



**NEW!**

Advanced TCA®

Faceplate Fastening

Solutions

# BULLETIN



# FPS

# FACEPLATE FASTENING SOLUTIONS

Advanced TCA® specifications for telecom rack systems require two clinching fasteners: a self-clinching alignment pin and a captivated screw.

The PEM® Type TPXS™ pin meets the ATCA PICMG 3.0 specification for a 3mm alignment pin. The 15° tapered point makes engaging the mating hole easy.

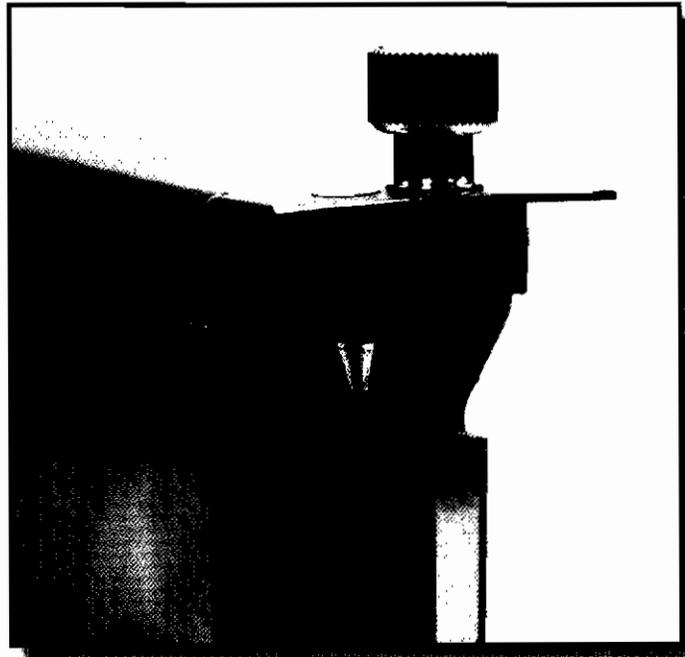
PEM® captive floating retention screws, with M3 threads and 0.51 mm of radial float, offer an ATCA style mounting solution. These thumb screws provide the added advantage of an anti cross-thread feature making thread engagement quick and easy. Types PF11M and PF12M provide retainer shoulder for enhanced visual verification of installation.



Type PF11PM Screw



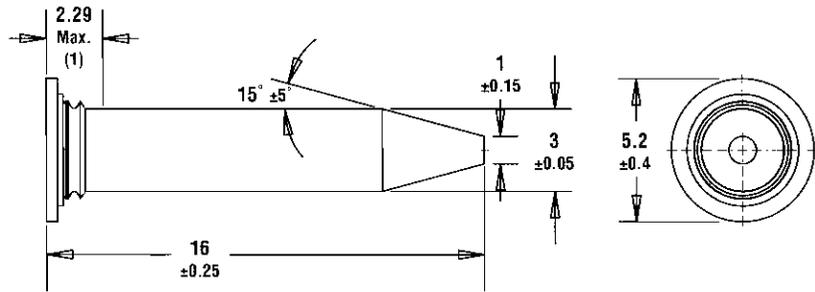
Type TPXS Pin



# TYPE TPXS™ SELF-CLINCHING ALIGNMENT PIN

Meets the ATCA PICMG 3.0 specification.

- Min. Sheet Thickness: 1 mm
- Hole Size In Sheet: 3.5 mm +0.08
- Min. Dist. Hole C/L To Edge: 6.4 mm
- Fastener Material: 300 series stainless steel
- For Use In Sheet Hardness: 70 or less on the Rockwell "B" scale



All dimensions are in millimeters. (1) Pin diameter may exceed max. in this region.

**TPX S - 3mm - 16**

Length Code

Pin Dia. Code

Material

Type

To see other styles and sizes of PEM® self-clinching pins, please refer to PEM® Bulletin FH.

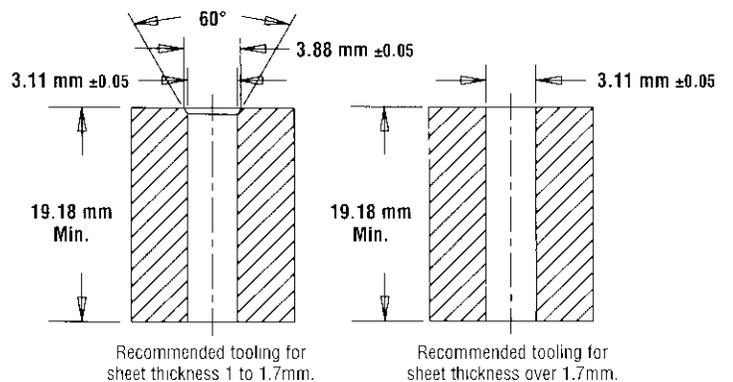
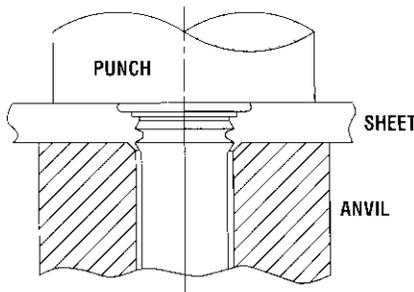
While the TPXS pin is preferred for ATCA applications, the PEM Type TPS-3mm-16 pin (not shown) with a less pronounced taper is also compliant.

## PERFORMANCE DATA

METRIC	Pin Dia. Code	Test Sheet Material	Sheet Hardness HRB	Installation (kN)	Pushout (kN)
	3mm	Aluminum	22	12	0.56
		Steel	65	22	0.98

## INSTALLATION

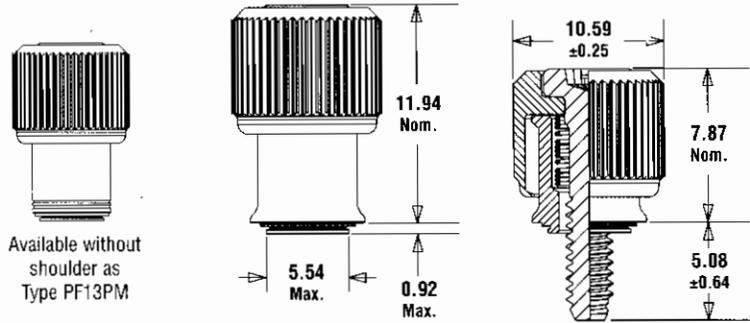
Punch or drill properly sized mounting hole in sheet. Do not perform any secondary operations such as deburring. Insert pin through mounting hole of sheet and into anvil hole. With punch and anvil surfaces parallel, apply only enough squeezing force to embed the pin's head flush in the sheet.



# CAPTIVE FLOATING RETENTION SCREWS

Provides 0.51 mm total float.  
 Available with or without retainer "positive stop" shoulder.  
 Available with or without MATHread® anti cross-threading feature.

**Min. Sheet Thickness:** 0.92 mm  
**Hole Size In Sheet:** 5.56 mm +0.08  
**Min. Dist. Hole C/L To Edge:** 7.11 mm  
**Threads:** M3, ANSI/ASME B1.13M, 6g  
**For Use In Sheet Hardness:** 80 or less on the Rockwell "B" scale



All dimensions are in millimeters.

Min. Float - 0.51 mm total.

**PF 11 P M - M3 - 0**  
 Screw Length Code  
 Thread Size  
 With MATHread Feature  
 With Phillips Drive  
 With Retainer Shoulder (13 designates without)  
 Panel Fastener

MATHread® technology allows mating threads to more easily self-align, eliminating any anti cross-threading issues. MATHread® is a registered trademark of MATHread Inc.

PennEngineering offers a complete assortment of captive screws and panel fasteners for a variety of applications. To view the complete line, you can refer to PEM Bulletin PF.

## PERFORMANCE DATA

METRIC	Thread Code	Test Sheet Material			
		Aluminum		Cold-Rolled Steel	
		Installation (kN)	Pushout (N)	Installation (kN)	Pushout (N)
	M3	6.7	355	11.1	645

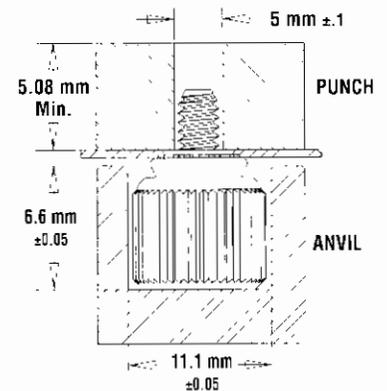
## MATERIAL & FINISH SPECIFICATIONS

	Fastener Material	Finish	
		Standard	Optional
<b>Knob</b>	Aluminum	Natural finish	Black anodize
<b>Screw</b>	Heat-treated carbon steel	Zinc per ASTM B633 SC1 (5µm), type III, colorless	Black nitride
<b>Retainer</b>	Heat-treated carbon steel	Bright nickel over copper flash per ASTM B689	—
<b>Spring</b>	300 series stainless steel	—	—

## INSTALLATION

Punch or drill properly sized mounting hole in sheet. Do not perform any secondary operations such as deburring. Place fastener into recessed anvil, and place workpiece over shank of fastener. With punch and anvil surfaces parallel, apply squeezing force until the shoulder of the retainer comes in contact with the sheet material.

Anvil Part Number: 8003521  
 Punch Part Number: 8003518



RoHS compliance information can be found on our website.

Specifications subject to change without notice.  
 Check our website for the most current version of this bulletin.

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