

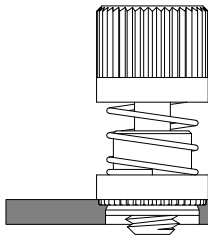
Narrow Panel Fasteners

FEATURES

- Narrow design for limited space applications.
- New contemporary appearance.
- Wide variety of drive and installation types, screw threads and lengths.
- Choice of RoHS-compliant materials and finishes.

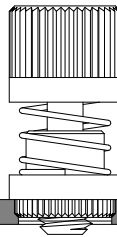


CNA
Self-Clinching



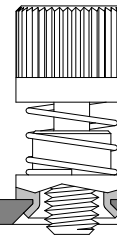
Page 2

CNB
Broaching



Page 8

CNC
Flare-In



Page 12

APPLICATION GUIDE

Type	Style	Installation Sheet Material			
		Aluminum	Carbon Steel	Stainless Steel	PCB
CNA	Self-Clinching	•	•		
CNB	Broaching	•	•		•
CNC	Flare-In	•	•	•	•



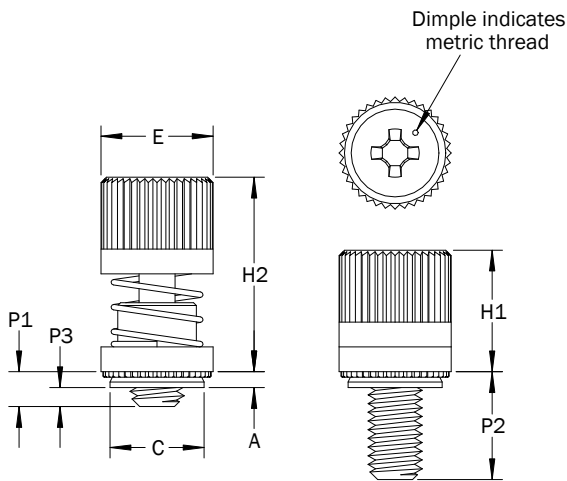
Self-Clinching Narrow Panel Fasteners

PART DESCRIPTION EXAMPLE

CNA — 632 — .060 — PH — KN — SS — P

Thread Code
 Screw Length Code
 Drive Code
 Knurled Cap*
 Material Code
 Finish Code

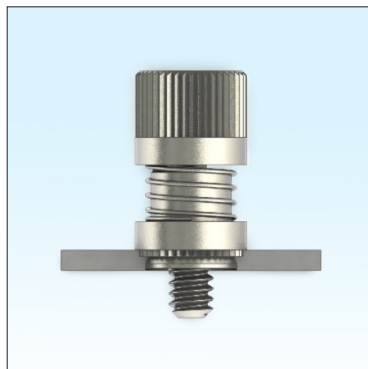
*Omit KN for smooth cap



Patented

DRIVE

Drive Code	Description	
PH	Cross-Recess	
SL	Slot	
TX	Six-Lobe Recess	



CNA Self-Clinching Narrow Panel Fasteners provide a simple and permanent installation in aluminum and carbon steel sheets.

CNA Self-Clinching Narrow Panel Fasteners

GENERAL

All dimensions in inches

INCH	Thread	Thread Code	Screw Length Code	Sheet			A (Shank) Max.	C Max.	E ±.010	P ₁ Ref.
				Minimum Thickness	Hole Size +.003 -.000	Minimum Distance Hole Center to Edge				
	4-40	440	.060	.060	.265	.25	.060	.264	.312	.060
			.185							.185
	6-32	632	.060	.060	.281	.28	.060	.280	.344	.060
			.185							.185
			.310							.310
	8-32	832	.060	.060	.312	.31	.060	.311	.375	.060
			.185							.185
			.310							.310
	10-32	1032	.060	.060	.344	.34	.060	.343	.406	.060
			.185							.185
			.310							.310
	1/4-20	2520	.060	.060	.413	.38	.060	.412	.468	.060
.185			.185							
.310			.310							

All dimensions in inches

INCH (CONTINUED)	Thread	Thread Code	Screw Length Code	P ₂ ±.016	P ₃ ±.025	H ₁ Max.	H ₂ Ref.	Drive Size				
								Cross-Recess	Six-Lobe	Slot		
	4-40	440	.060	.250	.000	.370	.540	#1	T-10	.040W		
			.185							.375	.125	.040D
	6-32	632	.060	.250	.000	.380	.540	#2	T-15	.051W		
			.185							.375	.125	.047D
			.310							.500	.250	
	8-32	832	.060	.312	.000	.480	.705	#2	T-20	.055W		
			.185							.437	.125	.055D
			.310							.562	.250	
	10-32	1032	.060	.312	.000	.490	.705	#2	T-25	.059W		
			.185							.437	.125	.055D
			.310							.562	.250	
	1/4-20	2520	.060	.375	.000	.620	.905	#3	T-25	.071W		
.185			.500							.125	.059D	
.310			.625							.250		

CNA Self-Clinching Narrow Panel Fasteners

GENERAL (CONTINUED)

All dimensions in millimeters

METRIC	Thread	Thread Code	Screw Length Code	Sheet			A (Shank) Max.	C Max.	E ±0.25	P ₁ Ref.
				Minimum Thickness	Hole Size +0.08 -0.00	Minimum Distance Hole Center to Edge				
	M3 x 0.5	M3	1.53	1.53	6.73	6.35	1.53	6.71	7.92	1.53
			4.71							4.71
	M3.5 x 0.6	M3.5	1.53	1.53	7.14	7.11	1.53	7.11	8.74	1.53
			4.71							4.71
			7.88							7.88
	M4 x 0.7	M4	1.53	1.53	7.92	7.87	1.53	7.90	9.53	1.53
			4.71							4.71
			7.88							7.88
	M5 x 0.8	M5	1.53	1.53	8.74	8.63	1.53	8.72	10.31	1.53
4.71			4.71							
7.88			7.88							
M6 x 1.0	M6	1.53	1.53	10.49	9.65	1.53	10.47	11.89	1.53	
		4.71							4.71	
		7.88							7.88	

All dimensions in millimeters

METRIC (CONTINUED)	Thread	Thread Code	Screw Length Code	P ₂ ±0.40	P ₃ ±0.64	H ₁ Max.	H ₂ Ref.	Drive Size				
								Cross-Recess	Six-Lobe	Slot		
	M3 x 0.5	M3	1.53	6.35	0.00	9.40	13.72	#1	T-10	1.02W		
			4.71							9.53	3.18	1.02D
	M3.5 x 0.6	M3.5	1.53	6.35	0.00	9.65	13.72	#2	T-15	1.30W		
			4.71							9.53	3.18	1.19D
			7.88							12.70	6.35	
	M4 x 0.7	M4	1.53	7.92	0.00	12.19	17.91	#2	T-20	1.40W		
			4.71							11.10	3.18	1.40D
			7.88							14.27	6.35	
	M5 x 0.8	M5	1.53	7.92	0.00	12.45	17.91	#2	T-25	1.50W		
4.71			11.10							3.18	1.40D	
7.88			14.27							6.35		
M6 x 1.0	M6	1.53	9.53	0.00	15.75	22.99	#3	T-25	1.80W			
		4.71							12.70	3.18	1.50D	
		7.88							15.88	6.35		

CNA Self-Clinching Narrow Panel Fasteners

MATERIAL AND FINISH

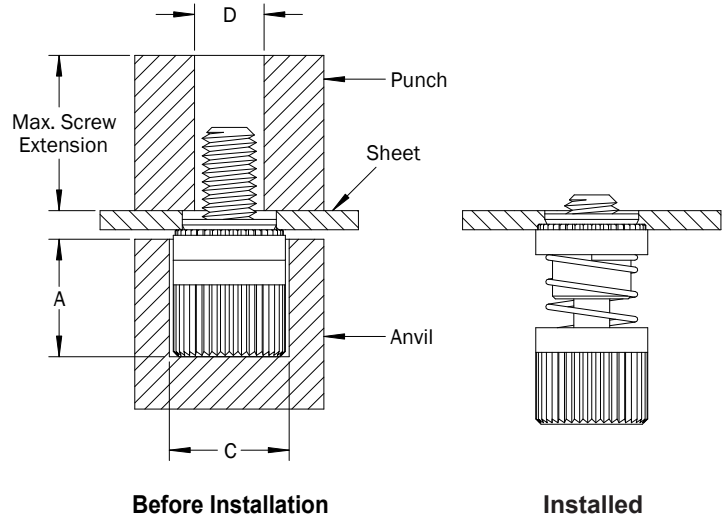
Material Code	Material Description			Finish Code	Finish Description			For Use in Sheet Hardness	
	Retainer	Screw	Spring		Retainer	Screw	Spring	HRB 70 Max.	HRB 60 Max.
SS	300-Series Stainless Steel	400-Series Heat Treated Stainless Steel	300-Series Stainless Steel	BLK-NIT	Black Nitride	Black Nitride	Passivated and/or Tested per ASTM A 967	•	
SS	300-Series Stainless Steel	400-Series Heat Treated Stainless Steel	300-Series Stainless Steel	P	Passivated and/or Tested per ASTM A 967	Passivated and/or Tested per ASTM A 967	Passivated and/or Tested per ASTM A 967	•	
STL	Carbon Steel	Heat Treated Carbon Steel	300-Series Stainless Steel	NI	Bright Nickel per ASTM B 689 Type II, Class 5	Bright Nickel per ASTM B 689 Type II, Class 5	Passivated and/or Tested per ASTM A 967		•



Black nitride provides an attractive finish that's durable against scratching.

INSTALLATION

1. Prepare correct sized mounting hole in sheet. Do not deburr hole edges.
2. Insert fastener in recessed anvil, locate sheet hole over captive screw shank with hole punch side of sheet toward the retainer and center punch over screw thread.
3. Squeeze the fastener between concentric and parallel anvil and punch surfaces. Use only enough pressure to seat the retainer shoulder flush with the sheet. Anvil and punch should be made from hardened tool steel or may be ordered using the PENCOM part numbers shown in the tables below.



ANVIL AND PUNCH DIMENSIONS

All dimensions in inches

INCH	Thread Code	Anvil			Punch	
		A ±.002	C ±.002	Part Number	D ±.002	Part Number
	440	.345	.358	TL1314	.190	TL1303
	632	.345	.390	TL1315	.214	TL1304
	832	.435	.421	TL1316	.243	TL1305
	1032	.435	.452	TL1317	.267	TL1306
	2520	.555	.514	TL1318	.329	TL1307

All dimensions in millimeters

METRIC	Thread Code	Anvil			Punch	
		A ±0.05	C ±0.05	Part Number	D ±0.05	Part Number
	M3	8.76	9.09	TL1314	5.01	TL1309
	M3.5	8.76	9.91	TL1315	5.44	TL1304
	M4	11.05	10.70	TL1316	5.97	TL1311
	M5	11.05	11.48	TL1317	6.94	TL1312
	M6	14.10	13.06	TL1318	7.97	TL1313

CNA Self-Cinching Narrow Panel Fasteners

PERFORMANCE

INCH	Thread Code	Material Code	Test Sheet Material			
			Aluminum		Cold-rolled Steel	
			Installation (lbs)	Retainer Push-out (lbs)	Installation (lbs)	Retainer Push-out (lbs)
440	SS	2400	240	3000	300	
	STL				255	
632	SS	2700	275	3500	350	
	STL				295	
832	SS	2900	300	3800	400	
	STL				340	
1032	SS	3000	400	4000	500	
	STL				420	
2520	SS	3500	400	5000	600	
	STL				510	

METRIC	Thread Code	Material Code	Test Sheet Material			
			Aluminum		Cold-rolled Steel	
			Installation (kN)	Retainer Push-out (N)	Installation (kN)	Retainer Push-out (N)
M3	SS	10.7	1068	13.3	1334	
	STL				1134	
M3.5	SS	12.0	1223	15.6	1557	
	STL				1312	
M4	SS	12.9	1334	16.9	1779	
	STL				1512	
M5	SS	13.3	1779	17.8	2224	
	STL				1868	
M6	SS	15.6	1779	22.2	2669	
	STL				2268	

(1) Performance data represents the average destructive result when all installation specifications are strictly followed. Variations in panel hole size, thickness, material, and installation methods will affect the loads. PENCOM strongly encourages testing in the application.

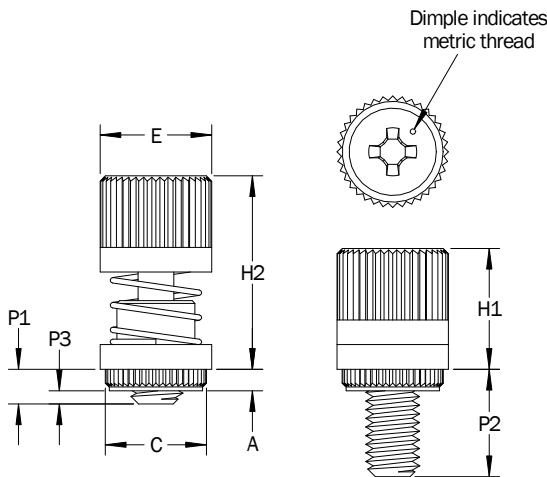


Broaching Narrow Panel Fasteners

PART DESCRIPTION EXAMPLE

CNB — 632 — .060 — PH — KN — SS — P
 T T T T T T
 Thread Screw Drive Knurled Material Finish
 Code Length Code Cap* Code Code

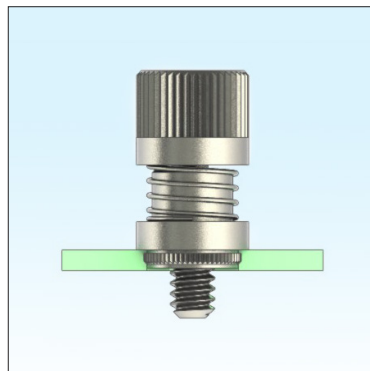
*Omit KN for smooth cap



Patented

DRIVE

Drive Code	Description	
PH	Cross-Recess	
SL	Slot	
TX	Six-Lobe recess	



CNB Broaching Narrow Panel Fasteners install easily in p.c. boards, aluminum sheets, castings and other soft materials. Non-plated holes in p.c. boards are recommended.

GENERAL

All dimensions in inches

INCH	Thread	Thread Code	Screw Length Code	Sheet			A (Shank) Max.	C ±.003	E ±.010	P ₁ Ref.
				Minimum Thickness	Hole Size +.003 -0.000	Minimum Distance Hole Center to Edge				
	4-40	440	.060	.060	.265	.20	.060	.283	.312	.060
			.185							.185
	6-32	632	.060	.060	.281	.26	.060	.299	.344	.060
			.185							.185
			.310							.310

All dimensions in inches

INCH (CONTINUED)	Thread	Thread Code	Screw Length Code	P ₂ ±.016	P ₃ ±.025	H ₁ Max.	H ₂ Ref.	Drive Size				
								Cross-Recess	Six-Lobe	Slot		
	4-40	440	.060	.250	.000	.370	.540	#1	T-10	.040W		
			.185							.375	.125	.040D
	6-32	632	.060	.250	.000	.380	.540	#2	T-15	.051W		
			.185							.375	.125	.047D
			.310							.500	.250	

All dimensions in millimeters

METRIC	Thread	Thread Code	Screw Length Code	Sheet			A (Shank) Max.	C ±0.08	E ±0.25	P ₁ Ref.
				Minimum Thickness	Hole Size +0.08 -0.00	Minimum Distance Hole Center to Edge				
	M3 x 0.5	M3	1.53	1.53	6.73	5.1	1.53	7.19	7.92	1.53
			4.71							4.71
	M3.5 x 0.6	M3.5	1.53	1.53	7.14	6.6	1.53	7.59	8.74	1.53
			4.71							4.71
			7.88							7.88

All dimensions in millimeters

METRIC (CONTINUED)	Thread	Thread Code	Screw Length Code	P ₂ ±0.40	P ₃ ±0.64	H ₁ Max.	H ₂ Ref.	Drive Size				
								Cross-Recess	Six-Lobe	Slot		
	M3 x 0.5	M3	1.53	6.35	0.00	9.40	13.72	#1	T-10	1.02W		
			4.71							9.53	3.18	1.02D
	M3.5 x 0.6	M3.5	1.53	6.35	0.00	9.65	13.72	#2	T-15	1.30W		
			4.71							9.53	3.18	1.19D
			7.88							12.70	6.35	

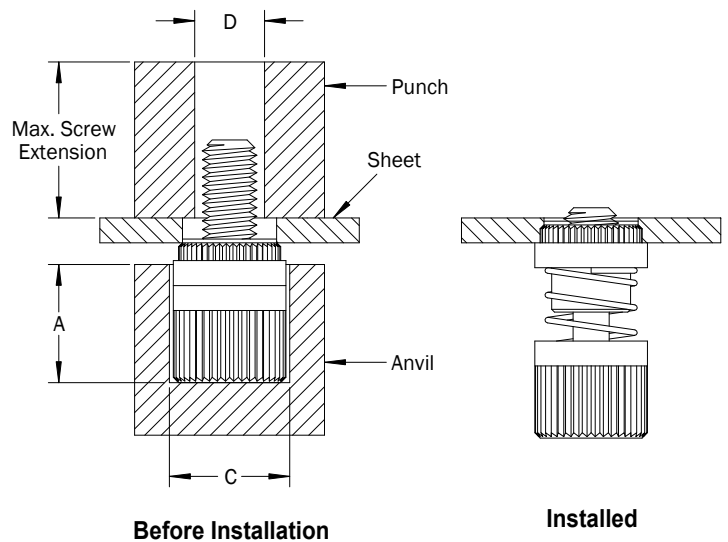
CNB Broaching Narrow Panel Fasteners

MATERIAL AND FINISH

Material Code	Material Description			Finish Code	Finish Description			For Use in Sheet Hardness		
	Retainer	Screw	Spring		Retainer	Screw	Spring	HRB 70 Max.	HRB 60 Max.	P.C. Board
SS	300-Series Stainless Steel	400-Series Heat Treated Stainless Steel	300-Series Stainless Steel	BLK-NIT	Black Nitride	Black Nitride	Passivated and/or Tested per ASTM A 967	•		•
SS	300-Series Stainless Steel	400-Series Heat Treated Stainless Steel	300-Series Stainless Steel	P	Passivated and/or Tested per ASTM A 967	Passivated and/or Tested per ASTM A 967	Passivated and/or Tested per ASTM A 967	•		•
STL	Carbon Steel	Heat Treated Carbon Steel	300-Series Stainless Steel	NI	Bright Nickel per ASTM B 689 Class II, Type 5	Bright Nickel per ASTM B 689 Class II, Type 5	Passivated and/or Tested per ASTM A 967		•	•

INSTALLATION

1. Prepare correct sized mounting hole in sheet. Do not deburr hole edges.
2. Insert fastener in recessed anvil, locate sheet hole over captive screw shank and center punch over screw thread.
3. Squeeze the fastener between concentric and parallel anvil and punch surfaces. Use only enough pressure to seat the retainer shoulder flush with the sheet. Anvil and punch should be made from hardened tool steel or may be ordered using the PENCOM part numbers shown in the tables below.



CNB Broaching Narrow Panel Fasteners

ANVIL AND PUNCH DIMENSIONS

All dimensions in inches

INCH	Thread Code	Anvil			Punch	
		A ±.002	C ±.002	Part Number	D ±.002	Part Number
	440	.345	.358	TL1314	.190	TL1303
	632	.345	.390	TL1315	.214	TL1304

All dimensions in millimeters

METRIC	Thread Code	Anvil			Punch	
		A ±0.05	C ±0.05	Part Number	D ±0.05	Part Number
	M3	8.76	9.09	TL1314	5.01	TL1309
	M3.5	8.76	9.91	TL1315	5.44	TL1304

PERFORMANCE

INCH	Thread Code	Material Code	Test Sheet Material .060" FR-4 Fiberglass	
			Installation (lbs)	Push-out (lbs)
	440	SS, STL	250	55
632	SS, STL	400	60	

METRIC	Thread Code	Material Code	Test Sheet Material 1.53mm FR-4 Fiberglass	
			Installation (kN)	Push-out (N)
	M3	SS, STL	1.1	245
M3.5	SS, STL	1.8	267	

(1) Performance data represents the average destructive result when all installation specifications are strictly followed. Variations in panel hole size, thickness, material, and installation methods will affect the loads. PENCOM strongly encourages testing in the application.

A variety of thread locking and lubricating materials can be applied to the threads. Nylon (shown), micro-encapsulated epoxy and other locking elements prevent loosening due to vibration. Lubricating coatings reduce friction, heat buildup and galling during installation of mating fasteners. To specify a nylon locking element, insert **PATCH** at the end of the part description. Other locking and lubricating materials available by request.

Ex. CNA-632-.060-PH-KN-SS-P-**PATCH**



CNB Broaching Narrow Panel Fasteners



Flare-In Narrow Panel Fasteners

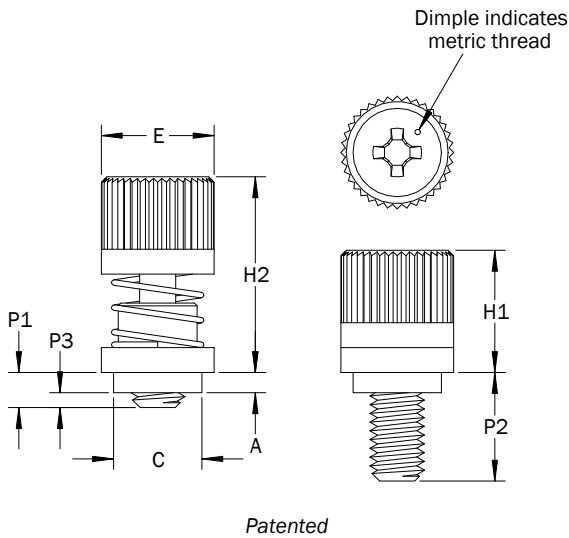
PART DESCRIPTION EXAMPLE

CNC — 632 — .060 — PH — KN — SS — P

T T T T T T

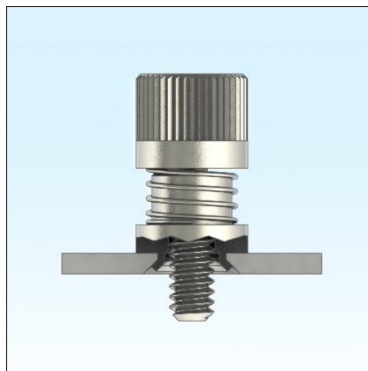
Thread Code Screw Length Code Drive Code Knurled Cap* Material Code Finish Code

*Omit KN for smooth cap



DRIVE

Drive Code	Description	
PH	Cross-Recess	
SL	Slot	
TX	Six-Lobe recess	



Flare-In Narrow Panel Fasteners require low installation forces and are popular choices for painted sheets and close-to-edge applications. They provide greater push-out resistance in p.c. boards as well.

GENERAL

All dimensions in inches

	Thread	Thread Code	Screw Length Code	Sheet		A (Shank) Max.	C Max.	E ±.010	P ₁ Ref.
				Minimum Thickness	Hole Size +.005 -.000				
INCH	4-40	440	.060	.031	.187	.041	.186	.312	.060
			.185						.185
	6-32	632	.060	.060	.213	.072	.212	.344	.060
			.185						.185
			.310						.310
	8-32	832	.060	.060	.266	.072	.265	.375	.060
			.185						.185
			.310						.310
	10-32	1032	.060	.060	.266	.072	.265	.406	.060
			.185						.185
			.310						.310
	1/4-20	2520	.060	.060	.323	.072	.322	.468	.060
.185			.185						
.310			.310						

All dimensions in inches

	Thread	Thread Code	Screw Length Code	P ₂ ±.016	P ₃ ±.025	H ₁ Max.	H ₂ Ref.	Drive Size				
								Cross-Recess	Six-Lobe	Slot		
INCH (CONTINUED)	4-40	440	.060	.250	.019	.370	.540	#1	T-10	.040W		
			.185							.375	.144	.040D
	6-32	632	.060	.250	.000	.380	.540	#2	T-15	.051W		
			.185							.375	.113	.047D
			.310							.500	.238	
	8-32	832	.060	.312	.000	.480	.705	#2	T-20	.055W		
			.185							.437	.113	.055D
			.310							.562	.238	
	10-32	1032	.060	.312	.000	.490	.705	#2	T-25	.059W		
			.185							.437	.113	.055D
			.310							.562	.238	
	1/4-20	2520	.060	.375	.000	.620	.905	#3	T-25	.071W		
.185			.500							.113	.059D	
.310			.625							.238		

CNC Flare-In Narrow Panel Fastener Assemblies

GENERAL (CONTINUED)

All dimensions in millimeters

METRIC	Thread	Thread Code	Screw Length Code	Sheet		A (Shank) Max.	C Max.	E ±0.25	P ₁ Ref.
				Minimum Thickness	Hole Size +0.10 -0.00				
M3 x 0.5	M3	1.53	0.79	4.75	1.05	4.73	7.92	1.53	
		4.71						4.71	
M3.5 x 0.6	M3.5	1.53	1.53	5.41	1.83	5.38	8.74	1.53	
		4.71						4.71	
		7.88						7.88	
M4 x 0.7	M4	1.53	1.53	6.76	1.83	6.74	9.53	1.53	
		4.71						4.71	
		7.88						7.88	
M5 x 0.8	M5	1.53	1.53	6.76	1.83	6.74	10.31	1.53	
		4.71						4.71	
		7.88						7.88	
M6 x 1.0	M6	1.53	1.53	8.20	1.83	8.18	11.89	1.53	
		4.71						4.71	
		7.88						7.88	

All dimensions in millimeters

METRIC (CONTINUED)	Thread	Thread Code	Screw Length Code	P ₂ ±0.40	P ₃ ±0.64	H ₁ Max.	H ₂ Ref.	Drive Size		
								Cross-Recess	Six-Lobe	Slot
M3 x 0.5	M3	1.53	6.35	0.48	9.40	13.72	#1	T-10	1.02W	
		4.71	9.53	3.66					1.02D	
M3.5 x 0.6	M3.5	1.53	6.35	0.00	9.65	13.72	#2	T-15	1.30W	
		4.71	9.53	2.88					1.19D	
		7.88	12.70	6.05						
M4 x 0.7	M4	1.53	7.92	0.00	12.19	17.91	#2	T-20	1.40W	
		4.71	11.10	2.88					1.40D	
		7.88	14.27	6.05						
M5 x 0.8	M5	1.53	7.92	0.00	12.45	17.91	#2	T-25	1.50W	
		4.71	11.10	2.88					1.40D	
		7.88	14.27	6.05						
M6 x 1.0	M6	1.53	9.53	0.00	15.75	22.99	#3	T-25	1.80W	
		4.71	12.70	2.88					1.50D	
		7.88	15.88	6.05						

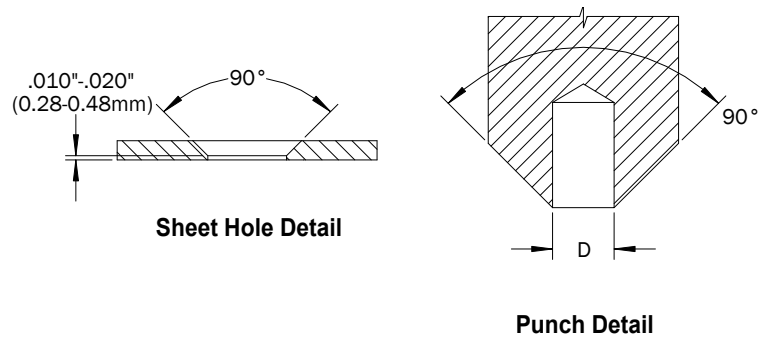
CNC Flare-In Narrow Panel Fasteners

MATERIAL AND FINISH

Material Code	Material Description			Finish Code	Finish Description		
	Retainer	Screw	Spring		Retainer	Screw	Spring
SS	300-Series Stainless Steel	400-Series Heat Treated Stainless Steel	300-Series Stainless Steel	P	Passivated and/or Tested per ASTM A 967	Passivated and/or Tested per ASTM A 967	Passivated and/or Tested per ASTM A 967

INSTALLATION

1. Prepare countersink and hole in sheet as shown.
2. Insert fastener in recessed anvil, locate sheet hole over captive screw shank and center punch over screw thread.
3. Squeeze the fastener between concentric and parallel anvil and punch. Flare the retainer shank into the sheet countersink using light pressure. Punch flare angle should match the sheet hole countersink angle. Anvil and punch should be made from hardened tool steel or may be ordered using the PENCOM part numbers shown in the tables below.



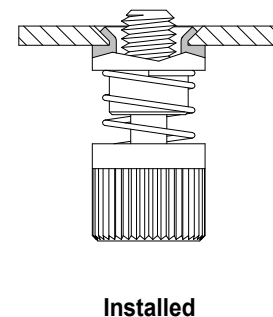
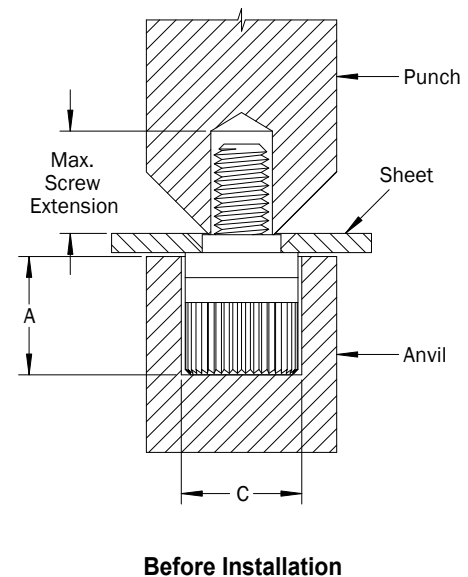
ANVIL AND PUNCH DIMENSIONS

All dimensions in inches

INCH	Thread Code	Anvil			Punch	
		A ±.002	C ±.002	Part Number	D +.003 -0.000	Part Number
	440	.345	.358	TL1314	.123	TL1567
	632	.345	.390	TL1315	.143	TL1568
	832	.435	.421	TL1316	.169	TL1569
	1032	.435	.452	TL1317	.202	TL1570
	2520	.555	.514	TL1318	.255	TL1571

All dimensions in millimeters

METRIC	Thread Code	Anvil			Punch	
		A ±0.05	C ±0.05	Part Number	D +0.08 -0.00	Part Number
	M3	8.76	9.09	TL1314	3.12	TL1567
	M3.5	8.76	9.91	TL1315	3.63	TL1568
	M4	11.05	10.70	TL1316	4.29	TL1569
	M5	11.05	11.48	TL1317	5.13	TL1570
	M6	14.10	13.06	TL1318	6.48	TL1571



CNC Flare-In Narrow Panel Fasteners