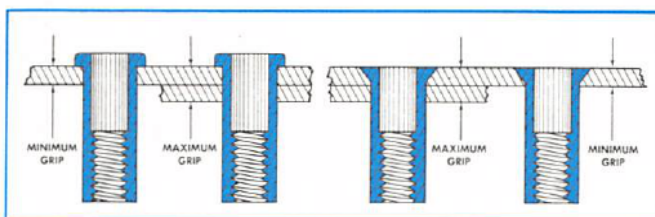
For ribbed shank RIVNUT fasteners to be effective, tensile strength of installation material must not exceed minimum RIVNUT fastener tensile strength. (See page 18.)

RIVNUT fastener removal procedure

Drill through the RIVNUT fastener head with the same size drill that drilled the original hole. The counter-bore will act as a drill guide. Punch out the shank. A fastener of the same size may now be installed in the hole.

Determining grip range

"Grip Range" is that zone of thickness best suited to the installation of a specific RIVNUT fastener. Maximum and minimum limits for each type of RIVNUT fasteners are found on later pages of this guide.



Grip range

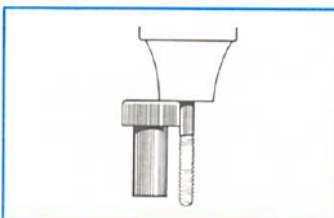
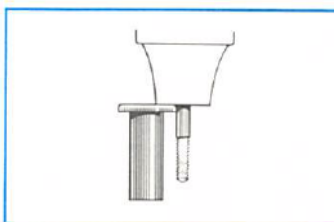
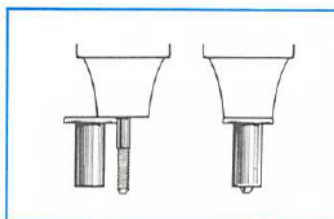
Maximum grip represents the greatest material thickness in which a specific RIVNUT fastener should be properly installed. Minimum grip represents the least thickness of material in which a specific RIVNUT fastener should be properly installed.

Important:

When material thickness (grip) approaches minimum or maximum for a given size RIVNUT fastener, a trial installation should be made.

Anvil adjustment

The anvil of the installation tool must be properly set to suit the RIVNUT fastener length. If the pull-up stud does not engage all the RIVNUT fastener threads, the fastener threads may be deformed or stripped.



Open end RIVNUT fastener

Chamfered end of the pull-up stud should extend just beyond the end of the RIVNUT fastener.

Closed end RIVNUT fastener

Thread RIVNUT fastener on pull-up stud all the way to the bottom of the threads. Back RIVNUT fastener off one complete turn, then adjust anvil so it contacts RIVNUT fastener head.

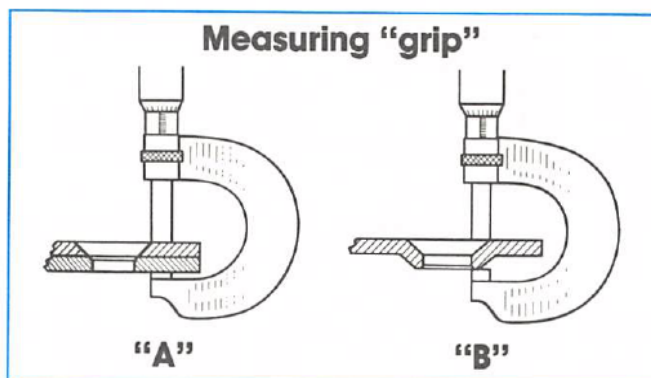
Fillister head RIVNUT fastener

Adjust the pull-up stud to the same reference points as conventional types of RIVNUT fasteners.

Measuring "grip"

In order to select the correct RIVNUT fastener, physical measurements must be made. In surface installations or machine countersunk installations, the "grip" is the same as the thickness of the metal (See "A" Below).

For dimpled or press countersunk holes, the "grip" is the measurement from the metal surface to the underside of the dimpled hole (See "B" Below).



Important:

Measurements must include air gaps, paint and any burrs that cannot be removed.



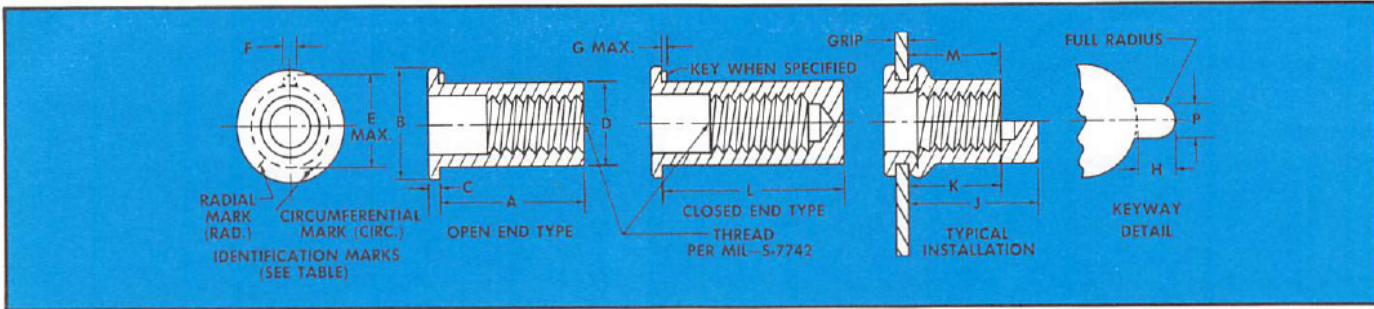
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Flat head RIVNUT® fastener — Unified Thread System



Code:

Diameter and grip range as tabulated. First letter of type number indicates material: "A" for aluminum alloy, "S" for C-1108 or C-1110 steel, "SS" for type 430 corrosion resistant steel, "CH" for heat treated 4037 steel, "BR" for brass, NM for type 305 stainless steel. Letter between dash numbers indicate type "—" for keyless open end, "K" for keyed open end, "B" for keyless closed end, "KB" for keyed closed end, "R" for ribbed shank.

Examples:

A25K80 = Aluminum alloy keyed open end 1/4-20 internal thread .020 to .080 grip range.
SS6KB200 = Corrosion resistant steel keyed closed end No. 6-32 internal thread .160 to .200 grip range.

Weights:

For Brass RIVNUTS multiply weight of aluminum RIVNUTS by 3.13. Weights for "CH" RIVNUTS (4037 steel) and "SS" RIVNUTS (Type 430 corrosion resistant steel) same as for "S" RIVNUTS.

First No. of Type No.	Thread Size*	B ±.015	C Nom.	D +.000 -.004	E Max.	F +.005 -.000	G Max.	Install Drill Size (Ref.)	Install Hole Size		Keyway Dimensions	
									Min.	Max.	P+.003 -.000	H
4	# 4-40 UNC-3B	.270	.025	.155	.198	.054	.023	5/32	.155	.157	.062	.046-.048
6	# 6-32 UNC-3B	.325	.032	.189	.240	.054	.023	# 12	.189	.193	.062	.056-.058
8	# 8-32 UNC-3B	.357	.032	.221	.271	.054	.023	# 2	.221	.226	.062	.056-.058
10	#10-32 UNF-3B	.406	.038	.250	.302	.054	.023	E	.250	.256	.062	.056-.058
25	1/4-20 UNC-3B	.475	.058	.332	.382	.054	.035	Q	.332	.338	.062	.056-.058
31	5/16-18 UNC-3B	.665	.062	.413	.505	.120	.040	Z	.413	.423	.128	.097-.102
37	3/8-16 UNC-3B	.781	.088	.490	.597	.120	.040	12.5 MM	.490	.500	.128	.110-.115
50	1/2-13 UNC-3B	.906	.085	.625	.733	.120	.040	3/8	.625	.635	.128	.110-.115

*Both UNC and UNF threads are available in No. 10 and larger thread sizes.

†Additional Grip Ranges are available.

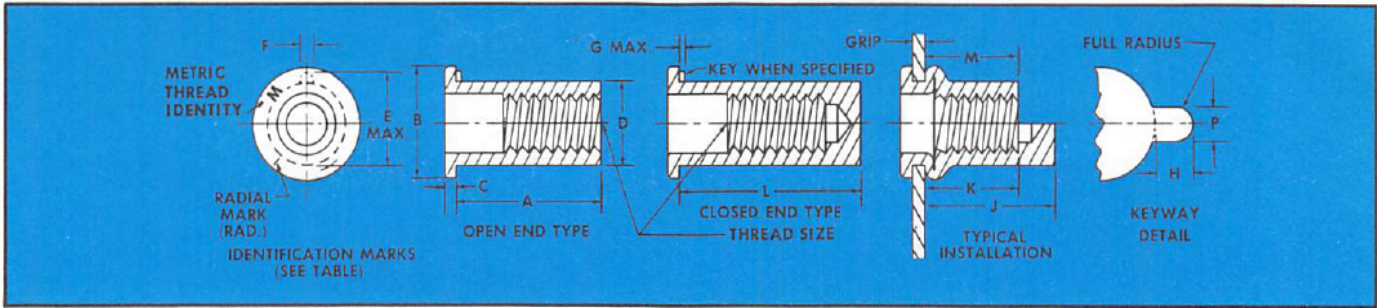
Type Number	Grip Range	Ident. Mark	Open End Keyed and Keyless				Closed End Keyless				Closed End Keyed					
			A ±.015	M Ref.	Wt. (Lbs./1000)		L ±.015	J Ref.	K Ref.	Wt. (Lbs./1000)		L ±.015	J Ref.	K Ref.	Wt. (Lbs./1000)	
					Alum.	Steel				Alum.	Steel				Alum.	Steel
4-60	.010-.060	Blank	.345	.230	.4	1.3	.500	.385	.230	.6	1.9	.500	.385	.230	.6	1.9
4-85	.060-.085	1-Rad.	.370	.230	.4	1.4	.525	.385	.230	.7	2.0	.525	.385	.230	.7	2.0
4-110	.085-.110	2-Rad.	.400	.230	.5	1.4	.555	.390	.230	.7	2.0	.555	.390	.230	.7	2.0
4-135	.110-.135	3-Rad.	.425	.230	.5	1.5	.580	.385	.230	.7	2.1	.580	.385	.230	.7	2.1
4-160	.135-.160	4-Rad.	.450	.230	.5	1.5	.605	.385	.230	.7	2.1	.605	.385	.230	.7	2.1
4-185	.160-.185	5-Rad.	.480	.230	.5	1.6	.635	.385	.230	.7	2.2	.635	.385	.230	.7	2.2
6-75	.010-.075	1-Rad.	.438	.300	.8	2.4	.625	.490	.305	1.2	3.5	.750	.615	.405	1.4	4.1
6-120	.075-.120	3-Rad.	.500	.315	.9	2.6	.625	.440	.255	1.1	3.4	.750	.565	.355	1.3	4.0
6-160	.120-.160	5-Rad.	.500	.270	.9	2.6	.750	.520	.260	1.3	4.0	.750	.520	.310	1.3	4.0
6-200	.160-.200	1-Circ.	.562	.290	.9	2.8	.750	.480	.260	1.3	3.9	.750	.480	.260	1.3	3.9
6-240	.200-.240	2-Circ.	.625	.310	1.0	3.0	.750	.435	.260	1.3	3.8	.750	.435	.260	1.3	3.8
6-280	.240-.280	3-Circ.	.687	.330	1.1	3.3	.812	.455	.265	1.3	4.1	.812	.455	.265	1.3	4.1
8-75	.010-.075	1-Rad.	.438	.300	1.0	3.0	.625	.490	.305	1.5	4.5	.750	.615	.405	1.7	5.3
8-120	.075-.120	3-Rad.	.500	.315	1.1	3.3	.625	.440	.255	1.4	4.4	.750	.565	.355	1.7	5.2
8-160	.120-.160	5-Rad.	.500	.270	1.1	3.2	.750	.520	.260	1.7	5.1	.750	.520	.310	1.7	5.1
8-200	.160-.200	1-Circ.	.625	.350	1.3	3.9	.750	.475	.265	1.6	5.0	.750	.475	.265	1.6	5.0
8-240	.200-.240	2-Circ.	.625	.305	1.2	3.8	.875	.555	.310	1.9	5.6	.875	.555	.310	1.9	5.6
8-280	.240-.280	3-Circ.	.687	.340	1.3	4.1	.875	.530	.290	1.8	5.6	.875	.530	.290	1.8	5.6
10-80	.010-.080	Blank	.531	.380	1.5	4.5	.781	.630	.380	2.3	6.8	.781	.630	.380	2.3	6.8
10-130	.080-.130	1-Rad.	.594	.390	1.6	4.9	.843	.640	.390	2.4	7.2	.843	.640	.390	2.4	7.2
10-180	.130-.180	2-Rad.	.641	.390	1.7	5.1	.891	.640	.390	2.4	7.4	.891	.640	.390	2.4	7.4
10-230	.180-.230	3-Rad.	.703	.395	1.8	5.4	.953	.645	.395	2.6	7.8	.953	.645	.395	2.6	7.8
10-280	.230-.280	4-Rad.	.750	.395	1.9	5.7	1.000	.645	.395	2.6	8.0	1.000	.645	.395	2.6	8.0
10-330	.280-.330	5-Rad.	.797	.385	1.9	5.9	1.047	.630	.385	2.7	8.2	1.047	.630	.385	2.7	8.2
25-80	.020-.080	Blank	.625	.450	3.2	9.7	.937	.760	.440	4.9	15.1	.937	.760	.440	5.0	15.1
25-140	.080-.140	1-Rad.	.687	.450	3.4	10.3	1.000	.760	.440	5.1	15.7	1.000	.760	.440	5.1	15.7
25-200	.140-.200	2-Rad.	.750	.450	3.6	10.9	1.062	.760	.440	5.3	16.2	1.062	.760	.440	5.3	16.3
25-260	.200-.260	3-Rad.	.812	.445	3.8	11.5	1.125	.755	.445	5.5	16.8	1.125	.755	.445	5.5	16.8
25-320	.260-.320	4-Rad.	.875	.445	4.0	12.0	1.187	.755	.445	5.7	17.4	1.187	.755	.445	5.7	17.4
25-380	.320-.380	5-Rad.	.937	.445	4.1	12.6	1.250	.755	.445	5.9	18.0	1.250	.755	.445	5.9	18.0
31-125	.030-.125	Blank	.750	.505	6.0	18.2	1.187	.940	.550	9.6	29.1	1.187	.940	.550	9.6	29.2
31-200	.125-.200	1-Rad.	.875	.555	6.7	20.3	1.281	.960	.555	10.1	30.6	1.281	.960	.555	10.1	30.7
31-275	.200-.275	2-Rad.	.937	.540	6.9	21.1	1.343	.950	.560	10.3	31.4	1.343	.950	.560	10.3	31.5
31-350	.275-.350	3-Rad.	1.032	.560	7.4	22.6	1.437	.965	.570	10.8	32.9	1.437	.965	.570	10.8	32.9
31-425	.350-.425	4-Rad.	1.125	.580	7.9	24.0	1.531	.985	.575	11.3	34.3	1.531	.985	.575	11.3	34.4
31-500	.425-.500	5-Rad.	1.187	.565	8.2	24.9	1.593	.975	.580	11.5	35.1	1.593	.975	.580	11.6	35.2
37-115	.030-.115	Blank	.844	.585	9.7	29.7	1.281	1.020	.660	14.8	45.0	1.281	1.020	.660	14.8	45.1
37-200	.115-.200	1-Rad.	.938	.595	10.3	31.4	1.375	1.030	.670	15.4	46.8	1.375	1.030	.670	15.4	45.9
37-285	.200-.285	2-Rad.	1.031	.605	10.9	33.2	1.468	1.040	.680	15.9	48.5	1.468	1.040	.680	16.0	48.6
37-370	.285-.370	3-Rad.	1.125	.615	11.5	34.9	1.562	1.050	.690	16.5	50.3	1.562	1.050	.690	16.5	50.4
37-455	.370-.455	4-Rad.	1.218	.630	12.0	36.7	1.656	1.065	.710	17.1	52.1	1.656	1.065	.710	17.1	52.2
37-540	.455-.540	5-Rad.	1.312	.635	12.6	38.5	1.750	1.075	.715	17.7	53.8	1.750	1.075	.715	17.7	53.9
**50-150	.050-.150	Blank	.906	.605	14.0	42.6	1.328	1.030	.605	21.9	66.6	1.328	1.030	.605	21.9	66.6
50-250	.150-.250	1-Rad.	1.031	.630	15.2	46.3	1.453	1.055	.630	23.1	70.3	1.453	1.055	.630	23.1	70.3
50-350	.250-.350	2-Rad.	1.141	.640	16.2	49.2	1.562	1.060	.640	24.0	73.2	1.562	1.060	.640	24.0	73.2
50-450	.350-.450	3-Rad.	1.250	.650	17.1	52.2	1.671	1.070	.650	25.0	76.1	1.671	1.070	.650	25.0	76.1

**NOTE: The weight of RIVNUTS is based on the weight of the material used in their manufacture. The numbers shown in previous issues. Old design still available on special request. Check with BFG for details.



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Flat head RIVNUT® fastener — Metric Thread System



Code:

Diameter and grip range as tabulated. First letter of type number indicates material "A" for aluminum alloy, "S" for C-1108 or C-1110 steel, "SS" for Type 430 corrosion resistant steel, "BR" for brass. Letter between dash numbers indicate type "-" for keyless open end, "K" for keyed open end, "B" for keyless closed end, "KB" for keyed closed end.

Examples:

AM3K1.0 = Aluminum alloy keyed open end M3X0.5 internal thread 0.25 to 1.00 grip range.
SSM5KB3.5 = Corrosion resistant steel keyed closed end M5X0.8 internal thread 2.00 to 3.50 grip range.

Weights:

For Brass RIVNUTS multiply weight of aluminum RIVNUTS by 3.13. Weights for "SS" RIVNUTS (Type 430 corrosion resistant steel) same as for "S" RIVNUTS (C-1108 or C-1110 steel).

First Symbols of Type Numbers	Thread Size	B ±0.38	C Nom.	D +0.00 -0.10	E Max.	F +0.13 -0.00	G Max.	Install Drill Size (Ref.)	Install Hole Size		Keyway Dimensions	
									Min.	Max.	P+0.08 -0.00	H
M3	M3X0.5 -6H	6.68	0.63	3.93	5.03	1.37	0.58	4.00	3.94	4.01	1.57	1.17-1.22
M4	M4X0.7 -6H	9.01	0.81	5.61	6.88	1.37	0.58	5.60	5.60	5.74	1.57	1.42-1.47
M5	M5X0.8 -6H	11.17	1.22	7.13	8.73	1.85	0.58	7.20	7.20	7.30	2.06	1.70-1.75
M6	M6X1.0 -6H	13.43	1.47	8.43	10.33	2.23	0.89	8.50	8.50	8.60	2.44	2.06-2.13
M7	M7X1.0 -6H	14.92	1.47	9.37	11.27	2.23	0.89	9.40	9.40	9.50	2.44	2.06-2.13
M8	M8X1.25-6H	16.65	1.57	10.48	12.82	3.05	1.02	10.50	10.50	10.75	3.25	2.46-2.59
M10	M10X1.50-6H	19.50	2.23	12.44	15.15	3.05	1.02	12.50	12.50	12.70	3.25	2.79-2.92
M12	M12X1.75-6H	22.79	2.23	15.46	18.20	3.05	1.02	15.50	15.50	15.74	3.25	2.79-2.92

†Additional Grip Ranges are available.

Type Number	Grip † Range	Ident. Mark	Open End Keyed and Keyless				Closed End Keyed and Keyless				
			A ±0.38	M Ref.	Wt. (Lbs./1000)		L ±0.38	J Ref.	K Ref.	Wt. (Lbs./1000)	
					Alum.	Steel				Alum.	Steel
M3- 1.0	0.25- 1.00	Blank	8.00	5.61	.3	1.0	12.00	9.62	5.61	.5	1.6
M3- 1.75	1.00- 1.75	1-Rad.	8.75	5.61	.4	1.1	12.75	9.62	5.61	.5	1.7
M3- 2.5	1.75- 2.50	2-Rad.	9.50	5.61	.4	1.1	13.50	9.62	5.61	.6	1.7
M3- 3.25	2.50- 3.25	3-Rad.	10.25	5.61	.4	1.2	14.24	9.62	5.61	.6	1.7
M3- 4.0	3.25- 4.00	4-Rad.	11.00	5.61	.4	1.2	15.00	9.62	5.61	.6	1.8
M3- 4.75	4.00- 4.75	5-Rad.	11.75	5.61	.4	1.3	15.75	9.62	5.61	.6	1.9
M4- 2.0	0.25- 2.00	Blank	11.00	7.08	1.0	3.1	16.00	12.08	7.08	1.6	5.0
M4- 3.0	2.00- 3.00	1-Rad.	12.00	7.08	1.1	3.3	17.00	12.08	7.08	1.7	5.2
M4- 4.0	3.00- 4.00	2-Rad.	13.00	7.08	1.1	3.4	18.00	12.08	7.08	1.8	5.3
M4- 5.0	4.00- 5.00	3-Rad.	14.00	7.08	1.2	3.5	19.00	12.08	7.08	1.8	5.5
M4- 6.0	5.00- 6.00	4-Rad.	15.00	7.08	1.2	3.7	20.00	12.08	7.08	1.9	5.7
M4- 7.0	6.00- 7.00	5-Rad.	16.00	7.08	1.3	3.8	21.00	12.08	7.08	1.9	5.8
M5- 2.0	0.25- 2.00	Blank	14.50	10.09	2.2	6.6	20.00	15.60	9.09	3.0	9.3
M5- 3.5	2.00- 3.50	1-Rad.	16.00	10.09	2.3	6.9	21.50	15.60	9.09	3.2	9.6
M5- 5.0	3.50- 5.00	2-Rad.	17.50	10.09	2.4	7.2	23.00	15.60	9.09	3.2	9.9
M5- 6.5	5.00- 6.50	3-Rad.	19.00	10.09	2.5	7.5	24.50	15.60	9.09	3.4	10.3
M5- 8.0	6.50- 8.00	4-Rad.	20.50	10.09	2.6	7.9	26.00	15.60	9.09	3.5	10.6
M5- 9.5	8.00- 9.50	5-Rad.	22.00	10.09	2.7	8.2	27.50	15.60	9.09	3.6	11.1
M6- 2.0	0.75- 2.00	Blank	15.50	10.58	3.4	10.3	23.00	18.07	10.58	5.1	15.5
M6- 3.5	2.00- 3.50	1-Rad.	17.00	10.58	3.5	10.7	24.50	18.07	10.58	5.3	16.0
M6- 5.0	3.50- 5.00	2-Rad.	18.50	10.58	3.7	11.2	26.00	18.07	10.58	5.4	16.5
M6- 6.5	5.00- 6.50	3-Rad.	20.00	10.58	3.8	11.7	27.50	18.07	10.58	5.6	17.0
M6- 8.0	6.50- 8.00	4-Rad.	21.50	10.58	4.0	12.2	29.00	18.07	10.58	5.7	17.5
M6- 9.5	8.00- 9.50	5-Rad.	23.00	10.58	4.2	12.7	30.50	18.07	10.58	5.9	18.0
M7- 3.0	0.75- 3.00	Blank	17.00	11.09	4.0	12.3	24.00	18.10	11.09	5.7	17.2
M7- 5.0	3.00- 5.00	1-Rad.	19.00	11.09	4.4	13.5	26.00	18.10	11.09	6.1	18.6
M7- 7.0	5.00- 7.00	2-Rad.	21.00	11.09	4.8	14.5	28.00	18.10	11.09	6.3	19.3
M7- 9.0	7.00- 9.00	3-Rad.	23.00	11.09	5.0	15.2	30.00	18.10	11.09	6.6	20.0
M7-11.0	9.00-11.00	4-Rad.	25.00	11.09	5.2	16.0	32.00	18.10	11.09	6.9	20.9
M7-13.0	11.00-13.00	5-Rad.	27.00	11.09	5.5	16.8	34.00	18.10	11.09	7.1	31.7
M8- 3.0	1.00- 3.00	Blank	18.00	11.83	5.2	15.9	26.00	19.82	11.83	7.9	24.0
M8- 5.0	3.00- 5.00	1-Rad.	20.00	11.83	5.7	16.9	28.00	19.82	11.83	8.2	25.0
M8- 7.0	5.00- 7.00	2-Rad.	22.00	11.83	5.9	17.9	30.00	19.82	11.83	8.6	26.0
M8- 9.0	7.00- 9.00	3-Rad.	24.00	11.83	6.2	19.0	32.00	19.82	11.83	8.9	27.2
M8-11.0	9.00-11.00	4-Rad.	26.00	11.83	6.5	19.7	34.00	19.82	11.83	9.1	27.8
M8-13.0	11.00-13.00	5-Rad.	28.00	11.83	6.8	20.8	36.00	19.82	11.83	9.5	28.8
M10- 3.0	1.00- 3.00	Blank	20.00	13.20	8.0	24.5	29.00	22.18	13.20	12.2	37.3
M10- 5.5	3.00- 5.50	1-Rad.	22.50	13.20	8.5	25.9	31.50	22.18	13.20	12.6	38.4
M10- 8.0	5.50- 8.00	2-Rad.	25.00	13.20	8.9	27.0	34.00	22.18	13.20	13.1	39.8
M10-10.5	8.00-10.50	3-Rad.	27.50	13.20	9.3	28.4	36.50	22.18	13.20	13.4	41.0
M10-13.0	10.50-13.00	4-Rad.	30.00	13.20	9.7	29.6	39.00	22.18	13.20	13.8	42.1
M12- 3.0	1.00- 3.00	Blank	24.00	16.45	14.9	45.5	32.00	24.44	16.45	21.1	64.1
M12- 5.5	3.00- 5.50	1-Rad.	26.50	16.45	15.9	48.3	34.50	24.44	16.45	21.9	66.7
M12- 8.0	5.50- 8.00	2-Rad.	29.00	16.45	16.6	50.7	37.00	24.44	16.45	22.7	69.3
M12-10.5	8.00-10.50	3-Rad.	31.50	16.45	17.6	53.5	39.50	24.44	16.45	23.6	71.9
M12-13.0	10.50-13.00	4-Rad.	34.00	16.45	18.5	56.3	42.00	24.44	16.45	24.5	74.7

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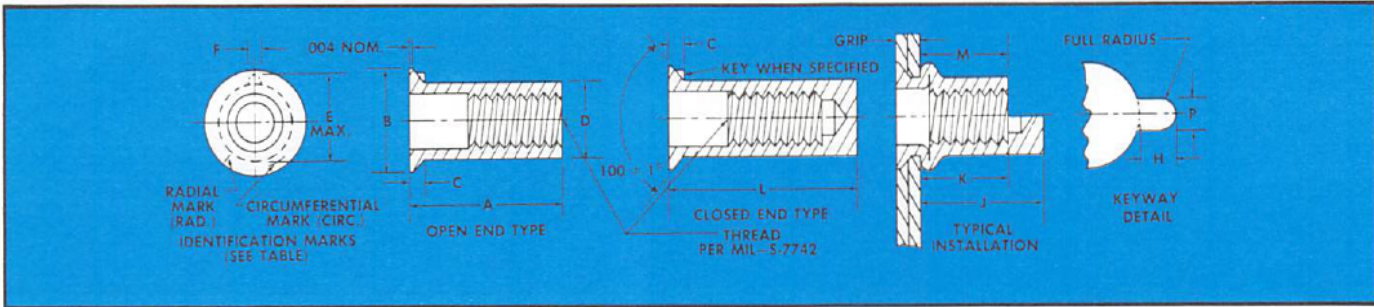
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Countersunk head RIVNUT® fastener — Unified Thread System



Code:

Diameter and grip range as tabulated. First letter of type number indicates material: "A" for aluminum alloy, "S" for C-1108 or C-1110 steel, "SS" for Type 430 corrosion resistant steel, "CH" for heat treated 4037 steel, "BR" for brass, NM for type 305 stainless steel. Letter between dash numbers indicate type "—" for keyless open end, "K" for keyed open end, "B" for keyless closed end, "KB" for keyed closed end, "R" for ribbed shank.

Examples:

A25K151 = Aluminum alloy keyed open end 1/4-20 internal thread .089 to .151 grip range.
 SS6KB241 = Corrosion resistant steel keyed closed end No. 6-32 internal thread .201 to .241 grip range.

Weights:

For Brass RIVNUTS multiply weight of aluminum RIVNUTS by 3.13. Weights for "CH" RIVNUTS (4037 steel) and "SS" RIVNUTS (Type 430 corrosion resistant steel) same as for "S" RIVNUTS (C-1108 steel).

First No. of Type No.	Thread Size*	B Ref.	C Max.	D +.000 -.004	E Max.	F +.005 -.000	Install Drill Size (Ref.)	Install Hole Size		Keyway Dimensions	
								Min.	Max.	P +.003 -.000	H
4	# 4-40 UNC-3B	.263	.051	.155	.198	.054	3/32	.155	.157	.062	.046-.048
6	# 6-32 UNC-3B	.323	.063	.189	.240	.054	# 12	.189	.193	.062	.056-.058
8	# 8-32 UNC-3B	.355	.063	.221	.271	.054	# 2	.221	.226	.062	.056-.058
10	# 10-32 UNF-3B	.391	.065	.250	.302	.054	E	.250	.256	.062	.056-.058
25	1/4-20 UNC-3B	.529	.089	.332	.382	.054	Q	.332	.338	.062	.056-.058
31	5/16-18 UNC-3B	.656	.104	.413	.505	.120	Z	.413	.423	.128	.097-.102
37	3/8-16 UNC-3B	.770	.124	.490	.597	.120	12.5 MM	.490	.500	.128	.110-.115
50	1/2-13 UNC-3B	.906	.124	.625	.733	.120	3/8	.625	.635	.128	.110-.115

*Both UNC and UNF threads are available in No. 10 and larger thread sizes.

†Additional Grip Ranges are available.

Type Number	Grip † Range	Ident. Mark	Open End Keyed and Keyless				Closed End Keyless				Closed End Keyed					
			A ±.015	M Ref.	Wt. (Lbs./1000)		L ±.015	J Ref.	K REF.	Wt. (Lbs./1000)		L ±.015	J Ref.	K Ref.	Wt. (Lbs./1000)	
					Alum.	Steel				Alum.	Steel				Alum.	Steel
4-81	.050-.081	Blank	.370	.235	.4	1.3	.525	.390	.235	.6	1.9	.525	.390	.235	.6	1.9
4-106	.081-.106	1-Rad.	.395	.235	.4	1.3	.550	.390	.235	.6	1.9	.550	.390	.235	.6	1.9
4-131	.106-.131	2-Rad.	.420	.235	.4	1.4	.575	.390	.235	.7	2.0	.575	.390	.235	.7	2.0
4-156	.131-.156	3-Rad.	.450	.235	.5	1.4	.600	.390	.235	.7	2.0	.600	.390	.235	.7	2.0
4-181	.156-.181	4-Rad.	.475	.235	.5	1.5	.625	.390	.235	.7	2.1	.625	.390	.235	.7	2.1
4-206	.181-.206	5-Rad.	.500	.235	.5	1.5	.650	.390	.235	.7	2.1	.650	.390	.235	.7	2.1
6-106	.065-.106	Blank	.500	.325	.8	2.5	.687	.510	.325	1.2	3.6	.812	.635	.425	1.4	4.2
6-161	.106-.161	2-Rad.	.500	.280	.8	2.4	.687	.465	.280	1.2	3.5	.812	.590	.380	1.3	4.1
6-201	.161-.201	4-Rad.	.562	.295	.9	2.6	.687	.420	.260	1.1	3.4	.812	.545	.335	1.3	4.0
6-241	.201-.241	1-Circ.	.625	.315	.9	2.9	.812	.505	.295	1.3	4.0	.812	.505	.295	1.3	4.0
6-281	.241-.281	2-Circ.	.625	.270	.9	2.8	.812	.465	.265	1.3	3.9	.812	.465	.265	1.3	3.9
6-321	.281-.321	3-Circ.	.687	.290	1.0	3.0	.844	.455	.265	1.3	4.0	.844	.455	.265	1.3	4.0
8-106	.065-.106	Blank	.500	.325	1.0	3.1	.687	.510	.325	1.5	4.6	.812	.635	.425	1.8	5.4
8-161	.106-.161	2-Rad.	.500	.280	1.0	3.0	.687	.465	.280	1.5	4.5	.812	.590	.380	1.7	5.3
8-201	.161-.201	4-Rad.	.562	.290	1.1	3.3	.687	.415	.255	1.4	4.4	.812	.540	.330	1.7	5.2
8-241	.201-.241	1-Circ.	.625	.310	1.2	3.6	.875	.560	.290	1.8	5.5	.875	.560	.290	1.8	5.5
8-281	.241-.281	2-Circ.	.687	.325	1.1	3.2	.875	.515	.290	1.8	5.4	.875	.515	.290	1.8	5.4
8-321	.281-.321	3-Circ.	.687	.295	1.2	3.8	.875	.485	.300	1.7	5.2	.875	.485	.300	1.7	5.2
10-116	.065-.116	Blank	.578	.395	1.4	4.3	.828	.645	.395	2.2	6.7	.828	.645	.395	2.2	6.7
10-166	.116-.166	1-Rad.	.625	.385	1.5	4.6	.875	.635	.385	2.3	6.9	.875	.635	.385	2.3	6.9
10-216	.166-.216	2-Rad.	.687	.400	1.6	4.9	.938	.650	.400	2.4	7.2	.938	.650	.400	2.4	7.2
10-266	.216-.266	3-Rad.	.734	.390	1.7	5.1	.984	.640	.390	2.5	7.5	.984	.640	.390	2.5	7.5
10-316	.266-.316	4-Rad.	.781	.385	1.8	5.4	1.031	.635	.385	2.5	7.7	1.031	.635	.385	2.5	7.7
10-366	.316-.366	5-Rad.	.844	.400	1.9	5.7	1.094	.650	.400	2.6	8.0	1.094	.650	.400	2.6	8.0
25-151	.089-.151	Blank	.687	.440	3.2	9.8	1.000	.750	.435	5.0	15.1	1.000	.750	.435	5.0	15.1
25-211	.151-.211	1-Rad.	.750	.440	3.4	10.3	1.062	.750	.435	5.2	15.7	1.062	.750	.435	5.2	15.7
25-271	.211-.271	2-Rad.	.812	.440	3.6	10.9	1.125	.750	.435	5.4	16.3	1.125	.750	.435	5.4	16.3
25-331	.271-.331	3-Rad.	.875	.435	3.8	11.5	1.187	.750	.435	5.5	16.9	1.187	.750	.435	5.5	16.9
25-391	.331-.391	4-Rad.	.937	.435	4.0	12.1	1.250	.750	.435	5.7	17.5	1.250	.750	.435	5.7	17.5
25-451	.391-.451	5-Rad.	1.000	.445	4.2	12.7	1.312	.760	.445	5.9	18.1	1.312	.760	.445	5.9	18.1
31-181	.106-.181	Blank	.844	.540	5.9	17.8	1.218	.915	.540	9.0	27.5	1.218	.915	.540	9.0	27.5
31-256	.181-.256	1-Rad.	.937	.560	6.3	19.3	1.312	.935	.560	9.5	28.9	1.312	.935	.560	9.5	29.0
31-331	.256-.331	2-Rad.	1.000	.550	6.6	20.1	1.406	.955	.550	10.0	30.4	1.406	.955	.550	10.0	30.5
31-406	.331-.406	3-Rad.	1.093	.565	7.1	21.5	1.468	.940	.565	10.2	31.1	1.468	.940	.565	10.2	31.2
31-481	.406-.481	4-Rad.	1.156	.555	7.3	22.3	1.562	.960	.555	10.7	32.6	1.562	.960	.555	10.8	32.7
31-556	.481-.556	5-Rad.	1.250	.575	7.8	23.7	1.625	.950	.575	10.9	33.3	1.625	.950	.575	11.0	33.4
37-211	.125-.211	Blank	.938	.580	8.9	27.0	1.375	1.020	.655	13.9	42.3	1.375	1.020	.655	13.9	42.4
37-296	.211-.296	1-Rad.	1.031	.590	9.4	28.7	1.468	1.030	.655	14.5	44.1	1.468	1.030	.655	14.5	44.1
37-381	.296-.381	2-Rad.	1.125	.600	10.0	30.5	1.562	1.040	.675	15.0	45.8	1.562	1.040	.675	15.1	45.9
37-466	.381-.466	3-Rad.	1.219	.615	10.6	32.3	1.656	1.050	.690	15.6	47.6	1.656	1.050	.690	15.7	47.7
37-551	.466-.551	4-Rad.	1.312	.625	11.2	34.0	1.750	1.065	.705	16.2	49.4	1.750	1.065	.705	16.2	49.5
37-636	.551-.636	5-Rad.	1.422	.650	11.9	36.2	1.859	1.090	.715	16.9	51.6	1.859	1.090	.715	17.0	51.7
**50-226	.125-.226	Blank	.984	.610	14.0	43.2	1.406	1.030	.610	21.9	66.6	1.406	1.030	.610	21.9	66.6
50-326	.226-.326	1-Rad.	1.094	.620	15.0	45.7	1.515	1.040	.620	22.9	69.7	1.515	1.040	.620	22.9	69.7
50-426	.326-.426	2-Rad.	1.218	.640	16.2	49.2	1.625	1.050	.640	23.8	72.6	1.625	1.050	.640	23.8	72.6
50-526	.426-.526	3-Rad.	1.312	.635	16.9	51.6	1.750	1.075	.635	25.0	76.3	1.750	1.075	.635	25.0	76.3

**NOTE: The 1/2 BFGood

Numbers shown in prev

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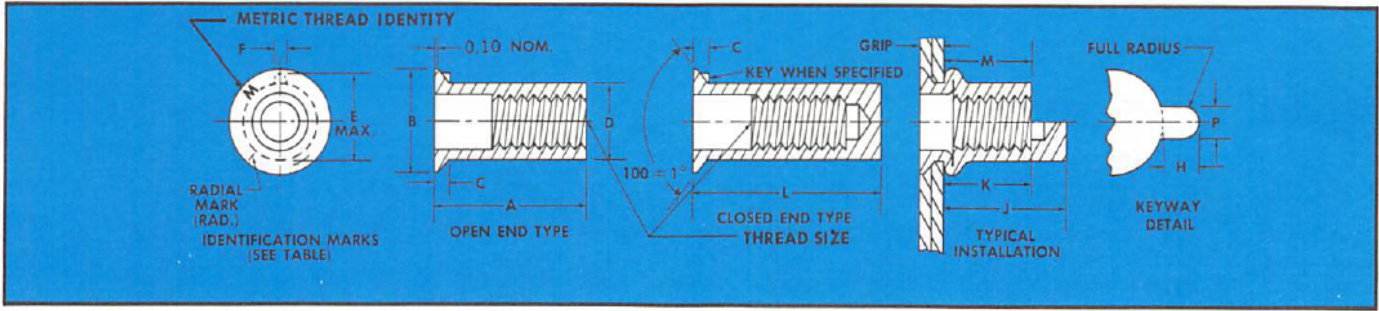
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Countersunk head RIVNUT® fastener — Metric Thread System



Code:

Diameter and grip range as tabulated. First letter of type number indicates material: "A" for aluminum alloy, "S" for C-1108 or C-1110 steel, "SS" for Type 430 corrosion resistant steel, "BR" for brass. Letter between dash numbers indicate type "—" for keyless open end, "K" for keyed open end, "B" for keyless closed end, "KB" for keyed closed end.

Examples:

AM3K2.1 = Aluminum alloy keyed open end M3X0.5 internal thread 1.29 to 2.10 grip range.
SSM5KB8.1 = Corrosion resistant steel keyed closed end M5X0.8 internal thread 6.60 to 8.10 grip range.

Weights:

For Brass RIVNUTS multiply weight of aluminum RIVNUTS by 3.13. Weights for "SS" RIVNUTS (Type 430 corrosion resistant steel) same as for "S" RIVNUTS (C-1108 or C-1110 steel).

First Symbols of Type Numbers	Thread Size	B Ref.	C Max.	D +0.00 -0.10	E Max.	F +0.13 -0.00	Install Drill Size (Ref.)	Install Hole Size		Keyway Dimensions	
								Min.	Max.	P+0.08 -0.00	H
M3	M3X0.5 -6H	6.68	1.29	3.93	5.03	1.37	4.00	3.94	4.01	1.57	1.17-1.22
M4	M4X0.7 -6H	9.01	1.60	5.61	6.88	1.37	5.60	5.60	5.74	1.57	1.42-1.47
M5	M5X0.8 -6H	11.17	1.83	7.13	8.73	1.85	7.20	7.20	7.30	2.06	1.70-1.75
M6	M6X1.0 -6H	13.43	2.26	8.43	10.33	2.23	8.50	8.50	8.60	2.44	2.06-2.13
M7	M7X1.0 -6H	14.92	2.39	9.37	11.27	2.23	9.40	9.40	9.50	2.44	2.06-2.13
M8	M8X1.25-6H	16.65	2.64	10.48	12.82	3.05	10.50	10.50	10.75	3.25	2.46-2.59
M10	M10X1.50-6H	19.50	3.15	12.44	15.15	3.05	12.50	12.50	12.70	3.25	2.79-2.92
M12	M12X1.75-6H	22.79	3.15	15.46	18.20	3.05	15.50	15.50	15.74	3.25	2.79-2.92

†Additional Grip Ranges are available.

Type Number	Grip † Range	Ident. Mark	Open End Keyed and Keyless				Closed End Keyed and Keyless				
			A ±0.38	M Ref.	Wt. (Lbs./1000)		L ±0.38	J Ref.	K Ref.	Wt. (Lbs./1000)	
					Alum.	Steel				Alum.	Steel
M3- 2.1	1.29- 2.10	Blank	9.00	5.48	.3	1.0	13.00	9.52	5.48	.5	1.6
M3- 2.86	2.10- 2.86	1-Rad.	9.75	5.48	.4	1.1	13.75	9.52	5.48	.6	1.7
M3- 3.6	2.86- 3.60	2-Rad.	10.50	5.48	.4	1.2	14.50	9.52	5.48	.6	1.8
M3- 4.36	3.60- 4.36	3-Rad.	11.25	5.48	.4	1.2	15.25	9.52	5.48	.6	1.8
M3- 5.1	4.36- 5.10	4-Rad.	12.00	5.48	.4	1.2	16.00	9.52	5.48	.6	1.8
M3- 5.86	5.10- 5.86	5-Rad.	12.75	5.48	.4	1.3	16.75	9.52	5.48	.6	1.9
M4- 3.1	1.60- 3.10	Blank	12.00	6.98	1.0	3.0	16.50	11.50	6.98	1.5	4.6
M4- 4.1	3.10- 4.10	1-Rad.	13.00	6.98	1.0	3.2	17.50	11.50	6.98	1.6	4.7
M4- 5.1	4.10- 5.10	2-Rad.	14.00	6.98	1.1	3.4	18.50	11.50	6.98	1.6	4.8
M4- 6.1	5.10- 6.10	3-Rad.	15.00	6.98	1.1	3.5	19.50	11.50	6.98	1.6	5.0
M4- 7.1	6.10- 7.10	4-Rad.	16.00	6.98	1.2	3.7	20.50	11.50	6.98	1.7	5.2
M4- 8.1	7.10- 8.10	5-Rad.	17.00	6.98	1.2	3.8	21.50	11.50	6.98	1.8	5.3
M5- 3.6	1.80- 3.60	Blank	16.00	9.98	2.1	6.3	22.00	15.97	9.98	3.1	9.5
M5- 5.1	3.60- 5.10	1-Rad.	17.50	9.98	2.2	6.6	23.50	15.97	9.98	3.2	9.8
M5- 6.6	5.10- 6.60	2-Rad.	19.00	9.98	2.3	7.0	25.00	15.97	9.98	3.3	10.1
M5- 8.1	6.60- 8.10	3-Rad.	20.50	9.98	2.4	7.3	26.50	15.97	9.98	3.4	10.5
M5- 9.6	8.10- 9.60	4-Rad.	22.00	9.98	2.5	7.6	28.00	15.97	9.98	3.5	10.8
M5-11.1	9.60-11.10	5-Rad.	23.50	9.98	2.6	8.0	29.50	15.97	9.98	3.7	11.2
M6- 4.1	2.25- 4.10	Blank	18.00	10.96	3.3	10.1	25.00	17.97	10.96	5.0	15.1
M6- 5.6	4.10- 5.60	1-Rad.	19.50	10.96	3.5	10.6	26.50	17.97	10.96	5.1	15.6
M6- 7.1	5.60- 7.10	2-Rad.	21.00	10.96	3.6	11.1	28.00	17.97	10.96	5.3	16.0
M6- 8.6	7.10- 8.60	3-Rad.	22.50	10.96	3.8	11.6	29.50	17.97	10.96	5.4	16.5
M6-10.1	8.60-10.10	4-Rad.	24.00	10.96	4.0	12.2	31.00	17.97	10.96	5.6	17.1
M6-11.6	10.10-11.60	5-Rad.	25.50	10.96	4.2	12.7	32.50	17.97	10.96	5.8	17.7
M7- 4.1	2.29- 4.10	Blank	18.00	11.02	3.8	11.7	25.00	17.99	11.02	5.8	17.6
M7- 6.1	4.10- 6.10	1-Rad.	20.00	11.02	4.2	12.7	27.00	17.99	11.02	6.1	18.5
M7- 8.1	6.10- 8.10	2-Rad.	22.00	11.02	4.4	13.4	29.00	17.99	11.02	6.3	19.3
M7-10.1	8.10-10.10	3-Rad.	24.00	11.02	4.7	14.4	31.00	17.99	11.02	6.6	20.1
M7-12.1	10.10-12.10	4-Rad.	26.00	11.02	5.0	15.1	33.00	17.99	11.02	6.9	20.9
M7-14.1	12.10-14.10	5-Rad.	28.00	11.02	5.2	15.8	35.00	17.99	11.02	7.2	21.7
M8- 5.1	2.69- 5.10	Blank	20.50	12.23	5.2	15.9	28.50	20.23	12.23	7.9	24.2
M8- 7.1	5.10- 7.10	1-Rad.	22.50	12.23	5.5	16.7	30.50	20.23	12.23	8.3	25.2
M8- 9.1	7.10- 9.10	2-Rad.	24.50	12.23	5.8	17.7	32.50	20.23	12.23	8.5	26.0
M8-11.1	9.10-11.10	3-Rad.	26.50	12.23	6.1	18.6	34.50	20.23	12.23	8.9	27.0
M8-13.1	11.10-13.10	4-Rad.	28.50	12.23	6.4	19.6	36.50	20.23	12.23	9.1	27.8
M8-15.1	13.10-15.10	5-Rad.	30.50	12.23	6.7	20.4	38.50	20.23	12.23	9.5	28.9
M10- 6.1	3.17- 6.10	Blank	23.00	12.72	7.6	23.1	31.50	21.47	12.72	11.4	34.7
M10- 8.6	6.10- 8.60	1-Rad.	25.50	12.72	8.0	24.4	34.00	21.47	12.72	11.8	36.0
M10-11.1	8.60-11.10	2-Rad.	28.00	12.72	8.4	25.7	36.50	21.47	12.72	12.2	37.2
M10-13.6	11.10-13.60	3-Rad.	30.50	12.72	8.9	27.0	39.00	21.47	12.72	12.7	38.6
M10-16.1	13.60-16.10	4-Rad.	33.00	12.72	9.3	28.4	41.50	21.47	12.72	13.1	39.8
M12- 6.1	3.17- 6.10	Blank	27.00	16.35	14.2	43.2	35.00	24.34	16.35	20.3	61.7
M12- 8.6	6.10- 8.60	1-Rad.	29.50	16.35	15.1	46.0	37.50	24.34	16.35	21.1	64.4
M12-11.1	8.60-11.10	2-Rad.	32.00	16.35	15.9	48.3	40.00	24.34	16.35	21.9	66.8
M12-13.6	11.10-13.60	3-Rad.	34.50	16.35	16.9	51.4	42.50	24.34	16.35	22.9	69.8
M12-16.1	13.60-16.10	4-Rad.	37.00	16.35	17.7	53.9	45.00	24.34	16.35	23.8	72.6

RIVNUT® fastener engineering data—Unified Thread System

Upset load (lbs.)

RIVNUT Size	Aluminum		Brass		Steel		Stainless Steel	
	Min. Grip	Max. Grip	Min. Grip	Max. Grip	Min. Grip	Max. Grip	Min. Grip	Max. Grip
# 4-40	400	450	700	800	700	800	800	900
# 6-32	500	600	800	950	850	1000	1000	1300
# 8-32	600	700	1300	1500	1000	1250	1400	1650
# 10-32	750	800	1600	1800	1300	1500	1900	2000
¼" -20	1300	1450	2570	2880	2300	2610	3300	3400
⅜" -18	1900	2150	3870	4210	3300	3650	4800	5600
⅝" -16	2570	2700	4620	4940	4965	5325	6100	6660
½" -13	4000	4400	NA	NA	6700	7200	NA	NA

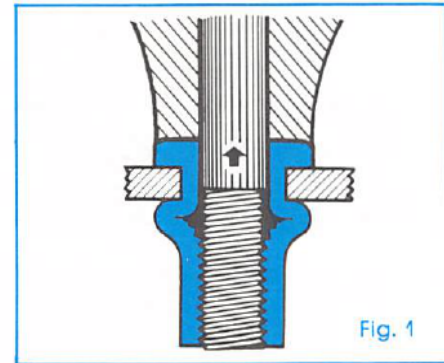


Fig. 1

Ultimate thread strength (lbs.)

RIVNUT Size	Aluminum		Brass		Steel		Stainless Steel	
	Min. Grip	Max. Grip	Min. Grip	Max. Grip	Min. Grip	Max. Grip	Min. Grip	Max. Grip
# 4-40	675	575	1265	1075	1180	1000	1600	1300
# 6-32	964	820	1740	1480	1705	1450	2400	2000
# 8-32	1095	935	2050	1740	1920	1630	3000	2200
# 10-32	1600	1450	3025	2525	3000	2500	4000	3500
¼" -20	2500	2400	4900	4250	5240	4520	6000	5100
⅜" -18	4000	3700	7795	6840	7625	6300	8700	7500
⅝" -16	4700	4450	11600	11200	11500	10450	11700	9650
½" -13	7900	6400	NA	NA	17250	14500	NA	NA

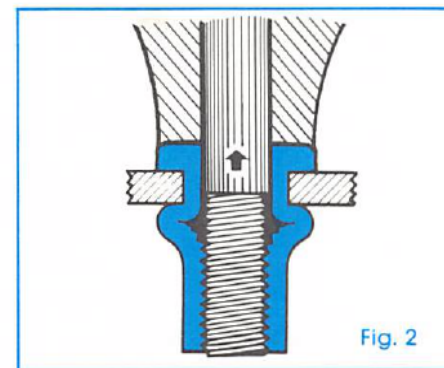


Fig. 2

Ultimate tensile strength (lbs.)

RIVNUT Size	Aluminum	Brass	Steel	Stainless Steel
# 4-40	261	474	458	621
# 6-32	373	678	656	889
# 8-32	485	882	853	1153
# 10-32	617	1120	1085	1470
¼" -20	1150	2020	1850	2510
⅜" -18	1600	2995	2750	3730
⅝" -16	2075	3925	3900	5280
½" -13	3100	NA	4900	NA

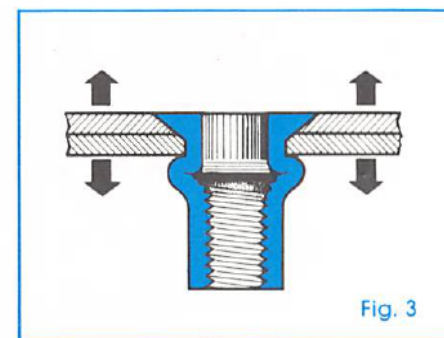


Fig. 3

Ultimate shear strength (lbs.)

RIVNUT Size	Aluminum	Brass	Steel	Stainless Steel
# 4-40	158	300	316	515
# 6-32	230	430	460	749
# 8-32	294	558	588	958
# 10-32	374	710	748	1220
¼" -20	710	1230	1100	1790
⅜" -18	930	1850	1750	2850
⅝" -16	1260	2425	2420	3940
½" -13	2150	NA	3400	NA

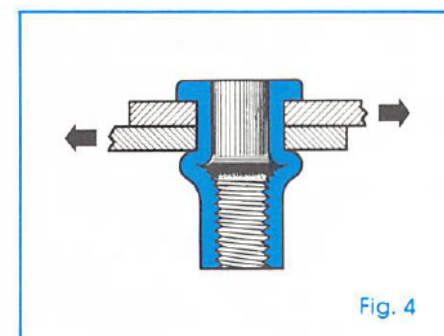


Fig. 4

Aluminum RIVNUTS were tested in 2024-T4 aluminum plates. Brass and steel RIVNUTS tested in steel plates. Stainless Steel RIVNUTS tested in stainless steel plates.

These data are average only—certain variations must be expected in practice.

NA—Test data not available.

RIVNUT® fastener engineering data—Metric Thread System

Upset load (lbs.) See Fig. 1

RIVNUT Size	Aluminum		Brass		Steel		Stainless Steel	
	Min. Grip	Max. Grip	Min. Grip	Max. Grip	Min. Grip	Max. Grip	Min. Grip	Max. Grip
M3X0.5	208	238	441	491	418	440	708	775
M4X0.7	602	724	1216	1374	1105	1144	1713	1803
M5X0.8	923	1024	1527	1860	1697	1873	2177	2634
M6X1.0	1396	1530	2387	2543	2451	2759	3623	3816
M7X1.0	1813	1936	2704	3272	3316	3567	4088	4451
M8X1.25	1869	2040	3175	3641	3020	3645	4255	4862
M10X1.50	2067	2247	3551	3687	3388	3722	4529	4915
M12X1.75	4400	4675	NA	NA	7304	7958	9493	11530

Ultimate thread strength (lbs.) See Fig. 2

RIVNUT Size	Aluminum		Brass		Steel		Stainless Steel	
	Min. Grip	Max. Grip	Min. Grip	Max. Grip	Min. Grip	Max. Grip	Min. Grip	Max. Grip
M3X0.5	517	446	441	491	1141	959	1771	1685
M4X0.7	1201	1136	2181	2002	2231	2162	3133	2772
M5X0.8	1855	1643	3611	3086	3086	3250	5193	4279
M6X1.0	2470	2500	5301	4773	5192	4770	6910	6823
M7X1.0	3623	3089	5438	4805	6028	5292	7216	5916
M8X1.25	4530	4135	5667	5123	6460	5792	9980	8797
M10X1.50	5677	4193	9400	6217	7597	6210	11250	11116
M12X1.75	9617	8013	NA	NA	15767	14117	22412	20000

Ultimate tensile strength (lbs.) See Fig. 3

RIVNUT Size	Aluminum	Brass	Steel	Stainless Steel
M3X0.5	178	338	338	458
M4X0.7	415	781	775	1148
M5X0.8	579	1176	1099	1592
M6X1.0	914	1733	1733	2347
M7X1.0	1158	2196	2148	3009
M8X1.25	1291	2485	2420	3326
M10X1.50	1542	2961	2925	4011
M12X1.75	2906	NA	5029	7537

Ultimate shear strength (lbs.) See Fig. 4

RIVNUT Size	Aluminum	Brass	Steel	Stainless Steel
M3X0.5	93	255	275	427
M4X0.7	275	496	551	796
M5X0.8	529	976	768	1064
M6X1.0	591	1134	996	1520
M7X1.0	916	1645	1351	2187
M8X1.25	823	1630	1924	2905
M10X1.50	1127	1796	2051	2698
M12X1.75	2060	NA	2945	4770

Aluminum RIVNUTS were tested in 2024-T4 aluminum plate. Brass, steel and stainless steel RIVNUTS tested in steel plates.

These data are averages only—certain variations must be expected in practice.

NA—Test data not available.



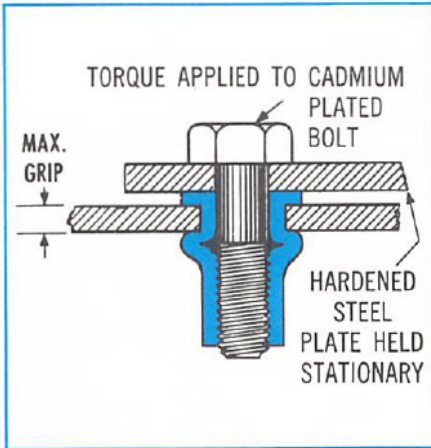
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RIVNUT® engineering data — Unified Thread System (cont.)



Torque strength data

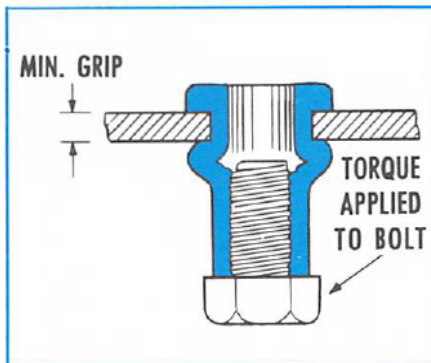
Torque—axial load relationship

Used as nut plates, RIVNUTS may be safely loaded to torque equivalent of their maximum upset loads. Surpassing these loads will cause the screw to break, or the RIVNUT will continue to upset until ultimate strip load is attained.

Because of the many variables such as type of lubrication, plating, type and grade of screw or bolt, it is recommended that a pilot test be conducted to determine the optimum assembly torque.

RIVNUT Size	Torque Equiv. of Max. Upset Load (Lb.-In.)			
	Aluminum	Brass	Steel	Stainless Steel
# 4-40	8	15	15	15
# 6-32	12	24	24	30
# 8-32	16	40	38	45
# 10-32	25	45	45	60
¼"-20	60	130	130	160
⅝"-18	100	156	156	260
⅜"-16	190	345	344	400
½"-13	350	NA	660	NA

(These values are averages only.)



RIVNUT torque-out strength

Although RIVNUT fasteners are not normally used as shown in this view, it is used to illustrate the effect of accidental imposition of torque by: over-length screw bottoming in a blind end RIVNUT; unthreaded shank area of an insufficiently threaded screw bottoming in the first thread of a RIVNUT; cross threading in inserting screw.

Torque Required to Turn RIVNUT (Lb.-In.)

RIVNUT Size	Aluminum		Brass		Steel		Stainless Steel	
	Key	Keyless	Key	Keyless	Key	Keyless	Key	Keyless
# 4-40	9	4	20	8	20	8	45	8
# 6-32	12	4	30	8	29	13	46	15
# 8-32	20	9	37	12	34	21	66	38
# 10-32	22	12	46	23	43	23	77	38
¼"-20	55	30	100	50	93	51	134	78
⅝"-18	101	46	NA	103	176	70	360	115
⅜"-16	116	83	300	198	361	131	400	201
½"-13	216	130	NA	NA	NA	300	NA	NA

Aluminum RIVNUTS were tested in 2024-T4 aluminum plates. Brass and steel RIVNUTS tested in steel plates. Stainless Steel RIVNUTS tested in stainless steel plates.

These data are averages only—certain variations must be expected in practice.

NA—Test data not available.

RIVNUT fastener materials and finishes

Material	Type No.	Standard Finish	Min. Tensile Strength (PSI Ult.)
ALUMINUM	6053-T4	Anodize — Alumilite No. 205 Will meet Specifications: MIL-A-8625 (ASG)	25,000
STEEL	C-1008* C-1108* C-1010* C-1110*	Cadmium Plate—.0002" Minimum Thickness Per QQ-P-416 Class 3, Type I	45,000
	4037	Cadmium Plate—.0003" Minimum Thickness Per QQ-P-416 Class 2, Type II	55,000 (No. 4 & No. 6 THD Size) 85,000 (No. 8 — ½" THD Sizes)
STAINLESS STEEL	430	Passivated Per QQ-P-35 Type II	67,000
	305** Carp No. 10**		80,000
BRASS	Alloy No. 260	None — Bright as Machined	50,000

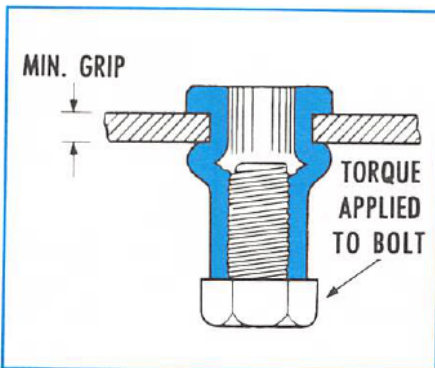
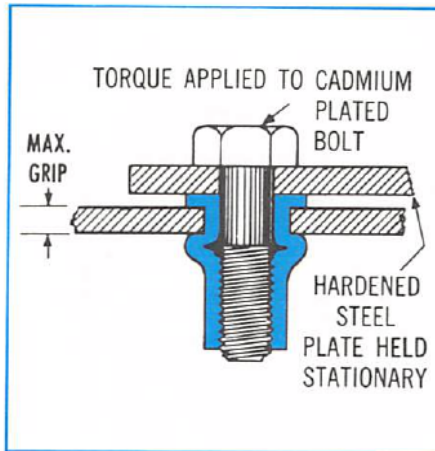
*May be used interchangeably.

**305 and Carpenter No. 10 stainless steel may be used interchangeably.

Note: Other specifications under which RIVNUTS qualify are listed on page 5.

Before specifying a special finish, contact RIVNUT representative for list of non-standard finishes that are available.

RIVNUT® engineering data — Metric Thread System (cont.)



Torque strength data

Torque—axial load relationship

Used as nut plates, RIVNUTS may be safely loaded to torque equivalent of their maximum upset loads. Surpassing these loads will cause the screw to break, or the RIVNUT will continue to upset until ultimate strip load is attained.

Because of the many variables such as type of lubrication, plating, type and grade of screw or bolt, it is recommended that a pilot test be conducted to determine the optimum assembly torque.

RIVNUT Size	Torque Equiv. of Max. Upset Load (Lb.-In.)			
	Aluminum	Brass	Steel	Stainless Steel
M3X0.5	8	14	13	19
M4X0.7	23	31	26	48
M5X0.8	31	78	92	110
M6X1.0	94	104	121	134
M7X1.0	144	156	216	354
M8X1.25	208	273	284	412
M10X1.50	228	246	312	468
M12X1.75	498	NA	630	954

(These values are averages only.)

RIVNUT torque-out strength

Although RIVNUT fasteners are not normally used as shown in this view, it is used to illustrate the effect of accidental imposition of torque by: over-length screw bottoming in a blind end RIVNUT; unthreaded shank area of an insufficiently threaded screw bottoming in the first thread of a RIVNUT; cross threading in inserting screw.

Torque Required to Turn RIVNUT (Lb.-In.)								
RIVNUT Size	Aluminum		Brass		Steel		Stainless Steel	
	Key	Keyless	Key	Keyless	Key	Keyless	Key	Keyless
M3X0.5	12	3	23	7	21	6	39	10
M4X0.7	18	10	35	15	32	12	53	21
M5X0.8	29	18	78	27	100	25	119	40
M6X1.0	94	40	138	51	142	49	168	73
M7X1.0	98	41	132	56	168	62	208	133
M8X1.25	112	53	240	64	268	64	334	161
M10X1.50	120	70	368	72	356	124	532	196
M12X1.75	432	236	NA	NA	472	336	702	528

Aluminum RIVNUTS were tested in 2024-T4 aluminum plates. Brass and steel RIVNUTS tested in steel plates. Stainless Steel RIVNUTS tested in stainless steel plates. These data are averages only—certain variations must be expected in practice.

NA—Test data not available.

Material	Type No.	Standard Finish	Min. Tensile Strength
ALUMINUM	6053-T4	Anodize — Alumilite No. 205 Will meet Specifications: MIL-A-8625 (ASG)	172MPa (25,000 PSI)
STEEL	C-1008* C-1108* C-1010* C-1110*	Cadmium Plate—.0002" Minimum Thickness Per QQ-P-416 Class 3, Type I	310MPa (45,000 PSI)
STAINLESS STEEL	430	Passivated Per QQ-P-35 Type II	462MPa (67,000 PSI)
	305** Carp No. 10**		80,000
BRASS	Alloy No. 260	None — Bright as Machined	345MPa (50,000 PSI)

*May be used interchangeably.

**305 and Carpenter No. 10 stainless steel may be used interchangeably.

Note: Other specifications under which RIVNUTS qualify are listed on page 5. Before specifying a special finish, contact RIVNUT representative for list of non-standard finishes that are available.



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Standard hex RIVNUT® fasteners - Unified Thread System

BFGoodrich standard hex RIVNUT fasteners, one-piece fasteners with torque resisting hexagonal shanks provide these outstanding advantages:

- **Positive torque-out resistance**
- **Low profile • High tensile strength**
- **Lightweight**

Now you can have the full benefit of BFGoodrich RIVNUTS with their simple construction and easy-to-install features in a smaller, lightweight, high-performance version which MEETS GRADE 5 NUT-PROOF LOAD REQUIREMENTS PER SAE STD. J995. BFG standard hex RIVNUTS can be installed in either round or hexagonal holes. They can be locked in place quickly by one person with a standard RIVNUT Header Tool. In addition they can be INSTALLED AFTER PAINTING OR FINAL FINISHING OPERATIONS. The result is a nut plate that eliminates welding, cleaning threads, warping, etc. RIVNUT threads are as clean and intact after the RIVNUT is installed as they were originally.

Thread sizes:

No. 10-24, No. 10-32 1/4-20 and 1/4-28 5/16-18, 5/16-24 3/8-16, 3/8-24 Unified Class 3 Internal Threads

Material:

Steel A.I.S.I. C-1008, C-1010, C-1108 or C-1110, Ultimate Tensile Strength 65,000 PSI Minimum

Aluminum 6053-T4

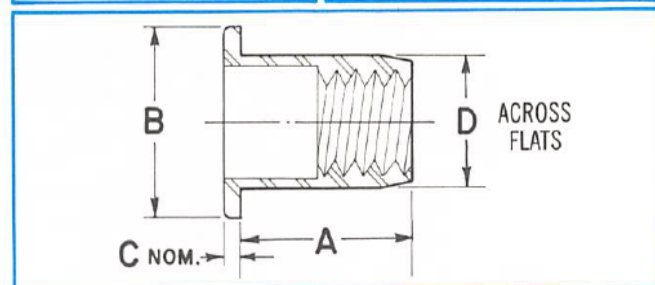
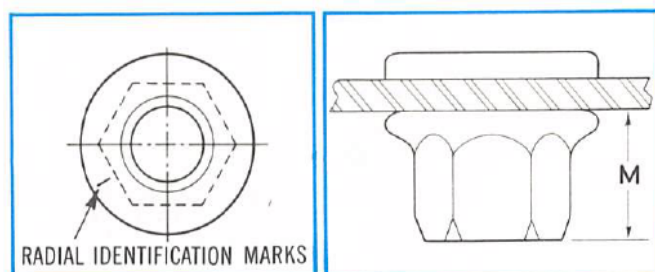
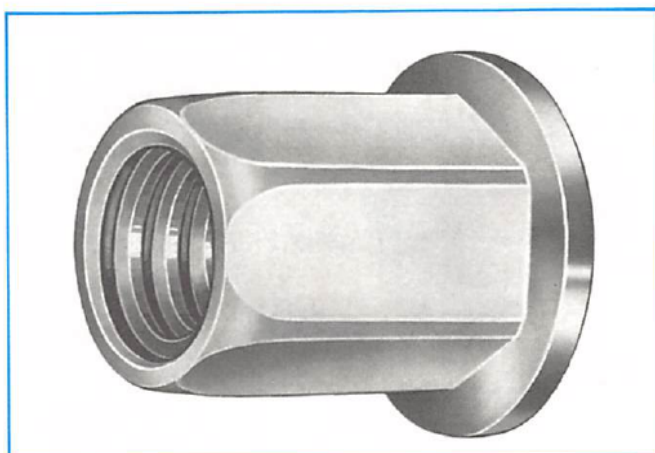
Finish:

Steel: Cadmium Plate Per Federal Spec. QQ-P-416 Class 3, Type 1

Aluminum: Anodize-Alumilite No. 205

Code:

First letter of type number indicates material: "A" for aluminum alloy, "S" for steel.



RIVNUT engineering data

Thread Size	Type No.	Ident. Mark	Grip Range †		A ±.015	B ±.015	C Nom.	D Max.	Hex Hole (Across Flat)	Round Hole	Calc. Wt. (Lbs./1000) Alum./Steel	M Ref.
			Min.	Max.								
10-32	10H85	Blank	.010	.085	.344	.344	.043	.223	.223/.229	.250/.256	0.81/2.40	.200
	10H135	1 Rad.	.085	.135	.406	.344	.043	.223	.223/.229	.250/.256	0.88/2.64	.210
	10H185	2 Rad.	.135	.185	.453	.344	.043	.223	.223/.229	.250/.256	0.90/2.78	.210
1/4-20	25H85	Blank	.020	.085	.406	.437	.043	.296	.296/.302	.332/.338	1.56/4.71	.245
	25H145	1 Rad.	.085	.145	.469	.437	.043	.296	.296/.302	.332/.338	1.66/5.11	.250
	25H205	2 Rad.	.145	.205	.531	.437	.043	.296	.296/.302	.332/.338	1.79/5.5	.250
5/16-18	31H105	Blank	.030	.105	.562	.562	.048	.368	.368/.374	.413/.419	3.18/9.66	.375
	31H175	1 Rad.	.105	.175	.640	.562	.048	.368	.368/.374	.413/.419	3.43/10.42	.380
	31H245	2 Rad.	.175	.245	.703	.562	.048	.368	.368/.374	.413/.419	3.60/11.00	.375
3/8-16	37H115	Blank	.030	.115	.625	.656	.058	.437	.437/.443	.490/.496	4.55/13.85	.400
	37H205	1 Rad.	.115	.205	.718	.656	.058	.437	.437/.443	.490/.496	4.93/15.00	.405
	37H295	2 Rad.	.205	.295	.812	.656	.058	.437	.437/.443	.490/.496	5.30/16.11	.410

†Additional Grip Range Available



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Metric hex RIVNUT® fasteners – Metric Thread System

BFGoodrich metric hex RIVNUT fasteners, one-piece fasteners with torque resisting hexagonal shanks provide these outstanding advantages:

- **Positive torque-out resistance**
- **Low profile • High tensile strength**
- **Lightweight**

Now you can have the full benefit of BFGoodrich RIVNUTS with their simple construction and easy-to-install features in a smaller, lightweight, high-performance version. BFG standard hex RIVNUTS can be installed in either round or hexagonal holes. They can be locked in place quickly by one person with a standard RIVNUT Header Tool. In addition they can be **INSTALLED AFTER PAINTING OR FINAL FINISHING OPERATIONS**. The result is a nut plate that eliminates welding, cleaning threads, warping, etc. RIVNUT threads are as clean and intact after the RIVNUT is installed as they were originally.

Thread sizes:

M5X0.8, M6X1.0, M8X1.25, M10X1.50. Class 6H Internal Threads

Material:

Steel A.I.S.I. C-1008, C-1010, C-1108 or C-1110, Ultimate Tensile Strength 448 MPa Minimum

Aluminum 6053-T4

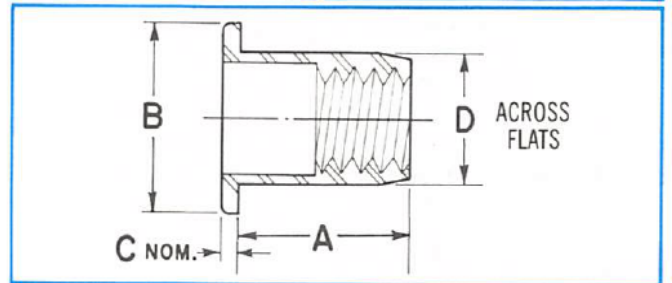
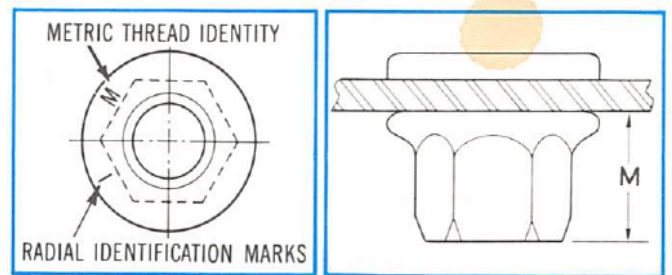
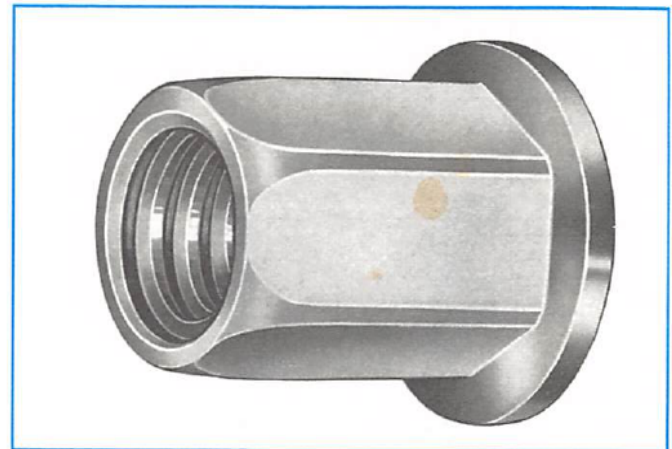
Finish:

Steel: Cadmium Plate Per Federal Spec. QQ-P-416 Class 3, Type 1

Aluminum: Anodize-Alumilite No. 205

Code:

First letter of type number indicates material: "A" for aluminum alloy, "S" for steel.



RIVNUT engineering data

Thread Size	Type No.	Ident. Mark	Grip Range †		A ±0.38	B ±0.38	C Nom.	D Max.	Hex Hole (Across Flat)	Round Hole	Calc. Wt. (Lbs./1000) Alum./Steel	M Ref.
			Min.	Max.								
M5X0.8	M5H2.15	Blank	0.50	2.15	10.30	9.52	1.09	6.35	6.35/6.50	7.13/7.28	1.10/3.40	6.72
	M5H3.55	1-Rad.	2.15	3.55	11.90	9.52	1.09	6.35	6.35/6.50	7.13/7.28	1.22/3.65	6.72
	M5H5.05	2-Rad.	3.55	5.05	13.48	9.52	1.09	6.35	6.35/6.50	7.13/7.28	1.23/3.80	6.72
M6X1.0	M6H2.15	Blank	0.50	2.15	10.30	11.09	1.09	7.51	7.51/7.66	8.42/8.58	1.55/4.72	6.22
	M6H3.65	1-Rad.	2.15	3.65	11.90	11.09	1.09	7.51	7.51/7.66	8.42/8.58	1.78/5.45	6.22
	M6H5.20	2-Rad.	3.65	5.20	13.48	11.09	1.09	7.51	7.51/7.66	8.42/8.58	1.93/5.82	6.22
M8X1.25	M8H2.55	Blank	0.50	2.55	15.86	15.07	1.57	10.08	10.08/10.23	11.09/11.36	4.56/13.84	10.35
	M8H4.55	1-Rad.	2.50	4.55	17.84	15.07	1.57	10.08	10.08/10.23	11.09/11.36	4.91/14.96	10.35
	M8H6.60	2-Rad.	4.55	6.60	19.82	15.07	1.57	10.08	10.08/10.23	11.09/11.36	5.27/15.94	10.35
M10X1.50	M10H2.95	Blank	0.75	2.95	15.88	17.48	1.57	11.89	11.89/12.14	13.26/13.52	5.47/16.71	13.08
	M10H5.20	1-Rad.	2.95	5.20	18.24	17.48	1.57	11.89	11.89/12.14	13.26/13.52	5.95/18.12	13.08
	M10H7.50	2-Rad.	5.20	7.50	20.62	17.48	1.57	11.89	11.89/12.14	13.26/13.52	6.43/19.53	13.08

†Additional
ALL DIM



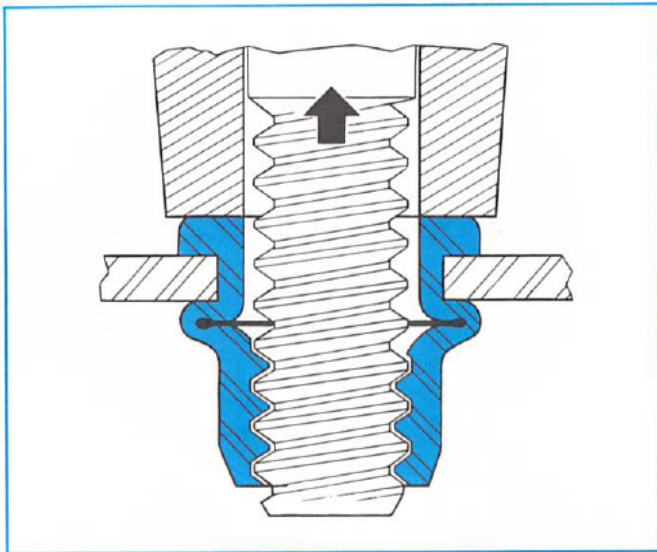
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Standard hex RIVNUTS® — Unified Thread System



Performance data (Steel only)

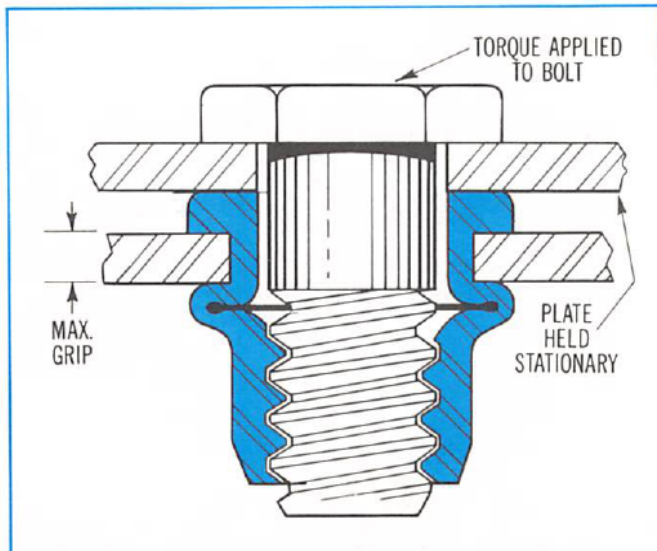
Standard Hex RIVNUT Size	Grip	Upset Load (Lbs.)	Ultimate Thread Strength (Lbs.)
#10-32	Min. Max.	1200 1250	3100 2600
¼"-20	Min. Max.	2150 2350	4800 4800
⅝"-18	Min. Max.	3075 3300	8400 8600
¾"-16	Min. Max.	4100 4375	9800 11000

Torque strength data (Steel only)

RIVNUT fasteners tested in steel plates, hardness 50-55-Rb. Torque—axial load relationship.

Used as nut plates, RIVNUTS may be safely loaded to torque equivalent of their maximum upset loads. Surpassing these loads will cause the screw to break, or the RIVNUT will continue to upset until ultimate strip load is attained. Because of the many variables such as type of lubrication, plating, type and grade of screw or bolt, it is recommended that a pilot test be conducted to determine optimum assembly torque.

Standard Hex RIVNUT Size	Torque Equivalent Of Max. Upset Load (Lb.-In.)
#10-32	30
¼"-20	90
⅝"-18	170
¾"-16	300



RIVNUT torque strength (Steel only)

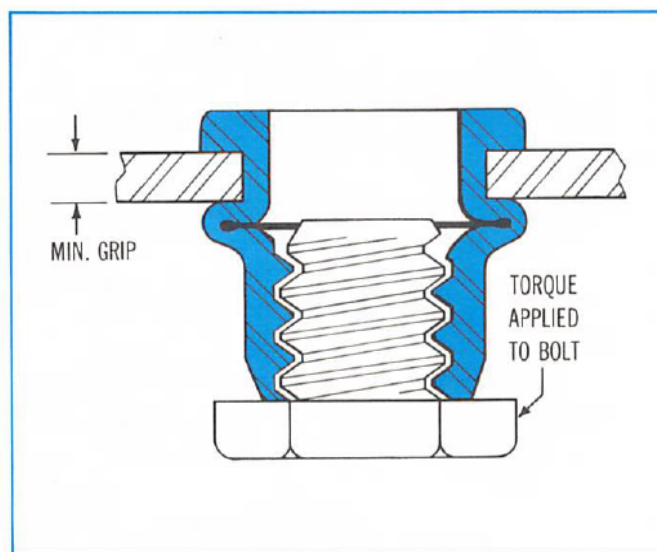
Although RIVNUTS are not normally used as shown in this view, it is used to illustrate the effect of accidental imposition of torque by: unthreaded shank area of an insufficiently threaded screw bottoming in the first thread of a RIVNUT; cross threading in inserting screw.

Torque required to turn RIVNUT (Lb.-In.) (Steel only)

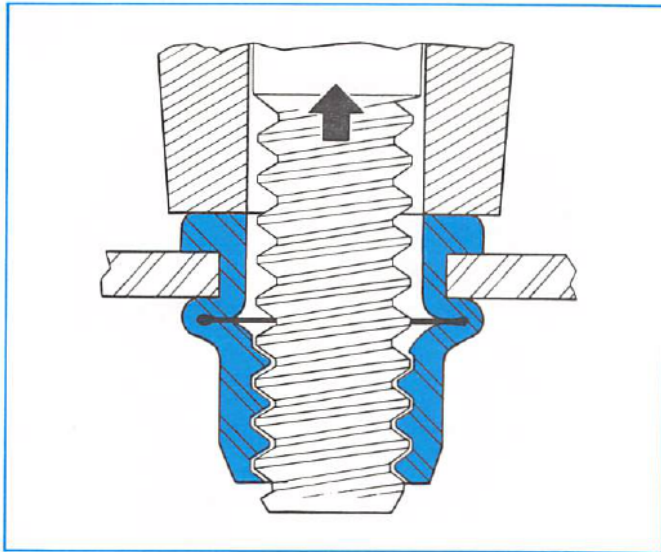
Standard Hex RIVNUT Size	Hole Type	
	Round	Hex*
#10-32	20	65
¼"-20	42	150
⅝"-18	76	285
¾"-16	95	490

*Torque test conducted in max. grip to illustrate full capability of Hex RIVNUT in hex hole.

These values are averages only—certain variations must be expected in practice.



Metric hex RIVNUTS® — Metric Thread System



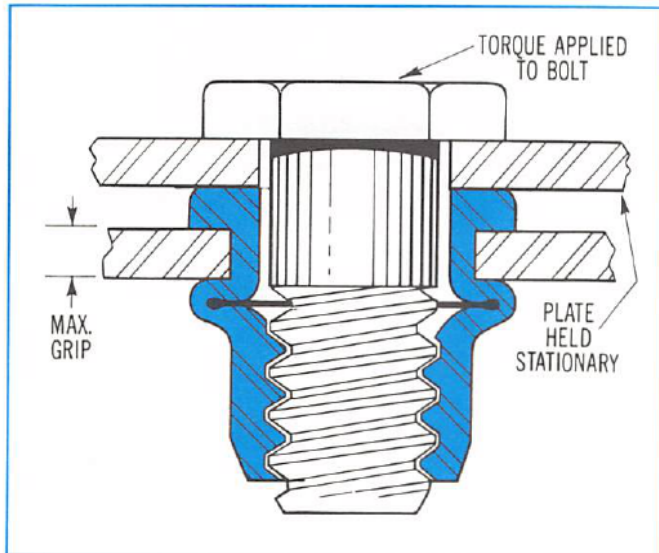
Performance data

Metric Hex RIVNUT Size	Grip	Upset Load (Lbs.)	Ultimate Thread Strength (Lbs.)
M5X0.8	Min. Max.	1200 1200	4470 3320
M6X1.0	Min. Max.	2100 2200	6230 5700
M8X1.25	Min. Max.	3260 3425	7900 7200
M10X1.50	Min. Max.	4460 4950	13700 11350

Torque strength data

RIVNUT fasteners tested in steel plates, hardness 50-55-Rb. Torque—axial load relationship.

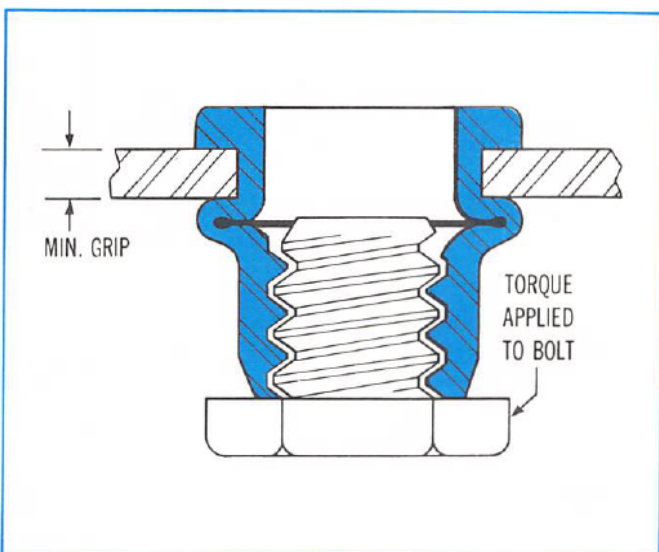
Used as nut plates, RIVNUTS may be safely loaded to torque equivalent of their maximum upset loads. Surpassing these loads will cause the screw to break, or the RIVNUT will continue to upset until ultimate strip load is attained. Because of the many variables such as type of lubrication, plating, type and grade of screw or bolt, it is recommended that a pilot test be conducted to determine optimum assembly torque.



Metric Hex RIVNUT Size	Torque Equivalent Of Max. Upset Load (Lb.-In.)
M5X0.8	30
M6X1.0	84
M8X1.25	170
M10X1.50	350

RIVNUT torque strength

Although RIVNUTS are not normally used as shown in this view, it is used to illustrate the effect of accidental imposition of torque by: unthreaded shank area of an insufficiently threaded screw bottoming in the first thread of a RIVNUT; cross threading in inserting screw.



Torque required to turn RIVNUT (Lb.-In.)

Metric Hex RIVNUT Size	Hole Type	
	Round	Hex*
M5X0.8	20	65
M6X1.0	42	150
M8X1.25	76	285
M10X1.50	95	490

*Torque test conducted in max. grip to illustrate full capability of Hex RIVNUT in hex hole.

These values are averages only—certain variations must be expected in practice.

Heavy duty hex RIVNUT® fasteners – Unified Thread System

BFGoodrich heavy-duty hex RIVNUT fasteners are recommended where high thread strength and high torque-out resistance are required in a blind fastening application.

The shank of the heavy-duty hex RIVNUT has six flat sides which run the full shank length. There is no key under the head— no keyway to cut or line up. In addition to providing maximum torque-out resistance, the hex design gives added strength to the shank and threads.

BFGoodrich heavy-duty hex RIVNUTS can be used in either hex or round holes. They can be installed quickly by one person with a standard RIVNUT header tool. In addition, they can be installed after painting or final finishing operations. The result is a nut plate that eliminates welding, thread cleaning, warping, etc. RIVNUT threads are as clean and intact after the RIVNUT fastener is installed as they were originally.

Specifications

Sizes:

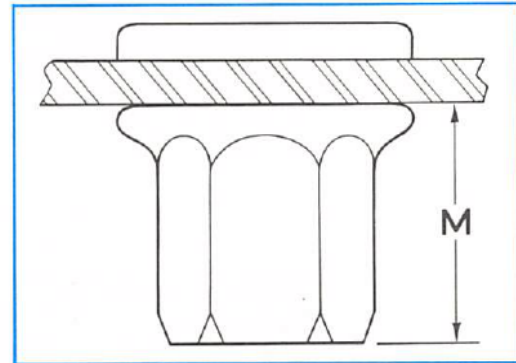
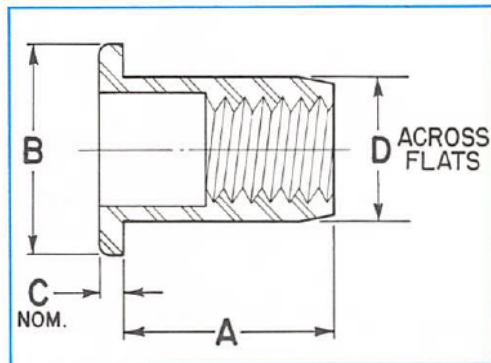
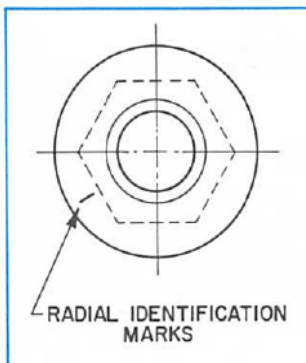
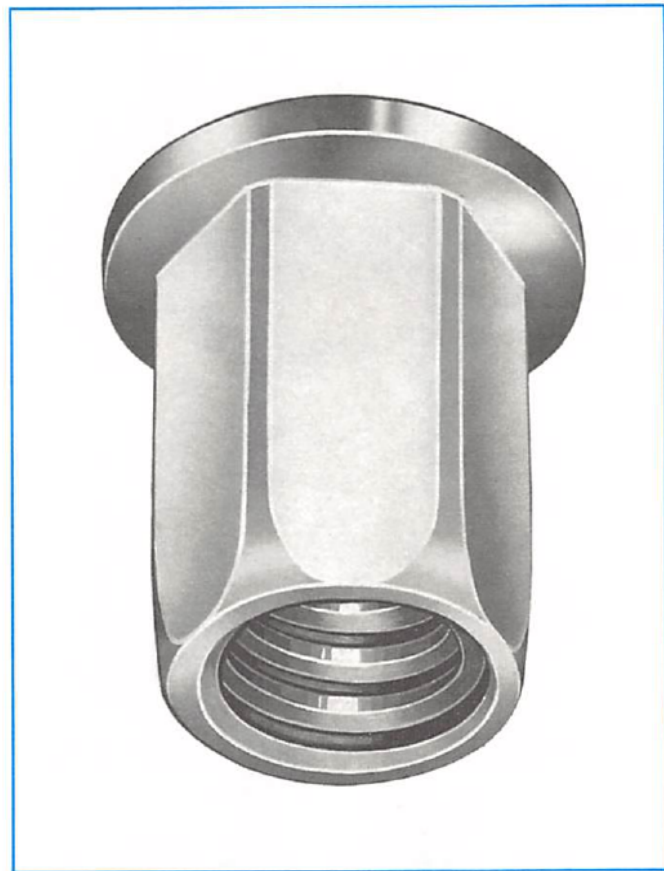
1/4"-20, 1/4"-28, 5/16"-18, 5/16"-24, 3/8"-16, and 3/8"-24 unified class 3 internal threads

Material:

Steel A.I.S.I. C-1108, C-1010 or C-1110, Ultimate Tensile Strength 65,000 PSI Minimum

Finish:

Cad. plate per federal spec. QQ-P-416 Class 3 Type 1 (.0002" Min. Thick)

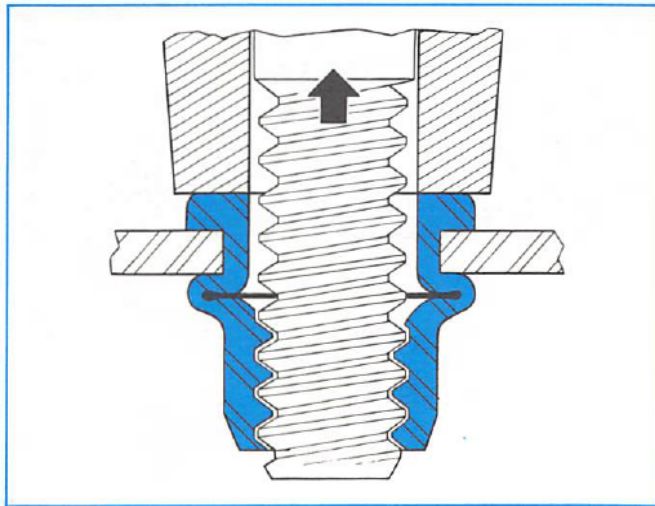


Engineering data

Thread Size	Type No.	Identification Mark	Grip Range†		A ± .015	B ± .015	C Nom.	D Max.	Hex Hole Limits (Across Flats)	Round Hole Limits	Calc. Wt. (Lbs./1000)	M Ref.
			Min.	Max.								
1/4" - 20	S25 H 80	Blank	.020	.080	.500	.469	.058	.312	.312/.318	.347/.353	7.5	.340
	S25 H 150	1 Rad.	.080	.150	.578	.469	.058	.312	.312/.318	.347/.353	8.2	.345
	S25 H 220	2 Rad.	.150	.220	.656	.469	.058	.312	.312/.318	.347/.353	8.9	.345
	S25 H 290	3 Rad.	.220	.290	.734	.469	.058	.312	.312/.318	.347/.353	9.6	.345
5/16" - 18	S31 H 100	Blank	.020	.100	.625	.594	.062	.397	.397/.403	.437/.447	14.7	.405
	S31 H 180	1 Rad.	.100	.180	.703	.594	.062	.397	.397/.403	.437/.447	15.8	.405
	S31 H 260	2 Rad.	.180	.260	.781	.594	.062	.397	.397/.403	.437/.447	16.9	.405
	S31 H 340	3 Rad.	.260	.340	.875	.594	.062	.397	.397/.403	.437/.447	18.0	.405
3/8" - 16	S37 H 125	Blank	.020	.125	.703	.688	.088	.468	.468/.478	.522/.532	23.4	.450
	S37 H 230	1 Rad.	.125	.230	.812	.688	.088	.468	.468/.478	.522/.532	25.5	.450

†Additional Grip Ranges are available

Heavy duty hex RIVNUT® fasteners — Unified Thread System



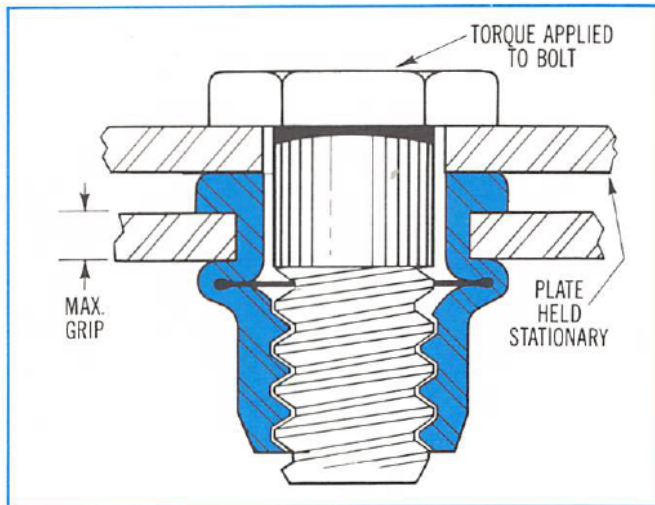
Performance data

Heavy-duty Hex RIVNUT Size	Grip	Upset Load (Lbs.)	Ultimate Thread Strength (Lbs.)
1/4"-20	Min. Max.	3000 3300	6425 6275
5/16"-18	Min. Max.	4900 5150	8825 8850
3/8"-16	Min. Max.	6200 6700	11500 11200

Torque strength data

RIVNUT fasteners tested in steel plates, hardness 50-55-Rb. Torque—axial load relationship.

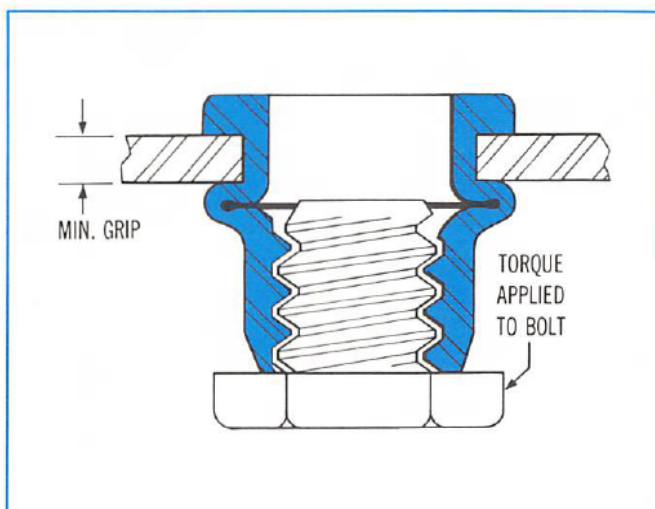
Used as nut plates, RIVNUTS may be safely loaded to torque equivalent of their maximum upset loads. Surpassing these loads will cause the screw to break, or the RIVNUT will continue to upset until ultimate strip load is attained. Because of the many variables such as type of lubrication, plating, type and grade of screw or bolt, it is recommended that a pilot test be conducted to determine optimum assembly torque.



Heavy-duty Hex RIVNUT Size	Torque Equivalent Of Max. Upset Load (Lb.-In.)
1/4"-20	110
5/16"-18	220
3/8"-16	425

RIVNUT fastener torque strength

Although RIVNUTS are not normally used as shown in this view, it is used to illustrate the effect of accidental imposition of torque by: unthreaded shank area of an insufficiently threaded screw bottoming in the first thread of a RIVNUT; cross threading in inserting screw.



Torque required to turn RIVNUT (Lb.-In.)

Heavy-duty Hex RIVNUT Size	Hole Type	
	Round	Hex*
1/4"-20	45	200
5/16"-18	55	380
3/8"-16	125	740

*Torque test conducted in max. grip to illustrate full capability of Hex RIVNUT in hex hole.

These values are averages only. Variations must be expected in practice.



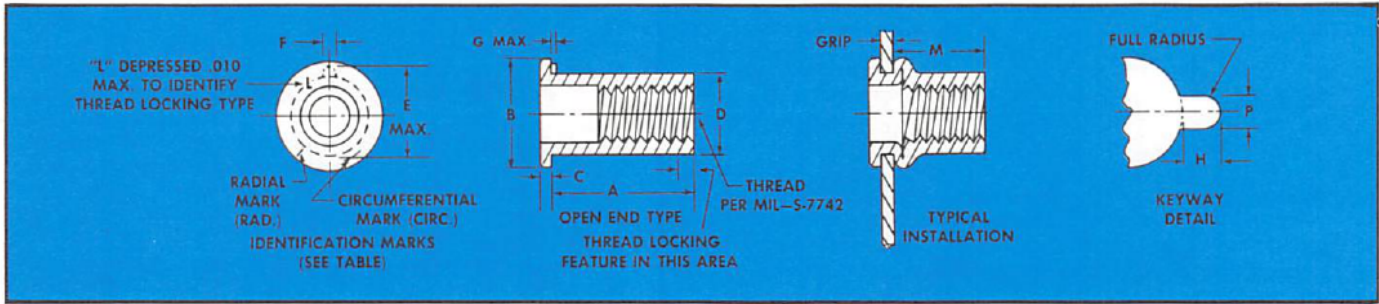
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Flat head Unilock fastener—Unified Thread System



Unilock RIVNUTS are one-piece blind fasteners (installed from one side of the work) with internal threads to provide a sturdy nutplate.

They are crimped at the end to provide a thread locking feature. This provides an all-metal interference fit between attaching screw and the threads in the Unilock RIVNUT shank. The screw stays locked in place, assures a tight assembly, resists vibration.

Made from high strength alloy steel, they meet the strength and torque requirements of MIL-N-25027 for lock type nuts. Available in countersunk and flat head styles, keyed, open-end only.

Engineering data

First No. of Type No.	Thread Size	B ±.015	C Nom.	D +.000 -.004	E Max.	F +.005 -.000	G Max.	Install Drill Size (Ref.)	Install Hole Size		Keyway Dimensions		Axial Tensile Strength
									Min.	Max.	P+.003 -.000	H	Lbs.—Min.
4	# 4-40 UNC-3B	.270	.025	.155	.198	.054	.023	5/32	.155	.157	.062	.046-.048	1170
6	# 6-32 UNC-3B	.325	.032	.189	.240	.054	.023	# 12	.189	.193	.062	.056-.058	1690
8	# 8-32 UNC-3B	.357	.032	.221	.271	.054	.023	# 2	.221	.226	.062	.056-.058	2570
10	#10-32 UNF-3B	.406	.038	.250	.302	.054	.023	E	.250	.256	.062	.056-.058	4130
25	1/4-28 UNF-3B	.475	.058	.332	.382	.054	.035	Q	.332	.338	.062	.056-.058	6590
31	5/16-24 UNF-3B	.665	.062	.413	.505	.120	.040	Z	.413	.423	.128	.097-.102	9040
37	3/8-24 UNF-3B	.781	.088	.490	.597	.120	.040	12.5 MM	.490	.500	.128	.110-.115	12,700
50	1/2-20 UNF-3B	.906	.085	.625	.733	.120	.040	3/8	.625	.635	.128	.110-.115	Not Available

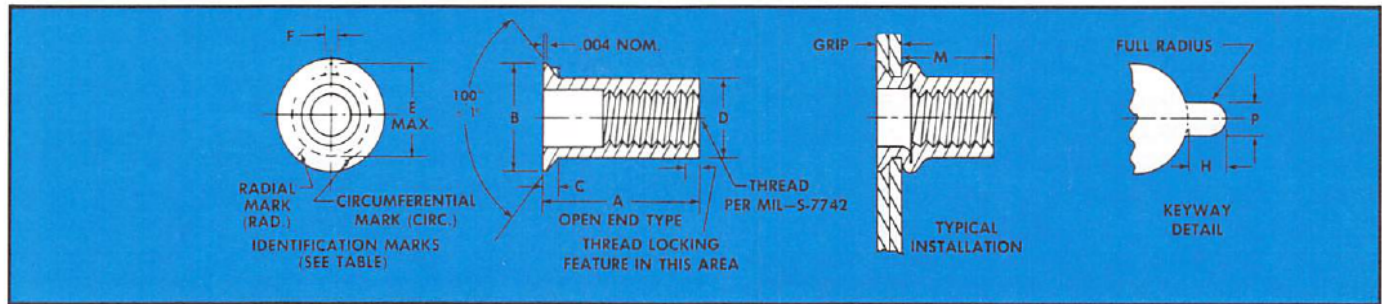
BFG Part Number	NAS Part Number	Grip † Range	Ident. Mark	A ±.015	M Nom.	Weight Lbs./1000
CH4K60L	NAS1329H04K60L	.010-.060	BLANK	.345	.230	1.3
CH4K85L	NAS1329H04K85L	.060-.085	1 RAD.	.370	.230	1.4
CH4K110L	NAS1329H04K110L	.085-.110	2 RAD.	.400	.230	1.4
CH4K135L	NAS1329H04K135L	.110-.135	3 RAD.	.425	.230	1.5
CH4K160L	NAS1329H04K160L	.135-.160	4 RAD.	.450	.230	1.5
CH6K75L	NAS1329H06K75L	.010-.075	1 RAD.	.438	.300	2.4
CH6K120L	NAS1329H06K120L	.075-.120	3 RAD.	.500	.315	2.6
CH6K160L	NAS1329H06K160L	.120-.160	5 RAD.	.500	.270	2.6
CH6K200L	NAS1329H06K200L	.160-.200	1 CIRC.	.562	.290	2.8
CH6K240L	NAS1329H06K240L	.200-.240	2 CIRC.	.625	.310	3.0
CH8K75L	NAS1329H08K75L	.010-.075	1 RAD.	.438	.300	3.0
CH8K120L	NAS1329H08K120L	.075-.120	3 RAD.	.500	.315	3.3
CH8K160L	NAS1329H08K160L	.120-.160	5 RAD.	.500	.270	3.2
CH8K200L	NAS1329H08K200L	.160-.200	1 CIRC.	.625	.350	3.9
CH8K240L	NAS1329H08K240L	.200-.240	2 CIRC.	.625	.305	3.8
CH10K80L	NAS1329H3K80L	.010-.080	BLANK	.531	.380	4.5
CH10K130L	NAS1329H3K130L	.080-.130	1 RAD.	.594	.390	4.9
CH10K180L	NAS1329H3K180L	.130-.180	2 RAD.	.641	.390	5.1
CH10K230L	NAS1329H3K230L	.180-.230	3 RAD.	.703	.395	5.4
CH10K280L	NAS1329H3K280L	.230-.280	4 RAD.	.750	.395	5.7
CH2528K80L	NAS1329H4K80L	.020-.080	BLANK	.625	.450	9.7
CH2528K140L	NAS1329H4K140L	.080-.140	1 RAD.	.687	.450	10.3
CH2528K200L	NAS1329H4K200L	.140-.200	2 RAD.	.750	.450	10.9
CH2528K260L	NAS1329H4K260L	.200-.260	3 RAD.	.812	.445	11.5
CH2528K320L	NAS1329H4K320L	.260-.320	4 RAD.	.875	.445	12.0
CH3124K125L	NAS1329H5K125L	.050-.125	BLANK	.750	.505	18.2
CH3124K200L	NAS1329H5K200L	.125-.200	1 RAD.	.875	.555	20.3
CH3124K275L	NAS1329H5K275L	.200-.275	2 RAD.	.937	.540	21.1
CH3124K350L	NAS1329H5K350L	.275-.350	3 RAD.	1.032	.560	22.6
CH3724K115L	NAS1329H6K115L	.030-.115	BLANK	.844	.585	29.7
CH3724K200L	NAS1329H6K200L	.115-.200	1 RAD.	.938	.595	31.4
CH3724K285L	NAS1329H6K285L	.200-.285	2 RAD.	1.031	.605	33.2
CH3724K370L	NAS1329H6K370L	.285-.370	3 RAD.	1.125	.615	34.9
CH5020K150L	SEE BELOW*	.050-.150	BLANK	.906	.605	42.6
CH5020K250L		.150-.250	1 RAD.	1.031	.630	46.3
CH5020K350L		.250-.350	2 RAD.	1.141	.640	49.2
CH5020K450L		.350-.450	3 RAD.	1.250	.650	52.2

*The 1/2" thread size RIVNUTS are of new design and at the present time are not covered by NAS standards.

†Additional Grip Ranges are available.



Countersunk head Unilock fastener—Unified Thread System



Specifications

Sizes:

No. 4-40, No. 6-32, No. 8-32 UNC-3B internal threads.
No. 10-32, 1/4-28, 5/16-24, 3/8-24, 1/2-20 UNF-3B internal threads.

Material:

A.I.S.I. 4037 Alloy Steel per QQ-W-405 (seam free).
Ultimate Tensile Strength
No. 4-40—55,000 P.S.I. Min.
No. 6-32—60,000 P.S.I. Min.
No. 8-32 thru 1/2"-20—85,000 P.S.I. Min.

Finish:

Cad. plate per QQ-P-416, Type II, Class 2.

Thread Locking:

Per torque requirements of MIL-N-25027.

Installation Tools:

Unilock RIVNUTS can be installed with standard BFG RIVNUT Header tools, except they require reduced diameter pull-up studs. (When ordering, specify regular pull-up stud part No. followed by "L".)

Engineering data

First No. of Type No.	Thread Size	B Ref.	C Max.	D +.000 - .004	E Max.	F +.005 - .000	Install Drill Size (Ref.)	Install Hole Size		Keyway Dimensions		Axial Tensile Strength
								Min.	Max.	P +.003 - .000	H	Lbs.—Min.
4	# 4-40 UNC-3B	.263	.051	.155	.198	.054	3/32	.155	.157	.062	.046-.048	1170
6	# 6-32 UNC-3B	.323	.063	.189	.240	.054	#12	.189	.193	.062	.056-.058	1590
8	# 8-32 UNC-3B	.355	.063	.221	.271	.054	# 2	.221	.226	.062	.056-.058	2570
10	#10-32 UNF-3B	.391	.065	.250	.302	.054	E	.250	.256	.062	.056-.058	4130
25	1/4-28 UNF-3B	.529	.089	.332	.382	.054	Q	.332	.338	.062	.056-.058	6590
31	5/16-24 UNF-3B	.656	.104	.413	.505	.120	Z	.413	.423	.128	.097-.102	9040
37	3/8-24 UNF-3B	.770	.124	.490	.597	.120	12.5 MM	.490	.500	.128	.110-.115	12,700
50	1/2-20 UNF-3B	.906	.124	.625	.733	.120	3/8	.625	.635	.128	.110-.115	Not Available

BFG Part Number	NAS Part Number	Grip † Range	Ident. Mark	A ±.015	M Nom.	Weight Lbs./1000
CH4K81L	NAS1330H04K81L	.050-.081	BLANK	.370	.235	1.3
CH4K106L	NAS1330H04K106L	.081-.106	1 RAD.	.395	.235	1.3
CH4K131L	NAS1330H04K131L	.106-.131	2 RAD.	.420	.235	1.4
CH4K156L	NAS1330H04K156L	.131-.156	3 RAD.	.450	.235	1.4
CH4K181L	NAS1330H04K181L	.156-.181	4 RAD.	.475	.235	1.5
CH6K106L	NAS1330H06K106L	.065-.106	BLANK	.500	.325	2.5
CH6K161L	NAS1330H06K161L	.106-.161	2 RAD.	.500	.280	2.4
CH6K201L	NAS1330H06K201L	.161-.201	4 RAD.	.562	.295	2.6
CH6K241L	NAS1330H06K241L	.201-.241	1 CIRC.	.625	.315	2.9
CH6K281L	NAS1330H06K281L	.241-.281	2 CIRC.	.625	.270	2.8
CH8K106L	NAS1330H08K106L	.065-.106	BLANK	.500	.325	3.1
CH8K161L	NAS1330H08K161L	.106-.161	2 RAD.	.500	.280	3.0
CH8K201L	NAS1330H08K201L	.161-.201	4 RAD.	.562	.290	3.3
CH8K241L	NAS1330H08K241L	.201-.241	1 CIRC.	.625	.310	3.6
CH8K281L	NAS1330H08K281L	.241-.281	2 CIRC.	.687	.325	3.2
CH10K116L	NAS1330H3K116L	.065-.116	BLANK	.578	.395	4.3
CH10K166L	NAS1330H3K166L	.116-.166	1 RAD.	.625	.385	4.6
CH10K216L	NAS1330H3K216L	.166-.216	2 RAD.	.687	.400	4.9
CH10K266L	NAS1330H3K266L	.216-.266	3 RAD.	.734	.390	5.1
CH10K316L	NAS1330H3K316L	.266-.316	4 RAD.	.781	.385	5.4
CH2528K151L	NAS1330H4K151L	.089-.151	BLANK	.687	.440	9.8
CH2528K211L	NAS1330H4K211L	.151-.211	1 RAD.	.750	.440	10.3
CH2528K271L	NAS1330H4K271L	.211-.271	2 RAD.	.812	.440	10.9
CH2528K331L	NAS1330H4K331L	.271-.331	3 RAD.	.875	.435	11.5
CH2528K391L	NAS1330H4K391L	.331-.391	4 RAD.	.937	.435	12.1
CH3124K181L	NAS1330H5K181L	.106-.181	BLANK	.844	.540	17.8
CH3124K256L	NAS1330H5K256L	.181-.256	1 RAD.	.937	.560	19.3
CH3124K331L	NAS1330H5K331L	.256-.331	2 RAD.	1.000	.550	20.1
CH3124K406L	NAS1330H5K406L	.331-.406	3 RAD.	1.093	.565	21.5
CH3724K211L	NAS1330H6K211L	.125-.211	BLANK	.938	.580	27.0
CH3724K296L	NAS1330H6K296L	.211-.296	1 RAD.	1.103	.590	28.7
CH3724K381L	NAS1330H6K381L	.296-.381	2 RAD.	1.125	.600	30.5
CH3724K466L	NAS1330H6K466L	.381-.466	3 RAD.	1.219	.615	32.3
CH5020K226L		.125-.226	BLANK	.984	.610	43.2
CH5020K326L	SEE BELOW*	.226-.326	1 RAD.	1.094	.620	45.7
CH5020K426L		.326-.426	2 RAD.	1.218	.640	49.2
CH5020K526L		.426-.526	3 RAD.	1.312	.635	51.6

*The 1/2" thread size RIVNUTS are of new design and at the present time are not covered by NAS standards.

†Additional Grip Ranges are available.



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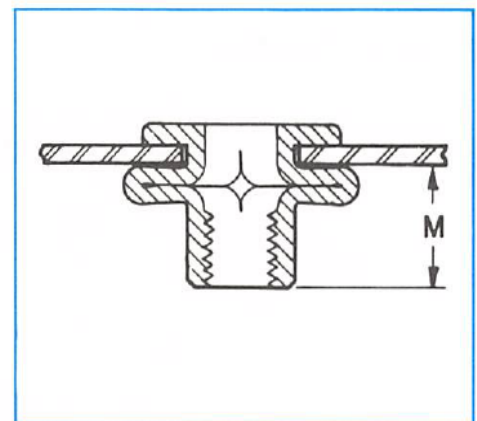
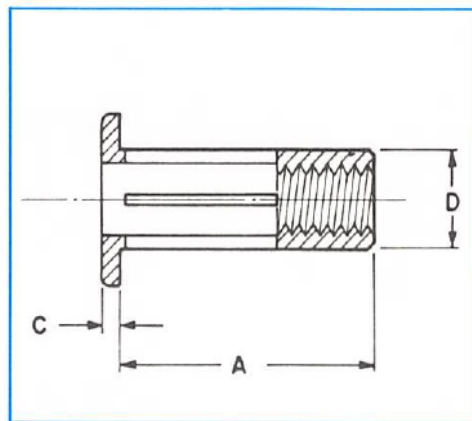
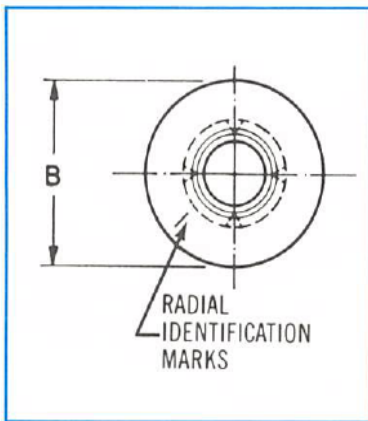
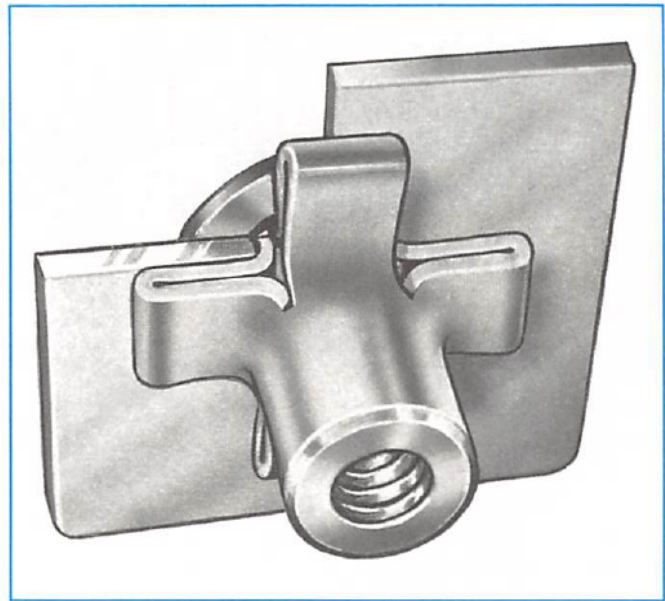
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Flat head PLUSNUT® fastener— Unified Thread System

Developed specifically for automotive, electronic and appliance assembly. Also, suitable for wide applications throughout industry.

PLUSNUTS are blind, threaded fasteners recommended for rigid fastening in sheet metal, fiberglass and plastics. Slotted shanks split and form large flaps which evenly distribute installation and working loads over a large area. For example, PLUSNUTS provide excellent anchors for seat belts, car top carriers and mirror mounts. PLUSNUTS also offer solutions to many other fastening problems because of these outstanding advantages over other blind fasteners.

- Superb pull-out strength
- Wide grip range
- Exceptional torque and thread strength.



Specifications

Thread Size*	Type Number	Ident. Mark	Grip Range†		A ±.015	B Nom.	C Nom.	D Max.	M Nom.	Inst. Drill Size	Inst. Hole Size		Wt. (Lbs./1000)		
			Min.	Max.							Min.	Max.	Alum.	Brass	Steel and Stainless
4-40	4P90	Blank	.020	.090	.484	5/16	.025	.169	.250	1 1/64	.170	.175	.70	2.21	2.01
	4P150	1 Rad.	.090	.150	.562	5/16	.025	.169	.250	1 1/64	.170	.175	.75	2.50	2.27
6-32	6P150	Blank	.020	.150	.656	7/16	.032	.208	.335	#4	.208	.213	1.43	4.84	4.40
	6P270	1 Rad.	.150	.270	.765	7/16	.032	.208	.335	#4	.208	.213	1.57	5.30	4.82
8-32	8P150	Blank	.020	.150	.656	7/16	.038	.241	.340	C	.241	.246	1.78	5.86	5.33
	8P270	1 Rad.	.150	.270	.781	7/16	.038	.241	.340	C	.241	.246	1.90	6.51	5.92
10-32	10P175	Blank	.020	.175	.781	1/2	.038	.272	.425	I	.272	.277	2.57	8.72	7.93
	10P320	1 Rad.	.175	.320	.921	1/2	.038	.272	.425	I	.272	.277	2.89	9.67	8.79
1/4-20	25P280	Blank	.020	.280	1.000	5/8	.058	.346	.505	S	.346	.352	5.28	17.83	16.21
	25P500	1 Rad.	.280	.500	1.234	5/8	.058	.346	.505	S	.346	.352	6.08	20.41	18.55
5/16-18	31P280	Blank	.020	.280	1.141	3/4	.062	.437	.570	7/16	.437	.453	9.26	31.15	28.32
	31P500	1 Rad.	.280	.500	1.375	3/4	.062	.437	.570	7/16	.437	.453	10.56	35.26	32.05
3/8-16	37P280	Blank	.020	.280	1.218	7/8	.088	.514	.605	33/64	.514	.522	14.09	47.07	42.79
	37P500	1 Rad.	.280	.500	1.437	7/8	.088	.514	.605	33/64	.514	.522	15.36	51.50	46.82

*Both UNC and UNF threads are available in No. 10 and larger sizes.

CODE: Diameter and grip range as tabulated. First letter of type number indicates material: "A" for aluminum, "S" for steel, "SS" for stainless steel, "BR" for brass.

EXAMPLE: S10P175 – Steel, No. 10-32 Internal Thread, .020 – .175 Grip Range.

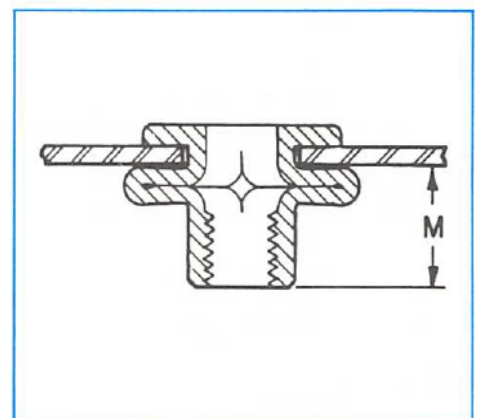
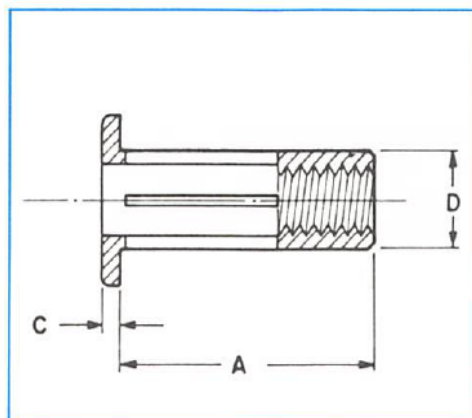
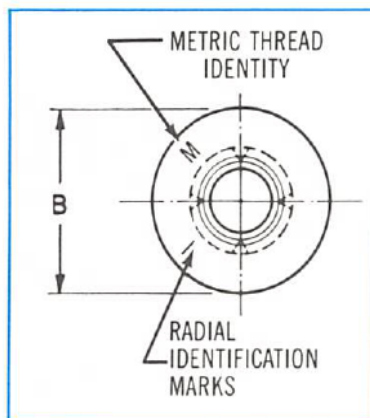
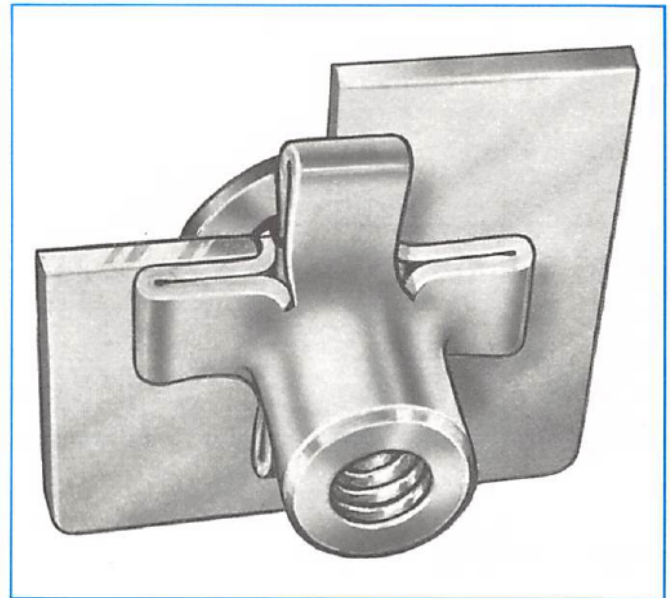
†Additional Grip Ranges are available.

Flat head PLUSNUT® fastener— Metric Thread System

Developed specifically for automotive, electronic and appliance assembly. Also, suitable for wide applications throughout industry.

PLUSNUTS are blind, threaded fasteners recommended for rigid fastening in sheet metal, fiberglass and plastics. Slotted shanks split and form large flaps which evenly distribute installation and working loads over a large area. For example, PLUSNUTS provide excellent anchors for seat belts, car top carriers and mirror mounts. PLUSNUTS also offer solutions to many other fastening problems because of these outstanding advantages over other blind fasteners.

- Superb pull-out strength
- Wide grip range
- Exceptional torque and thread strength.



Specifications

Thread Size*	Type Number	Ident. Mark	Grip Range†		A ± 0.38	B Nom.	C Nom.	D Max.	M Nom.	Inst. Drill Size	Inst. Hole Size		Wt. (Lbs./1000)		
			Min.	Max.							Min.	Max.	Alum.	Brass	Steel and Stainless
M4X0.7	M4P3.80	Blank	0.50	3.80	16.65	11.09	0.96	6.12	8.60	6.20	6.12	6.25	1.85	5.84	5.46
	M4P6.85	1 Mark	3.80	6.85	19.80	11.09	0.96	6.12	8.60	6.20	6.12	6.25	1.98	6.45	6.04
M5X0.8	M5P4.45	Blank	0.50	4.45	21.03	12.70	0.96	7.47	9.90	7.50	7.47	7.62	3.03	10.00	9.36
	M5P8.10	1 Mark	4.45	8.10	23.80	12.70	0.96	7.47	9.90	7.50	7.47	7.62	3.27	10.58	9.90
M6X1.0	M6P7.10	Blank	0.50	7.10	25.40	15.87	1.50	8.79	12.80	8.80	8.79	8.93	6.06	19.69	18.41
	M6P12.70	1 Mark	7.10	12.70	31.32	15.87	1.50	8.79	12.80	8.80	8.79	8.93	6.08	19.72	18.44
M8X1.25	M8P7.10	Blank	0.50	7.10	28.95	19.04	1.57	11.10	14.47	11.80	11.10	11.50	9.53	30.81	28.81
	M8P12.70	1 Mark	7.10	12.70	34.90	19.04	1.57	11.10	14.47	11.80	11.10	11.50	10.61	34.42	32.18
M10X1.50	M10P7.10	Blank	0.50	7.10	30.94	22.23	2.24	13.06	15.75	33/64 Inch Drill	13.06	13.26	13.07	42.47	39.71
	M10P12.70	1 Mark	7.10	12.70	36.50	22.23	2.24	13.06	15.75	33/64 Inch Drill	13.06	13.26	14.90	60.15	48.52

CODE: Diameter and grip range as tabulated. First letter of type number indicates material: "A" for aluminum, "S" for steel, "SS" for stainless steel, "BR" for brass.

EXAMPLE: SM4P3.80 – Steel, M4X0.7 Internal Thread, 0.50 – 3.80 Grip Range.

†Additional Grip Ranges are available.

Metric/Inch conversion chart – page 47

ALL DIMENSIONS ARE IN MILLIMETERS



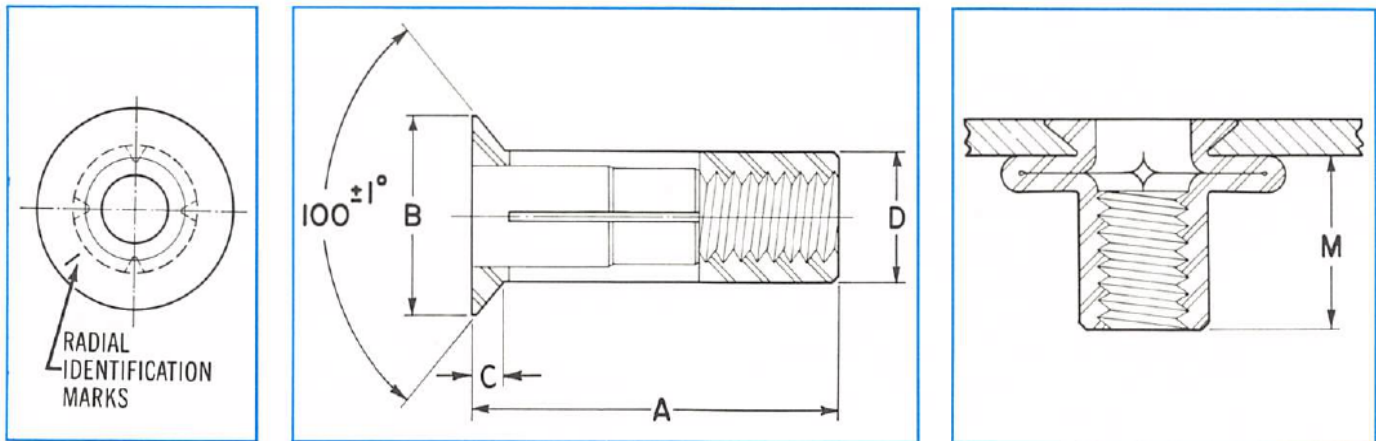
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Countersunk head PLUSNUT® fastener – Unified Thread System



Materials and finishes

Material	Type No.	Standard Finish
STEEL	C-1108* C-1010* C-1110*	Cadmium Plate — .0002" Minimum Thickness will meet Federal Specification: QQ-P-416, Class 3, Type I
STAINLESS STEEL	430	Passivated per Federal Specification QQ-P-35, Type II
BRASS	Alloy No. 260	Bright as machined.
ALUMINUM	6053	Anodize per MIL-A-8625

*C-1108, C-1010 and C-1110 steel may be used interchangeably.

Specifications

Thread Size*	Type Number	Ident. Mark	Grip Range†		A ± .015	B Ref.	C Max.	D Max.	M Nom.	Inst. Drill Size	Inst. Hole Size		Wt. (Lbs./1000)		
			Min.	Max.							Min.	Max.	Alum.	Brass	Steel and Stainless
4-40	4P106	Blank	.051	.106	.500	.307	.051	.169	.250	1 1/64	.170	.175	.63	2.20	2.0
	4P151	1 Rad.	.106	.151	.562	.307	.051	.169	.250	1 1/64	.170	.175	.76	2.40	2.18
6-32	6P166	Blank	.065	.166	.672	.345	.063	.208	.340	#4	.208	.213	1.20	4.18	3.80
	6P271	1 Rad.	.166	.271	.781	.345	.063	.208	.340	#4	.208	.213	1.42	4.68	4.25
8-32	8P176	Blank	.065	.176	.672	.377	.063	.241	.335	C	.241	.246	1.54	5.17	4.70
	8P271	1 Rad.	.176	.271	.781	.377	.063	.241	.335	C	.241	.246	1.75	5.76	5.24
10-32	10P196	Blank	.065	.196	.781	.412	.065	.272	.415	I	.272	.277	2.27	7.48	6.80
	10P321	1 Rad.	.196	.321	.922	.412	.065	.272	.415	I	.272	.277	2.51	8.49	7.72
1/4-20	25P296	Blank	.089	.296	1.015	.545	.089	.346	.505	S	.346	.352	4.64	15.42	14.02
	25P501	1 Rad.	.296	.501	1.234	.545	.089	.346	.505	S	.346	.352	5.28	17.83	16.21
5/16-18	31P301	Blank	.102	.301	1.156	.667	.102	.437	.565	7/16	.437	.453	8.25	27.68	25.16
	31P501	1 Rad.	.301	.501	1.375	.667	.102	.437	.565	7/16	.437	.453	9.48	31.57	28.70
3/8-16	37P316	Blank	.125	.316	1.250	.795	.124	.514	.610	33/64	.514	.522	12.01	40.17	36.52
	37P501	1 Rad.	.316	.501	1.453	.795	.124	.514	.610	33/64	.514	.522	13.33	44.55	40.50

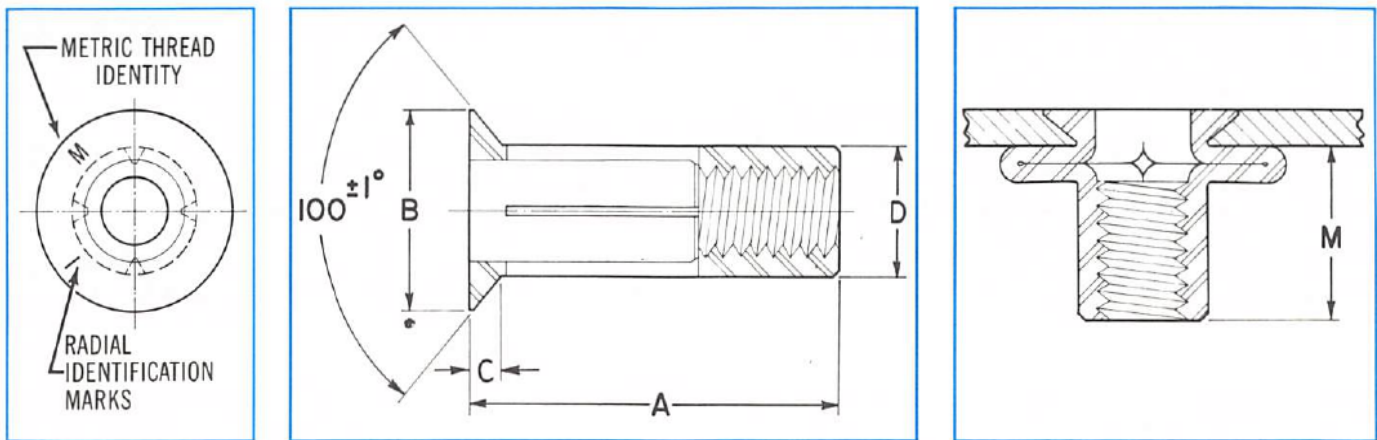
*Both UNC and UNF threads are available in No. 10 and larger sizes.

CODE: Diameter and grip range as tabulated. First letter of type number indicates material: "A" for aluminum, "S" for steel, "SS" for stainless steel, "BR" for brass.

EXAMPLE: S25P296 – Steel, 1/4-20 Internal Thread, .089 – .296 Grip Range.

†Additional Grip Ranges are available.

Countersunk head PLUSNUT® fastener – Metric Thread System



Materials and finishes

Material	Type No.	Standard Finish
STEEL	C-1108* C-1010* C-1110*	Cadmium Plate — .0002" Minimum Thickness will meet Federal Specification: QQ-P-416, Class 3, Type I
STAINLESS STEEL	430	Passivated per Federal Specification QQ-P-35, Type II
BRASS	Alloy No. 260	Bright as machined.
ALUMINUM	6053	Anodize per MIL-A-8625

*C-1108, C-1010 and C-1110 steel may be used interchangeably.

Specifications

Thread Size*	Type Number	Ident. Mark	Grip Range†		A ± 0.38	B Ref.	C Max.	D Max.	M Nom.	Inst. Drill Size	Inst. Hole Size		Wt. (Lbs./1000)		
			Min.	Max.							Min.	Max.	Alum.	Brass	Steel and Stainless
M4X0.7	M4P4.41	Blank	1.65	4.41	17.06	9.58	1.60	6.12	8.51	6.20	6.12	6.25	1.74	5.46	5.10
	M4P6.86	1 Mark	4.41	6.86	19.84	9.58	1.60	6.12	8.51	6.20	6.12	6.25	1.84	6.03	5.64
M5X0.8	M5P4.96	Blank	1.65	4.96	21.03	11.35	1.65	7.47	10.52	7.50	7.47	7.62	3.82	9.40	8.65
	M5P8.16	1 Mark	4.96	8.16	24.21	11.35	1.65	7.47	10.52	7.50	7.47	7.62	3.29	10.86	10.15
M6X1.0	M6P7.51	Blank	2.26	7.51	25.78	13.84	2.26	8.79	12.80	8.80	8.79	8.93	5.23	16.15	15.79
	M6P12.71	1 Mark	7.51	12.71	31.34	13.84	2.26	8.79	12.80	8.80	8.79	8.93	5.59	19.15	17.07
M8X1.25	M8P7.51	Blank	2.61	7.51	29.36	19.05	2.59	11.10	14.35	11.80	11.10	11.50	7.87	25.56	23.90
	M8P12.71	1 Mark	7.51	12.71	34.93	19.05	2.59	11.10	14.35	11.80	11.10	11.50	8.96	29.24	27.37
M10X1.50	M10P8.01	Blank	3.18	8.01	32.13	22.23	3.15	13.06	16.25	33/64 Inch Drill	13.06	13.26	12.78	41.69	38.98
	M10P12.61	1 Mark	8.01	12.61	37.29	22.23	3.15	13.06	16.25	33/64 Inch Drill	13.06	13.26	13.85	45.03	42.11

CODE: Diameter and grip range as tabulated. First letter of type number indicates material: "A" for aluminum, "S" for steel, "SS" for stainless steel, "BR" for brass.

EXAMPLE: SM10P8.01 – Steel, M10X1.50 Internal Thread, 3.18 – 8.01 Grip Range.

†Additional Grip Ranges are available.

Metric/Inch conversion chart – page 47

ALL DIMENSIONS ARE IN MILLIMETERS



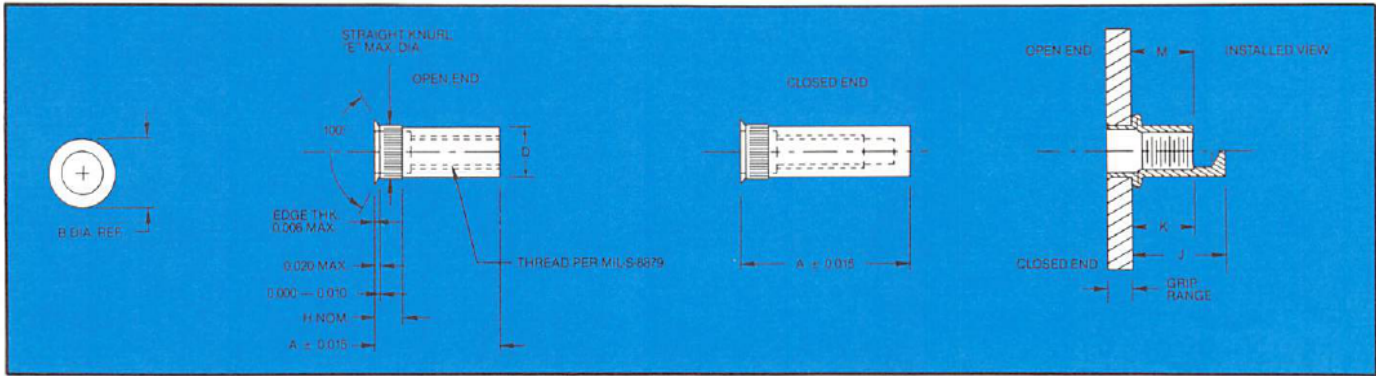
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THINHEAD™ Ribbed RIVNUT® fastener – Unified Thread System



CODE: Diameter and grip range as tabulated. First letter of type number indicates material: "S" for C-1110 steel, "SS" for Type 430 corrosion resistant steel, "CH" for heat treated 4037 steel, "NM" for Type 305 stainless steel or equivalent. Example of Type No. STR25-80="S" for C-1110 steel or equivalent, "TR"=Thinhead ribbed shank, "25"=2520 thread, — for open end, "80"=.080 inch maximum grip.

EXAMPLE: NMTR10B130 ="NM" Type 305 corrosion resistant steel or equivalent. "TR"=Thinhead ribbed shank, "10"=1032 thread, "B"=closed end, "130"=.130 inch maximum grip.

WEIGHTS: "NM" RIVNUTS (Type 305, corrosion resistant steel), "CH" RIVNUTS (4037 steel) and "SS" RIVNUTS (Type 430 corrosion resistant steel) same as for "S" RIVNUTS (C-1110 steel or equivalent).

First No. of Type No.	Thread Size*	B REF.	D +.000 - .004	E MAX. DIA.	Install Drill Size (Ref.)	Install Hole Size	
						Min.	Max.
4	#4 – 40UNC – 3B	.197	.155	.165	#19	.166	.1695
6	#6 – 32UNC – 3B	.231	.189	.198	#8	.198	.202
8	#8 – 32UNC – 3B	.263	.221	.230	#1	.228	.232
10	#10 – 32UNF – 3B	.292	.250	.261	G	.261	.265
25	1/4 – 20UNC – 3B	.374	.332	.343	11/32	.343	.348
31	5/16 – 18UNC – 3B	.454	.413	.426	27/64	.426	.432
37	3/8 – 16UNC – 3B	.531	.490	.503	1/2	.500	.510
50	1/2 – 13UNC – 3B	.667	.625	.638	41/64	.640	.650

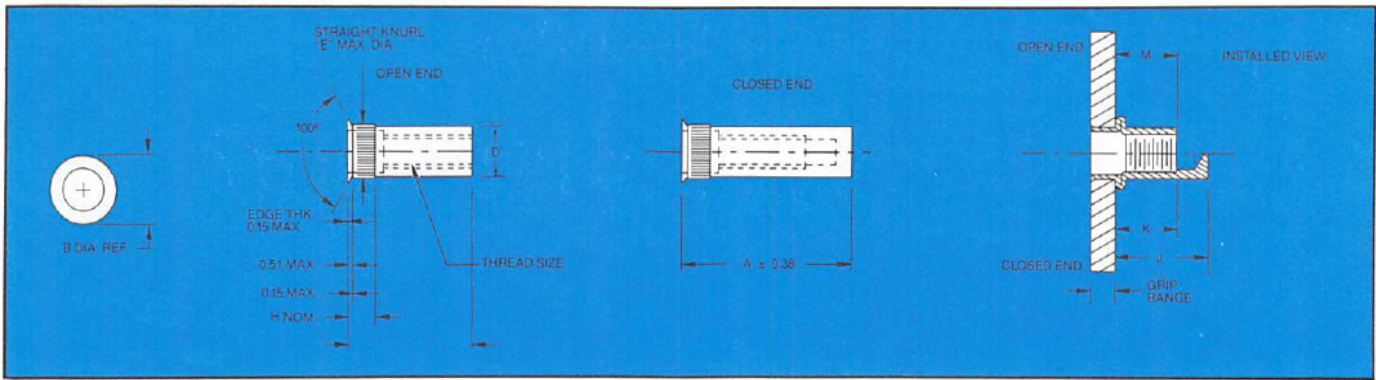
*Both UNC and UNF threads are available in No. 10 and larger thread sizes. EXAMPLE: 3724UNF, call out 3724 in Type No. Thread lock available upon request.

Type Number	Grip Range	H NOM	Open End			Closed End			Wt. (Lbs./1000) Steel
			A ±.015	M Ref.	Wt. (Lbs./1000) Steel	A ±.015	J Ref.	K Ref.	
4-60	.025-.060	.115	.375	.260	1.06	.531	.415	.260	1.68
4-85	.060-.085	.140	.390	.260	1.08	.546	.415	.260	1.69
4-110	.085-.110	.165	.421	.260	1.15	.578	.415	.260	1.77
4-135	.110-.135	.190	.453	.260	1.21	.609	.415	.260	1.83
4-160	.135-.160	.215	.484	.260	1.28	.640	.415	.260	1.90
4-185	.160-.185	.240	.500	.260	1.31	.656	.415	.260	1.92
6-070	.030-.070	.145	.453	.320	1.89	.640	.510	.320	3.00
6-110	.070-.110	.185	.484	.310	1.98	.671	.500	.310	3.09
6-150	.110-.150	.225	.531	.315	2.14	.718	.505	.315	3.25
6-190	.150-.190	.265	.578	.320	2.28	.765	.510	.320	3.39
6-230	.190-.230	.305	.609	.315	2.36	.796	.505	.315	3.52
6-270	.230-.270	.345	.656	.320	2.52	.844	.510	.320	3.63
8-070	.030-.070	.145	.453	.320	2.40	.640	.510	.320	3.86
8-110	.070-.110	.185	.500	.325	2.60	.687	.515	.325	4.05
8-150	.110-.150	.225	.546	.330	2.79	.734	.520	.330	4.24
8-190	.150-.190	.265	.586	.330	2.97	.781	.520	.330	4.43
8-230	.190-.230	.305	.625	.330	3.08	.812	.520	.330	4.54
8-270	.230-.270	.345	.671	.335	3.26	.844	.510	.335	4.72
10-80	.030-.080	.155	.562	.400	3.68	.750	.590	.400	5.38
10-130	.080-.130	.205	.625	.415	4.03	.812	.605	.415	5.88
10-180	.130-.180	.255	.671	.410	4.25	.859	.590	.410	6.10
10-230	.180-.230	.305	.718	.410	4.48	.906	.570	.410	6.33
10-330	.230-.280	.355	.781	.420	4.81	.968	.610	.420	6.66
10-330	.280-.330	.405	.828	.420	5.04	1.015	.610	.420	6.89
25-80	.030-.080	.155	.609	.435	2.83	.890	.715	.435	11.51
25-140	.080-.140	.215	.671	.435	7.35	.953	.715	.435	12.05
25-200	.140-.200	.275	.734	.440	7.89	1.015	.720	.440	12.57
25-260	.200-.260	.335	.812	.460	8.57	1.093	.740	.460	13.26
25-320	.260-.320	.395	.875	.460	9.09	1.156	.740	.460	13.77
25-380	.320-.380	.455	.937	.460	9.59	1.218	.740	.460	14.27
31-125	.030-.125	.200	.781	.540	14.21	1.093	.847	.540	22.51
31-200	.125-.200	.275	.875	.555	15.62	1.187	.862	.555	23.92
31-275	.200-.275	.350	.953	.560	16.68	1.250	.867	.560	24.64
31-350	.275-.350	.425	1.031	.570	17.77	1.343	.877	.570	26.10
31-425	.350-.425	.500	1.125	.580	19.19	1.437	.887	.580	27.49
31-500	.425-.500	.575	1.187	.570	19.96	1.500	.877	.570	28.28
37-115	.030-.115	.190	.812	.540	20.01	1.156	.882	.540	32.71
37-200	.115-.200	.275	.890	.545	21.34	1.234	.888	.545	34.04
37-285	.200-.285	.360	.984	.555	23.11	1.328	.898	.555	35.81
37-370	.285-.370	.445	1.093	.570	25.30	1.453	.913	.570	38.03
37-455	.370-.455	.530	1.187	.575	28.84	1.531	.918	.575	41.55
37-540	.455-.540	.615	1.281	.585	30.62	1.562	.923	.585	43.29
50-150	.050-.150	.225	.968	.815	33.48	1.375	1.430	.815	56.89
50-250	.150-.250	.325	1.062	.815	35.57	1.468	1.430	.815	58.93
50-350	.250-.350	.425	1.187	.835	38.77	1.609	1.550	.835	62.88
50-450	.350-.450	.525	1.281	.830	40.79	1.687	1.445	.830	64.15



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THINHEAD™ Ribbed RIVNUT® fastener – Metric Thread System



CODE: Diameter and grip range as tabulated. First letter of type number indicates material: "S" for C-1110 steel, "SS" for Type 430 corrosion resistant steel, "CH" for heat treated 4037 steel, "NM" for Type 305 stainless steel or equivalent. Example of Type No. STRM3-2.50 "S" for C-1110 steel or equivalent, "TR"=Thinhead ribbed shank, M5=M3X05 thread, — for open end, 2.50=2.50MM maximum grip.

EXAMPLE: NMTRM12B5.10="NM" Type 305 corrosion resistant steel or equivalent. "TR"=Thinhead ribbed shank, M5=M5X0.8 thread, "B"=closed end, 5.10=5.10 MM maximum grip.

WEIGHTS: "NM" RIVNUTS (Type 305, corrosion resistant steel), "CH" RIVNUTS (4037 steel) and "SS" RIVNUTS (Type 430 corrosion resistant steel) same as for "S" RIVNUTS (C-1110 steel or equivalent).

First Symbols of Type No.	Thread Size	B REF.	D +.000 - 0.10	E MAX. DIA.	Install Drill Size (Ref.)	Install Hole Size	
						Min.	Max.
M3	M3X0.5-6H	5.00	3.93	4.19	#19	4.22	4.29
M4	M4X0.7-6H	6.68	5.61	5.84	#1	5.79	5.92
M5	M5X0.8-6H	8.30	7.13	7.48	M	7.49	7.59
M6	M6X1.0-6H	8.80	8.43	8.71	11/32	8.70	8.83
M7	M7X1.0-6H	10.56	9.37	9.62	9.6MM	9.60	9.72
M8	M8X1.25-6H	11.53	10.48	10.81	27/64	10.81	10.97
M10	M10X1.50-6H	13.50	12.44	13.47	1/2	12.70	12.95
M12	M12X1.75-6H	16.62	15.38	15.73	5/8	15.66	15.96

Type Number	Grip Range	H NOM	Open End			Closed End			
			A ±.015	M Ref.	Wt. (Lbs./1000) Steel	A ±.015	J Ref.	K Ref.	Wt. (Lbs./1000) Steel
M3-1.00	0.63 — 1.00	2.39	9.00	4.06	.868	13.00	10.61	4.06	1.45
M3-1.75	1.00 — 1.75	3.15	9.75	4.06	.915	13.75	10.61	4.06	1.50
M3-2.50	1.75 — 2.50	3.91	10.50	4.06	.962	14.50	10.61	4.06	1.55
M3-3.25	2.50 — 3.25	4.64	11.25	4.06	1.01	15.25	10.61	4.06	1.60
M3-4.00	3.25 — 4.00	5.41	12.00	4.06	1.05	16.00	10.61	4.06	1.64
M3-4.75	4.00 — 4.75	6.14	12.75	4.06	1.10	16.75	10.61	4.06	1.69
M4-2.00	0.63 — 2.00	3.40	11.50	7.59	2.48	16.50	12.59	7.59	4.05
M4-3.00	2.00 — 3.00	4.39	12.50	7.59	2.65	17.50	12.59	7.59	4.22
M4-4.00	3.00 — 4.00	5.41	13.50	7.59	2.81	18.50	12.59	7.59	4.38
M4-5.00	4.00 — 5.00	6.40	14.50	7.59	2.97	19.50	12.59	7.59	4.54
M4-6.00	5.00 — 6.00	7.39	15.50	7.59	3.14	20.50	12.59	7.59	4.71
M4-7.00	6.00 — 7.00	8.45	16.50	7.59	3.30	21.50	12.59	7.59	4.86
M5-2.00	0.63 — 2.00	3.91	15.00	10.58	5.24	20.00	15.58	10.58	7.81
M5-3.50	2.00 — 3.50	5.41	16.50	10.58	5.60	21.50	15.58	10.58	8.17
M5-5.00	3.50 — 5.00	6.90	18.00	10.58	5.90	23.00	15.58	10.58	8.48
M5-6.50	5.00 — 6.50	8.40	19.50	10.58	6.27	24.50	15.58	10.58	8.84
M5-8.00	6.50 — 8.00	9.90	21.00	10.58	6.62	26.00	15.58	10.58	9.18
M5-9.50	8.00 — 9.50	11.40	22.50	10.58	6.97	27.50	15.58	10.58	9.54
M6-2.00	0.63 — 2.00	3.91	16.00	11.09	7.81	23.00	18.07	11.09	12.67
M6-3.50	2.00 — 3.50	5.41	17.50	11.09	8.33	24.50	18.07	11.09	13.17
M6-5.00	3.50 — 5.00	6.90	19.00	11.09	8.84	26.00	18.07	11.09	13.68
M6-6.50	5.00 — 6.50	8.40	20.50	11.09	9.34	27.50	18.07	11.09	14.02
M6-8.00	6.50 — 8.00	9.90	22.00	11.09	9.92	29.00	18.07	11.09	14.76
M6-9.50	8.00 — 9.50	11.40	23.50	11.09	10.43	30.50	18.07	11.09	16.64
M7-3.00	0.63 — 3.00	4.90	17.50	11.57	9.65	24.50	18.58	11.57	15.40
M7-5.00	3.00 — 5.00	6.85	19.50	11.57	10.50	26.50	18.58	11.57	16.27
M7-7.00	5.00 — 7.00	8.91	21.50	11.57	11.37	28.50	18.58	11.57	17.14
M7-9.00	7.00 — 9.00	12.49	23.50	11.57	12.22	30.50	18.58	11.57	17.99
M7-11.00	9.00 — 11.00	12.69	25.50	11.57	13.73	32.50	18.58	11.57	18.75
M7-13.00	11.00 — 13.00	14.90	27.50	11.57	13.90	34.50	18.58	11.57	19.66
M8-3.00	0.63 — 3.00	4.90	20.00	13.83	13.39	28.00	21.83	13.83	21.46
M8-5.00	3.00 — 5.00	6.85	22.00	13.83	14.37	30.00	21.83	13.83	22.45
M8-7.00	5.00 — 7.00	8.91	24.00	13.83	15.36	32.00	21.83	13.83	23.44
M8-9.00	7.00 — 9.00	12.49	26.00	13.83	16.33	34.00	21.83	13.83	24.43
M8-11.00	9.00 — 11.00	12.69	28.00	13.83	17.28	36.00	21.83	13.83	25.36
M8-13.00	11.00 — 13.00	14.90	30.00	13.83	18.27	38.00	21.83	13.83	26.35
M10-3.00	1.00 — 3.00	4.90	21.00	14.18	17.53	29.50	22.56	14.18	26.25
M10-5.50	3.00 — 5.50	7.41	23.50	14.18	18.95	32.00	22.56	14.18	30.67
M10-8.00	5.50 — 8.00	9.90	26.00	14.18	20.36	34.50	22.56	14.18	32.08
M10-10.50	8.00 — 10.50	12.41	28.50	14.18	21.78	37.00	22.56	14.18	33.50
M10-13.00	10.50 — 13.00	14.90	31.00	14.18	23.19	39.50	22.56	14.18	34.91
M12-2.50	1.00 — 2.50	5.03	24.00	16.93	34.49	33.50	26.45	16.93	55.36
M12-5.00	2.50 — 5.00	7.54	26.50	16.93	37.26	36.00	26.45	16.93	58.09
M12-7.50	5.00 — 7.50	10.05	29.00	16.93	39.97	38.50	26.45	16.93	60.80
M12-10.00	7.50 — 10.00	12.54	31.50	16.93	42.71	41.00	26.45	16.93	63.54
M12-12.50	10.00 — 12.50	15.03	34.00	16.93	45.50	43.50	26.45	16.93	66.33

Note: All dimensions in millimeters.

Metric/inch conversion chart — page 47



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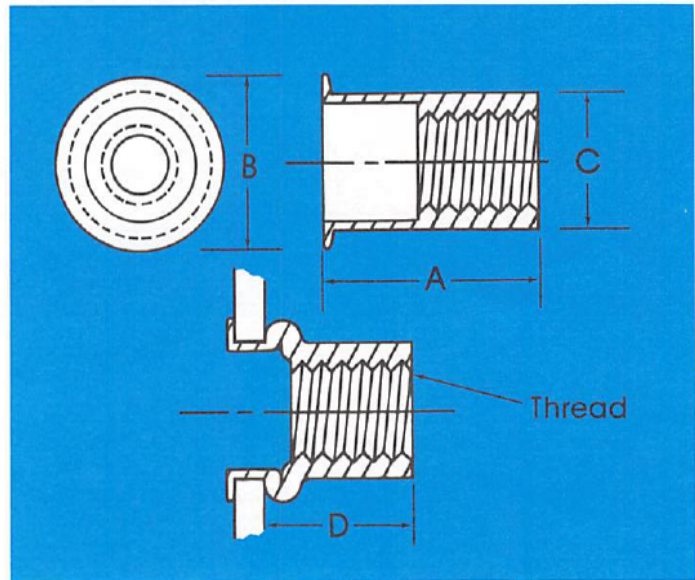
Low profile RIVNUT® fasteners

Where to use an LPR?

When fastener head height or protrusion is an important design consideration in blind and non-blind applications.

How does an LPR work?

A BFGoodrich hand or power tool pull-up stud engages the LPR's threads, exerting a pull causing the shank to expand against the material being fastened.



Type no. example: L-S10-130 "L" for low profile head, "S" for steel, "10" for #10-32 thread, .130 for maximum of grip range.

Part Number	Unified Thread Size	Grip Range	A ± .015	B ± .010	C + .000 - .006	D Ref.	Install Drill Size (Ref.)	Install Hole Size	
								Min.	Max.
L-S6-80	#6-32UNC-2B	.020-.080	.315	.236	.197	.187	#8	.199	.203
L-S8-80	#8-32UNC-2B	.020-.080	.425	.268	.236	.250	B	.238	.242
L-S10-130	#10-32UNF-2B	.020-.130	.500	.307	.276	.265	7.1MM	.278	.282
L-S25-130	1/4-20UNC-2B	.020-.130	.606	.394	.354	.343	9.1MM	.356	.360
L-S31-130	5/16-18UNC-2B	.020-.130	.650	.472	.433	.406	7/16"	.435	.439
L-S37-160	3/8-16UNC-2B	.020-.160	.701	.551	.512	.406	33/64"	.514	.518

Type no. example: L-SM5-2.0 "L" for low profile head, "S" for steel, M5 for M5x0.8 thread, 2.0 for maximum of grip range.

Part Number	Metric Thread Size	Grip Range	A ± 0.38	B ± 0.25	C + 0.00 - 0.15	D Ref.	Install Drill Size (Ref.)	Install Hole Size	
								Min.	Max.
L-SM5-2.0	M5x0.8	0.51-2.0	12.7	7.8	7.0	6.7	7.1MM	7.05	7.15
L-SM6-3.3	M6x1.0	0.51-3.3	15.4	10.0	9.0	8.7	9.1MM	9.03	9.13
L-SM8-3.3	M8x1.25	0.51-3.3	16.5	12.0	11.0	10.3	7/16"	11.04	11.14
L-SM10-4.1	M10x1.50	0.51-4.1	17.8	14.0	13.0	10.3	33/64"	13.04	13.14

Material — Steel, SAE 1010 or 1012.
Finish — Zinc plate per ASTM designation B633-78, FE/Zn5, Type II.

All dimensions in metric except drill sizes

RIVNUT®/PLUSNUT® DIMENSION DEFINITIONS

A SHANK LENGTH BEFORE UPSET - OPEN END	G KEY DEPTH
B HEAD DIAMETER	H KEYWAY DETAIL: LENGTH
C HEAD HEIGHT	J SHANK LENGTH AFTER UPSET - CLOSED END
D SHANK DIAMETER	K THREAD DEPTH AFTER UPSET - CLOSED END
E FROM FRONT OF KEY TO REVERSE SIDE OF SHANK	L SHANK LENGTH BEFORE UPSET - CLOSED END
F KEY WIDTH	M SHANK LENGTH AFTER UPSET - OPEN END
	P KEYWAY DETAIL: WIDTH

GLOSSARY OF TERMS

GRIP RANGE	Represents the area between maximum and minimum — the zone of thickness best suited to the installation of a specific fastener.
MAXIMUM GRIP	Represents the maximum thickness of material in which a specific Rivnut can be installed.
MINIMUM GRIP	Represents the minimum thickness of material in which a specific Rivnut fastener should be installed.
TORQUE	A measure of the tendency of the force to rotate the body upon which it acts about an axis (twist). Measured in inch or foot pounds. Twelve (12) inch pounds = a foot pound.
ULTIMATE SHEAR STRENGTH	How many pounds it takes to horizontally break a Rivnut after upset by pulling across the shank of the Rivnut.
ULTIMATE TENSILE STRENGTH	How many pounds it takes to vertically break a Rivnut after upset by pulling on the head and the bulge of the Rivnut.
ULTIMATE THREAD STRENGTH	How many pounds it takes after upset to strip out the Rivnut threads.
UPSET	A term we use for installing BFGoodrich Fasteners.
UPSET LOAD	How much force is required to expand the counterbore and clinch the fastener.



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Hand operated tools for RIVNUT® fasteners

C-6000 speed header

(for light production)

Operating a push-pull knob on the handle threads the RIVNUT on and off the pull-up stud. Knurled barrel is held in palm of hand and lever is squeezed, retracting pull-up stud and producing RIVNUT bulge.

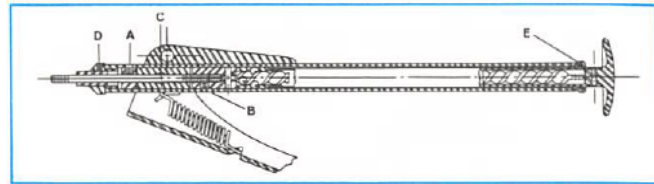
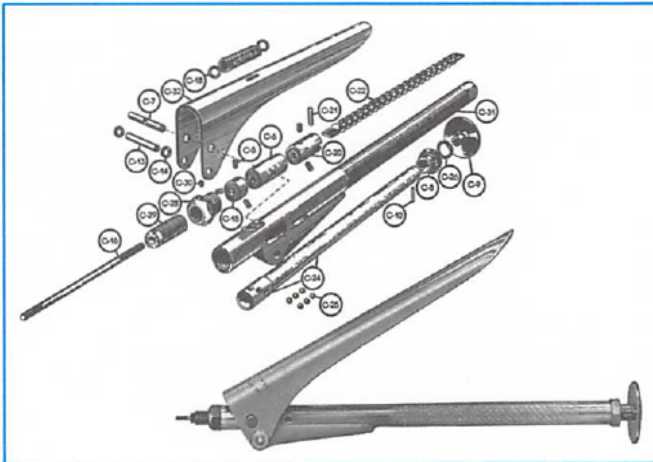
Note: Extra studs should be ordered with tool.

Parts for C-6000 speed header

When ordering a tool or part, always specify thread size of RIVNUT.

The C-6000 Speed Header is available for RIVNUTS with the following thread sizes:

Nos. 4-40; 6-32; 8-32; 10-32; 10-24; 12-24; 1/4-20 and 1/4-28. Metric: M3, M4, M5 and M6.



How to replace broken or damaged pull-up stud

1. Unthread anvil sleeve from tool.
2. Loosen 3 set screws at access hole "A."
3. Loosen two set screws at access hole "B" and let key wrench remain in the second set screw to prevent rotation of coupling while stud is being unscrewed.
4. Secure pull-up stud in aluminum or copper jaws of vise and turn entire tool counterclockwise, unscrewing stud from coupling.
5. Before installing replacement stud, line up hole through cross pin indicated at "C."
6. Slip collar loosely on replacement stud and insert stud through plunger, screwing stud into coupling until end of stud is just past the second set screw hole, then tighten both set screws at "B." (Longer threaded portion of stud goes into tool.)
7. Tighten 3 set screws in collar through access hole "A."
8. Replace and tighten anvil sleeve.

Anvil adjustment

1. Loosen set screw "D" and refer to page 11.
2. Tighten set screw "D" after anvil is properly adjusted.

Operating range

RIVNUT Material	#4	#6	#8	#10	1/4"	5/16"	3/8"	1/2"	M3	M4	M5	M6	M7	M8	M10	M12
Aluminum	Recommended	Recommended	Recommended	Recommended	Adequate but borderline strength—recommend power tool.				Recommended	Recommended	Recommended	Recommended				
Brass & Steel	Recommended	Recommended	Recommended	Adequate but borderline strength—recommend power tool.					Recommended	Recommended	Recommended					
Stainless Steel	Recommended	Recommended	Adequate but borderline strength—recommend power tool.						Recommended	Recommended						

Recommended Adequate but borderline strength—recommend power tool.

(Parts below are also suitable for earlier model C-5000 Speed Header)

Part No. Unified	Part No. Metric	Name	Quantity	Part No. Unified	Part No. Metric	Name	Quantity
C-5	C-5	Set screws No. 8/32 x 3/8"	5	C-20	C-20	*Coupling	1
C-6	C-6	Plunger	1	C-21	C-21	Pin	1
C-7	C-7	Cross pin	1	C-22	C-22	Operating Screw	1
C-8	C-8	Slide Bushing	1	C-24	C-24	Operating Slide & Nut	1
C-9	C-9	Knob	1	C-25	C-25	3/16" Hardened Steel Balls	6
C-10	C-10	Knob pin	1	C-26	C-26	"O" Ring	1
C-13	C-13	Hinge pin	1	C-28	C-28	Adjustable Anvil Sleeve	1
C-14	C-14	Washer for C-13	2	C-29	C-41	*Adjustable Anvil	1
C-15	C-39	*Collar	1	C-30	C-30	Set Screw	1
C-16	C-40	*Pull-up stud	1	C-31	C-31	Handle	1
C-18	C-18	Spring	1	C-32	C-32	Squeeze Handle	1

*These parts must be changed for each different thread size RIVNUT. Add thread size to Part No. Example—C39-M4, collar.

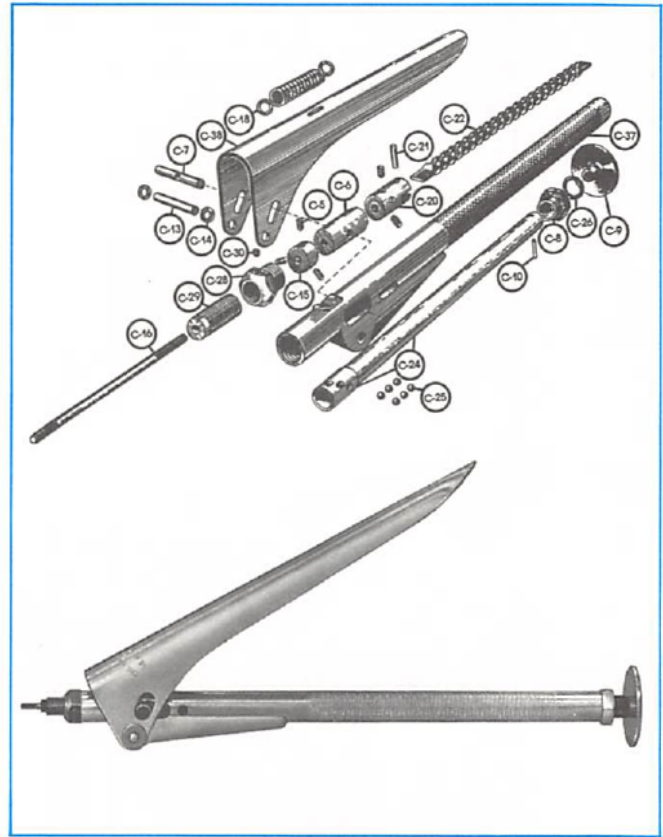
Hand operated header tools for PLUSNUTS®

C-7000 Speed header (for light production)

Range: #4 through #10 PLUSNUTS
Metric: M4 and M5 PLUSNUTS

Operating a push-pull knob on the handle threads the PLUSNUT on and off the pull-up stud. Knurled barrel is held in palm of hand and lever is squeezed, retracting pull-up stud and producing PLUSNUT bulge.

Note: Extra studs should be ordered with tool.

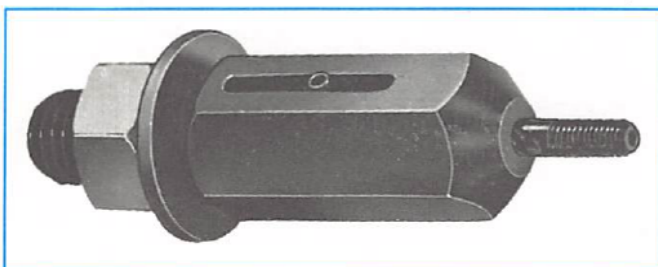


Part No. Unified	Part No. Metric	Name	Quantity	Part No. Unified	Part No. Metric	Name	Quantity
C-5	C-5	Set screws No. 8/32 x 1/8"	5	C-20	C-20	*Coupling	1
C-6	C-6	Plunger	1	C-21	C-21	Pin	1
C-7	C-7	Cross pin	1	C-22	C-22	Operating Screw	1
C-8	C-8	Slide Bushing	1	C-24	C-24	Operating Slide & Nut	1
C-9	C-9	Knob	1	C-25	C-25	3/16" Hardened Steel Balls	6
C-10	C-10	Knob pin	1	C-26	C-26	"O" Ring	1
C-13	C-13	Hinge pin	1	C-28	C-28	Adjustable Anvil Sleeve	1
C-14	C-14	Washer for C-13	2	C-29	C-41	*Adjustable Anvil	1
C-15	C-39	*Collar	1	C-30	C-30	Set Screw	1
C-16	C-40	*Pull-up stud	1	C-37	C-37	Handle	1
C-18	C-18	Spring	1	C-38	C-38	Squeeze Handle	1

*These parts must be changed for each different thread size PLUSNUT.

C-1000 wrench type header (for field repair and experimental use)

Range: #4 through 1/4" PLUSNUTS
Metric: M4 through M6 PLUSNUTS



Operating range

Header Type	PLUSNUT Material	#4	#6	#8	#10	1/4"	5/16"	3/8"	1/2"
C-1000	Steel	Recommended	Recommended	Recommended	Recommended				
	Brass								
	Stainless Steel								

Recommended

Hand operated header tools for RIVNUT®/ PLUSNUT® fasteners

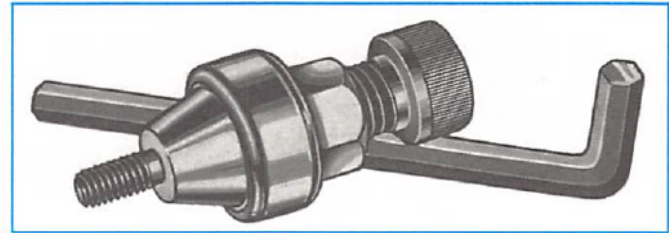
C-722 wrench type header (for field repair and experimental use)

Range: 5/16" thru 1/2" RIVNUTS
5/16" thru 3/8" PLUSNUTS
Metric: M7 thru M12 RIVNUTS
M8 thru M10 PLUSNUTS

Designed for larger sizes that require pull-up loads greater than provided with lever type hand tool. Sold only as a unit—repair parts not available. Suitable for field and experimental installation. Standard in Thread Sizes 5/16"-18, 5/16"-24, 3/8"-16, 3/8"-24, 1/2"-13, 1/2"-20. Metric: M7 x 1.0, M8 x 1.25, M10 x 1.50 and M12 x 1.75.

C-845 wrench type header for RIVNUTS only (for PLUSNUTS use C-1000 tool)

Wrench Type Header for Thread Sizes 4-40, 6-32, 8-32, 10-32, 10-24, 1/4"-20, 1/4"-28. Metric: M3 x 0.5, M4 x 0.7, M5 x 0.8 and M6 x 1.0.



Operating range

Header Type	RIVNUT Material	#4	#6	#8	#10	1/4"	5/16"	3/8"	1/2"	M3	M4	M5	M6	M7	M8	M10	M12
C-722	Aluminum																
	Brass & Steel																
	Stainless Steel																
C-845	Aluminum																
	Brass & Steel																
	Stainless Steel																

Recommended

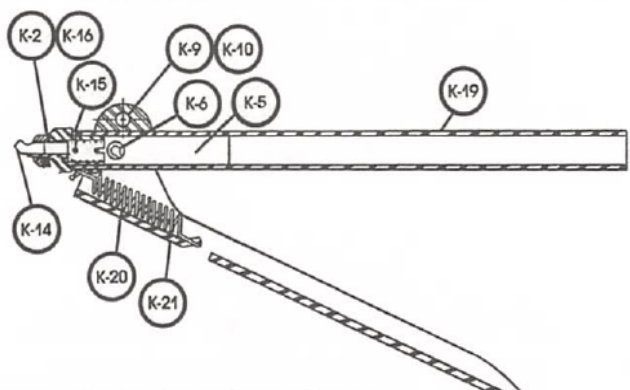
Key seating tool C-3600

Closing the handle of tool retracts a cutter blade that nips a keyway in thin metal. A small, round file or guided drill is recommended for cutting keys in heavier metals. When ordering tool parts,

be sure to specify flat or countersunk head and Rivnut thread size. Extra cutter blades should be ordered with the tool.

Standard tools for Nos. 4, 6, 8, 10, 1/4" thread size Rivnuts are Nos. C-3600-4, C-3600-6, C-3600-8, C-3600-10 and C-3600-25. These will cut 3/32" aluminum, 1/16" mild steel, 1/32" stainless steel.

Part No.	Name	Quantity
K-2-4 K-2-6 K-2-8 K-2-10 K-2-25	*Die Assembly for flat head Rivnuts	1
K-5	Cutter body	1
K-6	Roll Pin	1
K-9	Hinge Pin	1
K-10	Washer for K-9	2
K-14	Cutter blade	1
K-15	Roll Pin	2
K-16-4 K-16-6 K-16-8 K-16-10 K-16-25 K-18	*Die assembly for 100° countersunk Rivnuts	1
K-19	Cutter blade (No. 4 size only)	1
K-19	Handle	1
K-20	Spring	1
K-21	Squeeze handle	1



Instructions To Replace Cutter Blade:

1. Remove K2 or K16 die assembly. Fully depress K-21 squeeze handle and secure with tape or rubber band. Drive out front K-15 roll pin through 3/16" access hole in K-19 handle. Replace cutter blade and reinstall roll pin or—
2. Remove K-2 or K-16 die assembly. Drive out K-6 roll pin. Remove K-5 cutter body from handle. Drive out front K-15 roll pin only to replace cutter blade.

*This assembly must be changed for each different size Rivnut.

Power operated tools for RIVNUT®/PLUSNUT® fasteners

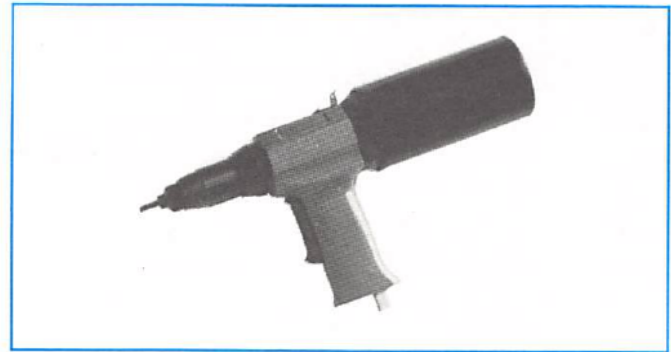
C-300 pneumatic header

Range: #4 thru #10 RIVNUT
(1/4" aluminum)

Metric: M3 thru M5 RIVNUT (M6 aluminum)

Range: #4 thru #10 PLUSNUT
(1/4" aluminum and steel)

Metric: M3 thru M5 PLUSNUT
(M6 aluminum and steel)



Operating range

RIVNUT Material	#4	#6	#8	#10	1/4"	5/16"	M3	M4	M5	M6
Aluminum	Recommended	Recommended	Recommended	Recommended	Recommended		Recommended	Recommended	Recommended	Recommended
Brass & Steel	Recommended	Recommended	Recommended	Recommended			Recommended	Recommended	Recommended	
Stainless Steel	Recommended	Recommended	Recommended	Recommended			Recommended	Recommended	Recommended	

Recommended

PLUSNUT Material	#4	#6	#8	#10	1/4"	5/16"	M3	M4	M5	M6
Aluminum	Recommended	Recommended	Recommended	Recommended	Recommended		Recommended	Recommended	Recommended	Recommended
Steel	Recommended	Recommended	Recommended	Recommended	Recommended		Recommended	Recommended	Recommended	Recommended
Brass & Stainless Steel	Recommended	Recommended	Recommended	Recommended			Recommended	Recommended	Recommended	

Recommended

Parts required to convert tool to other thread sizes

Unified Thread System

Thread Size	Pull-Up Stud	Anvil	
		RIVNUTS	PLUSNUTS
4-40	LP2603-440	LP2602-440	LP2602-440
6-32	LP2603-632	LP2602-632	LP2602-632
8-32	LP2603-832	LP2602-832	LP2602-832
10-32	LP2603-1032	LP2602-1032	LP2602-1032
1/4-20	LP2603-1/4" 20	LP2602-1/4" 20	LP2602-1/4" 20

Metric Thread System

Thread Size	Pull-Up Stud	Anvil	
		RIVNUTS	PLUSNUTS
M3	LP2603-M3	LP2602-M3	LP2602-M3
M4	LP2603-M4	LP2602-M4	LP2602-M4
M5	LP2603-M5	LP2602-M5	LP2602-M5
M6	LP2603-M6	LP2602-M6	LP2602-M6



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Power operated tools for RIVNUT®/PLUSNUT® fasteners

C-302 model P pneumatic header (for heavy production)

Range: #4 thru 1/4" RIVNUT (5/16" aluminum)
 Metric: M3 thru M7 RIVNUT (M8 aluminum)
 Range: #4 thru 5/16" PLUSNUTS
 Metric: M5 thru M8 PLUSNUTS
 For 3/8" and M10 PLUSNUTS contact BFG.
 C-302 Model B tools may be converted to Model P.
 Contact BFGoodrich.

Air-operated pistol-grip tool for heavy production use. Tool operates at a minimum air pressure of 75 psi. Weight 6.1 lbs. Thread size must be specified when tool is ordered. Extra studs should be ordered with tool.



Operating range

RIVNUT Material	#4	#6	#8	#10	1/4"	5/16"	3/8"	1/2"	M3	M4	M5	M6	M7	M8	M10	M12
Aluminum	█	█	█	█	█	█			█	█	█	█	█	█		
Brass & Steel	█	█	█	█	█				█	█	█	█	█			
Stainless Steel	█	█	█	█	█				█	█	█	█				

█ Recommended

Parts required to convert tool to other thread sizes

(Two-piece assembly)

Unified Thread System

Thread Size	Coupling	Pull-Up Stud	Anvil		Anvil for Standard Hex
			RIVNUTS	PLUSNUTS	
4-40	RP-88	RP-70-440	RP-72-4	RP-72-4	—
6-32	RP-88	RP-70-632	RP-72-6	RP-72-6	—
8-32	RP-88	RP-70-832	RP-72-8	RP-72-8	—
10-24	RP-88	RP-70-1024	RP-72-10	RP-72-10	RP-122-10
10-32	RP-88	RP-70-1032	RP-72-10	RP-72-10	RP-122-10
12-24	RP-100	RP-99-1224	RP-72-12	—	—
1/4"-20	RP-100	RP-99-2520	RP-72-25	RP-140-25	RP-122-25
1/4"-28	RP-100	RP-99-2528	RP-72-25	RP-140-25	RP-122-25

(One-piece construction.)

Thread Size	Pull-Up Stud and Coupling	Anvil	
		RIVNUTS	PLUSNUTS
5/16"-18	RP-71-3118	RP-72-31	RP-140-31
5/16"-24	RP-71-3124	RP-72-31	RP-140-31

Metric Thread System

Thread Size	Coupling	Pull-Up Stud	Anvil		
			RIVNUTS	HEX	PLUSNUTS
M3X0.5	RP-88	RP-142-M3	RP-145-M3	—	RP-145-M3
M4X0.7	RP-88	RP-142-M4	RP-145-M4	—	RP-145-M4
M5X0.8	RP-100	RP-143-M5	RP-145-M5	RP-211-M5	RP-145-M5
M6X1.0	RP-100	RP-143-M6	RP-145-M6	RP-211-M6	RP-185-M6

(One-piece construction.)

Thread Size	Pull-Up Stud and Coupling	Anvil		
		RIVNUTS	HEX	PLUSNUTS
M7X1.0	RP-144-M7	RP-145-M7	—	—
M8X1.0	RP-144-M8	RP-145-M8	RP-211-M8	RP-185-M8



Power operated tools for RIVNUT®/PLUSNUT® fasteners

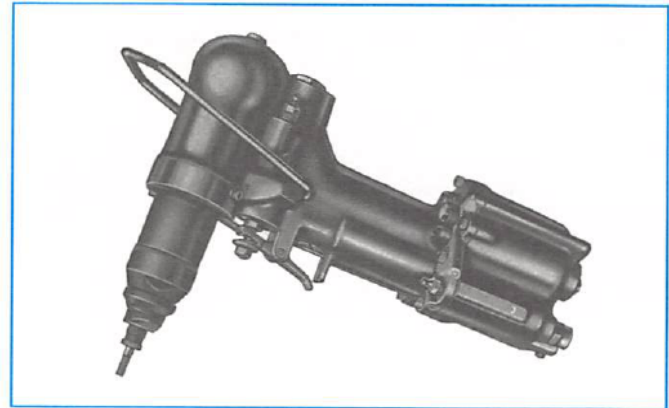
C-362 pneumatic-hydraulic header (for heavy production)

Range: #10 thru 1/2" RIVNUTS
Metric: M5 thru M12 RIVNUTS

Air-operated, hydraulic, hand-held tool for installation of larger size RIVNUTS. Tool operates at a minimum air pressure of 80 psi. Weight 11.7 lbs. Thread size must be specified when tool is ordered. Extra studs should be ordered with tool.

It is suggested that a nose piece assembly and pull-up stud be purchased for each thread size that is required. Although the C-362 can be converted from one thread size to another by changing the individual parts shown below, it is usually more convenient to change the complete nose piece assembly and pull-up stud.

Complete nose piece assemblies are packaged less the pull-up stud. Assembly consists of nose piece, anvil, anvil sleeve, anvil sleeve set screw and set screw plug, nose piece screws, push pins and springs, stud thrust washer, and stud holder with set screws, where applicable.



Operating range

RIVNUT Material	#4	#6	#8	#10	1/4"	5/16"	3/8"	1/2"	M3	M4	M5	M6	M7	M8	M10	M12
Aluminum																
Brass & Steel																
Stainless Steel																

Recommended

Parts required to convert tool to other thread sizes

Unified Thread System

Thread Size	Pull-Up Stud	Pull-Up Stud Holder	Anvil	Anvil Sleeve	Nose Piece	Nose Piece Assembly	Anvil for Standard Hex
10-24	P-146-1024	P-83633	P-83627	P-83622	P-83617	87666	P-182-10
10-32	P-146-1032	P-83633	P-83627	P-83622	P-83617	87666	P-182-10
12-24	P-146-1224	P-83632	P-83628	P-83623	P-83617	87665	—
1/4-20	P-146-2520	P-83632	P-83629	P-83623	P-83617	87664	P-182-25
1/4-28	P-146-2528	P-83632	P-83629	P-83623	P-83617	87664	P-182-25
5/16-18	P-147-3118	Not Required	P-83630	P-83624	P-83617	87662	P-182-31
5/16-24	P-147-3124	Not Required	P-83630	P-83624	P-83617	87662	P-182-31
3/8-16	P-147-3716	Not Required	P-83631	P-83624	P-83617	87660	P-182-37
3/8-24	P-147-3724	Not Required	P-83631	P-83624	P-83617	87660	P-182-37
1/2-13	P-147-5013	Not Required	P-132-50	P-83624	P-83617	P-160	—
1/2-20	P-147-5020	Not Required	P-132-50	P-83624	P-83617	P-160	—

Metric Thread System

Thread Size	Pull-Up Stud	Pull-Up Stud Holder	Anvil		Anvil Sleeve	Nose Piece	Nose Piece Assembly
			PLUSNUTS/RIVNUTS	HEX			
M5X0.8	P-194-M5	P-83632	P-196-M5	P-249-M5	P-83622	P-83617	P-197-M5
M6X1.0	P-194-M6	P-83632	P-196-M6	P-249-M6	P-83622	P-83617	P-197-M6
M7X1.0	P-195-M7	Not Required	P-196-M7	—	P-83623	P-83617	P-197-M7
M8X1.25	P-195-M8	Not Required	P-196-M8	P-249-M8	P-83624	P-83617	P-197-M8
M10X1.50	P-195-M10	Not Required	P-196-M10	P-249-M10	P-83624	P-124	P-197-M10
M12X1.75	P-195-M12	Not Required	P-196-M12	—	P-83624	P-124	P-197-M12



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Power operated tools for RIVNUT®/PLUSNUT® fasteners

C-900 model A pneumatic-hydraulic header operating range (for low production)

Range: #10 thru 1/2" RIVNUTS and #10 thru 3/8" PLUSNUTS

Metric: M5 thru M12 RIVNUTS and M5 thru M10 PLUSNUTS

Air-operated, hydraulic tool consisting of a hand-held header unit, a foot-operated pneumatic-hydraulic pump and a connecting high-pressure hose. Recommended operating air pressure 75-80 psi. Total weight 16 lbs.

Thread size must be specified when tool is ordered. Extra studs should be ordered with tool.



Operating range

RIVNUT Material	#4	#6	#8	#10	1/4"	5/16"	3/8"	1/2"	M3	M4	M5	M6	M7	M8	M10	M12
Aluminum																
Brass & Steel																
Stainless Steel																

Recommended

Parts required to convert tool to other thread sizes

*Standard Hex Rivnuts Require:
P-182-31 for 5/16 Thread Size.
P-182-37 for 3/8 Thread Size.

Unified Thread System

Thread Size	RIVNUT Pull-Up Stud	Pull-Up Stud Holder	Anvil	PLUSNUT Pull-Up Stud
10-24	RP-70-1024	HP-50-10	HP3-10	RP-70-1024
10-32	RP-70-1032	HP-50-10	HP3-10	RP70-1032
12-24	P-146-1224	HP-50-25	HP3-12	—
1/4-20	P-146-2520	HP-50-25	HP3-25	RP-99-2520
1/4-28	P-146-2528	HP-50-25	HP3-25	RP-99-2528
5/16-18	HP-2-3118	Not Required	*P-83630	HP-2-3118
5-16-24	HP-2-3124	Not Required	*P-83630	HP-2-3124
3/8-16	HP-2-3716	Not Required	*P-83631	HP-2-3716
3/8-24	HP-2-3724	Not Required	*P-83631	HP-2-3724
1/2-13	HP2-5013	Not Required	P-132-50	—
1/2-20	HP2-5020	Not Required	P-132-50	—

Metric Thread System

Thread Size	RIVNUT Pull-Up Stud	Pull-Up Stud Holder	Anvil		PLUSNUT Pull-Up Stud
			RIVNUT & PLUSNUT	HEX	
M5X0.8	P-194-M5	HP-50-25	HP-58-M5	P-249-M5	RP-143-M5
M6X1.0	P-194-M6	HP-50-25	HP-58-M6	P-249-M6	RP-143-M6
M7X1.0	HP-44-M7	Not Required	HP-58-M7	—	—
M8X1.25	HP-44-M8	Not Required	HP-196-M8	P-249-M8	HP-44-M8
M10X1.50	HP-44-M10	Not Required	P-196-M10	P-249-M10	HP-44-M10
M12X1.75	HP-44-M12	Not Required	P-196-M12	—	—



Power operated tools for RIVNUT® fasteners

C-410 Electric header (for medium production)

Range: #4 thru 1/4" RIVNUT
Metric: M3 thru M6 RIVNUT

Electric-operated pistol-grip tool for medium production use. Weight 7.0 lbs. Power source requirements: single phase, voltage 120V, Amps 3.70. Thread size must be specified when tool is ordered. Extra studs should be ordered with tool.



Operating Range Rivnut Fasteners

Rivnut Material	#4	#6	#8	#10	1/4"	5/16"	M3	M4	M5	M6	M8	M10
Aluminum	Recommended	Recommended	Recommended	Recommended	Recommended		Recommended	Recommended	Recommended	Recommended		
Brass & Steel	Recommended	Recommended	Recommended	Recommended	Recommended		Recommended	Recommended	Recommended	Recommended		
Stainless Steel	Recommended	Recommended	Recommended	Recommended			Recommended	Recommended	Recommended			

Recommended

(Two-piece assembly)

Unified Thread System

Thread Size	Stud Holder	Pull-Up Stud	Anvil for RIVNUT	Anvil for Standard Hex
4-40	L-1	RP-70-440	RP-72-4	—
6-32	L-1	RP-70-632	RP-72-6	—
8-32	L-1	RP-70-832	RP-72-8	—
10-24	L-1	RP-70-1024	RP-72-10	RP-122-10
10-32	L-1	RP-70-1032	RP-72-10	RP-122-10
12-24	L-2	RP-99-1224	RP-72-12	—
1/4"-20	L-2	RP-99-2520	RP-72-25	RP-122-25
1/4"-28	L-2	RP-99-2528	RP-72-25	RP-122-25

Metric Thread System

Thread Size	Stud Holder	Pull-Up Stud	Anvil	Anvil for Standard Hex
			RIVNUT	
M3X0.5	L-1	RP-142-M3	RP-145-M3	
M4X0.7	L-1	RP-142-M4	RP-145-M4	
M5X0.8	L-2	RP-143-M5	RP-145-M5	RP-211-M5
M6X1.0	L-2	RP-143-M6	RP-145-M6	RP-211-M6



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1. Copy this form to make a worksheet.
2. Complete the worksheet.
3. FAX the completed worksheet to BFG at 219-347-9429 or mail to BFG at the address below.
4. We will respond with recommendations.

From:

Name _____

Title _____ Company _____

Address _____

City/State/Zip _____

Phone _____ FAX _____

Application Information:

Date _____

Product Manufactured _____

Attaching _____ to _____

Type of Parent Material _____

Thread Size _____ Parent Material Thickness _____

Replacing what insert? _____

Other requirements _____

RIVNUT Material: Aluminum _____ Steel _____ Brass _____ Stainless Steel _____

Head Style: Flat _____ 100° Countersunk _____ Low Profile _____

End Style: Open _____ Closed _____

Torque: Keyless _____ Keyed _____ Other _____

Application Sketch:

BFGoodrich Aerospace
2705 Marion Drive
Kendallville, IN 46755
Tel (219) 347-6204
FAX (219) 347-9429

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Decimal equivalents Lettered drills

No. Drill	In. Diam.	No. Drill	In. Diam.	No. Drill	In. Diam.
A	.234	J	.277	S	.348
B	.238	K	.281	T	.358
C	.242	L	.290	U	.368
D	.246	M	.295	V	.377
E	.250	N	.302	W	.386
F	.257	O	.316	X	.397
G	.261	P	.323	Y	.404
H	.266	Q	.332	Z	.413
I	.272	R	.339		

Operating instructions and parts list

Instructions on the operation, care, maintenance and repair of BFGoodrich RIVNUT header tools (C-300, C-302, C-362, C-410 and C-900) are covered in full detail in separate manuals, available free of charge from BFGoodrich Aerospace, 2705 Marion Drive, Kendallville, IN 46755.

Decimal equivalents Numbered drills

No. Drill	Size In.	No. Drill	Size In.	No. Drill	Size In.	No. Drill	Size In.
1	0.2280	21	0.1590	41	0.0960	61	0.0390
2	0.2210	22	0.1570	42	0.0935	62	0.0380
3	0.2130	23	0.1540	43	0.0890	63	0.0370
4	0.2090	24	0.1520	44	0.0860	64	0.0360
5	0.2055	25	0.1495	45	0.0820	65	0.0350
6	0.2040	26	0.1470	46	0.0810	66	0.0330
7	0.2010	27	0.1440	47	0.0785	67	0.0320
8	0.1990	28	0.1405	48	0.0760	68	0.0310
9	0.1960	29	0.1360	49	0.0730	69	0.9292
10	0.1935	30	0.1285	50	0.0700	70	0.0280
11	0.1910	31	0.1200	51	0.0670	71	0.0260
12	0.1890	32	0.1160	52	0.0635	72	0.0250
13	0.1850	33	0.1130	53	0.0595	73	0.0240
14	0.1820	34	0.1110	54	0.0550	74	0.0225
15	0.1800	35	0.1100	55	0.0520	75	0.0210
16	0.1770	36	0.1065	56	0.0465	76	0.0200
17	0.1730	37	0.1040	57	0.0430	77	0.0180
18	0.1695	38	0.1015	58	0.0420	78	0.0160
19	0.1660	39	0.0995	59	0.0410	79	0.0145
20	0.1610	40	0.0980	60	0.0400	80	0.0135

Decimal equivalent chart

Inch Fraction	Decimal Equiv.	Inch Fraction	Decimal Equiv.	Inch Fraction	Decimal Equiv.
1/64	.0156	23/64	.3594	45/64	.7031
1/32	.0312	3/8	.375	23/32	.7187
3/64	.0469	25/64	.3906	47/64	.7344
1/16	.0625	13/32	.4062	3/4	.75
5/64	.0781	27/64	.4219	49/64	.7656
3/32	.0937	7/16	.4375	25/32	.7812
7/64	.1094	29/64	.4531	51/64	.7969
1/8	.125	15/32	.4687	13/16	.8125
9/64	.1406	31/64	.4844	53/64	.8281
5/32	.1562	1/2	.5	27/32	.8437
11/64	.1719	33/64	.5156	55/64	.8594
3/16	.1875	17/32	.5312	7/8	.875
13/64	.2031	35/64	.5469	57/64	.8906
7/32	.2187	9/16	.5625	29/32	.9062
15/64	.2344	37/64	.5781	59/64	.9219
1/4	.25	19/32	.5937	15/16	.9375
17/64	.2656	39/64	.6094	61/64	.9531
9/32	.2812	5/8	.625	31/32	.9687
19/64	.2969	41/64	.6406	63/64	.9844
5/16	.3125	21/32	.6562	1	1.00
21/64	.3281	43/64	.6719		
11/32	.3437	11/16	.6875		

Decimal equivalents of standard gauge sheet aluminum and sheet steel

No. of Gauge	Gauge		No. of Gauge	Gauge		No. of Gauge	Gauge	
	Aluminum (B & S)	Steel (U.S. Std.)		Aluminum (B & S)	Steel (U.S. Std.)		Aluminum (B & S)	Steel (U.S. Std.)
10	.1019	.1345	17	.0453	.0538	24	.0201	.0239
11	.0907	.1196	18	.0403	.0478	25	.0179	.0209
12	.0808	.1046	19	.0359	.0418	26	.0159	.0179
13	.0720	.0897	20	.0320	.0359	27	.0142	.0164
14	.0641	.0747	21	.0285	.0329	28	.0126	.0149
15	.0571	.0673	22	.0253	.0299	29	.0113	.0135
16	.0508	.0598	23	.0226	.0269	30	.0100	.0120



Conversion Chart – Applicable to metric dimensions shown in this manual.

MM	Inch	MM	Inch	MM	Inch	MM	Inch	MM	Inch
0.08	.003	3.61	.142	8.99	.354	13.51	.532	22.02	.867
0.10	.004	3.66	.144	9.02	.355	13.61	.536	22.20	.874
0.13	.005	3.81	.150	9.09	.358	13.77	.542	22.23	.875
0.25	.010	3.94	.155	9.12	.359	13.84	.545	22.53	.887
0.38	.015	4.01	.158	9.37	.369	14.02	.552	22.81	.898
0.51	.020	4.11	.162	9.40	.370	14.10	.555	23.01	.906
0.58	.023	4.14	.172	9.50	.374	14.12	.556	23.52	.926
0.63	.025	4.42	.174	9.53	.375	14.25	.561	23.80	.937
0.74	.029	4.45	.175	9.58	.377	14.48	.570	24.03	.946
0.75	.030	4.57	.180	9.60	.378	14.50	.571	24.21	.953
0.81	.032	4.75	.187	9.63	.379	14.61	.575	24.38	.960
0.89	.035	4.95	.195	9.75	.384	14.94	.588	24.46	.963
0.97	.038	5.00	.197	9.91	.390	14.99	.590	24.51	.965
0.99	.039	5.03	.198	10.08	.397	15.06	.593	25.02	.985
1.02	.040	5.11	.201	10.11	.398	15.11	.595	25.40	1.000
1.17	.046	5.21	.205	10.24	.403	15.16	.597	25.53	1.005
1.19	.047	5.49	.216	10.26	.404	15.27	.601	25.78	1.015
1.22	.048	5.61	.221	10.31	.406	15.47	.609	26.01	1.024
1.30	.051	5.74	.226	10.34	.407	15.52	.611	26.42	1.040
1.37	.054	5.87	.231	10.36	.408	15.75	.620	26.52	1.044
1.42	.056	5.99	.236	10.49	.413	15.77	.621	27.03	1.064
1.47	.058	6.10	.240	10.52	.414	15.85	.624	27.53	1.084
1.52	.060	6.12	.241	10.59	.417	15.88	.625	28.02	1.103
1.57	.062	6.20	.244	10.77	.424	16.00	.630	28.52	1.123
1.60	.063	6.22	.245	10.97	.432	16.10	.634	29.03	1.143
1.65	.065	6.25	.246	11.00	.433	16.26	.640	29.36	1.156
1.70	.067	6.35	.250	11.10	.437	16.36	.644	29.51	1.162
1.75	.069	6.50	.256	11.18	.440	16.46	.648	30.02	1.182
1.80	.071	6.60	.260	11.25	.443	16.51	.650	30.53	1.202
1.83	.072	6.68	.263	11.28	.444	16.66	.656	30.94	1.218
1.85	.073	6.73	.265	11.35	.447	16.76	.660	31.01	1.221
2.01	.079	6.85	.270	11.51	.453	17.02	.670	31.52	1.241
2.06	.081	6.88	.271	11.61	.457	17.04	.671	32.03	1.261
2.11	.083	6.99	.275	11.76	.463	17.32	.682	32.13	1.265
2.13	.084	7.01	.276	11.81	.465	17.48	.688	32.54	1.281
2.16	.085	7.08	.279	11.84	.466	17.53	.690	33.02	1.300
2.24	.088	7.11	.280	11.89	.468	17.81	.701	34.04	1.340
2.26	.089	7.14	.281	11.91	.469	17.83	.702	34.52	1.359
2.39	.094	7.21	.284	12.01	.473	18.01	.709	34.90	1.374
2.44	.096	7.29	.287	12.09	.476	18.08	.712	34.93	1.375
2.46	.097	7.32	.288	12.12	.477	18.11	.713	35.03	1.379
2.51	.099	7.47	.294	12.24	.482	18.21	.717	36.02	1.418
2.54	.100	7.49	.295	12.45	.490	18.24	.718	36.50	1.437
2.59	.102	7.52	.296	12.52	.493	18.52	.729	36.53	1.438
2.62	.103	7.62	.300	12.60	.496	19.02	.749	37.03	1.458
2.64	.104	7.67	.302	12.70	.500	19.05	.750	37.29	1.468
2.69	.106	7.98	.314	12.73	.501	19.51	.768	38.53	1.517
2.79	.110	8.00	.315	12.76	.502	19.81	.780	39.04	1.537
2.92	.115	8.10	.319	12.80	.504	19.84	.781	39.52	1.556
3.00	.118	8.15	.321	12.83	.505	20.02	.788	40.03	1.576
3.05	.120	8.43	.332	13.00	.512	20.25	.797	41.53	1.635
3.10	.122	8.51	.335	13.08	.515	20.52	.808	42.04	1.655
3.15	.124	8.61	.339	13.11	.516	20.62	.812	42.55	1.675
3.18	.125	8.74	.344	13.21	.520	21.01	.827	45.03	1.773
3.25	.128	8.76	.345	13.26	.522	21.03	.828		
3.51	.138	8.79	.346	13.44	.529	21.49	.846		
3.56	.140	8.94	.352	13.49	.531	21.51	.847		



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