

Self-Clinching Nuts Data

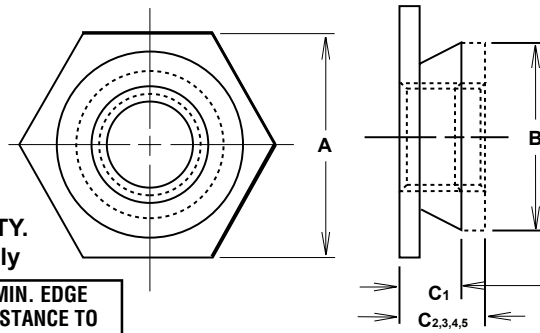
Inch

Information sur les écrous à sertir

Pouce

STAINLESS STEEL Inch Sizes

Self-Clinching FLUSHNUTS add strong load-bearing threads in panels too thin or too ductile to tap — also they provide a flush-with-the-panel fastening. Installation requires only squeezing pressure with any pneumatic or hydraulic parallel-acting press.



DIMENSIONS & SPECIFICATIONS:

PKG QTY.
100 only

SPAENAUR No.	THREAD SIZE	SHANK C MAX.	SHEET THICKNESS	*HOLE SIZE	A	B MAX.	MIN. EDGE DISTANCE TO CENTER OF HOLE
200-828	2-56	-1 .060"	.060-.090"	.172"	3/16"	.171"	.23"
200-829		-2 .090"	.091"-up				
200-830	4-40	-1 .060"	.060-.090"	.172"	3/16"	.171"	.23"
200-831		-2 .090"	.091"-up				
200-832	6-32	-1 .060"	.060-.090"	.213"	1/4"	.212"	.27"
200-833		-2 .090"	.091"-up				
200-834	8-32	-1 .060"	.060-.090"	.290"	5/16"	.289"	.28"
200-835		-2 .090"	.091"-up				
200-836	10-32	-1 .060"	.060-.090"	.312"	11/32"	.311"	.32"
200-837		-2 .090"	.091"-up				
200-838	1/4"-20	-3 .120"	.125-.155"	.344"	3/8"	.343"	.34"
200-839		-4 .151"	.156-.186"				
200-840		-5 .182"	.187"-up				

Note: Clinching profile may vary.

MATERIAL:

300 Series Stainless Steel (Passivated per QQ-P-35)

USE IN :

Materials with Rockwell Hardness of B-70 or less

Don't over-squeeze or hammer Flushnuts. Aluminum panels should be preanodized before fastener insertion.

*tol. +.003 to -.000

PERFORMANCE DATA

INSTALLATION

Drill or punch the correct diameter hole in sheet, referring to table at top. Place shank of fastener in hole and apply a squeezing force between two parallel surfaces sufficient only to embed hexagonal head flush in sheet. The metal displaced by the head flows evenly and smoothly around the back-tapered shank of the fastener, securely locking it into place with high pull-out resistance while at the same time, the embedded hexagonal head provides high torque resistance.

THREAD SIZE	PULL-THRU LB.	*TORQUE (INCH-LB.)	5052-H34 ALUMINUM		COLD ROLLED STEEL	
			INSTALLATION FORCE (LB)	PUSH-OUT LB.	APPROX. INSTALLATION FORCE (LB.)	PUSH-OUT (LB.)
2-56	600	2-1/4	2000	200	3000	200
4-40	650	4-3/4	2000	200	3000	200
6-32	800	8-3/4	2000	200	3000	200
8-32	1050	18	2000	240	4000	240
10-32	1050	32	2500	240	4000	240
1/4"-20	2750	80	3500	640	4500	840

Note: These values are for general reference only. Variations in mounting hole size, panel material, panel thickness and installation procedures will affect these data.

INSTALLATION & PERFORMANCE DATA

For

SELF-CLINCHING NUTS See Page C121-C124

STEEL:

Carbon Steel, Heat Treated, Zinc per ASTM B 633-85 SC1 (5µm), Type III, Colourless

STAINLESS STEEL (S.S)

300 Series Stainless Steel (Passivated, QQ-P-35, Type 1)

ALUMINUM (ALUM.)

2024-T4 Aluminum

THREAD:

Class 2B (MIL-S-7742)

See page B126 for Self-Clinching Studs

THREAD SIZE	SHANK	5052-H34 ALUMINUM			R/B 75 COLD ROLLED STEEL		
		INSTALLATION (LBS.)	PUSH-OUT (LBS)	*TORQUE (INCH-LBS.)	INSTALLATION (LBS.)	PUSH-OUT (LBS.)	*TORQUE (INCH-LBS.)
2-56	-0 (.030)	2000	80	10	3000	90	12
	-1 (.038)					125	12
	-2 (.054)					200	12
	-3 (.087)					200	12
3-48	-0 (.030)	2000	80	10	3000	90	12
	-1 (.038)					125	12
	-2 (.054)					200	12
	-3 (.087)					200	12
4-40	-0 (.030)	2000	80	10	3000	90	16
	-1 (.038)					125	18
	-2 (.054)					200	18
	-3 (.087)					200	18
6-32	-0 (.030)	2800	80	18	3500	100	25
	-1 (.038)					120	25
	-2 (.054)					250	35
	-3 (.087)					250	35
8-32	-0 (.030)	3500	80	25	4500	100	30
	-1 (.038)					140	30
	-2 (.054)					260	50
	-3 (.087)					260	50
10-24 and 10-32	-0 (.030)	4300	80	25	5000	100	40
	-1 (.038)					125	40
	-2 (.054)					200	75
	-3 (.087)					260	75
1/4"-20 and 1/4"-28	-1 (.054)	5000	80	350	6500	600	160
	-2 (.087)						
	-3 (.120)						
5/16"	-1 (.054)	5500	80	400	7500	650	300
	-2 (.087)						
	-3 (.120)						

Inch

Self-Clinching Nuts

Pouce

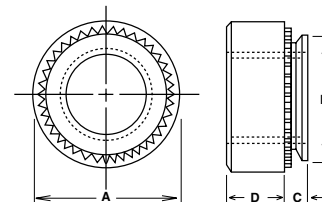
Écrous à sertir

••• add strong, load-bearing threads to thin metal sections. Easy to install.

■ A GENTLE SQUEEZE CLINCHES IT!

The installation of Self-Clinching fasteners is merely a matter of inserting them in previously punched or drilled holes in the sheet metal and applying squeezing force to imbed the clinching ring completely in the sheet.

*Cadmium or Zinc Plated - Our Option.



■ ONLY STANDARD TOOLS ARE REQUIRED —

Any pneumatic or oil hydraulic squeezer adjustable to predetermined pressures is the ideal tool for installing.

PKG QTY. 100 - All Sizes

STEEL & STAINLESS STEEL NUTS

Thread Size	SPAENAUR No.		C Max.	Minimum Sheet Thickness	Hole Size In Sheet (+.003-.000)	B Max.	A	D	Shank Style	Min. Distance Centre Line Hole To Sheet Edge
	CARBON STEEL *Cad. Plated	STAINLESS STEEL #303								
4-40		201-G03-1Y	.054	.056	.166	.165	.25	.07	2	.19
6-32		201-012	.054	.056	.1875	.187	.28	.07	2	.22
1/4"-20	201-G02-1P		.054	.056	.344	.343	.44	.17	1	.34
5/16"-18	200-030		.054	.056	.413	.411	.50	.23	1	.38

Note: Use Carbon Steel SELF-CLINCHING Fasteners in materials with Rockwell hardness of B-85 or less. Use Stainless Steel SELF-CLINCHING Fasteners for use in materials with Rockwell hardness of B-70 or less.

See page C120 for "INSTALLATION & PERFORMANCE DATA".
 See page C120 for Self-Clinching FLUSHNUTS.
 See page B126 for Self-Clinching STUDS.

CATALOG 14

SPAENAUR

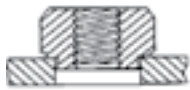
Self-Clinching Nuts Installation Data

Inch and Metric

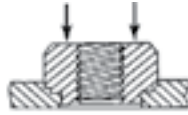
Données d'installation des écrous à sertir

Pouce et Métrique

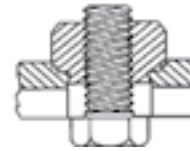
Installation & Performance Data



Fastener must be installed squarely in hole.



Squeezing force is applied to head of fastener.



Install bolt or screw from opposite side of head of fastener.

Information in the chart below relates to page C123

Thread Size	Shank Code	Cold-rolled Steel			5052-H34 Aluminum		
		Installation Force (tons)	Pushout (lbs.)	Torque-out (in.-lbs.)	Installation Force (tons)	Pushout (lbs.)	Torque-out (in.-lbs.)
2-56 3-48 4-40	0	1 - 2	100	13	0.5 - 1	60	8
	1		120	14		89	9.5
	2		225	17		169	12
	3		225	18		169	12
6-32	0	1.5 - 3	105	15	1 - 2	60	16
	1		125	19		90	17
	2		270	27		185	21
	3		270	27		185	21
8-32	0	2 - 3	105	25	1 - 2	65	21
	1		140	34		100	23
	2		280	44		215	32
	3		280	44		215	32
10-24 10-32	0	2 - 4.5	115	31	1 - 2	65	25
	1		175	39		105	31
	2		315	59		245	49
	3		315	59		245	49
1/4-20 1/4-28	1	3 - 4	395	145	2 - 3.5	355	85
	2-3		395	145		355	120
5/16-18 5/16-24	1	3 - 4	420	160	2 - 3.5	375	115
	2-3		420	175		375	155
3/8-16 3/8-24	1-2-3	3.5 - 5.5	455	315	2.5 - 4	395	265
	1-2-3		1050	735		—	—

Information in the chart below relates to page C124.

Thread Size	Shank Code	Installation Force (kN)	Pushout (N)	Torque-out (N•m)	Installation Force (kN)	Pushout (N)	Torque-out (N•m)
M2 M2.5 M3	0	11.2 - 15.6	465	2.1	6.7 - 8.9	275	0.9
	1		545			390	1.1
	2		1010			745	1.4
	3		1100			850	1.4
M3.5	0	13.4 - 26.7	475	1.8	11.2 - 13.4	290	1.8
	1		565	1.8		465	1.9
	2		1200	2.3		965	2.5
	3		1300	2.5		1050	2.8
M4	0	18 - 27	485	2.9	11.2 - 13.4	290	2.3
	1		640	2.95		465	2.6
	2		1245	4.2		965	4.0
	3		1300	4.2		1100	4.0
M5	0	18 - 38	525	3.6	11.2 - 15.6	290	3.0
	1		790	3.6		475	3.6
	2		1400	6.0		1180	4.7
	3		1500	6.0		1225	5.7
M6	1	27 - 36	1755	11.8	18 - 32	1570	11.8
	2						
M8	1	27 - 36	1860	26.0	18 - 32	1560	23.7
	2						

C122

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Inch

Self-Clinching Nuts

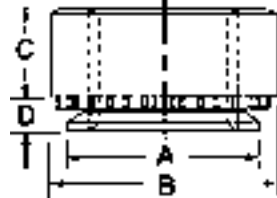
Pouce

Écrous à sertir



PKG QTY. 100

Self-Clinching Nuts



Self-clinching fasteners are pressed into holes in sheet metal by applying a steady squeezing force. This results in the cold-flow of sheet material, which is displaced by the knurl, into the undercut area on the shank of the fastener.

Thread Class 2B, MIL-S-7742; (6H ISO)

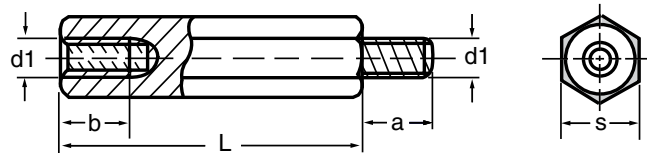
**Heat-treated Carbon Steel, Zinc, Clear to ASTM B633-85
Series 300 Stainless Steel, Passivated ASTM A380**

THREAD SIZE	SPAENAUR No.		SHANK	D Max. in.	Minimum Sheet Thickness	in.	A Max in.	B in.	C in.	Min.
	CARBON STEEL	STAINLESS STEEL								
4-40	201-007	201-807	0	.030	.030	.166 ^{+0.003} _{-.000}	.165	.250 ± .01	0.70 ± 0.01	.19
	-	201-808	1	.038	.040					
6-32	-	201-810	0	.030	.030	.1875 ^{+0.003} _{-.000}	.187	.281 ± 0.01	.070 ± 0.01	.22
	-	201-811	1	.038	.040					
	-	201-812	2	.054	.056					
	201-013	-	3	.087	.091					
8-32	201-016	201-816	2	.054	.056	.213 ^{+0.003} _{-.000}	.212	.312 ± 0.01	.090 ± 0.01	.27
	-	201-817	3	.087	.091					
10-24	201-017	-	0	.030	.030	.250 ^{+0.003} _{-.000}	.249	.344 ± 0.01	.090 ± 0.01	.28
	201-019	201-820	2	.054	.056					
10-32	201-023	201-824	2	.054	.056	.250 ^{+0.003} _{-.000}	.249	.344 ± 0.01	.090 ± 0.01	.28
	201-024	-	3	.087	.091					
1/4-20	-	201-827	2	.087	.091	.344 ^{+0.003} _{-.000}	.343	.437 ± 0.01	.170 ± .01	.34
3/8-16	-	201-829	1	.087	.091	.500 ^{+0.003} _{-.000}	.499	.562 ± 0.01	.270 ± 0.01	.44
	201-031	-	3	.235	.250					
1/2-13	201-032	-	2	.235	.250	.656 ^{+0.003} _{-.000}	.655	.810 ± 0.01	.360 ± 0.01	-

See page C122 for Inch Self-Clinching Nut Data.

For more Self Clinching Standoffs see Page G36

METRIC Threaded Hex Spacers
with Internal and External Thread
STEEL and BRASS



All dimensions in millimetres.

*Threaded length may be less.

SPAENAUR No.	L Spacer Body Length	d1 Thread Dia. x Pitch	Thread Length		S Across Flats (tol. h11)	Material and Finish	PKG QTY.
			a (±0.2)	b			
607-600	8 mm	M3 x 0.5 mm	5 mm	*6 mm	5.5 mm	STEEL, Zinc Plated	25
607-H93-1T	10 mm	M4 x 0.7 mm	6 mm	*7 mm	7.0 mm	STEEL, Zinc Plated	25
607-602	20 mm	M4 x 0.7 mm	6 mm	7 mm	7.0 mm	STEEL, Zinc Plated	25
605-036	15 mm	M4 x 0.7 mm	10 mm	10 mm	6.5 mm	BRASS, Nickel Pltd.	25

CATALOG 14

SPAENAUR

Self-Clinching Nuts

Metric

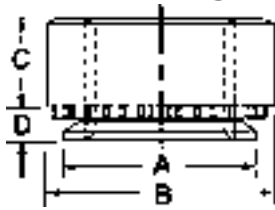
Écrous à sertir

Métrique



PKG QTY. 100

Self-Clinching Nuts



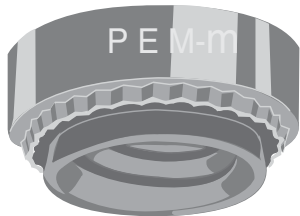
Self-clinching fasteners are pressed into holes in sheet metal by applying a steady squeezing force. This results in the cold-flow of sheet material, which is displaced by the knurl, into the undercut area on the shank of the fastener.

Thread Class 2B, MIL-S-7742; (6H ISO)

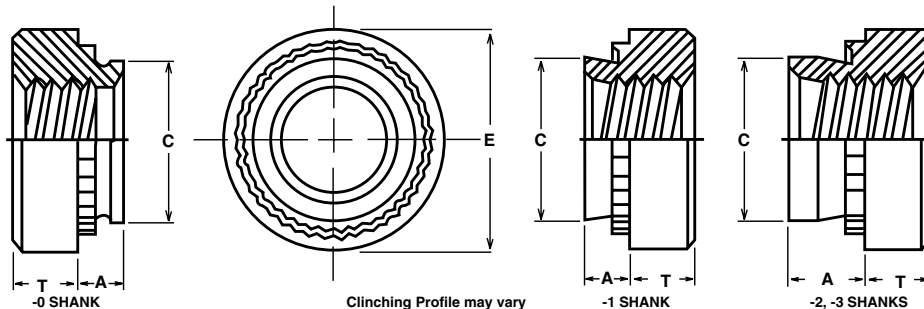
**Heat-treated Carbon Steel, Zinc, Clear to ASTM B633-85
Series 300 Stainless Steel, Passivated ASTM A380**

THREAD SIZE	SPAENAUR No.		SHANK	D Max. mm	Minimum Sheet Thickness	mm	A Max. mm	B mm	C mm	min.
	CARBON STEEL	STAINLESS STEEL								
M3 Pitch 0.5	-	201-836	0	0.76	0.8	4.25 ^{+0.08} _{-0.000}	4.22	6.3 ± 0.25	1.5 ± 0.25	4.8
	201-038	201-837	1	0.97	1.0					
	201-039	-	2	1.37	1.4					
M4 Pitch 0.7	201-G01-1A	201-846	2	1.37	1.4	5.4 ^{+0.08} _{-0.000}	5.38	7.9 ± 0.25	2.0 ± 0.25	6.9
M5 Pitch 0.8	-	201-849	1	0.97	1.0	6.4 ^{+0.08} _{-0.000}	6.38	8.7 ± 0.25	2.0 ± 0.25	7.1
		201-851	3	2.21	2.3					

See page C122 for Metric Self-Clinching Nut Data.



**A wise choice...
PEM Fasteners for
load-carrying threads
in thin metal sheets**



Metric

■ **“CLINCHED BY A SQUEEZE WITH THE GREATEST OF EASE”** — The installation of PEM fasteners is merely a matter of inserting them in previously punched or drilled holes in the sheet metal and applying squeezing force to imbed the clinching ring completely in the sheet.

One or several at a time may be pressed into position and permanently locked in the sheet.

■ **ONLY STANDARD TOOLS ARE REQUIRED** — Any pneumatic or oil/hydraulic squeezer adjustable to predetermined pressures is the ideal tool for installing PEM fasteners. The squeezing action of such tools uniformly presses the insert into the assembly regardless of inaccuracies of sheet thickness and gives the sheet material an opportunity to flow evenly and smoothly around the shank of the fastener.

(All dimensions are in millimetres)

PKG QTY. 100

THREAD SIZE	SPAENAUR No.	A Max.	*Minimum Sheet Thickness	Hole Size In Sheet +0.08	C Max.	E ±0.2	T ±0.1	Shank Style	Min. Distance Centre Line Hole To Sheet Edge
M8 Pitch 1.25	201-120	2.21	2.3	10.5	10.44	12.65	5.47	2	9.7

* **SELECTION OF SHANK LENGTHS** — PEM fasteners in each thread size are available with several shank lengths to meet the specifications of those design engineers who want panel holes refilled as much as possible. PEM fasteners with the shortest shank lengths provide adequate holding power for most applications in panel material which exceeds the minimum specified sheet thickness.

NOTE:

Use Carbon Steel PEM fasteners in materials with Rockwell hardness of B-85 or less.

Stainless Steel PEM fasteners are for use in materials with Rockwell hardness of B-70 or less.