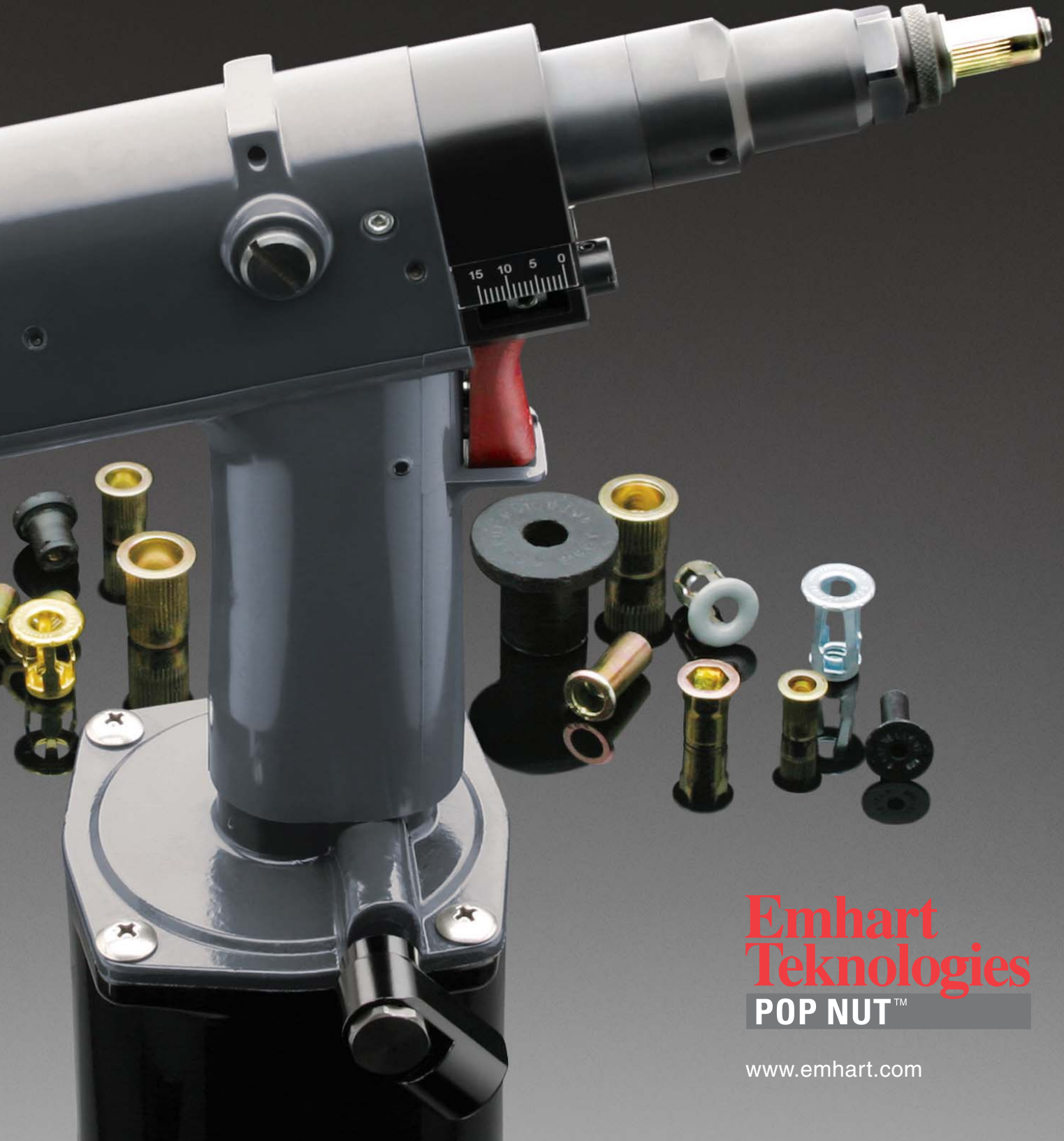


# POP<sup>®</sup>

BLIND RIVET NUTS



**Emhart  
Teknologies**

**POP NUT™**

[www.emhart.com](http://www.emhart.com)

# Creating the Future Worldwide.



At **Emhart Technologies**, creating the future is about growth, about change and about taking risks. It is who we are and what we do. Our focus is to reduce the overall product assembly costs of our customers by anticipating needs and meeting those needs with technology and market-driven solutions.

Emhart is a global leader in the design and creation of unique assembly technologies, delivering depth and breadth of service and product through a flexible, cross-functional global organization.

### Owning The Customer's Total Experience™

We provide every customer with the capability to satisfy every aspect of fastening and assembly technology. From concept through installation, around the corner and around the globe, Emhart develops and delivers solutions for challenging assembly applications.

#### Technology Optimization

Emhart has the ability to objectively match customer priorities, applications and manufacturing environment with the most appropriate assembly technology and fastening systems. We provide this capability through Application Engineers, and Mobile, Stationary and Virtual Innovation Centers located around the world. Each is electronically linked, capable of sharing application data and new design concepts with each other as well as with our customers.

#### System Integration

Emhart provides technological solutions in over 100 different countries. For each of these countries and for every application, we deliver innovative, integrated systems solutions from concept and design through system integration, worldwide.

#### Product Consultancy

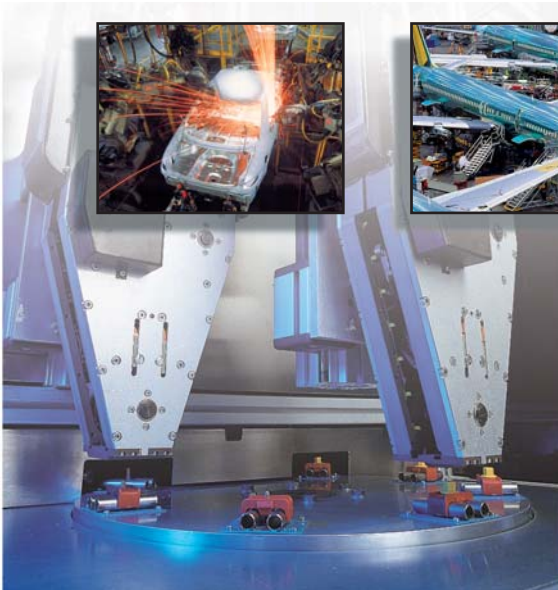
Emhart employs Application Analysis and Value Engineering to demonstrate how our technology can enhance the assembly process, and Value Analysis to detail the cost/benefit relationship of applying our technologies.

#### Innovative Services

Emhart is infused with the spirit and culture of innovation. From our **Stationary Innovation Centers** to our unique **Mobile Innovation Centers**, Emhart has built a worldwide service and technology infrastructure to support our customers, 24 hours a day, seven days a week.



DODGE® GRIPCO® HELI-COIL® NPR® PARKER-KALON® POP® TUCKER® WARREN®

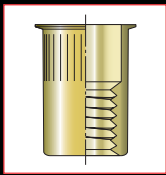


# POP NUT™ Table of Contents

	Introduction to Emhart . . . . .	2
	POP NUT™ Blind Rivet Nuts Introduction . . . . .	4
	POP NUT™ Advantages . . . . .	5
	POP NUT™ Installation Sequence . . . . .	6
	POP NUT™ Joint Design . . . . .	7
	POP NUT™ TK Open End Blind Rivet Nuts . . . . .	8
	POP NUT™ TL Open End Blind Rivet Nuts . . . . .	9
	POP NUT™ TH Open End Blind Rivet Nuts . . . . .	10
	POP NUT™ ST Open End Blind Rivet Nuts . . . . .	11
	POP NUT™ Custom Capabilities . . . . .	12
	JACK NUT® Threaded Inserts, Inch & Metric . . . . .	13
	WELL NUT® Threaded Inserts, Inch . . . . .	14
	WELL NUT® Threaded Inserts, Metric . . . . .	15
	POP NUT™ Installation Systems . . . . .	16, 17
	POP NUT™ PNT800A Power Tool . . . . .	18
	POP NUT™ PNT1000 Power Tool . . . . .	19
	POP NUT™ Manual Tools . . . . .	20, 21
	POP NUT™ Advanced Automation Tools . . . . .	22
	JACK NUT™ Installation Tools . . . . .	23
	POP NUT™ Testing and Test Procedures . . . . .	24
	POP NUT™ Specifications and Conversions . . . . .	25
	POP NUT™, WELL NUT® and JACK NUT® Kits . . . . .	26
	Emhart Product Portfolio . . . . .	27

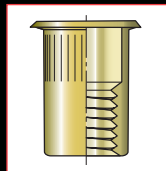
# POP NUT™ Blind Rivet Nuts Introduction

POP NUT brand blind rivet nuts are internally threaded rivets that can be installed into sheet-metal, tubing, extrusions, plastics and other materials.



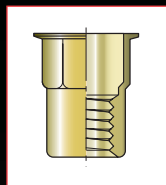
## POP NUT™ TK

The POP NUT TK Round body thin head allows the mating part to install nearly flush without a recess or dimple in the parent material.



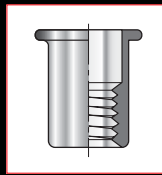
## POP NUT™ TL

The POP NUT TL Round Knurled body flat head provides excellent spin out resistance in round drilled, punched or molded holes.



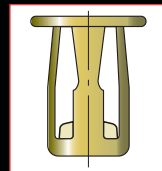
## POP NUT™ TH

The POP NUT TH Hex body flat head provides excellent spin out in hex punched, laser cut or molded holes.



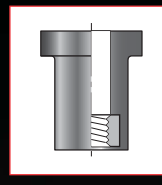
## POP NUT™ ST

The POP NUT ST Round body flat head features a thick wall design that is ideal for push out applications such as leg leveling screws.



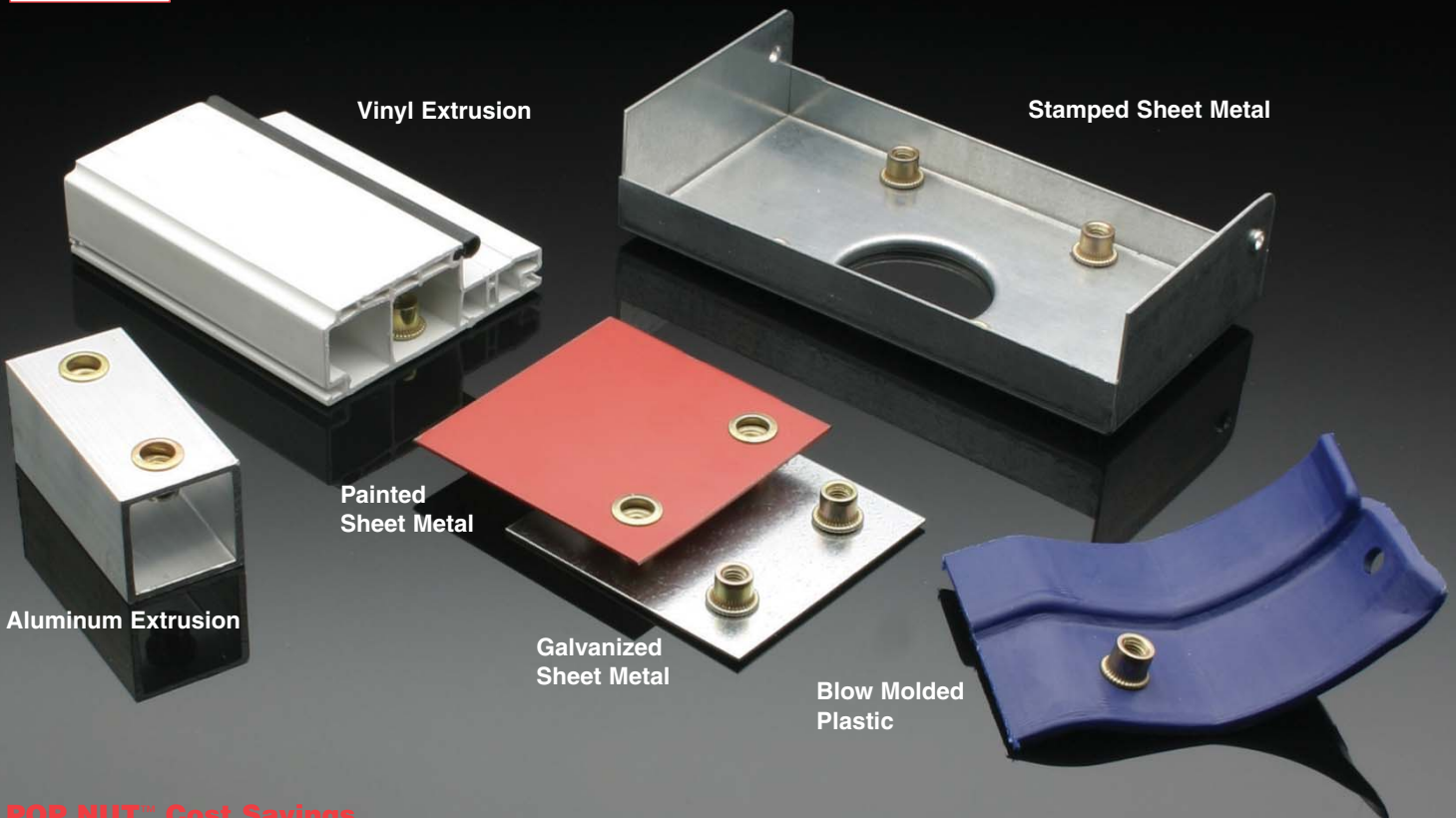
## JACK NUT™

The JACK NUT Slotted body flat head design that is ideal for soft materials.



## WELL NUT™

The WELL NUT is a rubber blind nut that is ideal for sealing and isolation against vibration, electrical conductivity and galvanic corrosion.



## POP NUT™ Cost Savings

POP NUT brand blind rivet nuts offer various in place cost saving advantages.

- Installs blind using hand held or fully automated tool systems.
- Installs before or after paint as the installation tool and process will not damage the finish on the parent material.
- Can be installed into materials as thin as .020" (0.5mm) saving weight.
- Can be installed into galvanized or pre-painted materials without damage to the finish eliminating any rework.
- Can be installed with 100% assurance and accuracy of count with the POP NUT SmartSet tool system.
- Installation time is 2-3 seconds for an operator with a power tool, and 4-6 seconds for automation feeding, pick up and installation.

# POP NUT™ Advantages

POP NUT fasteners can provide in-place cost savings versus other typical fasteners.

## POP NUT™ vs. Weld Nuts

- The POP NUT does not require back side access in the design of the parent material. They are installed blind from the front side.
- The POP NUT can be installed after paint to avoid thread masking or plugging costs as with weld nuts.
- Weld nuts can warp thin materials due to heat. Thinner materials can be used with POP NUT.
- Weld splatter can clog threads causing 100% inspection of weld nuts to ensure no clogged threads. This does not happen with POP NUT.
- POP NUT can be installed without damaging galvanized or pre-painted materials. The dust and gas caused by weld nuts is eliminated.

## POP NUT™ vs. Clinch or Pierce Nuts

- The POP NUT does not require backside access in the design of the parent material. They are installed blind from the front side.
- POP NUT has a wider grip range than clinch nuts so the number of parts can be reduced.
- POP NUT can be installed into pre-painted materials without damaging the paint.



## POP NUT™ vs. Loose Hardware and Tapping Screws

- POP NUT is captive in the parent material.
- POP NUT makes the joint one sided for a cleaner appearance especially in tubing.
- POP NUT provides 6 full threads for increased thread strength in thinner materials resulting in overall lighter weight.
- POP NUT is a better alternative to tapping or forming screws when the consumer must install the screw.



# POP NUT™ Installation Sequence

**The POP NUT™ installation sequence is simple.**

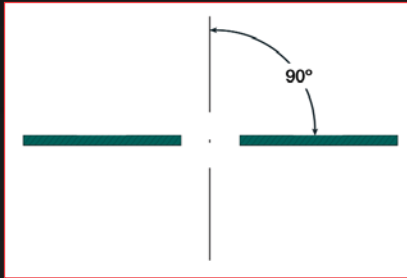
1. Push the POP NUT on the tool mandrel and it automatically spins on.
2. Place the POP NUT in the hole in the parent material.
3. Pull the trigger on the tool. The POP NUT collapses and forms a flange on the back side of the parent material. The tool automatically reverses and unthreads from the POP NUT.
4. Attach the mating part with a screw and tighten.



# POP NUT™ Joint Design

The information on this page gives some best practice guidelines about proper joint design for the POP NUT.

## Making the Hole in the Parent Material



The hole for the POP NUT must be square to the parent material. Holes drilled or punched on an angle can cause premature tool mandrel wear

issues. Back side burrs or punch tabs should also be removed so the back side flange can form symmetrically and flat. A tapered parent material will cause tool mandrel wear issues.

## Grip Range



The parent material thickness must be within the grip range of the POP NUT.

Softer materials such as plastic allow the POP NUT to expand in the hole reducing grip range. Testing is required to determine the optimum grip in plastics.

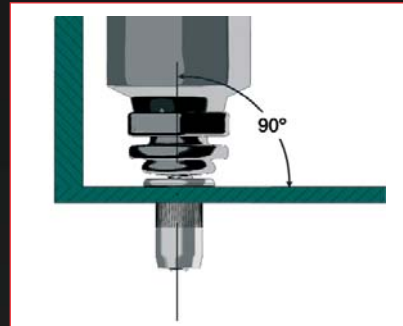
## Backside Clearance



If the POP NUT will be used in a tube, extrusion or other application that is closed on the back side, there must be

sufficient space for the POP NUT to fit in the hole before installation.

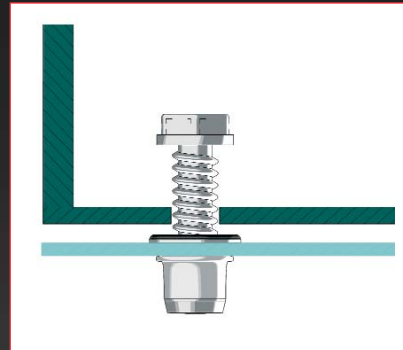
## Installation Tool Access



pieces can be developed to avoid obstacles.

The POP NUT tool must have perpendicular access to the parent material. If the tool is held on an angle, premature mandrel wear can occur. Special nose

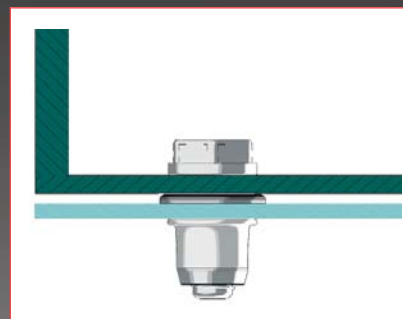
## The Mating Part



material should be slotted so the parent material remains in contact with the head of the POP NUT.

The mating part should have a hole size that is smaller than the POP NUT head diameter to assure contact with the head. If alignment tolerances are needed then the hole in the mating

## The POP NUT™ Joint and Mating Screw



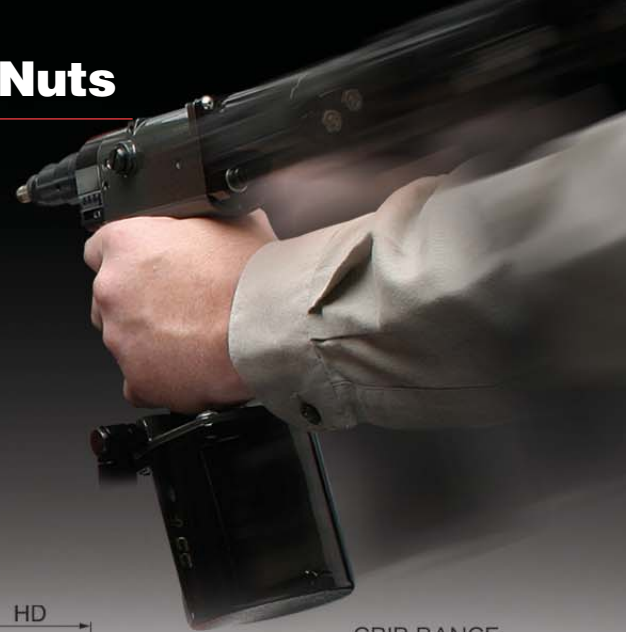
The mating screw can be up to Grade 5 or metric class 8.8. If the mating screw has a prevailing torque locking device, it is best to choose a hex body POP NUT. The mating screw should thread through the POP NUT by 2 threads.

The ideal POP NUT joint is one where the mating part is non-rotational and contacts the head of the POP NUT. The tighter the screw gets the tighter the POP NUT becomes.

# POP NUT™ TK Open End Blind Rivet Nuts

## POP NUT™ TK

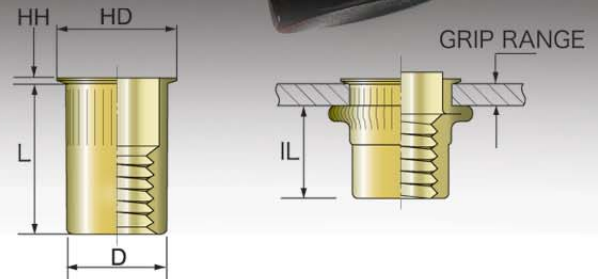
The POP NUT TK Open End Blind Rivet Nut has a thin head knurled body and is available in steel with zinc and yellow dichromate plating in both inch and metric thread sizes. The thin head allows for near flush attachment of the mating part without the need for recesses or sheet dimpling. The POP NUT TK features a wide grip range and excellent thread strength.



Additional materials, finishes and design options are available. See page 12 for design option details.

### Specifications

Material: Steel 1010/1008  
 Plating: Zinc Yellow per ASTM B633 Type II Fe/Zn .0003"; 8 µm  
 Thread Class: Inch – 2B/21 per ASME B1.1  
 Metric – 6H/21 per ASME B1.13M



Part Number	Thread Size inch	Grip Range min-max	Hole Size +.006 / -.000	HD ±.010	HH ±.002	D max	L ±.015	IL ref
TKS1-632-080	6-32unc	.020-.080	0.266	0.310	0.019	0.265	0.420	0.288
TKS1-632-130	6-32unc	.080-.130	0.266	0.310	0.019	0.265	0.470	0.288
TKS1-832-080	8-32unc	.020-.080	0.266	0.310	0.019	0.265	0.420	0.288
TKS1-832-130	8-32unc	.080-.130	0.266	0.310	0.019	0.265	0.470	0.288
TKS1-1024-130	10-24unc	.020-.130	0.297	0.340	0.019	0.296	0.475	0.280
TKS1-1024-225	10-24unc	.130-.225	0.297	0.340	0.019	0.296	0.585	0.284
TKS1-1032-130	10-32unf	.020-.130	0.297	0.340	0.019	0.296	0.475	0.280
TKS1-1032-225	10-32unf	.130-.225	0.297	0.340	0.019	0.296	0.585	0.284
TKS1-420-165	1/4-20unc	.027-.165	0.391	0.455	0.022	0.390	0.580	0.343
TKS1-420-260	1/4-20unc	.165-.260	0.391	0.455	0.022	0.390	0.680	0.331
TKS1-518-150	5/16-18unc	.027-.150	0.531	0.595	0.022	0.530	0.690	0.441
TKS1-518-312	5/16-18unc	.150-.312	0.531	0.595	0.022	0.530	0.805	0.398
TKS1-616-150	3/8-16unc	.027-.150	0.531	0.595	0.022	0.530	0.690	0.441
TKS1-616-312	3/8-16unc	.150-.312	0.531	0.595	0.022	0.530	0.805	0.398
Part Number	Thread Size metric	Grip Range min-max	Hole Size +0.15 / -.000	HD ±.025	HH ±0.05	D max	L ±0.38	IL ref
TKS1-470-20	M4	0.50-2.00	6.75	7.87	0.48	6.73	10.67	7.30
TKS1-470-33	M4	2.00-3.30	6.75	7.87	0.48	6.73	11.94	7.30
TKS1-580-33	M5	0.50-3.30	7.60	8.64	0.48	7.52	12.07	7.10
TKS1-580-57	M5	3.30-5.70	7.60	8.64	0.48	7.52	14.86	7.20
TKS1-610-42	M6	0.70-4.20	10.00	11.56	0.55	9.91	14.73	8.70
TKS1-610-66	M6	4.20-6.60	10.00	11.56	0.55	9.91	17.27	8.40
TKS1-8125-38	M8	0.70-3.80	13.50	15.11	0.55	13.46	17.53	11.29
TKS1-8125-79	M8	3.80-7.90	13.50	15.11	0.55	13.46	20.45	10.10
TKS1-1015-38	M10	0.70-3.80	13.50	15.11	0.55	13.46	17.53	11.20
TKS1-1015-79	M10	3.80-7.90	13.50	15.11	0.55	13.46	20.45	10.10



# POP NUT™ TL Open End Blind Rivet Nuts

## POP NUT™ TL

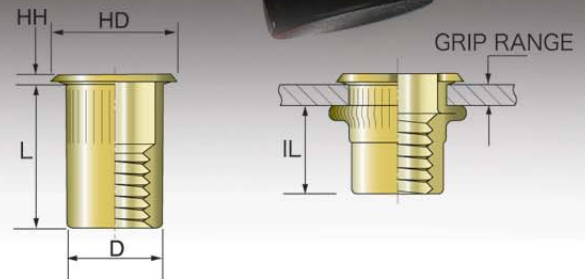
The POP NUT TL Open End Blind Rivet Nut has a flat head knurled body and is available in steel with zinc and yellow dichromate plating in both inch and metric thread sizes. The flat head provides support for the parent material and the mating part. The knurled body provides excellent spin out resistance in aluminum and plastics and features a wide grip range and excellent thread strength.



Additional materials, finishes and special design options are available. See page 12 for design option details.

### Specifications

Material: Steel 1010/1008  
 Plating: Zinc Yellow per ASTM B633 Type II Fe/Zn .0003"; 8 µm  
 Thread Class: Inch – 2B/21 per ASME B1.1  
 Metric – 6H/21 per ASME B1.13M



Part Number	Thread Size inch	Grip Range min-max	Hole Size +.006 / -.000	HD ±.010 / ±.025*	HH ±.003	D max	L ±.015	IL ref
TLS1-632-080	6-32unc	.020-.080	0.266	0.390	0.030	0.265	0.420	0.292
TLS1-632-130	6-32unc	.080-.130	0.266	0.390	0.030	0.265	0.470	0.292
TLS1-832-080	8-32unc	.020-.080	0.266	0.390	0.030	0.265	0.420	0.292
TLS1-832-130	8-32unc	.080-.130	0.266	0.390	0.030	0.265	0.470	0.292
TLS1-1024-130	10-24unc	.020-.130	0.297	0.415	0.030	0.296	0.475	0.284
TLS1-1024-225	10-24unc	.130-.225	0.297	0.415	0.030	0.296	0.585	0.296
TLS1-1032-130	10-32unf	.020-.130	0.297	0.415	0.030	0.296	0.475	0.284
TLS1-1032-225	10-32unf	.130-.225	0.297	0.415	0.030	0.296	0.585	0.296
TLS1-420-165	1/4-20unc	.027-.165	0.391	0.500	0.030	0.390	0.580	0.343
TLS1-420-260	1/4-20unc	.165-.260	0.391	0.500	0.030	0.390	0.680	0.331
TLS1-518-150	5/16-18unc	.027-.150	0.531	0.685*	0.035	0.530	0.690	0.437
TLS1-518-312	5/16-18unc	.150-.312	0.531	0.685*	0.035	0.530	0.805	0.394
TLS1-616-150	3/8-16unc	.027-.150	0.531	0.685*	0.035	0.530	0.690	0.437
TLS1-616-312	3/8-16unc	.150-.312	0.531	0.685*	0.035	0.530	0.805	0.394
TLS1-813-200	1/2-13unc	.063-.200	0.688	0.865*	0.047	0.685	1.150	0.811
TLS1-813-350	1/2-13unc	.200-.350	0.688	0.865*	0.047	0.685	1.300	0.803
Part Number	Thread Size metric	Grip Range min-max	Hole Size +0.15 / -0.00	HD ±0.25 / ±0.64*	HH ±0.08	D max	L ±0.38	IL ref
TLS1-470-20	M4	0.50-2.00	6.75	9.91	0.76	6.73	10.67	7.40
TLS1-470-33	M4	2.00-3.30	6.75	9.91	0.76	6.73	11.94	7.40
TLS1-580-33	M5	0.50-3.30	7.60	10.54	0.76	7.52	12.07	7.20
TLS1-580-57	M5	3.30-5.70	7.60	10.54	0.76	7.52	14.86	7.50
TLS1-610-42	M6	0.70-4.20	10.00	12.70	0.76	9.91	14.73	8.70
TLS1-610-66	M6	4.20-6.60	10.00	12.70	0.76	9.91	17.27	8.40
TLS1-8125-38	M8	0.70-3.80	13.50	17.40*	0.89	13.46	17.53	11.10
TLS4-8125-79	M8	3.80-7.90	13.50	17.40*	0.89	13.46	20.45	10.00
TLS1-1015-38	M10	0.70-3.80	13.50	17.40*	0.89	13.46	17.53	11.10
TLS1-1-15-79	M10	3.80-7.90	13.50	17.40*	0.89	13.46	20.45	10.00
TLS1-12175-51	M12	1.60-5.10	17.45	21.97*	1.19	17.40	29.21	20.60
TLS1-12175-89	M12	5.10-8.90	17.45	21.97*	1.19	17.40	33.02	20.40

# POP NUT™ TH Open End Blind Rivet Nuts

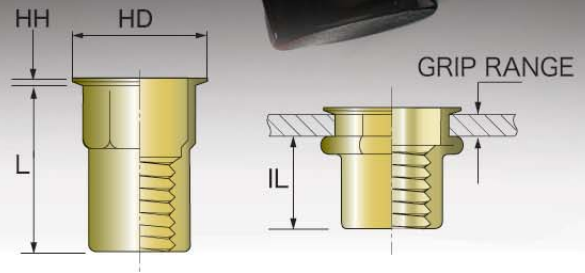
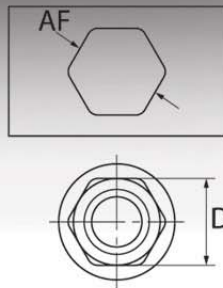
## POP NUT™ TH

The POP NUT TH Open End Blind Rivet Nut has a flat head hex body and is available in steel with zinc and yellow dichromate plating in both inch and metric thread sizes. When installed in a hex hole, the hex body provides the ultimate spin out resistance.



Additional materials, finishes and special design options are available. See page 12 for design option details.

Specifications	
Material:	Steel 1010/1008
Plating:	Zinc Yellow per ASTM B633 Type II Fe/Zn .0003"; 8 µm
Thread Class:	Inch – 2B/21 per ASME B1.1 Metric – 6H/21 per ASME B1.13M



Part Number	Thread Size inch	Grip Range min-max	Hole Size (AF) +.004 / -.000	HD ±.010 / ±.025*	HH ±.003	D max	L ±.015	IL ref
THS1-632-080	6-32unc	.020-.080	0.250	0.375	0.027	0.249	0.385	0.252
THS1-632-130	6-32unc	.080-.130	0.250	0.375	0.027	0.249	0.435	0.248
THS1-832-080	8-32unc	.020-.080	0.250	0.375	0.027	0.249	0.385	0.252
THS1-832-130	8-32unc	.080-.130	0.250	0.375	0.027	0.249	0.435	0.248
THS1-1024-130	10-24unc	.020-.130	0.281	0.390	0.027	0.280	0.435	0.252
THS1-1024-225	10-24unc	.130-.225	0.281	0.390	0.027	0.280	0.535	0.260
THS1-1032-130	10-32unf	.020-.130	0.281	0.390	0.027	0.280	0.435	0.252
THS1-1032-225	10-32unf	.130-.225	0.281	0.390	0.027	0.280	0.535	0.260
THS1-420-165	1/4-20unc	.027-.165	0.375	0.510	0.030	0.374	0.585	0.359
THS1-420-260	1/4-20unc	.165-.260	0.375	0.510	0.030	0.374	0.685	0.355
THS1-518-150	5/16-18unc	.027-.150	0.500	0.655*	0.035	0.499	0.685	0.453
THS1-518-312	5/16-18unc	.150-.312	0.500	0.655*	0.035	0.499	0.845	0.457
THS1-616-150	3/8-16unc	.027-.150	0.500	0.655*	0.035	0.499	0.685	0.453
THS1-616-312	3/8-16unc	.150-.312	0.500	0.655*	0.035	0.499	0.845	0.457

Part Number	Thread Size inch	Grip Range min-max	Hole Size (AF) +0.10 / -.00	HD ±0.25 / ±0.64*	HH ±0.08	D max	L ±0.38	IL ref
THS1-470-20	M4	0.50-2.00	6.35	9.53	0.68	6.35	9.78	6.40
THS1-470-33	M4	2.00-3.30	6.35	9.53	0.68	6.35	11.05	6.30
THS1-580-33	M5	0.50-3.30	7.14	9.91	0.68	7.10	11.05	6.40
THS1-580-57	M5	3.30-5.70	7.14	9.91	0.68	7.10	13.59	6.60
THS1-610-42	M6	0.70-4.20	9.53	12.96	0.76	9.50	14.86	9.10
THS1-610-66	M6	4.20-6.60	9.53	12.96	0.76	9.50	17.40	9.00
THS1-8125-38	M8	0.70-3.80	12.70	16.64*	0.89	12.70	17.40	11.50
THS1-8125-79	M8	3.80-7.90	12.70	16.64*	0.89	12.70	21.46	11.60
THS1-1015-38	M10	0.70-3.80	12.70	16.64*	0.89	12.70	17.40	11.50
THS1-1015-79	M10	3.80-7.90	12.70	16.64*	0.89	12.70	21.46	11.60

# POP NUT™ ST Open End Blind Rivet Nuts

## POP NUT™ ST

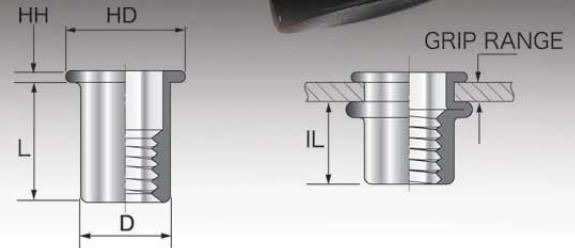
The POP NUT ST Open End Blind Rivet Nut has a flat head and thick walled round body and is available with zinc plating in inch thread sizes. This thick walled product is ideal for leg leveling screw applications as this fastener provides the best overall push out strength.

Additional materials, finishes and special design options are available. See page 12 for design option details.



### Specifications

Material: Steel 1010/1008  
 Plating: Zinc (CR + 6) per ASTM B633 Type III .0003"; 8 µm  
 Thread Class: Inch – MIL-S-7742/ASME-B1.1  
 Metric – 6H/21 per ASME B1.13M



Part Number	Thread Size inch	Grip Range min-max	Hole Size +.003 / -.000	HD ±.015	HH nom	D +.000 / -.004	L ±.015	IL ref
STS1-420-080	1/4-20unc	.020-.080	0.332	0.475	0.058	0.332	0.625	0.449
STS1-420-140	1/4-20unc	.080-.140	0.332	0.475	0.058	0.332	0.687	0.453
STS1-420-200	1/4-20unc	.140-.200	0.332	0.475	0.058	0.332	0.750	0.453
STS1-518-125	5/16-18unc	.030-.125	0.413	0.665	0.062	0.413	0.750	0.516
STS1-518-200	5/16-18unc	.125-.200	0.413	0.665	0.062	0.413	0.875	0.563
STS1-616-115	3/8-16unc	.030-.115	0.490	0.781	0.088	0.490	0.844	0.598
STS1-616-200	3/8-16unc	.115-.200	0.490	0.781	0.088	0.490	0.938	0.598
STS1-813-150	1/2-13unc	.050-.150	0.625	0.906	0.085	0.625	0.906	0.614
STS1-813-250	1/2-13unc	.150-.250	0.625	0.906	0.085	0.625	1.031	0.614

# POP NUT™ Custom Capabilities

## POP NUT™ Specials

There are many special POP NUT designs that can be created to meet specific customer needs. Closed ends, under-head seals, under-head knurls, special grip ranges, and compression limiting shoulders are but a few of the design options for POP NUT. At Emhart we pride ourselves on our ability and willingness to innovate our products to meet specific customer needs. Our application engineers are available to help you design the ultimate POP NUT for your application.

### Closed End

For applications that need to seal, the POP NUT can be made with a closed end. When combined with a sealed head a closed end POP NUT offers the best performance for a sealing application.



### Sealed Heads and Oversized Heads

The underside head of the POP NUT can be coated with PVC foam to seal against weather and non-petroleum based liquids. Rubber seals can be provided to seal against petroleum based liquids. The head of the POP NUT can be made larger to meet specific application requirements.



### Under-head Knurls

Under-head knurls can be added to increase spin out resistance in softer materials such as aluminum and plastic. In addition large flange heads can be added to better support plastic parent materials and the mating part. Under-head shoulders can be added to act as a compression limiter in soft materials such as ABS plastics.



### Special Grip Ranges

Special grip ranges can be designed to meet specific customer material thickness ranges. Customizing a grip range can reduce the number of parts required. The grip range can also be customized to provide the largest back side flange possible in an application to increase pull out resistance.



1st Grip

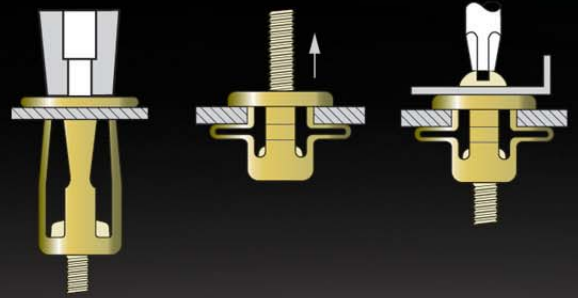
Custom Grip

2nd Grip

# JACK NUT® Inch/Metric Threaded Inserts

## JACK NUT®

The JACK NUT is a flat head slotted body blind rivet nut designed to be installed in soft or brittle materials such as plastic, paper, or glass. Its 4 legs expand behind the parent material providing excellent pull out resistance especially in soft materials. The JACK NUT can be coated with RAINITITE® to seal moisture and hard plastic PVC to prevent scratching and galvanic corrosion. JACK NUT inserts are RoHS compliant.



### How To Install:

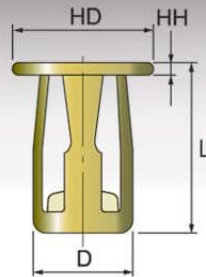
1. Thread JACK NUT Insert onto mandrel of installation tool, then insert all the way into predrilled hole until flange is firmly against mounting surface.
2. Fully collapse insert, then remove installation tool.
3. Pass machine screw through part to be fastened, then tighten until snug.

### Specifications

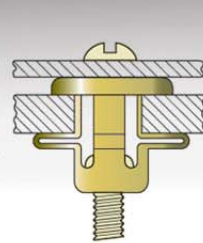
Material: Steel  
1010/1008  
Zinc w/clear  
Trivalent Chromate per  
ASTM B633

Thread Class: 2B (in); 6H (mm)

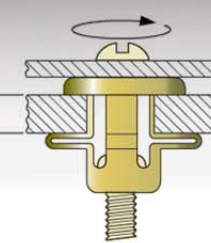
### Standard Type



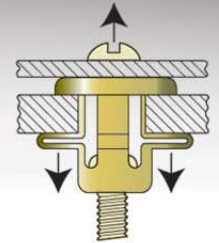
### Installed



### Torque



### Tensile



### Dimensions & Specifications

### Test Results @ Plate Thickness (T)

Catalog Number	Part Number	Thread Size	Body Diameter	Hole Size min-max D	Grip Range min-max	Length nom L	Head Height HH	Head Diameter HD	Plate Thickness in	Tightening Torque in-lb	Ultimate Tensile lb
<b>STEEL (INCH)</b>											
4SJN	310000	6-32	0.308	0.318 - 0.330	0.015 - 0.187	0.663	0.073	0.469	0.031	12	334
4LJN	310010	6-32	0.308	0.318 - 0.330	0.187 - 0.375	0.900	0.073	0.480	0.187	12	433
6SJN	310020	10-24	0.378	0.382 - 0.400	0.015 - 0.187	0.703	0.073	0.531	0.187	12	444
6LJN	310030	10-24	0.378	0.382 - 0.400	0.187 - 0.375	0.875	0.073	0.531	0.375	12	386
8SJN	310040	1/4-20	0.438	0.438 - 0.450	0.015 - 0.187	0.718	0.073	0.625	0.031	20	427
8LJN	310050	1/4-20	0.438	0.438 - 0.450	0.187 - 0.375	0.906	0.073	0.625	0.187	20	640
4SBJN*	310100	6-32	0.308	0.318 - 0.330	0.015 - 0.187	0.663	0.073	0.469	0.187	20	692
6SBJN*	310120	10-24	0.378	0.382 - 0.400	0.015 - 0.187	0.703	0.073	0.531	0.375	20	554
8SBJN*	310140	1/4-20	0.438	0.438 - 0.450	0.015 - 0.187	0.718	0.073	0.625	0.031	30	482
8LBJN*	310150	1/4-20	0.438	0.438 - 0.450	0.187 - 0.375	0.906	0.073	0.625	0.187	30	820
									0.375	30	906
									0.375	30	806
<b>BRASS (INCH)</b>											
4SJN	310512	M4 x 0.7	7.82	8.08 - 8.38	.381 - 4.75	16.84	1.85	11.91	0.79	1.36	1437
4LJN	310516	M4 x 0.7	7.82	8.08 - 8.38	4.75 - 9.53	22.86	1.80	12.19	4.75	1.36	1552
6SJN	310504	M5 x 0.8	9.60	9.70 - 10.16	.381 - 4.75	17.86	1.85	13.49	4.75	1.36	2086
6LJN	310506	M5 x 0.8	9.60	9.70 - 10.16	4.75 - 9.53	22.23	1.85	13.49	9.53	1.36	1966
8SJN	310508	M6 x 1.0	11.13	11.13 - 11.43	.381 - 4.75	18.24	1.85	15.88	0.79	2.26	1668
8LJN	310510	M6 x 1.0	11.13	11.13 - 11.43	4.75 - 9.53	23.01	1.85	15.88	4.75	2.26	2873
4SBJN*	310134	M4 x .7	7.82	8.08 - 8.38	.381 - 4.75	16.84	1.85	11.91	4.75	2.26	3127
6SBJN*	310126	M5 x .8	9.60	9.70 - 10.16	.381 - 4.75	17.86	1.85	13.49	9.53	2.26	3198
8SBJN*	310143	M6 x 1.0	11.13	11.13 - 11.43	.381 - 4.75	18.24	1.85	15.88	0.79	3.39	2277
8LBJN*	310146	M6 x 1.0	11.13	11.13 - 11.43	4.75 - 9.53	23.01	1.85	15.88	4.75	3.39	4715
									9.53	3.39	3923
									9.53	3.39	4243
<b>BRASS (METRIC)</b>											
4SBJN*	310134	M4 x .7	7.82	8.08 - 8.38	.381 - 4.75	16.84	1.85	11.91	0.79	**	**
6SBJN*	310126	M5 x .8	9.60	9.70 - 10.16	.381 - 4.75	17.86	1.85	13.49	4.75	**	**
8SBJN*	310143	M6 x 1.0	11.13	11.13 - 11.43	.381 - 4.75	18.24	1.85	15.88	0.79	**	**
8LBJN*	310146	M6 x 1.0	11.13	11.13 - 11.43	4.75 - 9.53	23.01	1.85	15.88	4.75	**	**
									9.53	**	**

\*Requires 25,000 minimum \*\*Refer to Factory Note: Also available in Raintite® or PVC coating

# WELL NUT® Inch Threaded Inserts

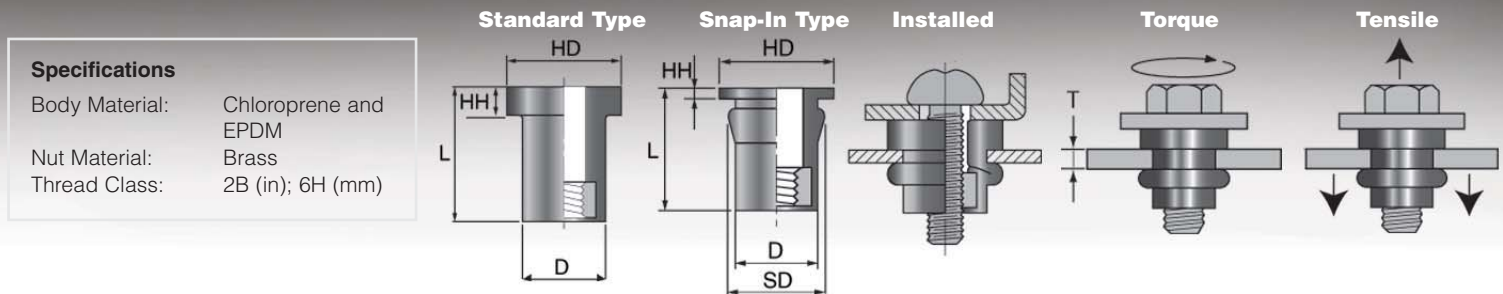
## WELL NUT®

The WELL NUT is a flat head round body rubber blind rivet nut that is installed when the mating screw is tightened. The WELL NUT is available in Chloroprene for standard applications and EPDM when exposed to sunlight and ultra violet rays. The internal threads are made of brass. WELL NUT inserts are RoHS compliant.



WELL NUT advantages:

- Seals out ambient moisture
- Muffles noise
- Dampens vibrations and shock
- Isolates electrical conductivity
- Isolates galvanic corrosion between dissimilar assembled components
- Snap in version can be pre-attached to parent material
- Available in custom materials to meet specific application requirements



Specifications	
Body Material:	Chloroprene and EPDM
Nut Material:	Brass
Thread Class:	2B (in); 6H (mm)

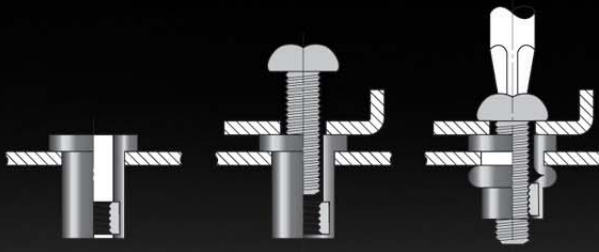
### Dimensions & Specifications (Inch)

### Test Results @ Plate Thickness (T)

Catalog Number	Part Number	Thread Size	Body Diameter D	Hole Size nom	Grip Range min-max	Length L	Head Height HH	Head Diameter HD	Snap Diameter SD	Plate Thickness in	Tightening Torque in-lb	Ultimate Tensile lb
<b>STANDARD</b>												
C632	347024	6-32	0.240	0.250	0.375 - 0.607	0.981	0.035	0.554	—	0.500	3	115
E632	347042	6-32	0.312	0.312	0.015 - 0.156	0.499	0.062	0.438	—	0.062	4	114
B832	347012	8-32	0.312	0.312	0.015 - 0.156	0.499	0.052	0.438	—	0.062	3	146
C832*	347025	8-32	0.312	0.312	0.015 - 0.172	0.560	0.060	0.750	—	0.063	3	130
L1024*	347233	10-24	0.375	0.375	0.030 - 0.277	0.767	0.187	0.562	—	0.125	5	95
10S	347108	10-32	0.377	0.377	0.015 - 0.192	0.554	0.036	0.500	—	0.125	5	230
10SL	347112	10-32	0.375	0.375	0.312 - 0.643	1.051	0.051	0.562	—	0.500	3	315
10XL*	347198	10-32	0.375	0.375	0.812 - 1.143	1.551	0.051	0.562	—	1.050	10	371
G1032	347048	10-32	0.377	0.377	0.030 - 0.227	0.807	0.187	0.750	—	0.125	5	277
H1032	347054	10-32	0.377	0.377	0.312 - 0.450	0.847	0.035	0.554	—	0.375	3	260
J1032	347064	10-32	0.377	0.377	0.030 - 0.227	0.700	0.080	0.750	—	0.125	5	225
Q1032	347088	10-32	0.377	0.377	0.035 - 0.232	0.665	0.040	0.562	—	0.125	5	265
1/4S	347102	¼-20	0.500	0.500	0.015 - 0.111	0.630	0.051	0.630	—	0.075	10	230
D1420	347030	¼-20	0.500	0.500	0.031 - 0.187	0.829	0.187	0.740	—	0.187	15	280
J1420	347068	¼-20	0.500	0.500	0.250 - 0.457	1.051	0.051	0.635	—	0.250	10	140
JL1420	347355	¼-20	0.500	0.500	0.625 - 0.830	1.432	0.422	0.625	—	0.375	10	445
JM1420*	347440	¼-20	0.500	0.500	0.215 - 0.422	1.440	0.440	0.650	—	0.250	10	445
W1420	347095	¼-20	0.500	0.500	0.197 - 0.342	0.801	0.051	0.635	—	0.187	10	360
AC1420*	347000	¼-20	0.562	0.562	0.280 - 0.500	1.301	0.051	0.635	—	0.397	20	251
E51618	347034	⅝-18	0.620	0.625	0.015 - 0.156	0.725	0.125	0.875	—	0.151	25	457
F51618*	347033	⅝-18	0.620	0.625	0.156 - 0.375	1.100	0.225	0.875	—	0.375	15	558
A3816	347008	⅝-16	0.750	0.750	0.015 - 0.437	1.062	0.187	1.250	—	0.437	20	1500
Z3816*	347098	⅝-16	0.750	0.750	0.015 - 0.125	1.050	0.350	1.750	—	0.125	30	1125
<b>SNAP-IN</b>												
2D832*	347029	8-32	0.310	0.312	0.015 - 0.050	0.430	0.050	0.500	0.375	0.031	5	91
A1024*	347004	10-24	0.375	0.375	0.015 - 0.050	0.562	0.125	0.562	0.407	0.031	5	156
NP1032	347280	10-32	0.375	0.375	0.015 - 0.050	0.400	0.059	0.510	0.407	0.050	5	230

\*Requires 25,000 minimum order.

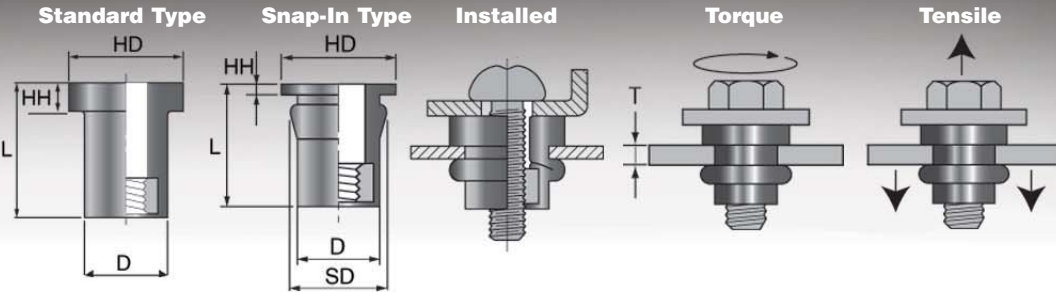
# WELL NUT® Metric Threaded Inserts



## Standard and Snap-In Well Nut Installation

1. Place WELL NUT Insert all the way into pre-drilled hole until flange is firmly against mounting surface.
2. Pass machine screw through part to be fastened.
3. Tighten until snug.

Specifications	
Body Material:	Chloroprene and EPDM
Nut Material:	Brass
Thread Class:	2B (in); 6H (mm)



## Dimensions & Specifications (Metric)

## Test Results @ Plate Thickness (T)

Catalog Number	Part Number	Thread Size	Body Diameter D	Hole Size nom	Grip Range min - max	Length L	Head Height HH	Head Diameter HD	Snap Diameter SD	Plate Thickness mm	Tightening Torque N-m	Ultimate Tensile N
<b>STANDARD</b>												
C632	347017	M3 x 0.5	6.10	6.35	9.53 - 15.42	24.92	0.89	14.07	—	12.7	0.34	512
E632	347043	M3 x 0.5	7.92	7.92	0.38 - 3.96	12.67	1.57	11.48	—	1.57	0.45	507
B832	347011	M4 x 0.7	7.92	7.92	0.38 - 3.96	12.67	1.32	11.13	—	1.57	0.34	649
C832*	347026	M4 x 0.7	6.10	7.92	0.38 - 4.37	14.22	1.52	19.05	—	1.60	0.34	578
L1024*	347089	M5 x 0.8	9.53	9.53	0.76 - 5.77	19.48	4.75	14.27	—	3.18	0.56	423
10S	347107	M5 x 0.8	9.58	9.58	0.38 - 4.88	14.07	0.91	12.70	—	3.18	0.56	1023
10SL	347111	M5 x 0.8	9.53	9.53	7.92 - 16.33	26.70	1.30	14.27	—	12.7	0.34	1401
10XL*	347141	M5 x 0.8	9.53	9.53	20.62 - 29.03	39.40	1.30	14.27	—	26.67	1.13	1650
G1032	347049	M5 x 0.8	9.58	9.58	0.76 - 5.77	20.50	4.75	19.05	—	3.18	0.56	1232
H1032	347051	M5 x 0.8	9.58	9.58	7.92 - 11.43	21.51	0.89	14.07	—	9.53	0.34	1156
J1032	347063	M5 x 0.8	9.58	9.58	0.76 - 5.77	17.78	2.03	19.05	—	3.18	0.56	1001
Q1032	347087	M5 x 0.8	9.58	9.58	0.89 - 5.89	16.89	1.02	14.27	—	3.18	0.56	1179
HSCM6X1	347261	M6 x 1.0	12.50	12.70	0.38 - 2.39	16.00	1.52	14.73	—	1.91	1.13	1001
EM6X1*	347247*	M6 x 1.0	12.50	12.70	0.38 - 2.39	16.00	1.30	17.25	—	0.79	1.58	534
ACM6X1*	347258*	M6 x 1.0	12.50	12.70	0.38 - 1.57	16.00	1.30	19.99	—	1.57	1.13	1308
1/4A*	347256	M6 x 1.0	12.70	12.70	0.38 - 1.27	15.98	2.82	15.98	—	1.91	1.13	1290
1/4S	347103	M6 x 1.0	12.70	12.70	0.38 - 2.82	16.00	1.30	16.00	—	1.91	1.13	1023
D1420	347031	M6 x 1.0	12.70	12.70	0.79 - 4.75	21.06	4.75	18.80	—	4.75	1.69	1245
J1420	347067	M6 x 1.0	12.70	12.70	6.35 - 11.61	26.70	1.30	16.13	—	6.35	1.13	1979
M6X1*	347254*	M6 x 1.0	12.70	12.70	0.38 - 2.39	16.00	1.30	19.99	—	1.91	1.13	992
MDM6X1*	347248	M6 x 1.0	12.70	12.70	0.79 - 4.75	21.06	4.75	18.80	—	4.75	1.69	1379
W1420	347093	M6 x 1.0	12.70	12.70	4.75 - 8.71	20.35	1.30	16.13	—	4.75	1.13	1601
E51618	347035	M8 x 1.25	15.88	15.88	0.38 - 3.96	18.42	3.18	22.23	—	3.84	2.82	2033
F51618*	347470	M8 x 1.25	15.75	15.88	3.96 - 9.53	27.94	5.71	22.22	—	9.53	1.69	2482
A51618*	347252	M8 x 1.25	19.00	19.05	0.38 - 6.02	27.00	5.00	32.00	—	4.75	2.26	1962
A3816*	347009	M8 x 1.25	19.05	19.05	0.38 - 11.10	26.97	4.75	31.75	—	11.10	2.26	6672
<b>SNAP-IN</b>												
2D832*	347027	M4 x 0.7	7.87	7.92	0.38 - 1.27	10.92	1.27	12.70	9.53	0.79	0.56	405
A1024*	347006	M5 x 0.8	9.53	9.53	0.38 - 1.27	14.27	3.18	14.27	10.34	0.79	0.56	694
NP1032	347266	M5 x 0.8	9.53	9.53	0.38 - 1.27	10.16	1.50	12.95	10.34	1.27	0.56	1023
W0811JS*	347410	M6 x 1.0	12.47	12.47	0.76 - 5.77	17.53	2.82	16.00	13.47	3.18	0.56	1023
ET51618*	347360	M8 x 1.25	15.88	15.88	0.38 - 3.00	27.99	8.48	22.20	17.25	3.18	0.9	1717

\*Requires 25,000 minimum order. \*\*Refer to factory. • Material is EPDM

# POP NUT™ Installation Systems

## POP NUT™ TOOLS

POP NUT tools are designed and manufactured by Emhart Teknologies to be ergonomic, rugged and dependable. Our hydro/pneumatic PNT800A and PNT1000 tools offer speed, low noise, light weight, single trigger operation, visual stroke indicator and a quick change mandrel system.



### PNT800A

Hydro/pneumatic spin-pull to stroke tool. This tool is available in spin-pull to pressure version with full process monitoring

### PNT1000

Heavy-duty hydro/pneumatic spin-pull to stroke tool

### PNT110

Manual tool with quick change mandrel system



### JNT7530/7529

Pneumatic spin-spin torque stall tool for JACK NUT





# POP NUT™ Installation Systems

## POP NUT™ SYSTEMS

Emhart Technologies has also developed specialized automation tools in both pick and place or auto feed versions. Our POP NUT automation tools can be purchased as separate items to be incorporated into a robotic automation system or a fixed station. Emhart Technologies can also provide any customized components that include feeders, boosters, process monitoring and controls.

### NPR Automation Tool

Hydro/pneumatic tool for automation available in auto feed or pick and place version



### PNT310

Manual lever tool with a push-pull knob for fast thread-on and thread-off



### PNT210

Manual ratchet tool



# PNT800A Power Tool

## PNT800A

The PNT800A is a spin-pull to stroke POP NUT tool that can install the full thread size range of the TK, TL and TH products. It features a push to thread on mandrel, and a stroke gauge which is easy to read and adjust. The PNT800A also features a quick release mandrel system, one step trigger and reverse override button.



## PNT800A Specifications:

- Installs 20 parts per minute
- Noise Rating: 72.7 dB (A)
- Weight: 3.7 lbs (1.68 kg)
- Stroke: .05 to .248 in (1.3 to 6.3 mm)
- Pull Force: 5260 lbs (23.4 kN)
- Pressure: 72.5-87 psi (5-6 bar)

### PNT800A Tool to install TK, TL, TH with Pilot Nosepiece

Thread Size	Complete Tool*	Mandrel	Pilot Nosepiece
<b>INCH</b>			
6-32UNC	PNT800A-632P	PNT600-01-632	PNT600-02-3P
8-32UNC	PNT800A-832P	PNT600-01-832	PNT600-02-4P
10-24UNC	PNT800A-1024P	PNT600-01-1024	PNT600-02-5P
10-32UNF	PNT800A-1032P	PNT600-01-1032	PNT600-02-5P
1/4-20UNC	PNT800A-420P	PNT600-01-420	PNT600-02-420P
5/16-18UNC	PNT800A-518P	PNT600-01-518	PNT600-02-8P
3/8-16UNC	PNT800A-616P	PNT600-01-616	PNT600-02-10P
<b>METRIC</b>			
M4x0.7	PNT800A-4P	PNT600-01-4P	PNT600-02-4P
M5x0.8	PNT800A-5P	PNT600-01-5P	PNT600-02-5P
M6x1	PNT800A-6P	PNT600-01-6P	PNT600-02-6P
M8x1.25	PNT800A-8P	PNT600-01-8P	PNT600-02-8P
M10x1.5	PNT800A-10P	PNT600-01-10P	PNT600-02-10P

### PNT800A Tool to install ST with Flat Nosepiece

Thread Size	Complete Tool*	Mandrel	Flat Nosepiece
<b>INCH</b>			
6-32UNC	PNT800A-632R	PNT600-01-632	PNT600-02-632
8-32UNC	PNT800A-832R	PNT600-01-832	PNT600-02-832
10-24UNC	PNT800A-1024R	PNT600-01-1024	PNT600-02-5
10-32UNF	PNT800A-1032R	PNT600-01-1032	PNT600-02-5
1/4-20UNC	PNT800A-420R	PNT600-01-420	PNT600-02-420
5/16-18UNC	PNT800A-518R	PNT600-01-518R	PNT600-02-8
3/8-16UNC	PNT800A-616R	PNT600-01-616R	PNT600-02-10
<b>METRIC</b>			
M4x0.7	PNT800A-4	PNT600-01-4	PNT600-02-4
M5x0.8	PNT800A-5	PNT600-01-5P	PNT600-02-5
M6x1	PNT800A-6	PNT600-01-6P	PNT600-02-6
M8x1.25	PNT800A-8	PNT600-01-8	PNT600-02-8
M10x1.5	PNT800A-10	PNT600-01-10A	PNT600-02-10

\*Complete tool includes mandrel and nosepiece.

# PNT1000 Power Tool

## PNT1000

The PNT1000 is a heavy-duty spin-pull to stroke POP NUT tool. It features a push to thread on mandrel, easy to adjust and read stroke gauge, quick release mandrel system, one step trigger and reverse override button.



## PNT1000 Specifications:

- Installs 20 parts per minute
- Noise Rating: 100 dB (A)
- Weight: 5.5 lbs (2.5 kg)
- Stroke: .04 to .300 in (1.0 to 7.5 mm)
- Pull Force: 6070 lbs (27 kN)
- Pressure: 72.5-87 psi (5-6 bar)

### PNT1000 Tool to install TK, TL, and TH with Pilot Nosepiece

Thread Size	Complete Tool*	Mandrel Adapter	Mandrel	Pilot Nosepiece
<b>INCH</b>				
1/4-20UNC	PNT1000-420P	PNT1000-58	PNT600-01-420	PNT1000-02-420P
5/16-18UNC	PNT1000-518P	PNT1000-58	PNT600-01-518	PNT1000-02-8P
3/8-16UNC	PNT1000-616P	NR	PNT1000-01-616	PNT1000-02-10P
1/2-13UNC	PNT1000-813P	NR	PNT1000-01-813	PNT1000-02-813P

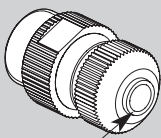
<b>METRIC</b>				
M6x1	PNT1000-6P	PNT1000-58	PNT600-01-6P	PNT1000-02-6P
M8x1.25	PNT1000-8P	PNT1000-58	PNT600-01-8P	PNT1000-02-8P
M10x1.5	PNT1000-10P	NR	PNT1000-01-10P	PNT1000-02-10P
M12x1.75	PNT1000-12P	NR	PNT1000-01-12P	PNT1000-02-12P

### PNT1000 Tool to install ST with Flat Nosepiece

Thread Size	Complete Tool*	Mandrel Adapter	Mandrel	Flat Nosepiece
<b>INCH</b>				
1/4-20UNC	PNT1000-420R	PNT1000-58	PNT600-01-420	PNT1000-02-420
5/16-18UNC	PNT1000-518R	PNT1000-58	PNT600-01-518R	PNT1000-02-8
3/8-16UNC	PNT1000-616R	NR	PNT1000-01-616R	PNT1000-02-10
1/2-13 UNC	PNT1000-813R	NR	PNT1000-01-813	PNT1000-02-813

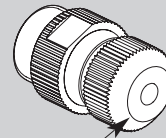
<b>METRIC</b>				
M6x1	PNT1000-M6	PNT1000-58	PNT600-01-6P	PNT1000-02-6
M8x1.25	PNT1000-M8	PNT1000-58	PNT600-01-8	PNT1000-02-8
M10x1.5	PNT1000-M10	NR	PNT1000-01-10A	PNT1000-02-10
M12x1.75	PNT1000-M12	NR	PNT1000-01-12A	PNT1000-02-12

### Nosepiece styles for both PNT800A and PNT1000



**Pilot Nosepiece**

The POP NUT TK, TL and TH fasteners require a nosepiece with a pilot. The pilot keeps the POP NUT centered on the tool nosepiece assuring that the POP NUT is installed with the thread being concentric to the head.



**Flat Nosepiece**

The POP NUT ST is a flat head thick walled product that requires a flat nosepiece for proper installation.

\*Complete tool includes mandrel, adapter and nosepiece. NR = Not Required

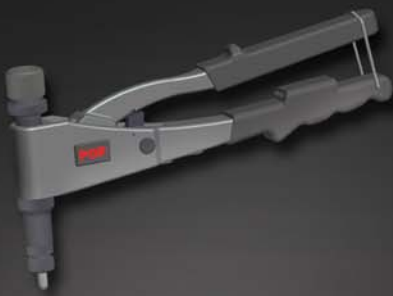
# POP NUT™ Manual Tools

## PNT110 Hand Plier Tool

The PNT110 is a plier operated tool and can install the POP NUT™ TK, TL and TH up to ¼-20 and M6 thread sizes. It features a quick change mandrel system.

### Operation

- Thread the POP NUT onto the tool mandrel
- Place the POP NUT in the hole
- Squeeze the tool handles together
- Turn the knob on the top of the tool to unthread



## PNT210 Heavy-Duty Ratchet Tool

The PNT210 is a ratchet styled tool and can install the full range of POP NUT fasteners in all thread sizes.

### Operation

- Thread the POP NUT onto the tool mandrel
- Place the POP NUT in the hole
- Hold the top bar and ratchet the lower bar
- Turn the knob on the top of the tool to unthread
- Note: The 210 tool is featured with a stroke control gauge and setting function. See the tool manual for details



Thread Size	Complete Tool	Mandrel + Nosepiece Kit	Kit Includes	
			Mandrel	Nosepiece
<b>To install TK, TL, and TH with Pilot Nosepiece</b>				
6-32unc	PNT110-IP	TAM400-411	FAM400-300	FAM400-403
8-32unc			FAM400-302	FAM400-404
10-24unc			FAM400-304	FAM400-405
10-32unf			FAM400-402	FAM400-405
1/4-20unc			FAM400-306	FAM400-406
M3	PNT110-MP	TAM400-420	FAM400-284	FAM400-412
M4			FAM400-285	FAM400-413
M5			FAM400-286	FAM400-414
M6			FAM400-287	FAM400-415

Thread Size	Complete Tool	Mandrel + Nosepiece Kit	Kit Includes	
			Mandrel	Nosepiece
<b>To install ST with Flat Nosepiece</b>				
6-32unc	PNT110-I	TAM400-484	FAM400-300	FAM400-308
8-32unc			FAM400-302	FAM400-310
10-24unc			FAM400-304	FAM400-312
10-32unf			FAM400-402	FAM400-312
1/4-20unc			FAM400-306	FAM400-314
M3	PNT110-M	TAM400-298	FAM400-284	FAM400-288
M4			FAM400-285	FAM400-289
M5			FAM400-286	FAM400-290
M6			FAM400-287	FAM400-291

Thread Size	Complete Tool	Mandrel + Nosepiece Kit	Kit Includes	
			Mandrel	Nosepiece
<b>To install TK, TL, and TH with Pilot Nosepiece</b>				
6-32unc	-	-	FAM400-440	FAM400-428
8-32unc	-	-	FAM400-441	FAM400-429
10-24unc	PNT210-IP	TAM400-485	FAM400-257	FAM400-430
10-32unf			FAM400-435	FAM400-430
1/4-20unc			FAM400-259	FAM400-431
5/16-18unc			FAM400-261	FAM400-432
3/8-16unc			FAM400-263	FAM400-433
1/2-13unc	-	-	FAM400-442	FAM400-434
M4	-	-	FAM400-225	FAM400-444
M5	-	-	FAM400-224	FAM400-445
M6	PNT210-MP	TAM400-486	FAM400-213	FAM400-446
M8			FAM400-214	FAM400-447
M10			FAM400-215	FAM400-448
M12			FAM400-216	FAM400-449

Thread Size	Complete Tool	Mandrel + Nosepiece Kit	Kit Includes	
			Mandrel	Nosepiece
<b>To install ST with Flat Nosepiece</b>				
6-32unc	-	-	FAM400-440	FAM400-458
8-32unc	-	-	FAM400-441	FAM400-245
10-24unc	PNT210-I	TAM400-487	FAM400-257	FAM400-247
10-32unf			FAM400-435	FAM400-247
1/4-20unc			FAM400-259	FAM400-249
5/16-18unc			FAM400-261	FAM400-251
3/8-16unc			FAM400-263	FAM400-265
1/2-13unc	-	-	FAM400-442	FAM400-459
M4	-	-	FAM400-225	FAM400-228
M5	-	-	FAM400-224	FAM400-171
M6	PNT210-M	TAM400-217	FAM400-213	FAM400-173
M8			FAM400-214	FAM400-176
M10			FAM400-215	FAM400-178
M12			FAM400-216	FAM400-208

# POP NUT™ Manual Tools

## PNT310 Lever Tool

The PNT310 is a double lever tool with a pull-to-remove plunger. The 310 is designed to install the full range of POP NUT products.

### Operation

- Thread the POP NUT onto the tool mandrel
- Place the POP NUT in the hole
- Squeeze the tool handles together
- Pull the plunger until the mandrel unthreads
- Note: The 310 tool is featured with a stroke control gauge and setting function. See the tool manual for details



## PNT410 Heavy-Duty Lever Tool

The PNT410 has a patented cam mechanism that reduces the amount of force to install the larger size POP NUTs. This tool can set up to M12 SS POP NUT products.

### Operation

- Thread the POP NUT onto the tool mandrel
- Place the POP NUT in the hole
- Squeeze the tool handles together
- Spin the reverse knob and the mandrel unthreads
- Note: The 410 tool is featured with a stroke control gauge and setting function. See the tool manual for details



Thread Size	Complete Tool	Mandrel + Nosepiece Kit	Kit Includes	
			Mandrel	Nosepiece
<b>To install TK, TL, and TH with Pilot Nosepiece</b>				
6-32unc	-	-	FAM400-462	FAM400-428
8-32unc	-	-	FAM400-234	FAM400-429
10-24unc	PNT310-IP	TAM400-488	FAM400-237	FAM400-430
10-32unf			FAM400-464	FAM400-430
1/4-20unc			FAM400-239	FAM400-431
5/16-18unc			FAM400-241	FAM400-432
3/8-16unc			FAM400-268	FAM400-433
1/2-13unc	-	-	FAM400-466	FAM400-434
M4	-	-	FAM400-317	FAM400-444
M5	PNT310-MP	TAM400-489	FAM400-132	FAM400-445
M6			FAM400-149	FAM400-446
M8			FAM400-152	FAM400-447
M10			FAM400-163	FAM400-448
M12			-	-

Thread Size	Complete Tool	Mandrel + Nosepiece Kit	Kit Includes	
			Mandrel	Nosepiece
<b>To install ST with Flat Nosepiece</b>				
6-32unc	-	-	FAM400-462	FAM400-458
8-32unc	-	-	FAM400-234	FAM400-245
10-24unc	PNT310-I	TAM400-490	FAM400-237	FAM400-247
10-32unf			FAM400-464	FAM400-247
1/4-20unc			FAM400-239	FAM400-249
5/16-18unc			FAM400-241	FAM400-251
3/8-16unc			FAM400-268	FAM400-265
1/2-13unc	-	-	FAM400-466	FAM400-459
M4	-	-	FAM400-317	FAM400-228
M5	PNT310-M	TAM400-320	FAM400-132	FAM400-171
M6			FAM400-149	FAM400-173
M8			FAM400-152	FAM400-176
M10			FAM400-163	FAM400-178
M12			-	-

Thread Size	Complete Tool	Mandrel + Nosepiece Kit	Kit Includes	
			Mandrel	Nosepiece
<b>To install TK, TL, and TH with Pilot Nosepiece</b>				
10-24unc	PNT410-IP	TAM400-482	DPM400-475	FAM400-430
10-32unf			DPM400-476	FAM400-430
1/4-20unc			DPM400-477	FAM400-431
5/16-18unc			DPM400-478	FAM400-432
3/8-16unc			DPM400-479	FAM400-433
1/2-13unc	-	-	DPM400-480	FAM400-434
M5	PNT410-MP	TAM400-483	DPM400-336	FAM400-445
M6			DPM400-337	FAM400-446
M8			DPM400-338	FAM400-447
M10			DPM400-339	FAM400-448
M12			DPM400-340	FAM400-449

Thread Size	Complete Tool	Mandrel + Nosepiece Kit	Kit Includes	
			Mandrel	Nosepiece
<b>To install ST with Flat Nosepiece</b>				
10-24unc	PNT410-I	TAM400-481	DPM400-475	FAM400-247
10-32unf			DPM400-476	FAM400-247
1/4-20unc			DPM400-477	FAM400-249
5/16-18unc			DPM400-478	FAM400-251
3/8-16unc			DPM400-479	FAM400-265
1/2-13unc	-	-	DPM400-480	FAM400-459
M5	PNT410-M	TAM400-341	DPM400-336	FAM400-171
M6			DPM400-337	FAM400-173
M8			DPM400-338	FAM400-176
M10			DPM400-339	FAM400-178
M12			DPM400-340	FAM400-208

# POP NUT™ Advanced Automation Systems

Emhart Teknologies has developed several types of advanced tool systems for process monitoring, full automation and an autofeed system.

## PNT800A-PC SmartSet®

This hand-held spin-pull to pressure tool has full process monitoring. The spin-pull to pressure control allows the tool to install the POP NUT in multiple or variable thickness materials without adjustment. The control module can be linked to a fixture to hold the part until all POP NUT parts are counted and installed correctly.



## Automation Tool

The POP NUT automation tool can be mounted onto an automation system or to a robot arm. Pick and place and auto-feed tools are available. Emhart Teknologies can also provide any customized components to include feeders, boosters, controls and feed tubes.



## NUTKWIK

The NUTKWIK is an auto-feed system that delivers the POP NUT to a receptacle for automatic pick up by a hand held tool. The NUTKWIK system can be combined with the PNT800A-PC tool for manual use.



# JACK NUT® Installation Tools



## JNT7530/7529 JACK NUT® Pneumatic Tools

For the high volume setting of all JACK NUT inserts, these torque adjustable tools set the inserts by rotation automatically compensating for material thickness variations. Reverses for removal.

Part Number	JNT7530	JNT7529
Weight	1.7 lb (0.77 kg)	2.0 lb (0.91 kg)
Dimensions	8 x 6.5 x 1.5 in (203.2 x 165.1 x 38.1 mm)	9 x 6.5 x 1.5 in (228.6 x 165.1 x 38.1 mm)
Air Pressure	90 psi (6.2 bar)	90 psi (6.2 bar)
Speed (rpm)	2300	750
Torque	15 in-lbs (1.69 N-m)	50 in-lbs (5.65 N-m)

Mandrel Selection	
Thread Size	Mandrel
6-32	JNT7500-632
10-24	JNT7500-1024
1/4-20	JNT7500-1420
M4	JNT7500-M4
M5	JNT7500-M5
M6	JNT7500-M6



## JNT2400 JACK NUT® Heavy Duty Hand Tool

Rugged steel tool uses interchangeable mandrels to set all sizes. Low grip effort is required and proper stroke is preset for positive setting without overtightening.

Part Number	JNT2400
Weight	1.0 lb (0.45 kg)
Dimensions	8.75 x 4.125 x 1.0 in (222.3 x 108 x 25.4 mm)

Mandrel Selection	
Thread Size	Mandrel
6-32	JNT2400-632
10-24	JNT2400-1024
1/4-20	JNT2400-1420
M4	JNT2400-M4
M5	JNT2400-M5
M6	JNT2400-M6



## JNT2200 JACK NUT® Hand Tool

An economical, easy to use tool for low volume installation in any material. Thread mandrel into JACK NUT, insert into hole, and squeeze handles to set. Interchangeable mandrels available to set all sizes.

Part Number	JNT2200
Weight	0.5 lb (0.23 kg)
Dimensions	8.5 x 2.75 x .75 in (215.9 x 69.6 x 19.1 mm)

Mandrel Selection	
Thread Size	Mandrel
6-32	JNT2200-632
10-24	JNT2200-1024
1/4-20	JNT2200-1420
M4	JNT2200-M4
M5	JNT2200-M5
M6	JNT2200-M6



## JNT1100 JACK NUT® Friction Wrench Tool

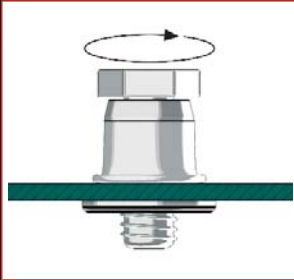
For use when installing a limited number of JACK NUTS. Insert the wrench between the screw and the head of the fastener. Hold the wrench and run the screw to set the JACK NUT.

Part Number	JNT1100
Weight	0.4 oz (11.34 g)
Dimensions	4 x .625 x .063 in (101.6 x 15.9 x 1.6 mm)

# POP NUT™ Testing and Test Procedures

Emhart Teknologies has developed test procedures to determine application strength data for POP NUT fasteners. The information provided on this page details the type of lab tests that we can conduct to help our customers choose the optimum POP NUT for a specific application.

## Spin Out

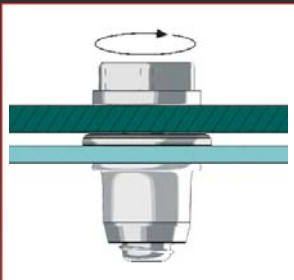


Spin Out is the amount of torque required to turn an installed POP NUT before clamp load is established in the joint. Spin Out can occur if the mating screw is cross threaded into the installed POP NUT. It can also occur if a mating screw

with a nylon patch is threaded into the installed POP NUT. Spin Out performance is directly related to the actual parent material density, thickness, hole type, hole size and POP NUT selected.

Spin Out torque is tested by tightening a screw into the backside of the installed POP NUT and measuring the amount of torque to turn the POP NUT.

## Ultimate Torque



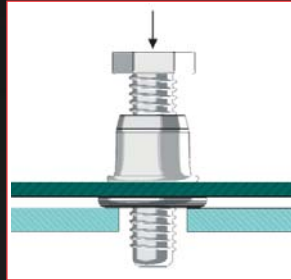
Ultimate Torque is the torque applied to the mating screw in an assembled joint until the screw or the POP NUT fails. The POP NUT is designed to withstand the torque of mating Grade 5 or Metric Class 8.8 screws.

The Ultimate Torque test is

best performed using the actual joint components and actual mating screw since the plating used on the fasteners plays an important role in ultimate joint strength.

Ultimate Torque is tested by keeping both the parent material and mating part stationary and then applying torque until failure. Note: The POP NUT is not intended to be used in applications where the mating part can rotate.

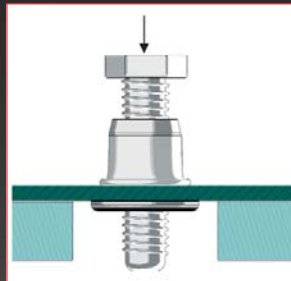
## Thread Shear



Thread Shear determines the ultimate strength of the POP NUT threads and backside flange. The POP NUT threads and backside flange are designed to be stronger than the tensile proof load of the Grade 5 or Metric Class 8.8 mating screw.

Thread Shear is tested by threading a screw into the back side of the installed POP NUT with the head supported with a fixture. The screw is pushed through the POP NUT until the back side flange or threads fall in the POP NUT.

## Pull Out



Pull Out is the force required to pull the installed POP NUT from the parent material. A fixture is designed to support the parent material at 3 times the diameter of the POP NUT. The fixture is needed to support the components

in test machine. Actual applications do not have "fixtures" supporting the parent material so these tests are done to show relative or comparative data between POP NUT types and are not indicative of actual application Pull Out data.

Pull Out is tested by threading a bolt into the backside of the POP NUT and pushing it through the parent material.

Tests performed by Emhart Teknologies are for reference or comparison only. Emhart Teknologies recommends that actual tests by the customer should be performed prior to specifying an Emhart Teknologies fastener.



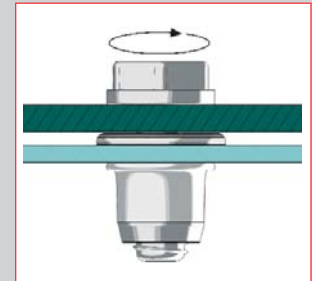
# POP NUT™ Specifications and Conversions

## Max Assembly Torque for Inch Grade 5 Screws

Thread size	Torque in-lbs
6-32unc	12
8-32unc	22
10-24unc	32
10-32unf	36
1/4-20unc	75
5/16-18unc	156
3/8-16unc	276
1/2-13unc	660

## Max Assembly Torque for Metric Class 8.8 Screws

Thread size	Torque N-m
M4	3
M5	6
M6	10
M8	24
M10	48
M12	82

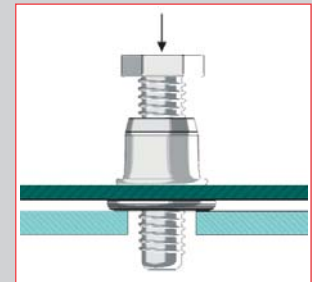


## POP NUT Axial Proof Load Inch

Thread size	Proof load lbs
6-32unc	750
8-32unc	1,200
10-24unc	1,500
10-32unf	1,700
1/4-20unc	2,700
5/16-18unc	4,450
3/8-16unc	6,600
1/2-13unc	12,100

## POP NUT Axial Proof Load Metric

Thread size	Proof load kN
M4	6.8
M5	10
M6	15
M8	27
M10	37
M12	54



## Material and Plating Specifications

Material	Specification	Plating Code	Description	Specification
Steel	1010/1008	1	Zinc Yellow + lube	Per ASTM-B633 TYPE II or III Fe/Zn, .0003", 8µm
		2	Hex chrome free zinc + lube	Per ASTM-B633 Type V or VI Fe/Zn, .0003", 8µm
		3	Hex Chrome free zinc tin + lube	Per GMW3200
		4	Hex chrome free zinc nickel + lube	Per DCX DBL8451.76
		5	Hex chrome free zinc + sealer + lube	Per Ford S-437
		6	Hex chrome free zinc + lube	Per GMW3044

## Sheet Metal Gauges

Gauge	Aluminum	Steel	Gauge	Aluminum	Steel
10	0.1019	0.1345	20	0.0320	0.0359
11	0.0907	0.1196	21	0.0285	0.0329
12	0.0808	0.1046	22	0.0253	0.0299
13	0.0720	0.0897	23	0.0226	0.0269
14	0.0641	0.0747	24	0.0201	0.0239
15	0.0571	0.0673	25	0.0179	0.0209
16	0.0508	0.0598	26	0.0159	0.0179
17	0.0453	0.0538	27	0.0142	0.0164
18	0.0403	0.0478	28	0.0126	0.0149
19	0.0359	0.0418	29	0.0113	0.0135

## Conversion Tables

Inches	x 25.4	Millimeters	x .03937	Inches
Feet	x .3048	Meters	x 3.281	Feet
Inches	x 2.54	Centimeters	x .3937	Inches
Inch Pounds	x .11298	Newton Meters	x 8.851	Inch Pounds
Foot Pounds	x 1.3558	Newton Meters	x .7376	Foot Pounds
Pounds	x .00445	Kilo Newtons	x 224.72	Pounds

# POP NUT™, WELL NUT® and JACK NUT® Kits

## WELL NUT® JACK NUT® R&D Kit (360900)

The WELL NUT JACK NUT R&D kit contains (6) Well Nut and (6) Jack Nut threaded inserts representing the broadest capabilities of these product lines.

## WELL NUT® Marine Kit (WNK200N)

The WELL NUT MARINE kit contains an assortment of Well Nut threaded inserts for numerous marine applications. Designed to seal out ambient moisture, muffle noise and dampen vibration and shock.

## POP NUT™ TK and TL Inch Kit (TA801-001)

The POP NUT TK and TL kit contains the first grip inch thread sizes from 6-32 to 3/8-16 and is ideal for prototyping and thread repair use.

## POP NUT™ TK and TL Metric Kit (TA801-002)

The POP NUT TK and TL kit contains the first grip metric thread sizes from M4 to M10 and second grip M6, and is ideal for prototyping and thread repair use.

## POP NUT™ TH Inch and Metric Kit (TA801-003)

The POP NUT TH kit contains the first grip inch and metric thread sizes from 6-32 to 3/8-16 and M4 to M10 and second grip M6, and is ideal for prototyping and thread repair use.



# Emhart Teknologies

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## Emhart Teknologies

applies unconventional thinking and innovation, routinely combining multiple technologies in new ways to create cost-effective assembly systems. Focused on intimate customer relationships in every phase of the manufacturing process, Emhart provides assembly solutions through computer-based modeling and value analysis from mobile and stationary innovation centers located around the globe and online at [www.emhart.com](http://www.emhart.com).

**Dodge** Threaded Inserts for plastic are designed to provide strong metal threads in soft materials. Dodge inserts are installed in a variety of ways including semi- and full automation using ultrasonic welding, hot or cold press-in, mold-in and self-threading.

- Application and Product Development
- Pre-production Prototyping and Sampling
- Extensive Product Range
- Installation Equipment Coordination

**Parker-Kalon** Specialty threaded fasteners set the industry standard for quality and consistency, providing high performance assembly for metal, plastic and masonry applications.

- Value-added design and engineering services
- Thread rolling, thread forming and self-drilling screws
- Assembled screws
- Weld screws and weld pins

**POP** Blind Riveting Systems offer an extensive range of blind rivets, hand-powered and automated-setting systems for every blind rivet application. POP's extensive experience and commitment to product breakthrough provide both on- and off-the-shelf products and systems.

- Lightweight, Vibration-proof Assembly
- High Grip and Pull-up Strengths
- Exceptional Versatility and Design Flexibility
- Extensive Installation and Processing Equipment

## Tucker Assembly Systems

from fully automated drawn ARC stud, Nut (NutFast®) and bracket (WeldFast™) welding to automatic plastic clip assembly and self-piercing riveting; Tucker supplies the most innovative and cost-effective assembly systems in the world.

- Application-Based Product Design
- Full System Approach
- Performance Monitoring, Self-Compensation and Diagnostics
- Production Line Integration

**Heli-Coil** precision formed stainless steel wire inserts for tapped threads in any materials provide permanent, conventional 60-degree internal screw threads that accommodate any standard bolt or screw.

- Tangless®
- Gall Resistant
- Self Locking
- Cordless Installation System

**Gripco** Prevailing torque nuts and assemblies are an integral part of OEM assembly operations, providing exceptional performance and simplification of the assembly process.

- Application and Standards Engineering
- Extensive Product Selection
- Cold and Hot Forming
- Heat Treating and Plating



As a result of our continuous design improvement, POP® fastening products specifications are subject to modifications. RoHS compliance information is available upon request.

# POP®

Your global resource for consistent high-quality fasteners and assembly systems, designed to meet your specific application requirements.

## THE AMERICAS

### United States

#### **Connecticut**

50 Shelton Technology Center  
P.O. Box 859  
Shelton, CT 06484 USA  
Tel. 203-924-9341  
Fax. 800-225-5614

### Canada

9870 boul. du Golf  
Anjou, Québec H1J 2Y7  
Canada  
Tel. 514-351-0330  
Fax. 514-351-0458

### Brazil

Rua Ricardo Cavatton, 226  
CEP 05038-110 Sao Paulo, SP  
Brazil  
Tel. +55 11 3871-6460  
Fax.+55 11 3611-3508

### Mexico

Bosque de Radiatas No 42  
Bosques de las Lomas  
05720 México, DF.  
Tel. +52-55-5326-7100  
Fax. +52-55-5326-7141

## EUROPE

### Denmark

Farverland 1 B  
DK-2600 Glostrup,  
Denmark  
Tel. +45 44 84 11 00  
Fax.+45 44 84 62 12

### Finland

Hyttimestarinkuja 4, PL25  
FI-02781 Espoo, Finland  
Tel. +358 9 8190060  
Fax.+358 9 812428

### France

ZA des Petits Carreaux  
No 8 Bâtiment Haute  
Technologie  
2 bis Avenue des Coquelicots  
94385 Bonneuil-sur Marne  
Cedex  
France  
Tel. 33-1-56-71-24-24  
Fax. 33-1-56-71-24-34

### Norway

Postboks 153, Leirdal  
1009 Oslo  
Norway  
Tel. +47 22909990  
Fax. +47 22909980

### Spain

Carretera M-300  
Km 29,700  
28802 Alcalá de Henares  
Madrid, Spain  
Tel. 34-91-887-1470  
Fax. 34-91-881-7278

### Sweden

Skjutbanev 6, Box 203  
SE-70144 Örebro, Sweden  
Tel. +46 19 2058000  
Fax. +46 19 260038

### United Kingdom

177 Walsall Road  
Birmingham B42 1BP  
United Kingdom  
Tel. +44 (0) 121 331 2460  
Fax. +44 (0) 121 356 1598



## ASIA PACIFIC

### Japan

Shuwa Kioicho Park Building  
3F  
3-6 Kioicho, Chiyoda-Ku  
Tokyo 102-0094, Japan  
Tel. 81-03-3265-7291  
Fax. 81-03-3265-7298

### Korea

Rm 609, Seorin Bldg.  
45-15 Yeoido-Dong,  
Yeongdeungpo-Ku  
Seoul, 150-891, R.O. Korea  
Tel. 82-2-783-9226-7  
Fax. 82-2-783-9228-9

### P. R. China

488 Jia Tang Road  
Jiading District  
Shanghai 201807  
People's Republic of China  
Tel. 86-21-5954-8626  
Fax. 86-21-5954-8775

DODGE  
DRIL-KWICK  
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JACK NUT  
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WARREN  
WELDFAST  
WELL NUT

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