

PennEngineering®

QUICK PRODUCT LOCATOR



INDEX



- **Self-clinching** fasteners are pressed into sheetmetal panels as thin as .016"/0.4mm.
- **Broaching** fasteners are pressed into PC board or other plastic materials as thin as .060"/1.53mm.
- **Surface mounted** fasteners on tape and reel are soldered to a PC board in the same way as other surface mount components.
- **Flare mounted** fasteners can be installed into almost any rigid type of panel.
- **Weld nuts** are designed specially to be welded into place.

(Products are listed alphabetically by type. Refer to matching color square for mounting style)

A4, AC, AS	Bulletin ALA
	Nuts with load-bearing, non-locking threads that permits up to .030"/0.76mm adjustment for mating hole misalignment.
B, BS	Bulletin B
	Nuts used in applications requiring closed thread ends. Blind end limits screw penetration and excludes foreign matter.
BSO, BS04, BSOA, BSOS	Bulletin SO
	Blind threaded standoffs installed with their heads flush with one surface of the mounting sheets.
CFN	Bulletin PL
	Broaching, nylon insert, self-locking nuts for use in thinner sheet, close-to-edge applications.
CFHA, CFHC, CHA, CHC	Bulletin CH
	Concealed-head studs installed into a blind milled hole where surface opposite stud must remain unmarred.
CLA, CLS, CLSS	Bulletin CL
	Nuts that provide load-bearing threads in thin sheets with high pushout and torque-out resistances.
CSOS, CSS	Bulletin CH
	Concealed-head standoffs installed into a blind milled hole where surface opposite standoff must remain unmarred.
DSO, DSOS	Bulletin SO
	Self-clinching threaded standoffs for use in close-to-edge applications.
F	Bulletin F
	PEMSERT® flush fasteners are flush with both sides of the sheet.
FE, FEO, FEOX, FEX	Bulletin FE
	Miniature nuts with strong threads. Available with locking or non-locking threads.
FH, FH4, FHA, FHP, FHS	Bulletin FH
	Flush-head studs with high pushout and torque-out resistances.

FHL, FHLS	Bulletin FH
	Low-displacement head studs can be installed close to the edge of a sheet without causing the edge to bulge.
H, HN, HNL	Bulletin CL
	Nuts with self-locking or non-locking threads that provide high pushout and torque-out resistances.
HF109	Bulletins HFG8 & FH
	Property class 10.9 high tensile strength studs meeting 1040 MPa minimum.
HFE	Bulletin FH
	Studs designed with an enlarged head diameter to provide high-strength in thin sheets.
HFG8	Bulletins HFG8 & FH
	Grade 8 high tensile strength studs meeting 150 ksi minimum.
HFH, HFHB, HFHS	Bulletin FH
	Studs for high-strength applications with high pull through resistance.
KF2, KFS2	Bulletin K
	Broaching nuts, internally threaded, for mounting on P.C. boards.
KFB3	Bulletin K
	Flare-mounted standoffs for mounting on P.C. boards with greater pullout performance.
KFE, KFSE	Bulletin K
	Threaded or unthreaded standoffs mounted on P.C. boards for stacking or spacing.
KFH	Bulletin K
	Threaded studs for use as solderable connectors or as permanently mounted studs on P.C. boards.
KSSB	Bulletins K & SSA
	SNAP-TOP® standoffs featuring a spring action to hold a P.C. board securely without screws or threaded hardware.



LA4, LAC, LAS	Bulletin ALA	 Nuts with load-bearing, self-locking threads that permits up to .030"/0.76mm adjustment for mating hole misalignment.	PF50	Bulletin PF	 Low-profile panel fastener assembly with large knurled cap and Phillips recess for tool or hand operation.
LK, LKA, LKS	Bulletin LK	 Nuts with a unique PEMFLEX® self-locking feature permitting repeated use and effective prevailing locking torque.	PF60	Bulletin PF	 Low-profile panel fastener assembly with large smooth cap and Phillips recess for tool or hand operation.
MPP	Bulletin MPP	 Self-clinching micro pins that can be installed into sheets as thin as 0.5mm.	PFC2, PFS2	Bulletin PF	 Spring-loaded panel fastener assembly for tool or hand operation.
MS04	Bulletin MS04	 Self-clinching micro standoffs that can be installed into sheets as thin as .016" / 0.4mm.	PFC2P	Bulletin PF	 Panel fastener assembly with Phillips recess for tool only operation.
PEM C.A.P.S.™	Bulletin PF	 Colored Access Panel Screws with plastic cap. Key features include Phillips drive and MATHread® anti-cross threading feature.	PFC4	Bulletin PF & SS	 Panel fastener assembly for installation into stainless steel sheets with Phillips recess for tool only operation.
PF10	Bulletin PF	 Flush-mounted panel screw components. N10 (nut), PR10 (retainer) and PS10 (screw).	PFHV	Bulletin PF	 Low-cost panel fastener assembly with universal slot/Phillips recess for tool or hand operation.
PF11, PF11M	Bulletin PF	 Panel fastener assembly with knurled cap and universal slot/Phillips recess. Available with anti cross-thread feature.	PFK	Bulletins K & PF	 Broaching panel fastener assembly for mounting on P.C. boards.
PF11MF	Bulletin PF	 Flare-mounted captive screw assembly with anti cross-thread feature.	PL, PLC	Bulletin PL	 PEMHEX® self-locking nuts with a nylon hexagonal element to provide a reusable prevailing torque thread lock.
PF11MW	Bulletin PF	 Floating captive screw assembly allows for mating hole misalignment.	PSHP	Bulletin K	 Surface mount panel fastener screw that is used with Type SMTPR retainer.
PF12, PF12M	Bulletin PF	 Panel fastener assembly with smooth cap and universal slot/Phillips recess. Available with anti cross-thread feature.	PSL2, PTL2	Bulletin PF	 Spring-loaded plunger assembly. Quick lockout feature on Type PTL2 holds plunger in retracted position.
PF12MF	Bulletin PF	 Flare-mounted captive screw assembly with anti cross-thread feature.	RAA	Bulletin RA	 Self-tapping R'ANGLE® fasteners provide strong right angle attachment points in thin sheets.
PF12MW	Bulletin PF	 Floating captive screw assembly allows for mating hole misalignment.	RAS	Bulletin RA	 Threaded R'ANGLE® fasteners provide strong right angle attachment points in thin sheets.
PF30, PF31, PF32	Bulletin PF	 Low-profile panel fastener assembly with large knurled head for tool or hand operation.	S, SS	Bulletin CL	 Nuts that provide load-bearing threads in thin sheets with high pushout and torque-out resistances.



SCB	Bulletin PF
	The spinning clinch bolt with axial float installs captive in panel and still spins freely.
SCBJ	Bulletin PF
	The spinning clinch bolt with jacking feature installs captive in panel and still spins freely.
SF, SFP	Bulletin SF
	SpotFast® self-clinching fasteners create a permanent, flush joining of two sheets of metal.
SFK	Bulletin SF
	SpotFast® self-clinching fasteners create a permanent, flush joining of metal to PCB or plastic panels.
SFW	Bulletin SF
	SpotFast® self-clinching fasteners create a permanent, flush joining of two sheets of metal. The washer allows for consistent pivoting of the two metal panels.
SKC	Bulletin SK
	KEYHOLE® standoffs designed for a board to be quickly slipped into place and removed by sliding it sideways and lifting it off.
SKC-F	Bulletin SK
	KEYHOLE® sheet joining fasteners designed to quickly join two sheets flat against each other and then can be removed.
SMTPR	Bulletin K
	Surface mount panel fastener retainer that is used with Type PSHP screw.
SMTRA	Bulletin K
	Surface mount R'ANGLE® fasteners provide strong re-usable threads at right angle to PC board.
SMTSO	Bulletin K
	Surface mount spacers and nuts are available threaded and unthreaded.
SL	Bulletin CL
	Locknuts designed with a unique TRI-DENT® locking feature, which meets demanding locking performance requirements.
SMPS	Bulletin CL
	Nuts that feature a lower profile and can be mounted closer to the edge of a sheet than standard self-clinching nuts.

SO, SO4, SOA, SOS	Bulletin SO
	Thru-hole threaded and unthreaded standoffs installed with their heads flush with one surface of the mounting sheets.
SOAG, SOSG	Bulletin SO
	Grounding standoffs for clinching into metal chassis with “gripping teeth” at opposite end to firmly contact mating board.
SP	Bulletins CL & SS
	Specially hardened self-clinching nuts for installation into stainless steel sheets.
SSA, SSC, SSS	Bulletin SSA
	SNAP-TOP® standoffs featuring a spring action to hold a P.C. board securely without screws or threaded hardware.
TD	Bulletin TD
	TY-D® self-clinching tie-mounts provide secure attachment points for mounting wires to electronic chassis or enclosure.
TDO	Bulletin TD
	TY-D® self-clinching hooks enable users to easily attach, remove, and return tie-bundled wires to their mounting points.
TFH, TFHS	Bulletin FH
	Self-clinching non-flush studs for sheets as thin as .020”/0.51mm.
TPS, TP4	Bulletin FH
	Flush-mounted pilot pins with chamfered end to make mating hole location easy.
TPXS	Bulletin FH
	Self-clinching alignment pin for ATCA® faceplate fastening solutions.
TSO, TSOA, TSOS	Bulletin SO
	Self-clinching standoffs provide permanent threads in ultra-thin sheets.
U, UL	Bulletin FE
	Miniature nuts with strong threads. Available with locking or non-locking threads.
WN, WNS	Bulletin WN
	Self-locating projection weld nuts. The engineered projections prevent burn-outs in thin sheets.



PEM® FASTENER IDENTIFICATION MARKS

To help you identify genuine PEM® brand fasteners, most are marked by one of our trademarks. Genuine PEM fasteners can only be purchased from one of our authorized worldwide distributors. For a complete listing of these distributors, check our web site: www.pemnet.com.

Two groove on nuts, standoffs, and plungers



The PEM® 300 identification marks



Double squares on floating fasteners



Recess dimple on studs, pins, panel fasteners, KEYHOLE® and SNAP-TOP® standoffs



“PEM” stamp on nuts and HYBRID™ panel fasteners



Blue nylon locking element on PEMHEX® nuts



PEM® C.A.P.S.™ Dot Pattern



PEM® FASTENER PROTOTYPE KIT

The PEM prototype kit contains a wide variety of PEM fasteners for your prototype needs. The kit contains over 1,000 different nuts, studs, standoffs, and panel fasteners of various types and sizes, so you can choose the one which will best suit your specific design requirements. The kit is available with unified or metric parts. Price U.S. \$99.00 (subject to change without notice).



SELF-CLINCHING FASTENER INSTALLATION DO'S AND DON'TS

“Do’s”

Do provide mounting hole of specified size for each fastener.

Do install fastener into punch side of sheet.

Do make certain that shank (or pilot) is within hole before applying installation force.

Do apply squeezing force between parallel surfaces.

Do apply sufficient force to totally embed clinching ring around entire circumference and to bring shoulder squarely in contact with sheet. For some fasteners, installation will be complete when the head is flush with the panel surface.

“Don’ts”

Don’t attempt to install a 300 series stainless steel fastener into a stainless steel sheet.

Don’t install steel or stainless steel fasteners in aluminum panels before anodizing or finishing.

Don’t deburr mounting holes on either side of sheet before installing fasteners – deburring will remove metal required for clinching fastener into sheet.

Don’t install fastener closer to edge of sheet than minimum edge distance indicated by manufacturer – unless a special fixture is used to restrict bulging of sheet edge.

Don’t over-squeeze. It will crush the head, distort threads, and buckle the sheet. Approximate installation forces are listed in performance data tables. Use this info as a guide. Be certain to determine optimum installation force by test prior to production runs.

Don’t attempt to insert fastener with a hammer blow – under any circumstances. A hammer blow won’t permit the sheet metal to flow and develop an interlock with the fastener’s contour.

Don’t install screw in the head side of fastener. Install from opposite side so that the fastener load is toward sheet. The clinching force is designed only to hold the fastener during handling and to resist torque during assembly.

Don’t install fastener on pre-painted side of panel.

*RoHS compliance information can be found on our website.
© 2010 PennEngineering.*

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

PennEngineering®



North America: Danboro, PA USA • E-mail: info@pemnet.com • Tel: +1-215-766-8853 • Fax: +1-215-766-0143 • 800-237-4736 (USA Only)
Europe: Galway, Ireland • E-mail: europe@pemnet.com • Tel: +353-91-751714 • Fax: +353-91-753541
Asia/Pacific: Singapore • E-mail: singapore@pemnet.com • Tel: +65-6-745-0660 • Fax: +65-6-745-2400
Shanghai, China • E-mail: china@pemnet.com • Tel: +86-21-5868-3688 • Fax: +86-21-5868-3988

Visit our PEMNET™ Resource Center at www.pemnet.com