

Threaded Access Hardware

Now available with anti cross-thread Technology

PennEngineering is a licensee for MATHread® anti cross-threading technology. This patented design helps speed assembly and eliminates failures, repairs, scrap, downtime, and warranty service associated with thread damage.

MATHread® is a registered trademark of MATHread Inc.

- Eases assembly.
- Aligns components.
- Improves assembly line productivity.
- Slides through clogged internal threads.



HOW IT WORKS



MISALIGNED AXIS:

This design offers users the benefits of self-aligning, anti cross-threading threads.



THREADS CAM:

As the threads come into contact, the patented anti cross-thread begins to cam over the female thread.



THREADS DRIVE NORMALLY:

The design promotes alignment of the two thread helices. The fasteners drive easily with reduced effort.

ALTERNATE RETAINER MOUNTING STYLES

- Broaching
- Flare-in
- Floating

STANDARD RECESS

PF11M



Phillips/Slot Combination

PF11PM



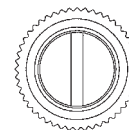
Phillips

PF11LSM



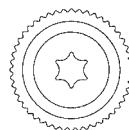
6-Lobe/Slot Combination

PF11SM



Slotted

PF11LM



6-Lobe

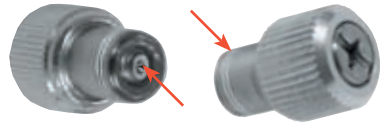
OPTIONAL RECESSES

PennEngineering®

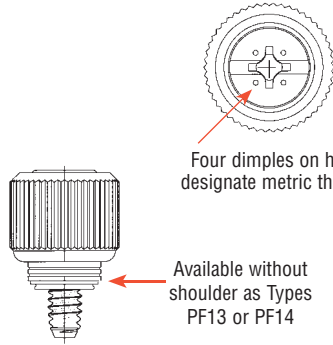
www.pemnet.com

SPECIFICATIONS

- Shoulder (PF11, PF12) provides positive stop during installation.
- Universal slot/Phillips recess.
- Type PF11 and PF13 meet UL 508 "operator access area" requirements.
- Type PF12 and PF14 meet UL 1950 "service access area" requirements.
- Available with DuraBlack™ finish.
- Available in three screw lengths.

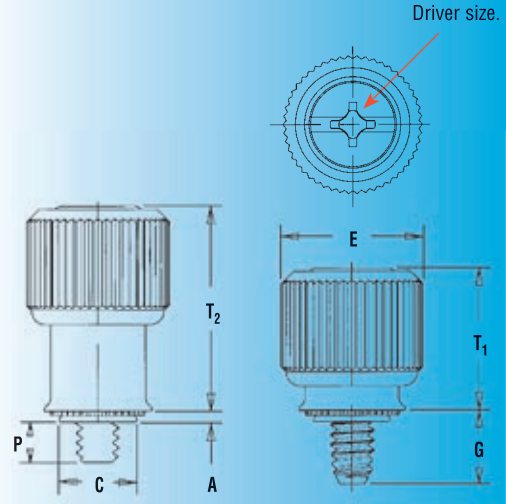


To be sure that you are getting genuine PEM® brand panel fasteners, look for the PEM "dimple" or "two groove" trademark.



Four dimples on head designate metric thread.

Available without shoulder as Types PF13 or PF14



Min. Float - .020" / 0.51 mm total.

All dimensions are in inches.

UNIFIED	Thread Size	Type		Thread Code	Screw Length Code	A Max.	Min. Sheet Thickness	Hole Size In Sheet + .003 - .000	C Max.	E ± .010	G ± .025	P ± .025	T ₁ Nom.	T ₂ Nom.	Driver Size	Min. Dist. Hole C/L To Edge
		Knurled Cap	Smooth Cap													
	.112-40 (#4-40)	PF11M PF13M	PF12M PF14M	440	0	.036	.036	.219	.218	.417	.200	.000	.310	.470	#1	.280
					1						.260	.060				
					2						.320	.120				
	.138-32 (#6-32)	PF11M PF13M	PF12M PF14M	632	0	.036	.036	.250	.249	.450	.230	.000	.450	.640	#2	.290
					1						.290	.060				
					2						.350	.120				
	.164-32 (#8-32)	PF11M PF13M	PF12M PF14M	832	0	.036	.036	.312	.311	.514	.230	.000	.450	.640	#2	.330
					1						.290	.060				
					2						.350	.120				
.190-32 (#10-32)	PF11M PF13M	PF12M PF14M	032	0	.036	.036	.312	.311	.514	.230	.000	.450	.640	#2	.330	
				1						.290	.060					
				2						.350	.120					
.250-20 (1/4-20)	PF11M PF13M	PF12M PF14M	0420	0	.036	.036	.375	.374	.575	.290	.000	.530	.800	#3	.460	
				1						.350	.060					
				2						.410	.120					

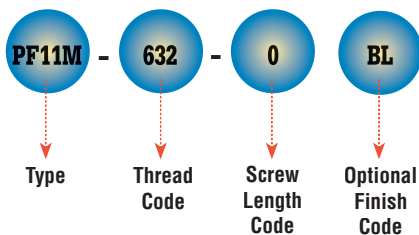
All dimensions are in millimeters.

METRIC	Thread Size x Pitch	Type		Thread Code	Screw Length Code	A Max.	Min. Sheet Thickness	Hole Size In Sheet + 0.08	C Max.	E ± 0.25	G ± 0.64	P ± 0.64	T ₁ Nom.	T ₂ Nom.	Driver Size	Min. Dist. Hole C/L To Edge
		Knurled Cap	Smooth Cap													
	M3 x 0.5	PF11M PF13M	PF12M PF14M	M3	0	0.92	0.92	5.56	5.54	10.59	5.08	0	7.87	11.94	#1	7.11
					1						6.6	1.52				
					2						8.13	3.05				
	M3.5 x 0.6	PF11M PF13M	PF12M PF14M	M3.5	0	0.92	0.92	6.35	6.33	11.43	5.84	0	11.43	16.26	#2	7.37
					1						7.37	1.52				
					2						8.89	3.05				
	M4 x 0.7	PF11M PF13M	PF12M PF14M	M4	0	0.92	0.92	7.92	7.9	13.06	5.84	0	11.43	16.26	#2	8.38
					1						7.37	1.52				
					2						8.89	3.05				
M5 x 0.8	PF11M PF13M	PF12M PF14M	M5	0	0.92	0.92	7.92	7.9	13.06	5.84	0	11.43	16.26	#2	8.38	
				1						7.37	1.52					
				2						8.89	3.05					
M6 x 1	PF11M PF13M	PF12M PF14M	M6	0	0.92	0.92	9.53	9.5	14.61	7.37	0	13.46	20.32	#3	11.68	
				1						8.89	1.52					
				2						10.41	3.05					

Specifications subject to change without notice.

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Part Number Designation



MATERIAL: Knob - Aluminum. Retainer - Heat-treated Carbon Steel.

Screw - Heat-treated Carbon Steel.

Spring - 300 Series Stainless Steel.

FINISH: Knob - Natural Finish.

Retainer - CN-Bright Nickel Over Copper Flash per ASTM B689.

Screw - ZI-Zinc per ASTM B 633 SC1 (5µm), Type III colorless.

OPTIONAL FINISH: BL-Durablack.

THREADS: External, ANSI B1.1, 2A ANSI/ASME B1.13M, 6g.

SHEET HARDNESS: 80 or Less on the Rockwell "B" Scale.