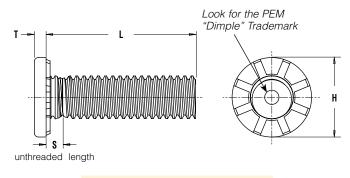
Type THFE™ Heavy Duty Studs for Thin Sheets

For installation into sheets as thin as .031" / 0.8 mm



TYPE THFE™ HEAVY DUTY STUDS FOR THIN SHEETS

- Enlarged head diameter reduces stress on panel.
- Thicker head allows for larger hole in attached panels.
- Clinch design provides high-strength in sheets as thin as .031" / 0.8 mm.
- Recommended for use in steel or aluminum sheets HRB (Rockwell "B" Scale) 85 or less and HB (Hardness Brinell) 165 or less.







All dimensions are in inches.

	Thread	Type Fastener	Thread		(L	Length (ength Code	Code "L" ± e in 16ths c				Min.	Hole Size In Sheet	Max. Hole In	Н	S	т	Min. Dist.
	Size	Material Steel	Code	.500	.750	1.00	1.25	1.50	1.75	2.00	Sheet Thickness	+.005 000	Attached ± Parts	±.01	Max. (1)	Max.	Hole ¢ To Edge
2	.250-20 (1/4-20)	THFE	0420	8	12	16	20	24	28	32	.031	.250	.340	.462	.109	.069	.446
	.313-18 (5/16-18)	THFE	0518	8	12	16	20	24	28	32	.031	.312	.402	.586	.117	.099	.596

All dimensions are in millimeters.

Tensile strength: 120 ksi

TRIC	Thread Size x Pitch	Type Fastener Material Steel	Thread Code			Length (Length Co	Code "L" ± de in milli				Min. Sheet Thickness	Hole Size In Sheet +0.13	Max. Hole In Attached Parts	H ±0.25	S Max. (1)	T Max.	Min. Dist. Hole & To Edge
ш Ш	M6 x 1	THFE	M6	15	20	25	30	35	40	50	0.8	6	8.3	11.35	2.62	1.7	10.5
	M8 x 1.25	THFE	M8	15	20	25	30	35	40	50	0.8	8	10.3	15.3	2.9	2.54	15

Tensile strength: 900 MPa

(1) Threads are gaugeable to within 2 pitches of the "S" Max. dimension. A class 3B/5H maximum material commercial nut shall pass up to the "S" Max. dimension.



Threads: External, ASME B1.1, 2A / ASME B1.13M, 6g Material: Hardened carbon steel Finish: ZI - Zinc plated, 5µm, colorless For use in sheet hardness: HRB 85 / HB 165 or less HRB - Hardness Rockwell "B" Scale. HB - Hardness Brinell.



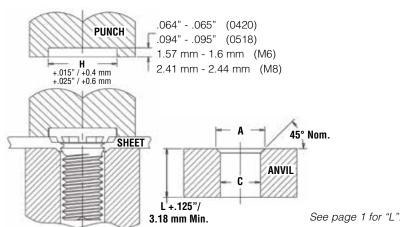
Type THFE[™] Heavy Duty Studs for Thin Sheets

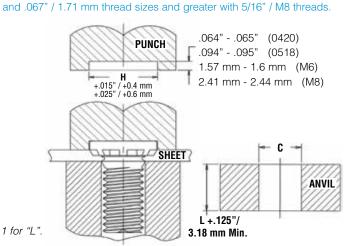
For installation into sheets as thin as .031" / 0.8 mm

INSTALLATION

- 1. Prepare properly sized mounting hole in sheet. Do not perform any secondary operations such as deburring
- 2. Insert stud through mounting hole (punch side) of sheet and into anvil hole.
- 3. With punch and anvil surfaces parallel, apply squeezing force on the punch sufficient only to embed the ribs on the head of the stud into the sheet.

Tooling for sheet thicknesses less than .052" / 1.31 mm with 1/4" / M6 thread sizes, and less than .067" / 1.71 mm with 5/16" / M8 thread sizes.





Punch Part Number 8019892

8019893

Tooling for sheet thicknesses .052" / 1.31 mm and greater with 1/4" / M6

PEMSERTER® Installation Tooling

	Thread	Anvil Dime	ensions (in.)	Anvil Part No.	Anvil Part No.	Punch	1 [Thread	Anvil Dimen	sions (mm)	Anvil Part No.	Anvil Part No.	
0	Code	A	C	For Sheets > .051"	For Sheets .031"051"	Part Number	4	-	Code	A + 0.1	C + 0.08	For Sheets > 1.3 mm	For Sheets 0.8 - 1.3 mm	
ū	0420	.302306	.250253	970200010300	8019886	8019890		- [M6	7.25	6.03	970200230300	8019888	
N N				For Sheets > .066"	For Sheets .031"066"			Ľ ≥				For Sheets > 1.7 mm	For Sheets 0.8 - 1.7 mm	
	0518	.374378	.31253155	970200011300	8019887	8019891] [M8	9.55	8.03	970200231300	8019889	

PERFORMANCE DATA(1)

IED	Thread Code	Max. Nut Tightening Torque (ft. lbs.)	Test Sheet Thickness and Material (in.)	Sheet Hardness HRB	Installation (lbs.) (2)	Pushout (Ibs.)	Torque-out (in. lbs.)	Tensile Strength (Ibs.) (3)	Pull Thru (lbs.)	Test Bushing Hole Size For Pull Thru Tests	
벁	0420	Q	.031" Aluminum	35	8800	116	71	3820	3249	.340	
Z	0420	0	.031" Cold-rolled Steel	47	13500	197	116	3820	3368	.340	
	0518	16	.031" Aluminum	44	11700	131	103	6280	5701	.402	
	0310	10	.031" Cold-rolled Steel	47	16000	187	124	6280	5772		

RIC	Thread Code	Max. Nut Tightening Torque (N•m)	Test Sheet Thickness and Material (mm)	Sheet Hardness HRB	Installation (kN) (2)	Pushout (N)	Torque-out (N•m)	Tensile Strength (kN) (3)	Pull Thru (kN)	Test Bushing Hole Size For Pull Thru Tests	
F	M6	10	0.8 mm Aluminum	38	39.2	550	7.3	18.1	13	8.3	
L L	IVIO	10	0.8 mm Cold-rolled Steel	47	60.1	886	13.4	18.1	14.3	0.5	
2	M8	21.7	0.8 mm Aluminum	44	56	582	12.2	32.9	27.8	10.3	
	IVIO	21.7	0.8 mm Cold-rolled Steel	47	71.2	881	13.1	32.9	28.1		

(1) Published installation forces are for general reference. Actual set-up and confirmation of complete installation should be made by observing proper seating of fastener as described in the installation steps. Other performance values reported are averages when all proper installation parameters and procedures are followed. Variations in mounting hole size, sheet material, and installation procedure may affect performance. Performance testing this product in your application is recommended. We will be happy to provide technical assistance and/or samples for this purpose.

(2) Installation controlled by proper cavity depth in punch.

(3) Head size is adequate to ensure failure in threaded area.

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PennEngineering®

PEM°

THFE-2

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