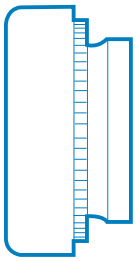
SELF CLINCHING NUTS



PSM SELF CLINCHING NUTS are threaded fasteners which incorporate a knurled platform and a groove. This platform, when embedded in the sheet, causes the displaced material to flow evenly into the groove of the fastener to give a positive retention.

ADV ANT AGES

- HIGH TORQUE RESISTANCE
- REVERSE SIDE OF THE SHEET REMAINS TOTALLY FLUSH
- SMALL AND NEAT, IDEAL FOR ALL ELECTRONICS OR PRECISION EQUIPMENT
- EASY ASSEMBLY WITH ANY SQUEEZE ACTION PRESS

DESIGN GUIDE

HOLE PREPARATION
Holes may be punched or drilled and a tolerance of -.000" +.003" (-0.00mm +0.08mm). Where possible install from punched side. Holes should not be de-burred or countersunk.

SHEET HARDNESS
See individual product data sheet for maximum sheet hardness.

INSTALLATION
Must always be carried out using a squeeze action - NEVER a shock load

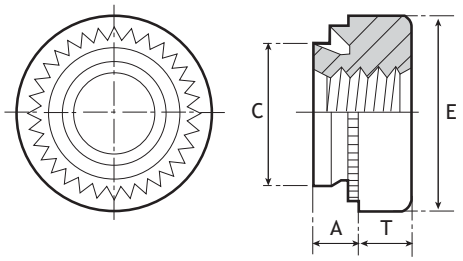
SHEET THICKNESS
Self Clinching fasteners are suitable for any thickness of material from the minimum specified for each individual product.

SHANK NUMBER
Always choose the longest shank possible for the sheet thickness.
This will optimise performance and increase retention.

DIRECTION OF LOAD
We recommend that Self Clinching fasteners should always be loaded from the pilot end.
(See method of assembly diagrams)

P-S & P-CLS SELF CLINCHING NUTS

TECHNICAL DATA



P-S & P-CLS TYPES (METRIC)

MATERIAL CODES

P-S & P-SS* - Hardened Steel Plated
P-CLS & P-CLSS* - Stainless Steel
(P-SS* and P-CLSS* codes refer to M5 sizes only)

STANDARD PLATING FINISH

Zinc & Clear Trivalent Passivation (Z)

MAXIMUM SHEET HARDNESS

P-S & P-SS = Rb80
P-CLS & P-CLSS = Rb70

METRIC

All dimensions in millimetres

THREAD SIZE / CODE	Shank Code	For Min Sheet Thickness	A (max)	Hole Size in Sheet +0.08 -0.00	Diameter of Shank C (max)	Diameter of Body E +/- 0.25	Depth of Body T +/- 0.25	Minimum distance centre line hole to sheet edge
M2	0	0.8 - 1.0	0.77	4.25	4.22	6.3	1.5	4.8
	1	1.0	0.97					
	2	1.4	1.38					
M2.5	0	0.8 - 1.0	0.77	4.25	4.22	6.3	1.5	4.8
	1	1.0	0.97					
	2	1.4	1.38					
M3	0	0.8 - 1.0	0.77	4.25	4.22	6.3	1.5	4.8
	1	1.0	0.97					
	2	1.4	1.38					
3.5M3	0	0.8 - 1.0	0.77	4.75	4.73	7.1	1.7	5.6
	1	1.0	0.97					
	2	1.4	1.38					
M3.5	0	0.8 - 1.0	0.77	4.75	4.73	7.1	1.5	5.6
	1	1.0	0.97					
	2	1.4	1.38					
M4	0	0.8 - 1.0	0.77	5.4	5.38	7.9	2.0	6.9
	1	1.0	0.97					
	2	1.4	1.38					
M5	0	0.8 - 1.0	0.77	6.4	6.38	8.7	2.0	7.1
	1	1.0	0.97					
	2	1.4	1.38					
M6	00	0.92	0.89	8.75	8.72	11.05	4.08	8.6
	0	1.2	1.15					
	1	1.4	1.38					
	2	2.3	2.21					
M8	1	1.4	1.38	10.5	10.47	12.65	5.47	9.7
	2	2.3	2.21					
M10	1	2.31	2.21	14.0	13.97	17.35	7.48	13.5
	2	3.18	3.05					
M12	1	3.18	3.05	16.66	16.64	20.0	9.14	16.0
	2	6.00	5.97					

HOW TO SPECIFY

P-S (Steel Standard Sizes)

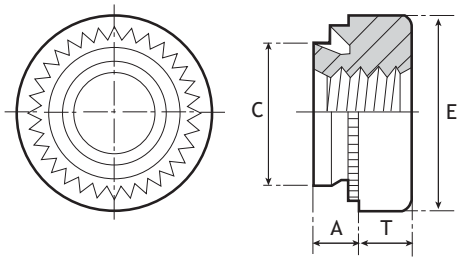
Product Code	P-S-M4-1-Z
Thread Code	P-S-M4-1-Z
Shank Code	P-S-M4-1-Z
Plating Code	P-S-M4-1-Z

P-CLS (Stainless Steel Standard Sizes)

Product Code	P-CLS-M4-1
Thread Code	P-CLS-M4-1
Shank Code	P-CLS-M4-1

P-S & P-CLS SELF CLINCHING NUTS

TECHNICAL DATA



P-S & P-CLS TYPES (UNIFIED)

MATERIAL CODES

P-S & P-SS* - Hardened Steel Plated
P-CLS & P-CLSS* - Stainless Steel (Unplated)
(P-SS* and P-CLSS* codes refer 032 and 024 sizes only)

STANDARD PLATING FINISH

Zinc & Clear Trivalent Passivation (Z)

MAXIMUM SHEET HARDNESS

P-S & P-SS = Rb80
P-CLS & P-CLSS = Rb70

UNIFIED

All dimensions in inches

THREAD SIZE / CODE	Shank Code	For Min Sheet Thickness	A (max)	Hole Size in Sheet +.003 -.000	Diameter of Shank C (max)	Diameter of Body E +/- .010	Depth of Body T +/- .010	Minimum distance centre line hole to sheet edge
256	0	0.030	0.030	.166	.165	.250	.070	.190
	1	0.040	0.038					
	2	0.056	0.054					
440	0	0.030	0.030	.166	.165	.250	.070	.190
	1	0.040	0.038					
	2	0.056	0.054					
	3	0.091	0.087					
632	0	0.030	0.030	.1875	.187	.280	.070	.220
	1	0.040	0.038					
	2	0.056	0.054					
	3	0.091	0.087					
832	0	0.030	0.030	.213	.212	.310	.090	.270
	1	0.040	0.038					
	2	0.056	0.054					
	3	0.091	0.087					
032 024	0	0.030	0.030	.250	.249	.340	.090	.280
	1	0.040	0.038					
	2	0.056	0.054					
	3	0.091	0.087					
0420 0428	0	0.047	0.045	.344	.343	.440	.170	.340
	1	0.056	0.054					
	2	0.091	0.087					
	3	0.125	0.120					
0518 0524	1	0.056	0.054	.413	.412	.500	.230	.380
	2	0.091	0.087					
	3	0.125	0.120					
0616 0624	1	0.091	0.087	.500	.499	.560	.270	.440
	2	0.125	0.120					
	3	0.250	0.235					
0813 0820	1	0.125	0.120	.656	.655	.810	.360	.630
	2	0.250	0.235					

HOW TO SPECIFY

P-S (Steel Standard Sizes)	
Product Code	P-S-832-1-Z
Thread Code	P-S-832-1-Z
Shank Code	P-S-832-1-Z
Plating Code	P-S-832-1-Z

P-CLS (Stainless Steel Standard Sizes)	
Product Code	P-CLS-832-1
Thread Code	P-CLS-832-1
Shank Code	P-CLS-832-1

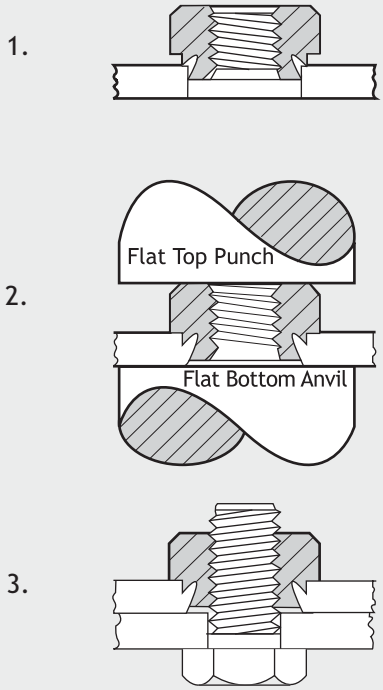
P-S & P-CLS SELF CLINCHING NUTS

METHOD OF ASSEMBLY

1. Punch a hole in the metal sheet to the size recommended in our technical data table. De-burring of the hole is not recommended.

2. Apply pressure to the head of the fastener sufficient to totally embed the clinching ring around the entire circumference and bring body in contact with the sheet.

3. Insert fixing screw or bolt from side opposite to the fastener body.



PERFORMANCE DATA

P-S & P-CLS METRIC

Thread Code	Shank Code	Test Sheet Material					
		Cold Rolled Steel			5052-H34 Aluminum		
		Installation (kN)	Pushout (N)	Torque-out (Nm)	Installation (kN)	Pushout (N)	Torque-out (Nm)
M2	0	11.0- 15.5	500	1.70	7.0 - 9.0	280	0.95
M2.5	1		600	1.90		420	1.15
M3	2		1000	2.10		700	1.40
3.5M3	0	14.0 - 22.0	550	2.00	11.0 - 14.0	350	1.70
	1		720	2.45		480	1.85
	2		1150	2.50		800	2.10
M3.5	0	14.0 - 22.0	550	2.00	11.0 - 14.0	350	1.70
	1		720	2.45		480	1.85
	2		1150	2.50		800	2.10
M4	0	17.0 - 27.0	600	2.95	12.0 - 15.0	400	2.20
	1		750	4.60		550	2.70
	2		1320	5.70		900	4.30
M5	0	19.0 - 33.0	670	4.10	13.0 - 17.0	460	3.20
	1		950	5.45		620	4.10
	2		1230	7.10		870	5.50
M6	0	25.0 - 36.0	1330	12.6	17.0 - 29.0	950	8.10
	1		1820	15.5		1480	10.1
	2		2140	16.8		1560	13.5
M8	1	27.0 - 39.0	2540	25.1	20.0 - 32.0	1890	15.6
	2		3100	29.5		2170	18.9
M10	1	35.0 - 50.0	3560	45.0	25.0 - 36.0	2650	35.0
	2						

Note: *The above values are averages when correct installation is performed. Variations in holes size, material and installation will affect these results. For specific advice we strongly recommend consultation with your PSM Technology Centre.*

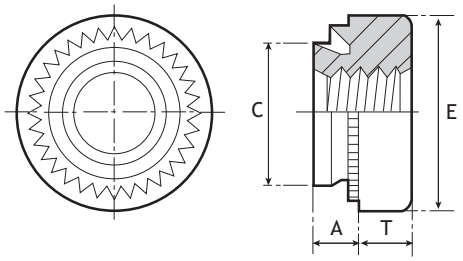
P-S & P-CLS UNIFIED

Thread Code	Shank Code	Test Sheet Material					
		Cold Rolled Steel			5052-H34 Aluminum		
		Installation (Lbs)	Pushout (Lbs)	Torque-out (In. Lbs)	Installation (Lbs)	Pushout (Lbs)	Torque-out (In. Lbs)
256 440	0	2500 - 3500	112	15	1500 - 2000	63	9
	1		135	17		94	10
	2 & 3		225	19		157	12
632	0	3200 - 5000	124	18	2500 - 3200	79	15
	1		162	21		108	17
	2 & 3		258	22		180	19
832	0	3800 - 6000	135	26	2700 - 3400	90	20
	1		169	41		124	24
	2 & 3		297	50		202	38
032 024	0	4200 - 7500	151	36	2900 - 3800	103	28
	1		213	48		139	36
	2 & 3		276	63		196	49
0420 0428	0	5500 - 8000	299	112	3800 - 6500	213	72
	1		409	137		333	89
	2 & 3		481	149		351	120
0518 0524	1	6000 - 8500	570	222	4500 - 7200	425	138
	2 & 3		687	261		488	167
0616 0624	1	8000 - 11000	800	398	5600 - 8000	596	310
	2						
0813 0820	1	10000 - 15000	1180	750	7000 - 9000	710	380
	2						

P-CLA SELF CLINCHING NUTS

TECHNI CA L DA TA

P-CLA



MATERIAL CODES
P-CLA - Aluminum

MAXIMUM SHEET HARDNESS
P-CLA = Rb 50

METRIC

All dimensions in millimetres

THREAD SIZE / CODE	Shank Code	For Min Sheet Thickness	A (max)	Hole Size in Sheet +0.08 -0.00	Diameter of Shank C (max)	Diameter of Body E +/- 0.25	Depth of Body T +/- 0.25	Minimum distance centre line hole to sheet edge
M2	1	1.0	0.98	4.25	4.22	6.3	1.5	4.8
	2	1.4	1.38					
M3	1	1.0	0.98	4.75	4.73	6.3	2.0	5.6
	2	1.4	1.38					
M3.5	1	1.0	0.98	5.4	5.38	7.1	2.0	6.9
	2	1.4	1.38					
M4	1	1.0	0.98	6.0	5.97	7.9	3.0	7.1
	2	1.4	1.38					
M5	1	1.0	0.98	7.5	7.47	9.5	3.8	7.9
	2	1.4	1.38					
M6	1	1.4	1.38	8.75	8.72	11.05	4.08	8.6
	2	2.3	2.21					

UNIFIED

All dimensions in inches

THREAD SIZE / CODE	Shank Code	For Min Sheet Thickness	A (max)	Hole Size in Sheet +.003 -.000	Diameter of Shank C (max)	Diameter of Body E +/- .010	Depth of Body T +/- .010	Minimum distance centre line hole to sheet edge
256	1	0.040	0.038	.166	.165	.250	.070	.190
	2	0.056	0.054					
440	1	0.040	0.038	.1875	.187	.250	.090	.220
	2	0.056	0.054					
632	1	0.040	0.038	.213	.212	.280	.090	.270
	2	0.056	0.054					
832	1	0.040	0.038	.234	.233	.310	.130	.280
	2	0.056	0.054					
032 024	1	0.040	0.038	.296	.295	.370	.160	.310
	2	0.056	0.054					
0420	1	0.056	0.054	.344	.343	.440	.170	.340
	2	0.091	0.087					
	3	0.125	0.12					

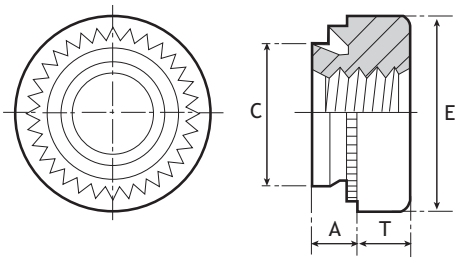
HOW TO SPECIFY

P-CLA	
Product Code	P-CLA-M4-1
Thread Code	P-CLA-M4-1
Shank Code	P-CLA-M4-1

P-SMPS SELF CLINCHING NUTS

TECHNICAL DATA

P-SMPS



MATERIAL CODES
P-SMPS-Stainless Steel

MAXIMUM SHEET HARDNESS
P-SMPS = Rb70

METRIC

All dimensions in millimetres

THREAD SIZE / CODE	For Min Sheet Thickness	A (max)	Hole Size in Sheet +0.08 -0.00	Diameter of Shank C (max)	Diameter of Body E +/- 0.25	Depth of Body T +/- 0.25	Minimum distance centre line hole to sheet edge
M2.5	0.64	0.61	3.80	3.79	5.6	1.4	3.7
M3	0.64	0.61	4.24	4.22	5.6	1.4	4.3
M3.5	0.64	0.61	4.75	4.73	6.4	1.4	5.1

UNIFIED

All dimensions in inches

THREAD SIZE / CODE	For Min Sheet Thickness	A (max)	Hole Size in Sheet + .003 - .000	Diameter of Shank C (max)	Diameter of Body E +/- .010	Depth of Body T +/- .010	Minimum distance centre line hole to sheet edge
256	.025	.024	.136	.135	.220	.065	.145
440	.025	.024	.166	.165	.220	.065	.170
632	.025	.024	.187	.186	.252	.065	.200

P-SMPS METRIC

Thread Code	Cold Rolled Steel		
	Installation (KN)	Pushout (N)	Torque-out (Nm)
M2.5	7-8	165	1.2
M3	8-9	280	1.4
M3.5	9-10	300	1.6

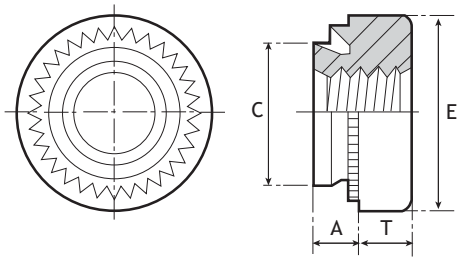
P-SMPS UNIFIED

Thread Code	Cold Rolled Steel		
	Installation (Lbs)	Pushout (Lbs)	Torque-out (In. Lbs)
256	1350-2000	45	10
440	1600-2200	60	13
632	2000-2700	72	15

HOW TO SPECIFY

P-SMPS	
Product Code	P-SMPS-M4
Thread Code	P-SMPS-M4

P-SP SELF CLINCHING NUTS FOR STAINLESS STEEL



MATERIAL CODES
P-SP - Hardened Stainless Steel

MAXIMUM SHEET HARDNESS
P-SP = Rb 90

METRIC

All dimensions in millimetres

THREAD SIZE / CODE	Shank Code	For Min Sheet Thickness	A (max)	Hole Size in Sheet +0.08 -0.00	Diameter of Shank C (max)	Diameter of Body E +/- 0.25	Depth of Body T +/- 0.25	Minimum distance centre line hole to sheet edge
M3	0	0.8	0.77	4.22	4.20	6.3	1.5	4.8
	1	1.0	0.97					
	2	1.4	1.38					
M4	0	0.8	0.77	5.4	5.38	7.9	2.0	6.9
	1	1.0	0.97					
	2	1.4	1.38					
M5	0	0.8	0.77	6.35	6.33	8.7	2.0	7.1
	1	1.0	0.97					
	2	1.4	1.38					
M6	1	1.4	1.38	8.75	8.72	11.05	4.10	8.6

UNIFIED

All dimensions in inches

THREAD SIZE / CODE	Shank Code	For Min Sheet Thickness	A (max)	Hole Size in Sheet +.003 -.000	Diameter of Shank C (max)	Diameter of Body E +/- .010	Depth of Body T +/- .010	Minimum distance centre line hole to sheet edge
440	0	0.030	0.030	.166	.165	.250	.070	.190
	1	0.040	0.038					
	2	0.056	0.054					
632	0	0.030	0.030	.1875	.187	.280	.070	.220
	1	0.040	0.038					
	2	0.056	0.054					
832	0	0.030	0.030	.213	.212	.310	.090	.270
	1	0.040	0.038					
	2	0.056	0.054					
032	0	0.030	0.030	.250	.249	.340	.090	.280
	1	0.040	0.038					
	2	0.056	0.054					
0420	1	0.056	0.054	.344	.343	.440	.170	.340

HOW TO SPECIFY

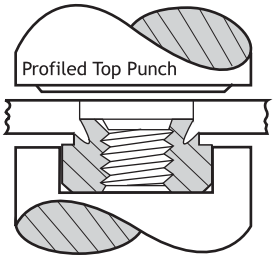
P-SP	
Product Code	P-SP-M4-1
Thread Code	P-SP-M4-1
Shank Code	P-SP-M4-1

PSM International
GLOBAL FASTENING SOLUTIONS

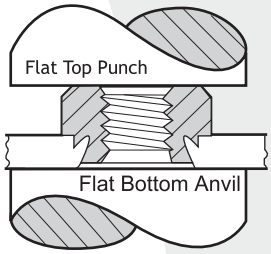
P-SP SELF CLINCHING NUTS

The **P-SP SELF CLINCHING NUT** is a threaded fastener which incorporates a knurled platform under the head, which when embedded in the sheet, displaces material into the clinch ring securing the fastener firmly in place.

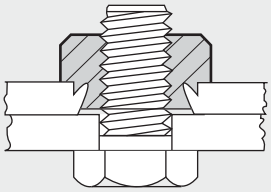
METHOD OF ASSEMBLY



1. Tooling option 1, install using profiled punch to achieve optimum performance. Apply sufficient load to bring body in contact with sheet around full circumference.
   Contact local Tech Centre for tooling detail.



2. Tooling option 2 using flat punch and anvil. Apply pressure to the body of the fastener sufficient to totally embed the clinching ring and bring body in contact with the sheet.



3. Insert fixing screw or bolt from side opposite to the fastener body.

PERFORMANCE DATA

P-SP METRIC

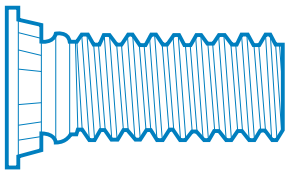
Thread Code	Shank Code	Test Sheet Material: 304 Stainless Steel		
		Installation (KN)	Pushout (N)	Torque-out (Nm)
M3	0	14 - 23	600	1.7
	1		780	2.0
	2		1200	2.2
M4	0	20 - 33	740	3.6
	1		890	4.3
	2		1470	5.4
M5	0	27 - 41	800	4.1
	1		1100	5.3
	2		1650	6.9
M6	1	39 - 50	2130	16.4

P-SP UNIFIED

Thread Code	Shank Code	Test Sheet Material: 304 Stainless Steel		
		Installation (Lbs)	Pushout (Lbs)	Torque-out (In. Lbs)
440	0	3000 - 5000	135	15
	1		175	18
	2		265	20
632	0	3500 - 6500	150	18
	1		190	21
	2		315	27
832	0	4000 - 7500	165	32
	1		200	38
	2		330	48
032	0	6000 - 9000	180	36
	1		245	47
	2		370	61
0420	1	9000 - 11000	480	145

Note: *The above values are averages when correct installation is performed. Variations in holes size, material and installation will affect these results. For specific advice we strongly recommend consultation with your PSM Technology Centre.*

P-FH & P-FHS SELF CLINCHING STUD



The **P-FH / P-FHS SELF CLINCHING STUD** is a threaded fastener which incorporates a knurled platform under the head, which when embedded in the sheet, displaces material into the clinch ring securing the fastener firmly in place.

ADV ANT AGES

- EASY TO ASSEMBLE WITH ANY SQUEEZE PRESS
- HIGH TORQUE RESISTANCE
- NO DAMAGE TO DECORATIVE FINISHES ON PANELS
- VISUAL PROOF OF SECURITY
- ALWAYS PERPENDICULAR TO PANEL
- HEAD INSTALLS FLUSH WITH SURFACE OF SHEET

DESIGN GUIDE

HOLE PREPARATION
It is recommended that the holes are formed using a punch operation, although drilled holes may be used. Holes should not be countersunk or de-burred.

HOLE SIZE
Holes must be held to a tolerance of -0.00mm + 0.08mm (-.000” +.003”)

MINIMUM SHEET THICKNESS
See product data sheets and method of assembly.

MAXIMUM SHEET HARDNESS
Rb80 for Steel Studs (P-FH)
Rb70 for Stainless Steel Studs (P-FHS)

INSTALLATION
Apply squeezing pressure sufficient only to embed the head of the stud flush with surface of the sheet. Avoid excessive pressures.
Installation forces vary with sheet hardness and thickness.
See PERFORMANCE DATA for recommended forces.

TOOLING NOTE:
Studs are installed using a flat top punch and flat bottom anvil with a clearance hole to accept the threaded section of the stud.
Where the sheet material is thin, a special thin sheet bottom anvil is required which includes a countersink at the top to create space for clinch ring and displaced sheet material.
See METHODS OF ASSEMBLY page for details