



Access

Hardware

BULLETIN



PF

PEM® BRAND ACCESS HARDWARE

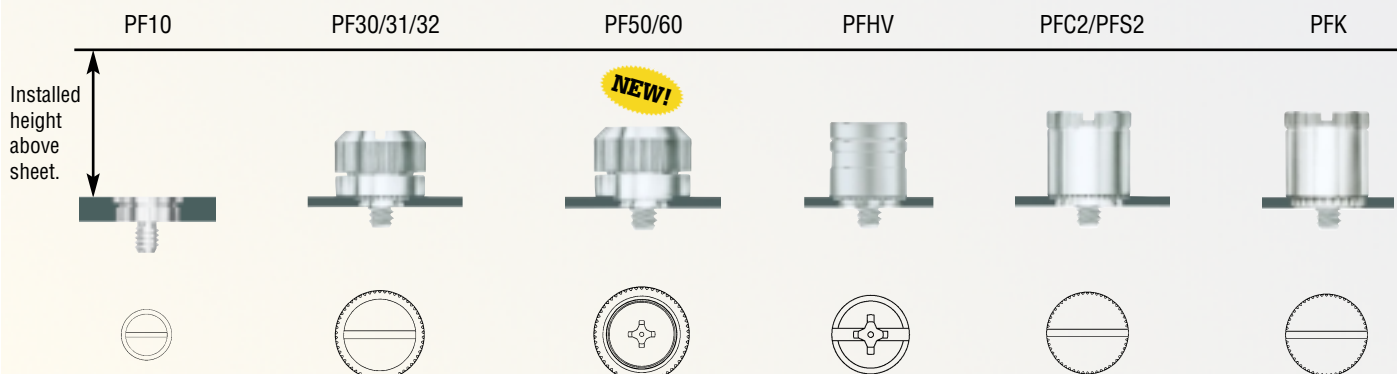
PEM brand access hardware is designed with captive screws to help keep parts to a minimum and eliminate risks associated with loose hardware that could fall out and damage internal components. These panel fastener assemblies are ideal to attach metal panels or other thin material components in applications where subsequent access will be necessary.

PEM threaded access hardware types include self-clinching panel fasteners with low-profile design that hugs front panels and a large knurl for ease of use; self-clinching panel fasteners with universal slot/Phillips recess; tool or hand actuated self-clinching panel fasteners in steel or stainless steel to resist corrosion; stainless steel panel fasteners that meet UL 1950 "service access area" requirements; low-cost self-clinching panel fasteners featuring a small, compact, and low-profile design for limited access areas; flush-mounted panel screw components; snap-in panel fasteners designed to be installed without tools; and press-in panel fasteners allowing for radial float to compensate for mating hole misalignment.

For special applications or designs, please consult your local engineering representative or a factory engineer.

TYPE PF11™ AND PF12™	
Self-clinching with tool or finger operation	Page 4
TYPE PF13™ AND PF14™	
Self-clinching with tool or finger operation	Page 5
TYPE PFC2 AND PFS2	
Self-clinching with tool or finger operation	Page 6
TYPE PFHV™	
Compact, self-clinching with tool or finger operation	Page 7
TYPE PF30	
Low-profile, self-clinching with tool or finger operation	Page 8
TYPE PF50™ AND PF60™	
Low-profile, self-clinching with tool or finger operation	Page 9
TYPE PF10	
Flush-mounted, self-clinching with tool only operation	Page 10
TYPE PFC2P™	
Self-clinching with tool only operation	Page 13
TYPE PFF™	
HYBRID™, floating with tool or finger operation	Page 14
TYPE PFP™	
HYBRID™, self-clinching with tool or finger operation	Page 15
TYPE PFS™	
HYBRID™ snap-in panel fasteners	Page 16
TYPE PFT™	
HYBRID™ panel fastener thumbscrews	Page 17
TYPE PFK	
Broaching, with tool or finger operation	Page 18
TYPE PTL2	
Self-clinching spring-loaded plunger assemblies	Page 18

HEIGHT COMPARISON GUIDE AND STANDARD RECESS FOR SAME THREAD SIZE PANEL FASTENERS



PEM® PANEL FASTENER SELECTOR GUIDE

PEM® Panel Fastener Type	Application Requires:															
	Meets UL 508 “operator access area” req.	Meets UL 1950 “service access area” req.	Recesses				Stainless steel for high corrosion resistance	Spring loaded assembly	Tool actuated	Hand actuated	Snaps into any thin material	Installs Into printed circuit boards	Multiple screw lengths	Flush mounted	Available in black	Available in custom colors (3)
			Slot/ Phillips	Phillips	Slot	Six-lobe/ slot available										
PF11	•		•			•		•	•	•			•		•	
PF12			•			•		•	•				•		•	
PF13	•		•					•	•	•			•		•	
PF14		•	•					•	•				•		•	
PFC2	•				•		•	•	•	•			•		•	
PFS2	•				•			•	•	•			•		•	
PFHV			•			•			•				•		•	
PF30 PF31 PF32	•				•			•	•	•					•	
PF50	•			•				•	•	•			•		•	
PF60		•		•				•	•				•		•	
PF10					•		•		•					•	•	
PFC2P		•		•			•	•	•				•		•	
PFF			•						•	•	•	•			•(2)	•
PFP	•		•			•			•	•			•		•(2)	•
PFS	•				•	•(1)			•	•	•	•			•(2)	•
PFT					•	•			•	•			•		•(2)	•
PFK	•				•		•	•	•	•		•	•		•	

(1) Six-lobe/slot drive is standard for Type PFS.

(2) Standard color is black.

(3) See page PF-27 for custom color capabilities.

PFC2P

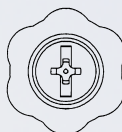
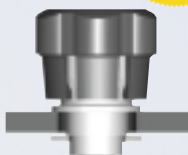


PFP

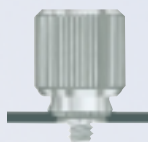


PFF

NEW!



PF11/PF12

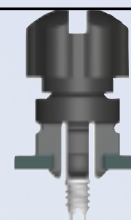


PF13/14

NEW!



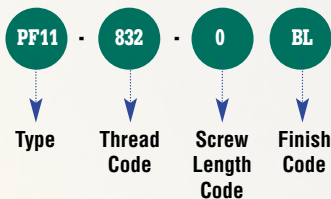
PFS



TYPE PF11™ AND PF12™ SELF-CLINCHING PANEL FASTENER ASSEMBLIES

- Shoulder provides positive stop during installation.
- Universal (slot/Phillips) recess.
- Type PF11 meets UL 508 "operator access area" requirements.
- Type PF12 meets UL 1950 "service access area" requirements.
- Available with durable black finish.
- Available in three screw lengths.

Part Number Designation



Type PF11

Patented.

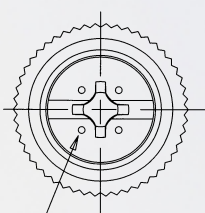


Type PF12

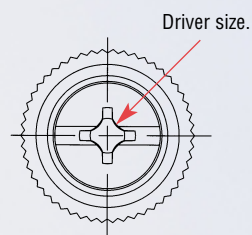


SCRATCH PROOF

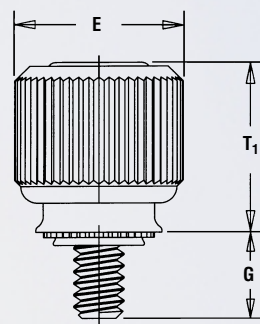
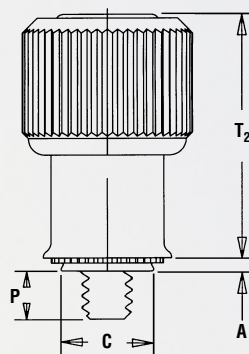
DuraBlack™ finish



Four dimples on head designate metric thread.



Driver size.



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

All dimensions are in inches.

	Thread Size	Type		Thread Code	Screw Length Code	A (Shank) 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													
UNIFIED	.112-40 (#4-40)	PF11	PF12	440	0	.036	.036	.219	.218	.417	.170	.000	.310	.450	#1	.280
					1						.230	.060				
					2						.290	.120				
	.138-32 (#6-32)	PF11	PF12	632	0	.036	.036	.250	.249	.450	.230	.000	.450	.640	#2	.290
					1						.290	.060				
					2						.350	.120				
	.164-32 (#8-32)	PF11	PF12	832	0	.036	.036	.312	.311	.514	.230	.000	.450	.640	#2	.330
					1						.290	.060				
					2						.350	.120				
	.190-32 (#10-32)	PF11	PF12	032	0	.036	.036	.312	.311	.514	.230	.000	.450	.640	#2	.330
					1						.290	.060				
					2						.350	.120				
	.250-20 (1/4-20)	PF11	PF12	0420	0	.036	.036	.375	.374	.575	.290	.000	.530	.790	#3	.460
					1						.350	.060				
					2						.410	.120				

All dimensions are in millimeters.

	Thread Size x Pitch	Type		Thread Code	Screw Length Code	A (Shank) 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													
METRIC	M3 x 0.5	PF11	PF12	M3	0	0.92	0.92	5.56	5.54	10.59	4.32	0	7.87	11.43	#1	7.11
					1						5.84	1.52				
					2						7.37	3.05				
	M3.5 x 0.6	PF11	PF12	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	PF11	PF12	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	PF11	PF12	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	PF11	PF12	M6	0	0.92	0.92	9.53	9.5	14.61	7.37	0	13.46	20.07	#3	11.68
					1						8.89	1.52				
					2						10.41	3.05				

NEW!

-
- A technical diagram of a gear pump assembly. It shows two intermeshing gears within a housing. A red arrow points to the meshing area between the two gears, indicating the location of the pressure rise.

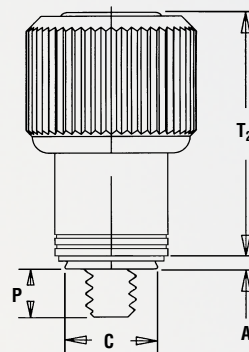
The diagram illustrates the bit fields of the PF13 register. It consists of four green circles arranged horizontally, each containing a value and connected by minus signs. Below each circle is a label with an arrow pointing to it. The circles contain 'PF13', '632', '0', and 'BL' respectively. The labels below are 'Type', 'Thread Code', 'Screw Length Code', and 'Finish Code' respectively.



Type PF14



**DuraBlack™
finish**



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

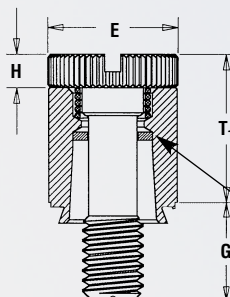
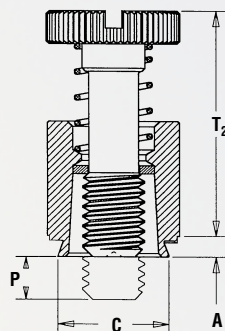
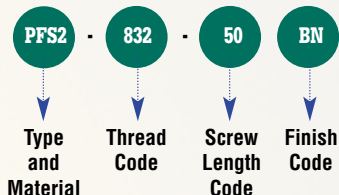
UNIFIED	Thread Size	Type		Thread Code	Screw Length Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet + .003 - .000	C Max.	E ± .010	G ± .025	P ± .025	T ₁ Nom.	T ₂ Nom.	Driver Size	Min. Dist. Hole C/L To Edge
		Knurled Cap	Smooth Cap													
	.112-40 (#4-40)	PF13	PF14	440	0	.036	.036	.219	.218	.417	.170	.000	.310	.450	#1	.280
					1						.230	.060				
					2						.290	.120				
	.138-32 (#6-32)	PF13	PF14	632	0	.036	.036	.250	.249	.450	.230	.000	.450	.640	#2	.290
					1						.290	.060				
					2						.350	.120				
	.164-32 (#8-32)	PF13	PF14	832	0	.036	.036	.312	.311	.514	.230	.000	.450	.640	#2	.330
					1						.290	.060				
2					.350						.120					
.190-32 (#10-32)	PF13	PF14	032	0	.036	.036	.312	.311	.514	.230	.000	.450	.640	#2	.330	
				1						.290	.060					
				2						.350	.120					
.250-20 (1/4-20)	PF13	PF14	0420	0	.036	.036	.375	.374	.575	.290	.000	.530	.790	#3	.460	
				1						.350	.060					
				2						.410	.120					

METRIC	Thread Size x Pitch	Type		Thread Code	Screw Length Code	A (Shank) 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	PF13	PF14	M3	0	0.92	0.92	5.56	5.54	10.59	4.32	0	7.87	11.43	#1	7.11
					1						5.84	1.52				
					2						7.37	3.05				
	M3.5 x 0.6	PF13	PF14	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	PF13	PF14	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	PF13	PF14	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	PF13	PF14	M6	0	0.92	0.92	9.53	9.5	14.61	7.37	0	13.46	20.07	#3	11.68	
				1						8.89	1.52					
				2						10.41	3.05					

TYPE PFC2 AND PFS2 PANEL FASTENER ASSEMBLIES

- Assorted screw lengths for most applications.
- Available in steel or stainless steel.
- Meets UL 508 "operator access area" requirements.
- Tool or finger operation.
- Most sizes available in three screw lengths.

Part Number Designation



Diagonal knurl identifies metric thread sizes.

PEM Trademark Blue plastic retaining ring



All dimensions are in inches.

	Thread Size	Type		Thread Code	Screw Length Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet + .003 - .000	C Max.	E ± .010	G ± .016	H ± .005	P ± .025	T ₁ Max.	T ₂ Nom.	Min. Dist. Hole C/L To Edge
		Steel	Stainless Steel													
UNIFIED	.112-40 (#4-40)	PFS2	PFC2	440	40	.060	.060	.265	.264	.312	.250	.072	.000	.36	.54	.25
					62						.375		.125			
	.138-32 (#6-32)	PFS2	PFC2	632	40	.060	.060	.281	.280	.344	.250	.072	.000	.36	.54	.28
					62						.375		.125			
					84 ^{NS}						.500		.250			
	.164-32 (#8-32)	PFS2	PFC2	832	50	.060	.060	.312	.311	.375	.312	.082	.000	.45	.69	.31
					72						.437		.125			
					94						.562		.250			
	.190-32 (#10-32)	PFS2	PFC2	032	50	.060	.060	.344	.343	.406	.312	.082	.000	.45	.69	.34
					72						.437		.125			
					94						.562		.250			
	.250-20 (1/4-20)	PFS2	PFC2	0420	60	.060	.060	.413	.412	.468	.375	.097	.000	.58	.88	.38
					82 ^{NS}						.500		.125			
					04 ^{NS}						.625		.250			

All dimensions are in millimeters.

	Thread Size x Pitch	Type		Thread Code	Screw Length Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet + 0.08	C Max.	E ± .25	G ± 0.4	H ± 0.13	P ± 0.64	T ₁ Max.	T ₂ Nom.	Min. Dist. Hole C/L To Edge
		Steel	Stainless Steel													
METRIC	M3 x 0.5	PFS2	PFC2	M3	40	1.53	1.53	6.73	6.71	7.92	6.4	1.83	0	9.14	13.72	6.35
					62 ^{NS}						9.5		3.2			
	M4 x 0.7	PFS2	PFC2	M4	50	1.53	1.53	7.92	7.9	9.53	7.9	2.08	0	11.43	17.53	7.87
					72 ^{NS}						11.1		3.2			
					94 ^{NS}						14.3		6.4			
	M5 x 0.8	PFS2	PFC2	M5	50	1.53	1.53	8.74	8.72	10.31	7.9	2.08	0	11.47	17.53	8.63
					72						11.1		3.2			
					94 ^{NS}						14.3		6.4			
	M6 x 1	PFS2	PFC2	M6	60	1.53	1.53	10.49	10.47	11.89	9.5	2.46	0	14.73	22.35	9.65
					82 ^{NS}						12.7		3.2			
					04 ^{NS}						15.9		6.4			

NS Not Stocked, available on special order.

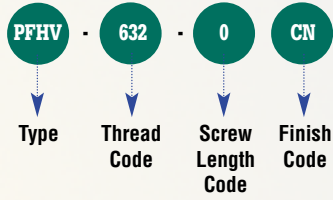
TYPE PFHV™ PANEL FASTENER ASSEMBLIES

- Small, compact and low profile design for limited access areas.
- Two screw lengths.
- Universal slot/Phillips recess standard.
- Six-lobe/slot combination available.

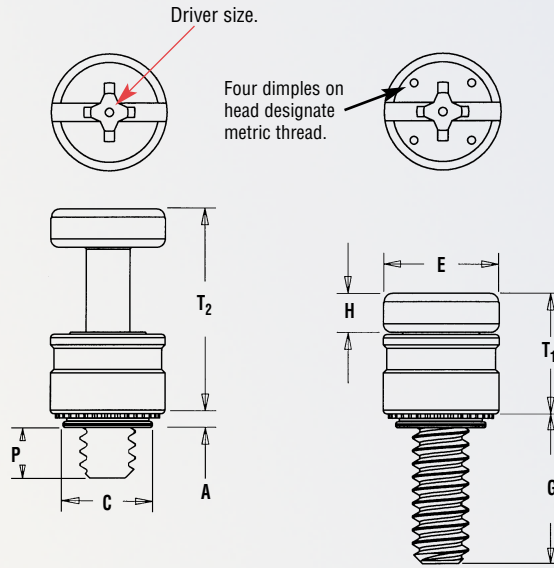


Available with six-lobe/slot combination drive (Type PFHVLS) on special order.

Part Number Designation



Patented.



All dimensions are in inches.

UNIFIED	Thread Size	Type	Thread Code	Screw Length Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet + .003 - .000	C Max.	E ± .010	G ± .025	H ± .005	P ± .025	T ₁ Nom.	T ₂ Nom.	Driver Size	Min. Dist. Hole C/L To Edge
	.112-40 (#4-40)	PFHV	440	0	.036	.036	.203	.202	.260	.216	.080	.000	.260	.436	#1	.213
				1						.316		.095				
	.138-32 (#6-32)	PFHV	632	0	.036	.036	.219	.218	.276	.234	.092	.000	.290	.484	#2	.230
				1						.359		.120				

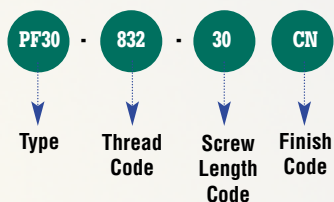
All dimensions are in millimeters.

METRIC	Thread Size x Pitch	Type	Thread Code	Screw Length Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet + 0.08	C Max.	E ± 0.25	G ± 0.64	H ± 0.13	P ±0.64	T ₁ Nom.	T ₂ Nom.	Driver Size	Min. Dist. Hole C/L To Edge
	M3x0.5	PFHV	M3	0	0.92	0.92	5.5	5.49	6.95	5.55	2.03	0	6.69	11.25	#1	5.8
				1						7.56		1.9				
	M3.5x0.6	PFHV	M3.5	0	0.92	0.92	6	5.98	7.45	6.01	2.34	0	7.45	12.47	#2	6.3
				1						8.42		2.3				
	M4x0.7	PFHV	M4	0	0.92	0.92	6.4	6.38	7.85	6.59	2.79	0	8.5	14.1	#2	6.7
				1						9.39		2.7				

TYPE PF30 LOW-PROFILE PANEL FASTENER ASSEMBLIES

- Satisfies many functional and cosmetic requirements.
- Large, slotted head for tool or finger operation.
- Low-profile design.
- Meets UL 508 "operator access area" requirements.

Part Number Designation

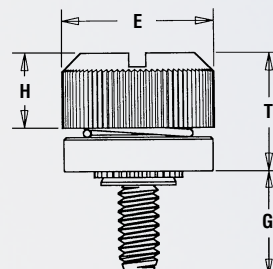
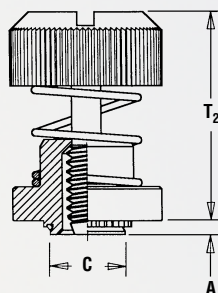


Patented.

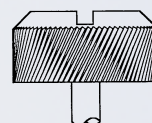


**SCRATCH
PROOF**

**DuraBlack™
finish**



Diagonal knurl
identifies metric
thread sizes.



All dimensions are in inches.

UNIFIED	Thread Size	Type	Thread Code	Screw Length Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet + .003 - .000	C Max.	E ±.010	G ± .015	H ± .005	T ₁ Max.	T ₂ Nom.	Min. Dist. Hole C/L To Edge
	.112-40 (#4-40)	PF30	440	30	.030	.030	.203	.202	.406	.300	.202	.325	.595	.26
		PF31			.038	.040								
		PF32			.058	.060								
	.138-32 (#6-32)	PF30 ^{NS}	632	30	.030	.030	.219	.218	.438	.300	.202	.325	.595	.28
		PF31			.038	.040								
		PF32			.058	.060								
	.164-32 (#8-32)	PF30 ^{NS}	832	30	.030	.030	.250	.249	.468	.300	.207	.330	.600	.29
		PF31			.038	.040								
		PF32			.058	.060								
	.190-32 (#10-32)	PF30 ^{NS}	032	30	.030	.030	.312	.311	.530	.300	.220	.335	.605	.33
		PF31			.038	.040								
		PF32			.058	.060								
	.250-20 (1/4-20)	PF32	0420	35	.058	.060	.375	.374	.625	.350	.242	.385	.675	.38

All dimensions are in millimeters.

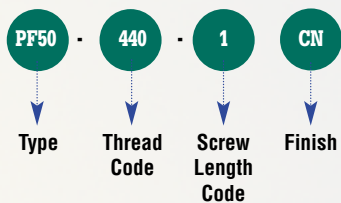
METRIC	Thread Size x Pitch	Type	Thread Code	Screw Length Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet + 0.08	C Max.	E ±0.25	G ± 0.4	H ± 0.13	T ₁ Max.	T ₂ Nom.	Min. Dist. Hole C/L To Edge
	M3 x 0.5	PF31 ^{NS}	M3	30	0.97	1	5.5	5.48	10.31	7.62	5.13	8.26	15.11	6.6
		PF32			1.48	1.5								
	M4 x 0.7	PF31	M4	30	0.97	1	6.4	6.38	11.89	7.62	5.26	8.38	15.24	7.37
		PF32			1.48	1.5								
	M5 x 0.8	PF31	M5	30	0.97	1	8	7.98	13.46	7.62	5.59	8.51	15.37	8.38
		PF32			1.48	1.5								
	M6 x 1	PF32 ^{NS}	M6	35	1.48	1.5	9.5	9.48	15.88	8.89	6.12	9.78	17.15	9.65

NS Not Stocked, available on special order.

TYPE PF50™ AND PF60™ LOW-PROFILE PANEL FASTENER ASSEMBLIES

- Satisfies many functional and cosmetic requirements.
- Type PF50 with large head and Phillips recess for tool or finger operation.
- Available with six-lobe recess.
- Type PF50 (knurled cap) meets UL 508 "operator access area" requirements.
- Type PF60 (smooth cap) meets UL 1950 "tool only access area" requirements.
- Available in black.

Part Number Designation



Type PF50

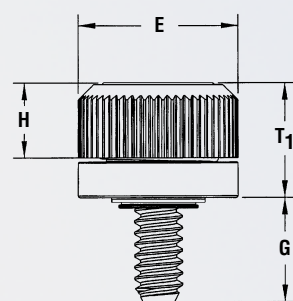
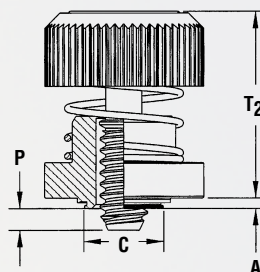
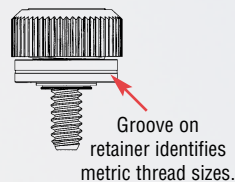


Type PF60



SCRATCH
PROOF

DuraBlack™
finish



All dimensions are in inches.

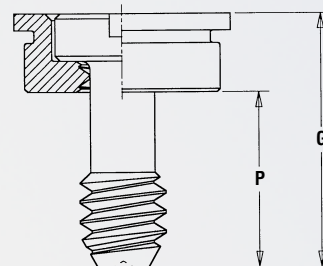
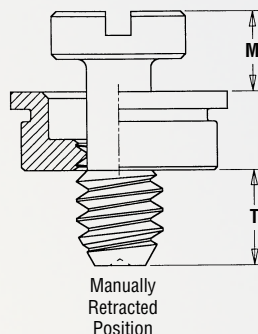
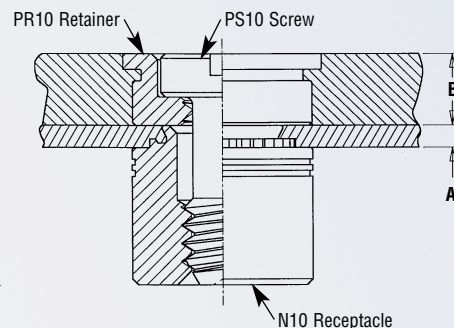
	Thread Size	Type		Thread Code	Screw Length Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet + .003 -.000	C Max.	E +.015 -.005	G ±.025	H ±.008	P ±.025	T ₁ Max.	T ₂ Nom.	Driver Size	Min. Dist Hole C/L To Edge
		Knurled Cap	Smooth Cap														
UNIFIED	.112-40 (#4-40)	PF50	PF60	440	0	.030	.030	.203	.202	.406	.230	.207	.000	.340	.520	#1	.26
					1						.290		.060				
	.138-32 (#6-32)	PF50	PF60	632	0	.030	.030	.219	.218	.438	.230	.207	.000	.340	.520	#2	.28
					1						.290		.060				
	.164-32 (#8-32)	PF50	PF60	832	0	.030	.030	.250	.249	.468	.230	.217	.000	.340	.530	#2	.29
					1						.290		.060				
	.190-32 (#10-32)	PF50	PF60	032	0	.030	.030	.312	.311	.530	.230	.225	.000	.360	.530	#2	.33
					1						.290		.060				
	.250-20 (1/4-20)	PF52	PF62	0420	0	.058	.060	.375	.374	.625	.280	.246	.000	.395	.600	#2	.38
					1						.340		.060				

All dimensions are in millimeters.

	Thread Size x Pitch	Type		Thread Code	Screw Length Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet + 0.08	C Max.	E +0.4 -0.13	G ±0.64	H ±0.2	P ±0.64	T ₁ Max.	T ₂ Nom.	Driver Size	Min. Dist Hole C/L To Edge
		Knurled Cap	Smooth Cap														
METRIC	M3 x 0.5	PF50	PF60	M3	0	0.77	0.8	5.5	5.48	10.3	5.84	5.26	0	8.64	13.21	#1	6.6
					1						7.37		1.52				
	M3.5 x 0.6	PF50	PF60	M3.5	0	0.77	0.8	5.56	5.54	11.1	5.84	5.26	0	8.64	13.21	#2	7.1
					1						7.37		1.52				
	M4 x 0.7	PF50	PF60	M4	0	0.77	0.8	6.4	6.38	11.9	5.84	5.51	0	8.64	13.46	#2	7.4
					1						7.37		1.52				
	M5 x 0.8	PF50	PF60	M5	0	0.77	0.8	8	7.98	13.5	5.84	5.72	0	9.15	13.46	#2	8.4
					1						7.37		1.52				
	M6 x 1	PF52	PF62	M6	0	1.47	1.5	9.5	9.48	15.9	7.11	6.25	0	10.04	15.24	#2	9.7
					1						8.64		1.52				

TYPE PF10 FLUSH-MOUNTED PANEL SCREW COMPONENTS

- Screw head is flush in sheets as thin as .125" / 3.2 mm.
- Screw remains captive in retainer when disengaged.
- For use in sheets of HRB 70 or less.



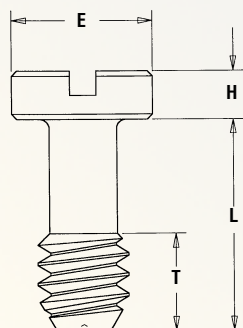
All dimensions are in inches.

UNIFIED	A Min.	B Nom.	G ± .010	M	P	T Nom.
	.04	.125	.40	.16	.28	.13

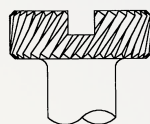
All dimensions are in millimeters.

METRIC	A Min.	B Nom.	G ± 0.25	M	P	T Nom.
	1	3.18	10.16	4.06	7.11	3.3

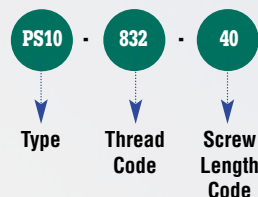
PS10 Flush-Mounted Screws



Diagonal knurl identifies metric thread sizes.



Part Number Designation



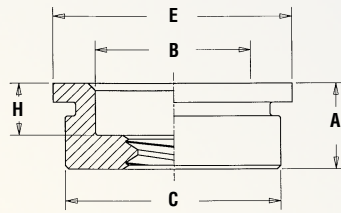
All dimensions are in inches.

UNIFIED	Thread Size	Type	Thread Code	Screw Length Code	E Nom.	H + .002 - .006	L ± .010	T Nom.
	.112-40 (#4-40)	PS10	440	40	.18	.075	.33	.13
	.138-32 (#6-32)	PS10	632	40	.21	.075	.33	.13
	.164-32 (#8-32)	PS10	832	40	.25	.075	.33	.13
	.190-32 (#10-32)	PS10	032	40	.28	.075	.33	.13

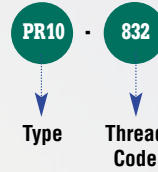
All dimensions are in millimeters.

METRIC	Thread Size x Pitch	Type	Thread Code	Screw Length Code	E Nom.	H + 0.05 - 0.15	L ± 0.25	T Nom.
	M3 x 0.5	PS10	M3	40	4.7	1.91	8.38	3.3
	M4 x 0.7	PS10	M4	40	6.3	1.91	8.38	3.3
	M5 x 0.8	PS10	M5	40	7.1	1.91	8.38	3.3

PR10 Self-Clinching Flush-Mounted Retainers



Part Number Designation



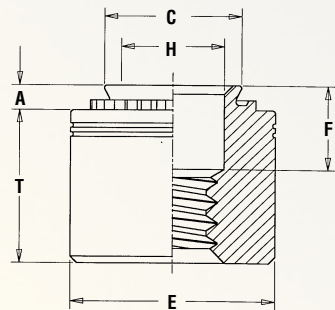
All dimensions are in inches.

UNIFIED	Thread Size	Type	Thread Code	A (Shank) Max.	Min. Sheet for Self-Clinching	Min. Sheet for Flush Installation	Hole Size in Sheet + .003 - .000	B Nom.	C Max.	E Nom.	H Nom.	Min. Dist. Hole C/L to Edge
	.112-40 (#4-40)	PR10	440	.125	.050	.125	.281	.195	.280	.31	.075	.31
	.138-32 (#6-32)	PR10	632	.125	.050	.125	.312	.225	.311	.34	.075	.33
	.164-32 (#8-32)	PR10	832	.125	.050	.125	.344	.255	.343	.37	.075	.34
	.190-32 (#10-32)	PR10	032	.125	.050	.125	.375	.290	.374	.41	.075	.36

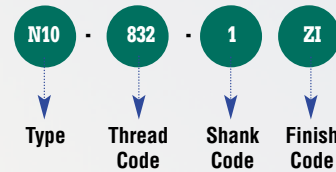
All dimensions are in millimeters.

METRIC	Thread Size x Pitch	Type	Thread Code	A (Shank) Max.	Min. Sheet for Self-Clinching	Min. Sheet for Flush Installation	Hole Size in Sheet + 0.08	B Nom.	C Max.	E Nom.	H Nom.	Min. Dist. Hole C/L to Edge
	M3 x 0.5	PR10	M3	3.18	1.27	3.18	7.14	4.75	7.12	7.87	1.91	7.87
	M4 x 0.7	PR10	M4	3.18	1.27	3.18	8.74	6.48	8.72	9.53	1.91	8.64
	M5 x 0.8	PR10	M5	3.18	1.27	3.18	9.53	7.37	9.5	10.41	1.91	9.14

N10 Self-Clinching Receptacle Nuts



Part Number Designation



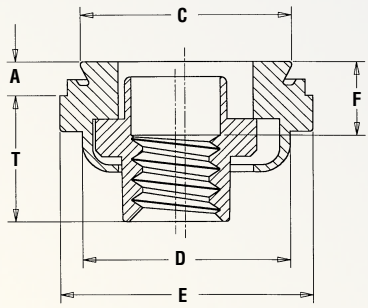
All dimensions are in inches.

UNIFIED	Thread Size	Type	Thread Code	Shank Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size in Sheet + .003 - .000	C Max.	E Nom.	F ± .010	H Nom.	T ± .005	Min. Dist. Hole C/L To Edge
	.112-40 (#4-40)	N10	440	1	.038	.040	.187	.186	.28	.130	.126	.24	.22
	.138-32 (#6-32)	N10	632	1	.038	.040	.213	.212	.31	.130	.156	.24	.27
	.164-32 (#8-32)	N10	832	1	.038	.040	.250	.249	.34	.130	.187	.24	.28
	.190-32 (#10-32)	N10	032	1	.038	.040	.277	.276	.37	.130	.213	.24	.31

All dimensions are in millimeters.

METRIC	Thread Size x Pitch	Type	Thread Code	Shank Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size in Sheet + 0.08	C Max.	E Nom.	F ± 0.25	H Nom.	T ± 0.13	Min. Dist. Hole C/L To Edge
	M3 x 0.5	N10	M3	1	0.97	1	4.75	4.73	7.11	3.3	3.2	6	5.59
	M4 x 0.7	N10	M4	1	0.97	1	6.35	6.33	8.64	3.3	4.75	6	7.11
	M5 x 0.8	N10	M5	1	0.97	1	7.04	7.01	9.53	3.3	5.41	6	7.87

F10 Self-Clinching Floating Receptacle Nuts (Special order only)



Part Number Designation

F10

832

1

BN

Type

Thread Code

Shank Code

Finish Code

All dimensions are in inches.

UNIFIED	Thread Size	Type	Thread Code	Shank Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet + .003 - .000	C Max.	D Max.	E Max.	F ± .010	T ± .010	Min. Dist. Hole C/L To Edge
	.112-40 (#4-40)	F10 ^{NS}	440	1	.038	.040	.290	.289	.290	.36	.102	.200	.30
	.138-32 (#6-32)	F10 ^{NS}	632	1	.038	.040	.328	.327	.330	.39	.102	.193	.32
	.164-32 (#8-32)	F10 ^{NS}	832	1	.038	.040	.368	.367	.365	.44	.102	.191	.34
	.190-32 (#10-32)	F10 ^{NS}	032	1	.038	.040	.406	.405	.405	.47	.102	.250	.36

All dimensions are in millimeters.

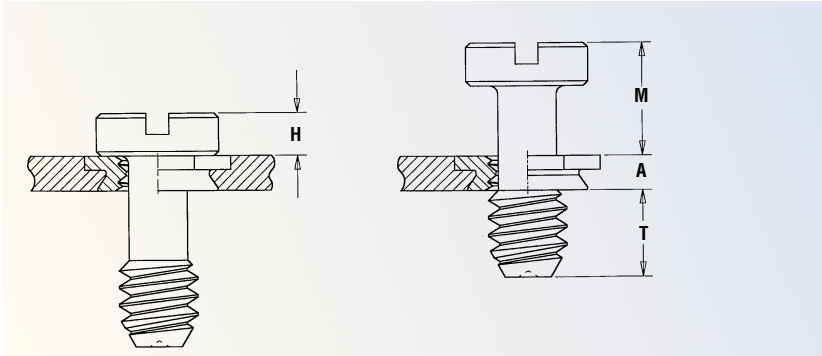
METRIC	Thread Size x Pitch	Type	Thread Code	Shank Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet + 0.08	C Max.	D Max.	E Max.	F ± 0.25	T ± 0.25	Min. Dist. Hole C/L To Edge
	M3 x 0.5	F10 ^{NS}	M3	1	0.97	1	7.37	7.34	7.37	9.15	2.59	5.08	7.62
	M4 x 0.7	F10 ^{NS}	M4	1	0.97	1	9.35	9.32	9.28	11.18	2.59	4.85	8.64
	M5 x 0.8	F10 ^{NS}	M5	1	0.97	1	10.31	10.29	10.29	11.94	2.59	6.53	9.14

NS Not Stocked, available on special order.

Special Application Note:

For applications where the screw head may project above the sheet surface, PS10 screws may be used with PEMSERT® Type F fasteners as retainers. Type F fasteners are self-clinching and flush mounted in sheets as thin as .060" / 1.5 mm. Screws are installed by turning them through the threads of the Type F fasteners. For dimensions and engineering data on Type F fasteners see PEM Bulletin F.

UNIFIED	PS10 with Type F Retainer (inches)	A Max.	H Nom.	M Nom.	T Nom.
		.060	.075	.21	.13
		1.53	1.9	5.4	3.3
METRIC	PS10 with Type F Retainer (millimeters)				



TYPE PFC2P™ PHILLIPS RECESS PANEL FASTENER ASSEMBLIES

- Meets UL 1950 "service area access" requirements.
- Assorted screw lengths for most applications.
- Stainless steel for high corrosion resistance.

Part Number Designation

PFC2P - **832** - **50**

Type Thread Code Screw Length Code

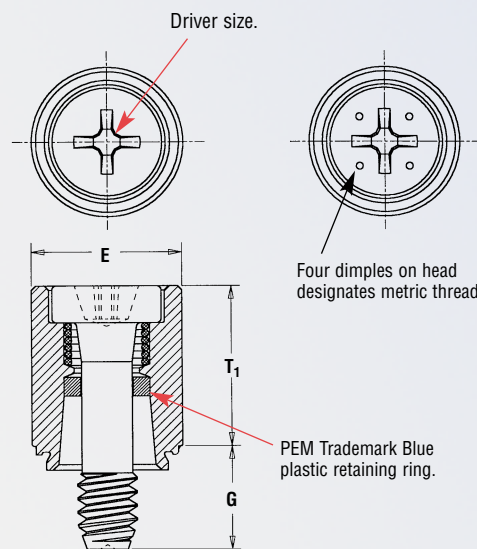
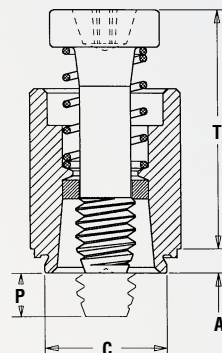


US
Patented.



SCRATCH PROOF

DuraBlack™ finish



All dimensions are in inches.

	Thread Size	Type	Thread Code	Screw Length Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet + .003 - .000	C Max.	E ± .010	G ± .016	P ± .025	T ₁ Max.	T ₂ Nom.	Driver Size	Min. Dist. Hole C/L To Edge
UNIFIED	.112-40 (#4-40)	PFC2P	440	40	.060	.060	.265	.264	.312	.250	.000	.370	.540	#1	.25
				62						.375	.125				
	.138-32 (#6-32)	PFC2P	632	40	.060	.060	.281	.280	.344	.250	.000	.380	.540	#2	.28
				62						.375	.125				
				84 ^{NS}						.500	.250				
	.164-32 (#8-32)	PFC2P	832	50	.060	.060	.312	.311	.375	.312	.000	.480	.705	#2	.31
				72						.437	.125				
				94						.562	.250				
	.190-32 (#10-32)	PFC2P	032	50	.060	.060	.344	.343	.406	.312	.000	.490	.705	#2	.34
				72						.437	.125				
				94						.562	.250				
	.250-20 (1/4-20)	PFC2P	0420	60	.060	.060	.413	.412	.468	.375	.000	.620	.905	#3	.38
				82 ^{NS}						.500	.125				
				04 ^{NS}						.625	.250				

All dimensions are in millimeters.

	Thread Size x Pitch	Type	Thread Code	Screw Length Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet + 0.08	C Max.	E ± 0.25	G ± 0.4	P ± 0.64	T ₁ Max.	T ₂ Nom.	Driver Size	Min. Dist. Hole C/L To Edge
METRIC	M3 x 0.5	PFC2P	M3	40	1.53	1.53	6.73	6.71	7.92	6.4	0	9.4	13.72	#1	6.35
				62 ^{NS}						9.5	3.2				
	M4 x 0.7	PFC2P	M4	50	1.53	1.53	7.92	7.9	9.53	7.9	0	12.19	17.91	#2	7.87
				72 ^{NS}						11.1	3.2				
				94 ^{NS}						14.3	6.4				
	M5 x 0.8	PFC2P	M5	50	1.53	1.53	8.74	8.72	10.31	7.9	0	12.45	17.91	#2	8.63
				72						11.1	3.2				
				94 ^{NS}						14.3	6.4				
	M6 x 1	PFC2P	M6	60	1.53	1.53	10.49	10.47	11.89	9.5	0	15.75	22.99	#3	9.65
				82 ^{NS}						12.7	3.2				
				04 ^{NS}						15.9	6.4				

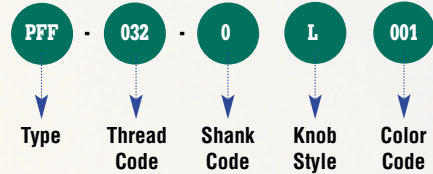
NS Not Stocked, available on special order.

TYPE PFF™ HYBRID™ FLOATING PANEL FASTENER ASSEMBLIES

NEW!

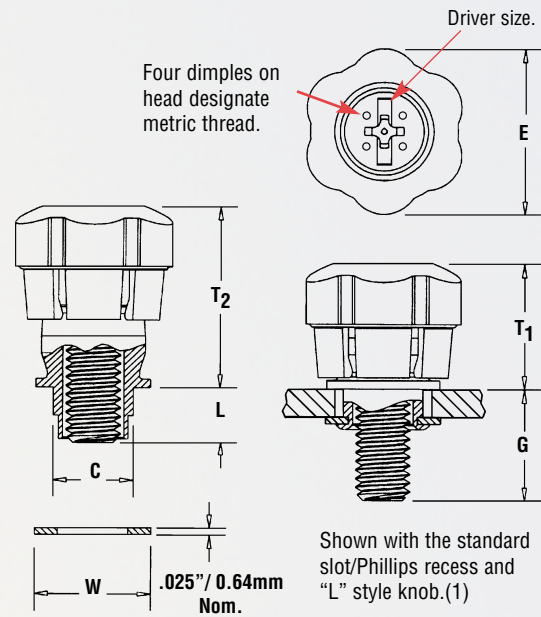
- Molded-thru color knob.
- Compensates for up to .060" / 1.52mm mating hole misalignment.
- Tool or finger operation.
- Optional colors available.
- Installs into any panel material.

Part Number Designation



Type PFF panel fasteners are shipped with mating washers.

For color capabilities see page PF-27.



All dimensions are in inches.

UNIFIED	Thread Size	Type	Thread Code	Shank Code	C Max.	E ±.010	G Nom.	L Nom.	T ₁ Nom.	T ₂ Nom.	Driver Size	Min. Radial Float in Sheet	W Max.	Washer Part Number
	.190-32 (#10-32)	PFF	032	0	.283	.594	.315	.154	.468	.668	#2	.030	.411	PFFW-0
				1			.346	.185	.498	.698				
	.216-24 (#12-24)	PFF	1224	0	.345	.646	.309	.160	.504	.698	#2	.030	.473	PFFW-12
				1			.341	.191	.534	.728				

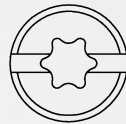
All dimensions are in millimeters.

METRIC	Thread Size x Pitch	Type	Thread Code	Shank Code	C Max.	E ±0.25	G Nom.	L Nom.	T ₁ Nom.	T ₂ Nom.	Driver Size	Min. Radial Float in Sheet	W Max.	Washer Part Number
	M5 x 0.8	PFF	M5	0	7.19	15.09	8	3.91	11.89	16.97	#2	0.76	10.44	PFFW-0
				1			8.79	4.7	12.65	17.73				
	M6 x 1	PFF	M6	0	8.77	16.41	7.85	4.06	12.8	17.73	#2	0.76	12.02	PFFW-M6
				1			8.66	4.85	13.56	18.49				

(1) For special recess types consult our Engineering Department.

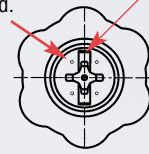
TYPE PFP™ HYBRID™ PANEL FASTENER ASSEMBLIES

- Metal slot/Phillips recess.
- Standard black ABS knob.
- Steel retainer and screw.
- Optional colors available.
- Molded-thru color.

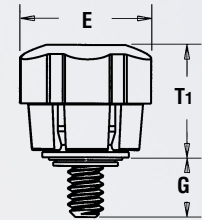
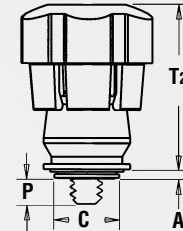


Available with six-lobe recess on special order.

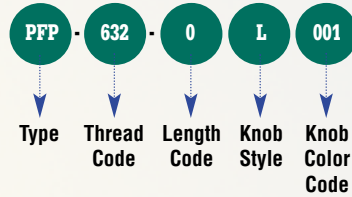
Four dimples on head designate metric thread.



Shown with standard slot/Phillips recess and "L" style knob.⁽¹⁾



Part Number Designation



Patented.

For color capabilities see page PF-27.

All dimensions are in inches.

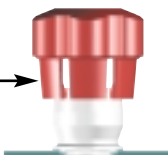
UNIFIED	Thread Size	Type	Thread Code	Screw Length Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet + .003 - .000	C Max.	E ± .010	G ± .025	P ± .025	T ₁ Nom.	T ₂ Nom.	Driver Size	Min. Dist. Hole C/L To Edge	Total Radial Float
	.112-40 (#4-40)	PFP	440	0	.036	.036	.203	.202	.542	.230	.000	.436	.636	#1	.213	.015
				1						.290	.060					
				2						.350	.120					
	.138-32 (#6-32)	PFP	632	0	.036	.036	.219	.218	.542	.230	.000	.436	.636	#2	.230	.020
				1						.290	.060					
				2						.350	.120					
	.164-32 (#8-32)	PFP	832	0	.036	.036	.250	.249	.594	.230	.000	.436	.636	#2	.263	.020
				1						.290	.060					
				2						.350	.120					
	.190-32 (#10-32)	PFP	032	0	.036	.036	.281	.280	.594	.230	.000	.436	.636	#2	.294	.020
				1						.290	.060					
				2						.350	.120					

All dimensions are in millimeters.

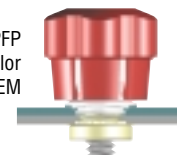
METRIC	Thread Size x Pitch	Type	Thread Code	Screw Length Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet +0.08	C Max.	E ± 0.25	G ± 0.64	P ± 0.64	T ₁ Nom.	T ₂ Nom.	Driver Size	Min. Dist. Hole C/L To Edge	Total Radial Float
	M3 x 0.5	PFP	M3	0	0.92	0.92	5.16	5.14	13.77	5.84	0	11.07	16.15	#1	5.41	.38
				1						7.37	1.52					
				2						8.89	3.05					
	M3.5 x 0.6	PFP	M3.5	0	0.92	0.92	5.56	5.54	13.77	5.84	0	11.07	16.15	#2	5.84	.51
				1						7.37	1.52					
				2						8.89	3.05					
	M4 x 0.7	PFP	M4	0	0.92	0.92	6.35	6.33	15.09	5.84	0	11.07	16.15	#2	6.68	.51
				1						7.37	1.52					
				2						8.89	3.05					
	M5 x 0.8	PFP	M5	0	0.92	0.92	7.14	7.12	15.09	5.84	0	11.07	16.15	#2	7.47	0.51
				1						7.37	1.52					
				2						8.89	3.05					

(1) For special drive types consult our Engineering department.

Spring action of plastic "fingers" holds knob in retracted position. Photo represents -0 length screw.



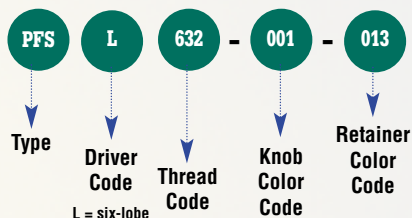
Shown here is the Type PFP panel fastener (custom color 002) threaded into a PEM Type S nut.



TYPE PFS™ HYBRID™ SNAP-IN PANEL FASTENERS

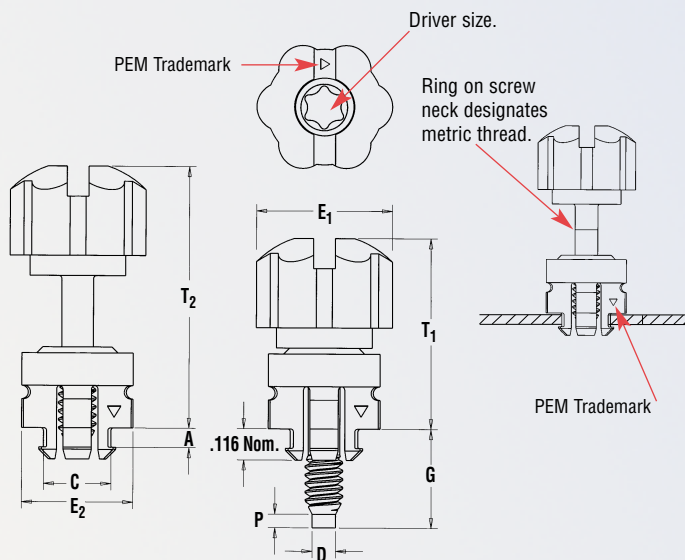
- Installs easily with finger pressure into any thin material.
- Internal, six-lobe metal recess plus slot in plastic knob.
- Standard recess (L) : six-lobe in screw, slot in knob.
- Dog point feature on screw.
- Color coding/matching capabilities for retainer and knob.
- Uses include computer chassis mounting and telecommunications devices.

Part Number Designation



Patent pending.

For color capabilities see page PF-27.



All dimensions are in inches.

UNIFIED	Thread Size	Type	Driver Code	Thread Code	A ±.007	Sheet Thickness Max.	Hole Size In Sheet ±.003	C ±.008	D ±.005	E ₁ Nom.	E ₂ ±.010	G ±.030	P ±.010	T ₁ ±.050	T ₂ Nom.	Driver Size
	.112-40 (#4-40)	PFS	L	440	.072	.065	.219	.217	.069	.500	.410	.341	.040	.706	.991	#10
	.138-32 (#6-32)	PFS	L	632	.072	.065	.250	.248	.086	.500	.410	.341	.050	.706	.991	#15
	.164-32 (#8-32)	PFS	L	832	.072	.065	.312	.310	.111	.580	.500	.341	.055	.760	1.045	#20

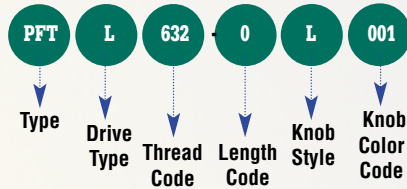
All dimensions are in millimeters.

METRIC	Thread Size x Pitch	Type	Driver Code	Thread Code	A ±0.18	Sheet Thickness Max.	Hole Size In Sheet ±0.08	C ±0.2	D ±0.13	E ₁ Nom.	E ₂ ±0.25	G ±0.76	P ±0.25	T ₁ ±1.27	T ₂ Nom.	Driver Size
	M3 x 0.5	PFS	L	M3	1.83	1.65	5.56	5.51	2.06	12.7	10.41	8.66	1.02	17.93	25.17	#10
	M3.5 x 0.6	PFS	L	M35	1.83	1.65	6.35	6.3	2.4	12.7	10.41	8.66	1.27	17.93	25.17	#15
	M4 x 0.7	PFS	L	M4	1.83	1.65	7.92	7.87	2.79	14.73	12.7	8.66	1.4	19.30	26.54	#20

TYPE PFT™ HYBRID™ PANEL FASTENER THUMBSCREWS

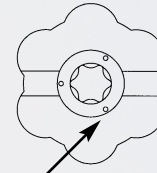
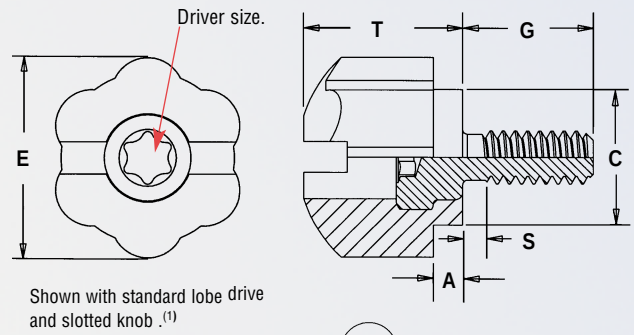
- Internal, six-lobe metal recess plus slot in plastic knob.
- Standard black ABS knob.
- Hand or tool actuated.
- Color matching capabilities.
- Molded-thru color.

Part Number Designation



Patent Pending.

For color capabilities see page PF-27.



Three dimples on head designate metric thread.

All dimensions are in inches.

UNIFIED	Thread Size	Type	Drive Type	Thread Code	Screw Length Code	A ± .010	C ± .015	E ± .015	G ± .025	S Max.	T ± .015	Driver Size	Max. Clearance Hole
	.112-40 (#4-40)	PFT	L	440	0	.075	.350	.500	.335	.052	.407	#10	.143
					1								
	.138-32 (#6-32)	PFT	L	632	0	.075	.350	.500	.335	.065	.407	#15	.156
					1								
	.164-32 (#8-32)	PFT	L	832	0	.075	.400	.580	.335	.065	.461	#20	.191
					1								
	.190-32 (#10-32)	PFT	L	032	0	.075	.400	.580	.335	.065	.461	#20	.204
					1								

All dimensions are in millimeters.

METRIC	Thread Size x Pitch	Type	Drive Type	Thread Code	Screw Length Code	A ± 0.25	C ± 0.40	E ± 0.40	G ± 0.64	S Max.	T ± 0.40	Driver Size	Max. Clearance Hole
	M3 x 0.5	PFT	L	M3	0	1.91	8.89	12.7	8.51	1.05	10.34	#10	3.73
					1								
	M3.5 x 0.6	PFT	L	M3.5	0	1.91	8.89	12.7	8.51	1.25	10.34	#15	3.96
					1								
	M4 x 0.7	PFT	L	M4	0	1.91	10.16	14.73	8.51	1.45	11.71	#20	4.78
					1								
	M5 x 0.8	PFT	L	M5	0	1.91	10.16	14.73	8.51	1.65	11.71	#20	5.28
					1								

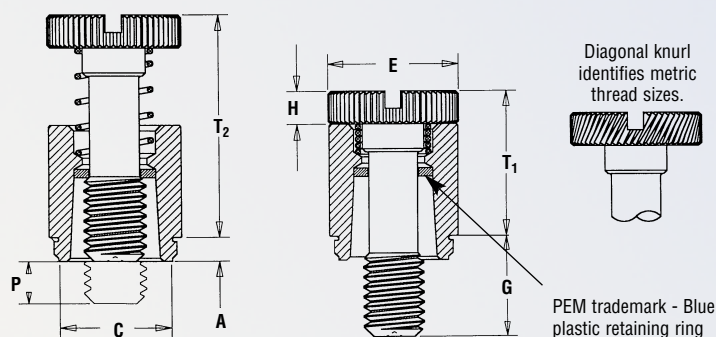
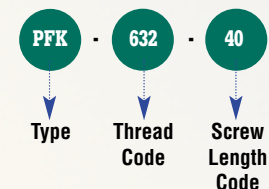
(1) For special knob or drive types consult our Engineering department.

TYPE PFK PANEL FASTENER ASSEMBLIES

- For use in PC boards and sheets of HRB 70 or less.



Part Number Designation



All dimensions are in inches.

UNIFIED	Thread Size	Type	Thread Code	Screw Length Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet +.003 -.000	C ± .003	E ± .010	G ± .016	H ± .005	P ± .025	T ₁ Max.	T ₂ Nom.	Min. Dist. Hole C/L To Edge
	.112-40 (#4-40)	PFK	440	40	.060	.060	.265	.283	.312	.250	.072	.000	.36	.54	.20
				62 ^{NS}						.375		.125			
				84 ^{NS}						.500		.250			
	.138-32 (#6-32)	PFK	632	40	.060	.060	.281	.299	.344	.250	.072	.000	.36	.54	.26
				62						.375		.125			
				84 ^{NS}						.500		.250			

All dimensions are in millimeters.

METRIC	Thread Size x Pitch	Type	Thread Code	Screw Length Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet +0.08	C ± 0.08	E ± .25	G ± 0.4	H ± 0.13	P ± 0.64	T ₁ Max.	T ₂ Nom.	Min. Dist. Hole C/L To Edge
	M3 x 0.5	PFK	M3	40	1.53	1.53	6.73	7.19	7.92	6.4	1.83	0	9.14	13.72	5.08
				62 ^{NS}						9.5		3.2			
				84 ^{NS}						12.7		6.4			

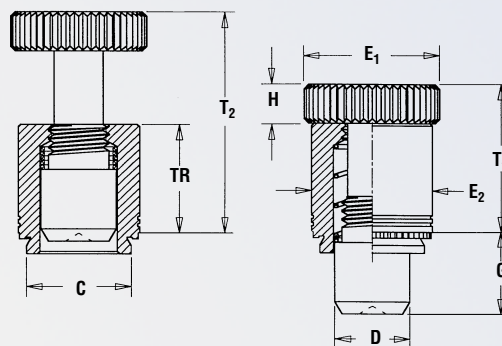
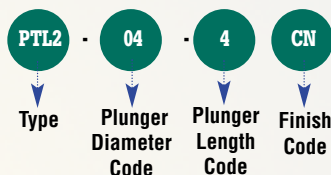
NS Not Stocked, available on special order.

TYPE PTL2 SPRING-LOADED PLUNGER ASSEMBLIES

- Reverse side of sheet is flush when plunger is retracted.
- Quick lockout feature holds plunger in retracted position.
- For use in sheets of HRB 80 or less.
- Available as type PSL2 without lockout feature on special order.



Part Number Designation



All dimensions are in inches.

UNIFIED	Type	Plunger Diameter Code	Plunger Length Code	Min. Sheet Thickness	Hole Size In Sheet +.003 -.000	C Max.	D + .000 - .005	E ₁ ± .010	E ₂ ± .010	G ± .010	H ± .010	T ₁ ± .010	T ₂ Nom.	TR ± .005	Min. Dist. Hole C/L To Edge
	PTL2	04	4	.060	.328	.327	.250	.50	.406	.310	.17	.595	.895	.430	.34
	PSL2 ^{NS}	04	4	.060	.328	.327	.250	.50	.406	.310	.17	.510	.780	.350	.34

All dimensions are in millimeters.

METRIC	Type	Plunger Diameter Code	Plunger Length Code	Min. Sheet Thickness	Hole Size In Sheet + 0.08	C Max.	D - 0.13	E ₁ ± 0.25	E ₂ ± 0.25	G ± 0.25	H ± 0.25	T ₁ ± 0.25	T ₂ Nom.	TR ± 0.13	Min. Dist. Hole C/L To Edge
	PTL2	04	4	1.53	8.33	8.31	6.35	12.7	10.3	7.87	4.32	15.11	22.73	10.92	8.64
	PSL2 ^{NS}	04	4	1.53	8.33	8.31	6.35	12.7	10.3	7.87	4.32	12.95	19.81	8.89	8.64

NS Not Stocked, available on special order.

MATERIAL & FINISH SPECIFICATIONS

	Threads		Fastener Materials							Standard Finishes				Optional Finish		For Use In Sheet Hardness:			
Type	Internal, ANSI B1.1, 2B ANSI/ASME B1.13M, 6H	External, ANSI B1.1, 2A ANSI/ASME B1.13M, 6g (1)	300 Series Stainless Steel	Carbon Steel	Heat-Treated Carbon Steel	Aluminum	Acetal (4)	400 Series Stainless Steel	ABS (3)	Passivated and/or Tested Per ASTM A380	Bright Nickel Over Copper Flash per ASTM B689	Zinc Per ASTM B 633-85 SC1 (5µm), Type III, Colorless	Natural Finish	Black Anodize	Black Nitride	80 or Less on the Rockwell “B” Scale	70 or Less on the Rockwell “B” Scale	60 or Less on the Rockwell “B” Scale	PC Board
PF11																			
PF12																			
Knob																			
Retainer																			
Screw																			
Spring																			
PF13																			
PF14																			
Knob																			
Retainer																			
Screw																			
Spring																			
PF2																			
Retainer																			
Screw																			
Spring																			
PFS2																			
Retainer																			
Screw																			
Spring																			
PFHV																			
Retainer																			
Screw																			
PF30																			
PF31																			
PF32																			
Retainer																			
Screw																			
Spring																			
PF50																			
PF60																			
Cap																			
Retainer																			
Screw																			
Spring																			
PR10																			
PS10																			
N10																			
F10																			
PFC2P																			
Retainer																			
Screw																			
Spring																			
PFF																			
Knob																			
Retainer																			
Screw																			
Washer																			
PFP																			
Knob																			
Retainer																			
Screw																			
PFS																			
Knob																			
Retainer																			
Screw																			
PFT																			
Knob																			
Screw																			
PFK																			
Retainer																			
Screw																			
Spring																			
PTL2																			
PSL2																			
Retainer																			
Plunger																			
Part Number Codes for Finishes										None	CN	ZI	None	BL	BN				

- As with all external plated threads, Class 2A/6g, the maximum major and pitch, after plating, may equal basic sizes and be gauged to Class 3A/6h, per ANSI B1.1, Section 8, Table 3A and ANSI B1.13M, Section 8, Paragraph 8.2.
- The blue plastic retaining rings are a PEM trademark. The temperature limit is 200° F / 93° C.
- Temperature limit is 200° F / 93° C.
- Temperature range 32°F - 150°F / 0°C - 65°C.

INSTALLATION⁽¹⁾

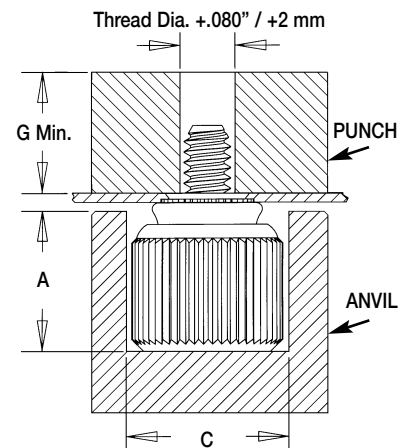
Type PF11 and PF12

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

Anvil Dimensions

UNIFIED	Thread Code	Anvil Dimensions (in.)		Anvil Part Number	Punch Part Number
		A ±.002	C ±.002		
	440	.260	.437	8003521	8003518
	632	.390	.468	8003522	8003519
	832	.390	.531	8003523	8003520
	032	.390	.531	8003523	8004350
	0420	.480	.598	8004351	8004352

METRIC	Thread Code	Anvil Dimensions (mm)		Anvil Part Number	Punch Part Number
		A ±0.05	C ±0.05		
	M3	6.6	11.1	8003521	8003518
	M3.5	9.91	11.89	8003522	8003519
	M4	9.91	13.49	8003523	8003520
	M5	9.91	13.49	8003523	8004350
	M6	12.19	15.19	8004351	8004352



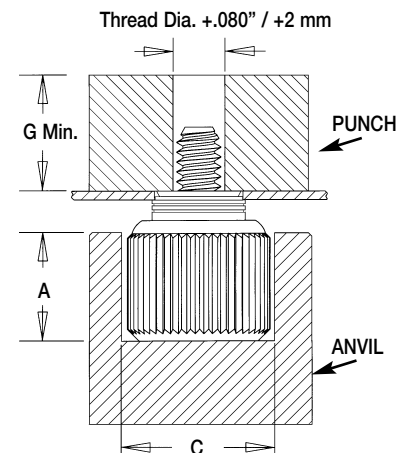
Type PF13 and PF14

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

Anvil Dimensions

UNIFIED	Thread Code	Anvil Dimensions (in.)		Anvil Part Number	Punch Part Number
		A ±.002	C ±.002		
	440	.260	.437	8003521	8003518
	632	.390	.468	8003522	8003519
	832	.390	.531	8003523	8003520
	032	.390	.531	8003523	8004350
	0420	.480	.598	8004351	8004352

METRIC	Thread Code	Anvil Dimensions (mm)		Anvil Part Number	Punch Part Number
		A ±0.05	C ±0.05		
	M3	6.6	11.1	8003521	8003518
	M3.5	9.91	11.89	8003522	8003519
	M4	9.91	13.49	8003523	8003520
	M5	9.91	13.49	8003523	8004350
	M6	12.19	15.19	8004351	8004352



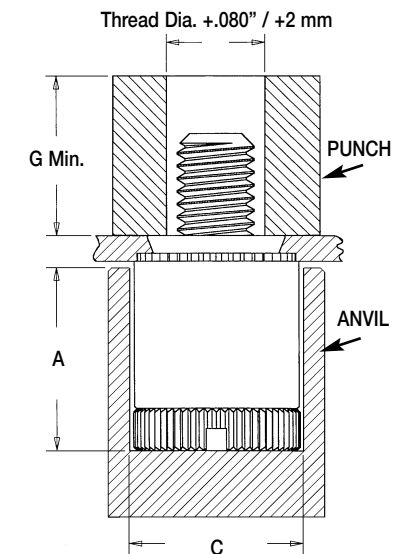
Type PFC2/PFS2/PFC2P

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

Anvil Dimensions

UNIFIED	Thread Code	Anvil Dimensions (in.)		Anvil Part Number	Punch Part Number
		A ±.002	C ±.002		
	440	.345	.323	975200026	975200060
	632	.345	.358	975200027	975200061
	832	.435	.386	975200028	975200062
	032	.435	.421	975200029	975200063
	0420	.565	.484	975200030	975200064

METRIC	Thread Code	Anvil Dimensions (mm)		Anvil Part Number	Punch Part Number
		A ±0.05	C ±0.05		
	M3	8.76	8.2	975200026	975200060
	M4	11.05	9.8	975200028	975200062
	M5	11.05	10.69	975200029	975200063
	M6	14.35	12.29	975200030	975200064



(1) Punches and anvils should be hardened.

INSTALLATION (Continued)

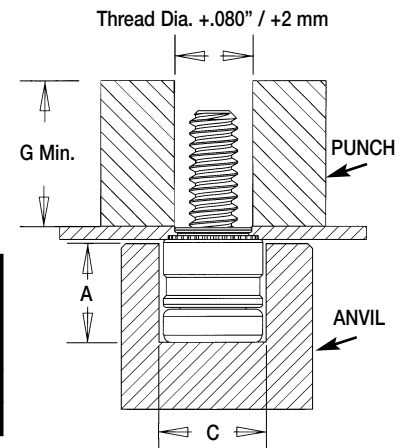
Type PFHV

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

Anvil Dimensions

UNIFIED	Thread Code	Anvil Dimensions (in.)		Anvil Part Number	Punch Part Number
		A ±.002	C ±.002		
	440	.220	.285	8004688	97020006400
	632	.250	.301	8004689	970200007400

METRIC	Thread Code	Anvil Dimensions (mm)		Anvil Part Number	Punch Part Number
		A ±0.05	C ±0.05		
	M3	5.59	7.24	8004688	970200006400
	M3.5	6.35	7.65	8004689	970200007400
	M4	7.24	8.43	8005439	9702000060



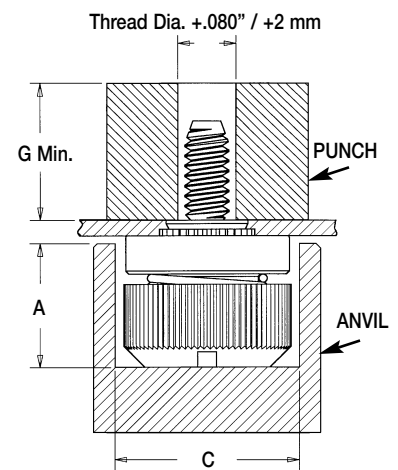
Type PF30

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

Anvil Dimensions

UNIFIED	Thread Code	Anvil Dimensions (in.)		Anvil Part Number	Punch Part Number
		A ±.002	C ±.002		
	440	.295	.421	975201060	975200060
	632	.295	.453	975201061	975200061
	832	.310	.484	975201062	975200062
	032	.310	.546	975201063	975200063
	0420	.365	.640	97520164	975200064

METRIC	Thread Code	Anvil Dimensions (mm)		Anvil Part Number	Punch Part Number
		A ±0.05	C ±0.05		
	M3	7.49	10.69	975201060	975200060
	M4	7.87	12.29	975201062	975200062
	M5	7.87	13.87	975201063	975200063
	M6	9.27	16.26	975201064	975200064



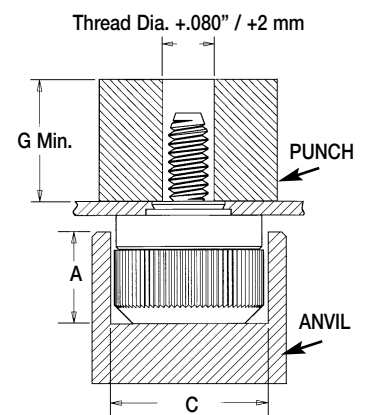
Type PF50 and PF60

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

Anvil Dimensions

UNIFIED	Thread Code	Anvil Dimensions (in.)		Anvil Part Number	Punch Part Number
		A ±.002	C ±.002		
	440	.295	.421	975201060	975200060
	632	.295	.453	975201061	975200061
	832	.310	.484	975201062	975200062
	032	.310	.546	975201063	975200063
	0420	.365	.640	975201064	975200064

METRIC	Thread Code	Anvil Dimensions (mm)		Anvil Part Number	Punch Part Number
		A ±0.05	C ±0.05		
	M3	7.49	10.69	975201060	975200060
	M3.5	7.49	11.51	975201061	975200061
	M4	7.87	12.29	975201062	975200062
	M5	7.87	13.87	975201063	975200063
	M6	9.27	16.26	975201064	975200064



INSTALLATION (Continued)

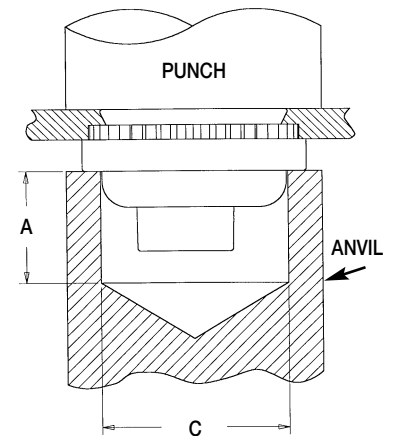
Type F10

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

Anvil Dimensions

UNIFIED	Thread Code	Anvil Dimensions (in.)		Anvil Part Number	Punch Part Number
		A ±.002	C ±.002		
	440	.310	.302	975200006	975200048
	632	.310	.339	975200007	975200048
	832	.310	.375	975200008	975200048
	032	.310	.413	975200009	975200048

METRIC	Thread Code	Anvil Dimensions (mm)		Anvil Part Number	Punch Part Number
		A ±0.05	C ±0.05		
	M3	7.87	7.67	975200006	975200048
	M4	7.87	9.53	975200008	975200048
	M5	7.87	10.49	975200009	975200048



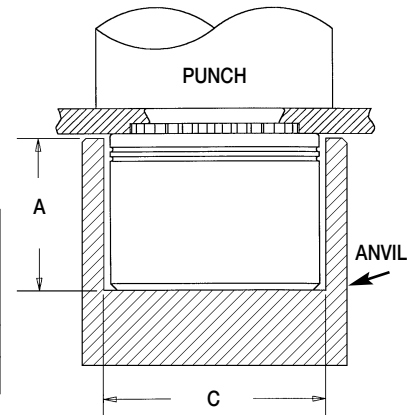
Type N10

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

Anvil Dimensions

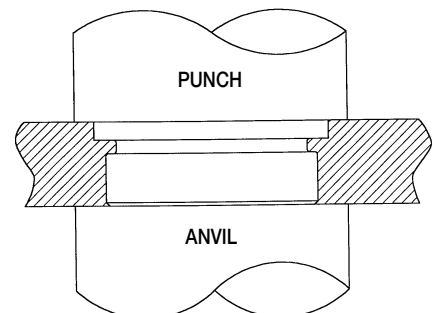
UNIFIED	Thread Code	Anvil Dimensions (in.)		Anvil Part Number	Punch Part Number
		A ±.002	C ±.002		
	440	.225	.298	8006124	975200048
	632	.225	.329	8006735	975200048
	832	.225	.361	8006736	975200048
	032	.225	.392	8006174	975200048

METRIC	Thread Code	Anvil Dimensions (mm)		Anvil Part Number	Punch Part Number
		A ±0.05	C ±0.05		
	M3	5.72	7.57	8006124	975200048
	M4	5.72	9.17	8006736	975200048
	M5	5.72	9.6	8006174	975200048



Type PR10

1. Punch or drill properly sized mounting hole in sheet. Do not perform any secondary operations such as deburring.
2. Place fastener into the mounting hole, preferably the punched side.
3. With punch and anvil surfaces parallel, apply squeezing force until the retainer is flush in the sheet.



INSTALLATION (Continued)

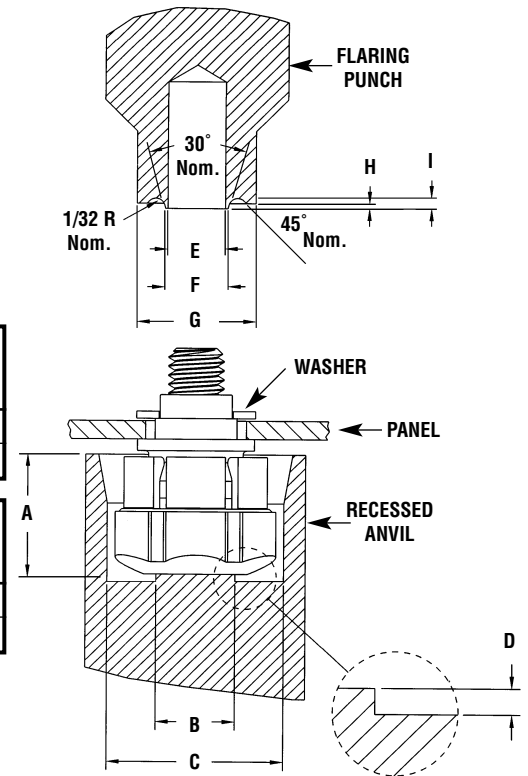
Type PFF

1. Punch or drill properly sized mounting hole in sheet. Do not perform any secondary operations such as deburring.
2. Place fastener into recessed anvil and workpiece over shank of fastener, and then place the washer over the shank of fastener.
3. With punch and anvil surfaces parallel, apply swaging force with flaring punch.

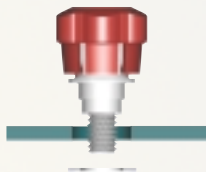
Anvil Dimensions

UNIFIED	Thread Code	Anvil Dimensions (in.)				Punch Dimensions (in.)					Anvil Part Number	Punch Part Number
		A ±.002	B ±.002	C ±.001	D ±.002	E	F ±.001	G ±.003	H ±.002	I ±.004		
	032	.449	.268	.607	.047	.198-.201	.205	.404	.016	.032	8006825	8006702
	1224	.485	.320	.659	.047	.217-.220	.236	.468	.018	.036	8006701	8006703

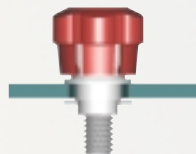
METRIC	Thread Code	Anvil Dimensions (mm)				Punch Dimensions (mm)					Anvil Part Number	Punch Part Number
		A ±0.05	B ±0.05	C ±0.03	D ±0.05	E	F ±0.03	G ±0.08	H ±0.05	I ±0.1		
	M5	11.4	6.81	15.42	1.19	5.03-5.11	5.21	10.26	0.41	0.81	8006825	8006702
	M6	12.32	8.13	16.74	1.19	5.99-6.07	6.4	11.89	0.51	1.02	8006701	8006704



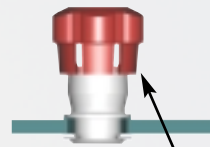
Type PFF panel fastener in custom color 002.



Type PFF before flaring.



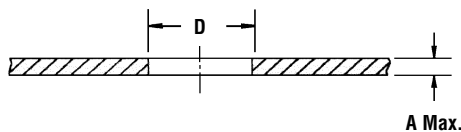
Type PFF after flaring.



Spring action plastic "fingers" holds knob in retracted position.

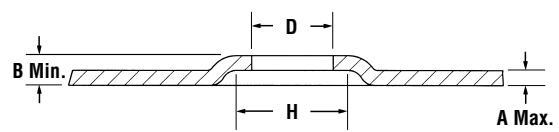
PANEL CONFIGURATION 1

For applications where a space between mating panels is acceptable.



PANEL CONFIGURATION 2

For applications where a space between mating panels is not acceptable.



UNIFIED	Type	Thread Code	Shank Code	A Sheet Thickness	B Min.	D Hole Size in Sheet (1) +.003 -.000	H Min. (2)
	PFF	032	0	.031 - .063	.125	.344	.472
			1	.064 - .094	.160		
	PFF	1224	0	.031 - .063	.125	.406	.534
			1	.064 - .094	.160		

METRIC	Type	Thread Code	Shank Code	A Sheet Thickness	B Min.	D Hole Size in Sheet (1) +.08	H Min. (2)
	PFF	M5	0	0.79 - 1.6	3.18	8.74	11.99
			1	1.61 - 2.39	4.06		
	PFF	M6	0	0.79 - 1.6	3.18	10.32	13.56
			1	1.61 - 2.39	4.06		

(1) Hole size may be as small as .001" / 0.3mm larger than the C dimension if radial float is not required.

(2) H dimension may be as small as .001" / 0.3mm larger than the W dimension if radial float is not required.

INSTALLATION (Continued)

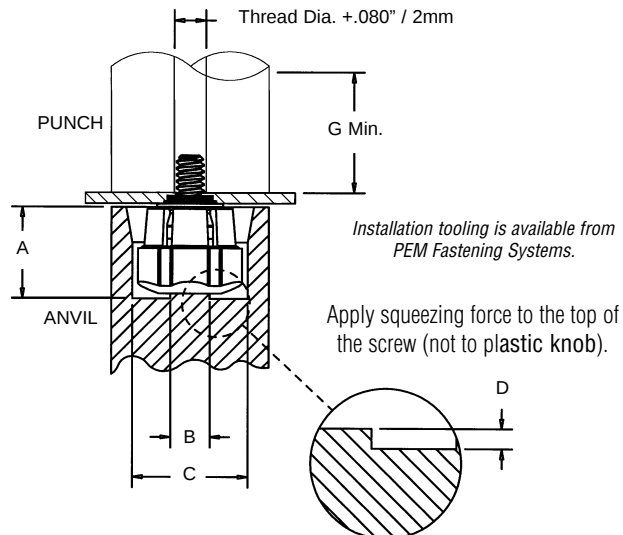
Type PFP

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

Anvil Dimensions

UNIFIED	Thread Code	Anvil Dimensions (in.)				Anvil Part Number	Punch Part Number
		A ±.002	B ±.002	C ±.001	D ±.002		
	440	.432	.221	.552	.047	8005413	8005440
	632	.432	.221	.552	.047	8005413	8005441
	832	.432	.277	.604	.047	8005414	8005442
	032	.432	.277	.604	.047	8005414	8005963

METRIC	Thread Code	Anvil Dimensions (mm)				Anvil Part Number	Punch Part Number
		A ±0.05	B ±0.05	C ±0.03	D ±0.05		
	M3	10.97	5.61	14.02	1.19	8005413	8005440
	M3.5	10.97	5.61	14.02	1.19	8005413	8005441
	M4	10.97	7.04	15.34	1.19	8005414	8005442
	M5	10.97	7.04	15.34	1.19	8005414	8005993

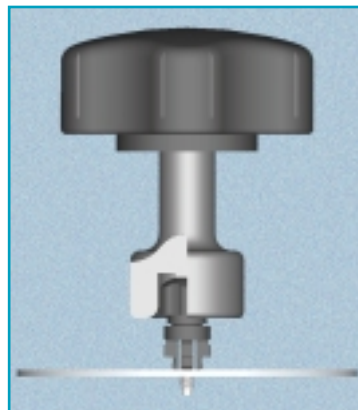
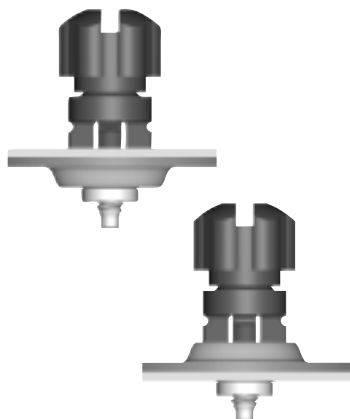


Type PFS



To install Type PFS snap-in panel fasteners simply place the fastener into mounting hole on punched side of the sheet and press with finger pressure.

For flush application, use either "bump out" configuration shown below. Contact our Engineering department for more information.



A hand installation tool is available to snap in Type PFS panel fasteners.

Part Number	Hand Tool Part Number
PFSL440	8006347
PFSL632	8006347
PFSL832	8006348
PFSLM3	8006347
PFSLM35	8006347
PFSLM4	8006348

INSTALLATION (Continued)

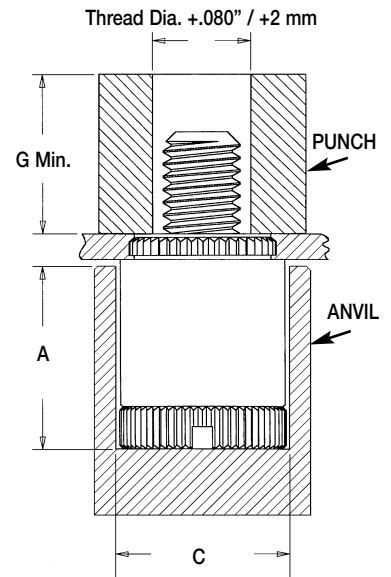
Type PFK

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

Anvil Dimensions

UNIFIED	Thread Code	Anvil Dimensions (in.)		Anvil Part Number	Punch Part Number
		A ±.002	C ±.002		
	440	.320	.323	975200026	975200060
	632	.320	.358	975200027	975200061

METRIC	Thread Code	Anvil Dimensions (mm)		Anvil Part Number	Punch Part Number
		A ±0.05	C ±0.05		
	M3	8.13	8.2	975200026	975200060



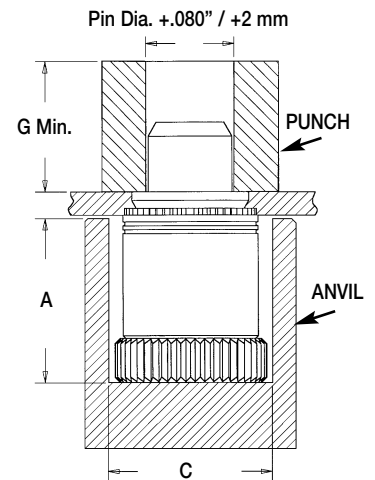
Type PTL2

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

Anvil Dimensions

UNIFIED	Plunger Diameter Code	Anvil Dimensions (in.)		Anvil Part Number	Punch Part Number
		A ±.002	C ±.002		
	04	.585	.520	975201245	970200013300

METRIC	Plunger Diameter Code	Anvil Dimensions (mm)		Anvil Part Number	Punch Part Number
		A ±0.05	C ±0.05		
	04	14.86	13.21	975201245	970200013300



PERFORMANCE DATA⁽¹⁾

UNIFIED	Type	Thread Code	Test Sheet Material			
			Aluminum		Cold-Rolled Steel	
			Installation (lbs.)	Pushout (lbs.)	Installation (lbs.)	Pushout (lbs.)
PF11 PF12	440	632	1500	80	2500	145
		832/032	2000	95	3500	150
	832/032	0420	3000	100	4500	160
		0420	3500	105	5000	195
PF13 PF14	440	632	1500	80	2500	145
		832/032	2000	95	3500	150
	832/032	0420	3000	100	4500	160
		0420	3500	105	5000	195
PFS2 PFC2 PFC2P	440	632	2400	240	3000	300
		832	2700	275	3500	350
	832	032	2900	300	3800	400
		0420	3000	400	4000	500
PFHV	440	632	1700	108	2200	118
		632	1850	117	2400	128
	440	632	2200	64-185(3)	(4)	(4)
		632	2400	66-190(3)	(4)	(4)
PF30 PF31 PF32	832	032	2800	68-200(3)	(4)	(4)
		032	3500	72-260(3)	(4)	(4)
	0420	0420	4300	(2)	(4)	(4)
		0420	4300	(2)	(4)	(4)
PF50 PF60 (5)	440	632	2200	64	2200	64
		832	2400	66	2400	66
	832	032	2800	68	2800	68
		032	3500	72	3500	72
PF52 PF62	0420	0420	4300	300	4600	340
		0420	4300	300	4600	340
	F10	632	1500	215	3000	300
		832	2000	240	3000	300
F10	832	032	2000	250	3000	300
		032	2000	300	3500	400
	440	632	2500	95	3600	130
		832	2500	105	4000	145
N10	832	032	3000	110	5000	180
		032	3500	120	6300	200
	440	632	2100	(2)	3000	(2)
		832	2100	(2)	3000	(2)
PR10	832	032	2100	(2)	3600	(2)
		032	2400	(2)	4200	(2)
	PSL2 PTL2	(2)	3000	400	4000	500
		(2)	3000	400	4000	500

METRIC	Type	Thread Code	Test Sheet Material			
			Aluminum		Cold-Rolled Steel	
			Installation (kN)	Pushout (N)	Installation (kN)	Pushout (N)
PF11 PF12	M3	M3	6.7	355	11.1	645
		M4/M5	13.3	445	20	710
	M6	M6	15.6	465	22.2	865
		M6	15.6	465	22.2	865
PF13 PF14	M3	M3	6.7	355	11.1	645
		M4/M5	13.3	445	20	710
	M6	M6	15.6	465	22.2	865
		M6	15.6	465	22.2	865
PFS2 PFC2 PFC2P	M3	M3	10.7	1068	13.3	1334
		M4	12.9	1334	16.9	1779
	M5	M5	13.3	1779	17.8	2224
		M6	15.6	1779	22.2	2669
PFHV	M3	M3	8.1	516	10.5	564
		M3.5	8.8	561	11.4	614
	M4	M4	9.4	599	12.1	656
		M4	9.4	599	12.1	656
PF30 PF31 PF32	M3	M3	9.8	285-823(3)	(4)	(4)
		M4	12.5	302-890(3)	(4)	(4)
	M5	M5	15.6	320-1156(3)	(4)	(4)
		M6	19.1	1423	(4)	(4)
PF50 PF60 (5)	M3	M3	9.8	284	9.8	284
		M3.5	10.7	294	10.7	294
	M4	M4	12.5	302	12.5	302
		M5	15.6	320	15.6	320
PF52 PF62	M6	M6	19.1	1334	20.5	1512
		M6	19.1	1334	20.5	1512
	F10	M3	6.7	956	13.3	1334
		M4	8.9	1112	13.3	1334
F10	M5	M5	8.9	1335	15.6	1779
		M5	8.9	1335	15.6	1779
	M3	M3	11.1	423	16	578
		M4	13.3	489	22.2	800
N10	M5	M5	15.6	534	28	890
		M5	15.6	534	28	890
	M3	M3	9.3	(2)	13.3	(2)
		M4	9.3	(2)	16	(2)
PR10	M5	M5	10.7	(2)	18.7	(2)
		M5	10.7	(2)	18.7	(2)
	(2)	(2)	13.3	1779	17.8	2224
		(2)	13.3	1779	17.8	2224

UNIFIED	Type	Thread Code	Max. Rec. Tightening Torque (in. lbs.)	Swaging Force (lbs.)	Pushout (lbs.)
PFF		032	21	600	100
		1224	21	800	120

METRIC	Type	Thread Code	Max. Rec. Tightening Torque (N•m)	Swaging Force (kN)	Pushout (N)
PFF		M5	2.37	2.67	445
		M6	2.37	3.56	534

(1) The installation and pushout values reported are averages when all installation specifications and procedures are followed. Variations in mounting hole size, sheet material and installation force (or swaging force for Type PFF) will affect this data. Performance testing of this product in your application is recommended. We will be happy to provide samples for this purpose.

(2) Not applicable.

(3) Pushout depends on shank length.

(4) Can be used in cold-rolled steel provided sheet hardness does not exceed Rockwell B 60.

(5) To obtain these values the aluminum test sheet thickness should be .030" to .040" / 0.76mm to 1.02mm, HRB 15 to 35 and the cold-rolled steel sheet should be .030" to .040" / 0.76mm to 1.02mm, HRB 45 to 65.

PERFORMANCE DATA⁽¹⁾ (Continued)

UNIFIED	Type	Thread Code	Max. Rec. Tightening Torque (in. lbs.)	Cold-rolled Steel		5052-H34 Aluminum	
				Installation (lbs.)	Pushout (lbs.)	Installation (lbs.)	Pushout (lbs.)
	PFP						
		440	10	2100	80	1300	73
		632	15	2200	114	1500	75
		832	21	2400	126	1600	80
		032	21	3000	151	2000	88

METRIC	Type	Thread Code	Max. Rec. Tightening Torque (N•m)	Cold-rolled Steel		5052-H34 Aluminum	
				Installation (kN)	Pushout (N)	Installation (kN)	Pushout (N)
	PFP						
		M3	1.13	9.3	355	5.8	325
		M3.5	1.7	9.8	507	6.7	335
		M4	2.37	10.7	560	7.1	355
		M5	2.37	13.3	672	8.9	400

UNIFIED	Type	Thread Code	Pushout (lbs.)	Max. Screw Tightening Torque (in. lbs.)
	PFS			
		440	5	4
		632	5	8
		832	5	14

METRIC	Type	Thread Code	Pushout (N)	Max. Screw Tightening Torque (N•m)
	PFS			
		M3	22	0.8
		M35	22	1
		M4	22	1.4

UNIFIED	Type	Thread Code	Test Sheet Material	
			FR-4 Fiberglass	
			Installation (lbs.)	Pushout (lbs.)
	PFK	440	250	55
		632	400	60

METRIC	Type	Thread Code	Test Sheet Material	
			FR-4 Fiberglass	
			Installation (kN)	Pushout (N)
	PFK	M3	1.1	245

(1) The installation and push out values reported are averages when all installations and procedures are followed. Variations in mounting hole size, sheet material and installation force will affect this data. Performance data testing of this product in your application is recommended. We will be happy to provide samples for this purpose. For Type PFS, tests were performed at room temperature and results are temperature dependent.

COLOR CAPABILITIES

For Type PFS

To build a custom color part, add a knob color code and a color retainer code from the chart to the right to the standard part number. Black is standard.

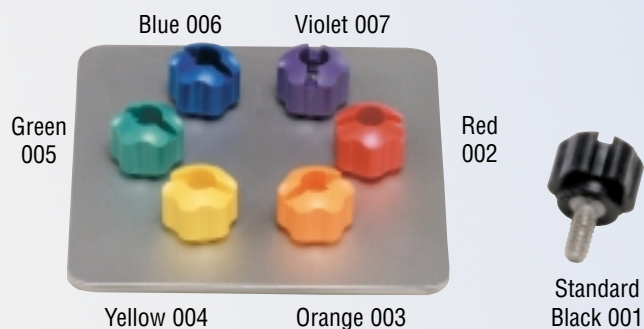
(For example, PFSL632-002-016 is a snap-in panel fastener with a #6-32 thread, a red knob, and a yellow retainer.)

For Types PFT, PFP, and PFF

Choose a knob color code and add it to the end of the standard part number.

The colors shown (except for black) are non-stocked standards and available on special order. Since actual color knob and retainer may vary slightly from those represented, we recommend that you request samples for color verification. If you require a custom color or you need a "color matched" knob or retainer, please contact us.

COLOR	KNOB CODE	RETAINER CODE
Black	001	013
Red	002	014
Orange	003	015
Yellow	004	016
Green	005	017
Blue	006	018
Violet	007	019





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

For the Name of the Authorized PEM distributor nearest you...



Visit us at our PEMNET® web site

www.pemnet.com or call

1-800-DIAL-PEM (USA Only)

Specifications subject to change without notice.

PEM® FASTENING SYSTEMS *a PennEngineering® company*

World Headquarters:

5190 Old Easton Road
Danboro, PA 18916 USA
E-mail: pem@pemnet.com

Tel: 215-766-8853 • Fax: 215-766-3633



U.K. And Europe:

Kirk Sandall Industrial Estate
Doncaster, South Yorkshire • DN3 1QR, England
E-mail: pem-uk@pemnet.com
Tel: 01302 893100 • Fax: 01302 885341

Asia/Pacific:

Citipoint Industrial Complex
152 Paya Lebar Road #03-06 • Singapore 409020
E-mail: arconix-sing@arconix.com
Tel: 6 745 0660 • Fax: 6 745 2400

Printed in U.S.A.
CAGE-46384