

STANDARD ENGINEERING INSTRUCTION

DSP 1.1.6 - Self-Clinching Steel Studs

1. Scope

This DSEI describes the types, sizes, and performance characteristics of self-clinching steel studs allowable in any ASMPT design.

2. Applicability

Any new design initiated after the first issue date of this document.

Any major rework of an existing design initiated after the first issue date of this document.

3. Preferred Supplier

PEM® is the preferred brand for this component type. This brand is supplied by the Penn Engineering & Manufacturing Corp. (www.pemnet.com)

4. Carbon Steel Self-Clinching Studs

These are the ASMPT preferred fasteners for use in mild steel sheet.

The fasteners should be inserted to achieve the push out and torque out as stated in Table 1 when tested in a steel sheet in accordance with the relevant section of the PEM® Catalog.

For latest application, technical and installation details refer to the relevant section of the PEM® Catalog.

5. Stainless Steel Self-Clinching Studs

These are the ASMPT preferred fasteners for use in aluminium sheet.

The fasteners should be inserted to achieve the push out and torque out as stated in Table 2 when tested in an aluminium sheet in accordance with the relevant section of the PEM® Catalog.

For latest application, technical and installation details refer to the relevant section of the PEM® Catalog.

6. Hard Stainless Steel Self-Clinching Studs

These are the ASMPT preferred fasteners for use in stainless steel sheet.

The fasteners should be inserted to achieve the push out and torque out as stated in Table 3 when tested in a steel sheet in accordance with the relevant section of the PEM® Catalog.

For latest application, technical and installation details refer to the relevant section of the PEM® Catalog.

7. Alternative Supplier

Alternative suppliers are permissible provided that their products meet all of the dimensional and performance characteristics of the PEM® equivalent.

8. Flush Installation

Clinch studs must be installed flush – refer to Fig 1. – Pem guidance for flush installation in different sheet thicknesses.

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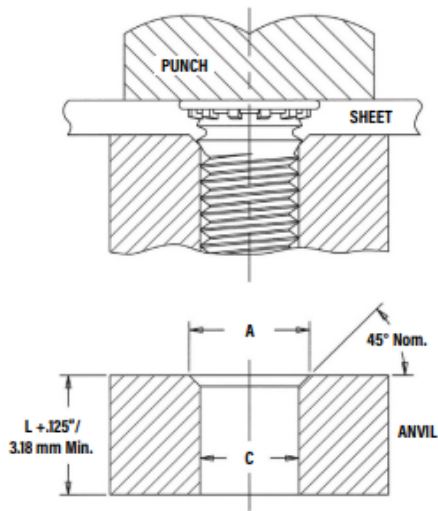
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INSTALLATION - FH™/FHS™/FHA™ THREADED STUDS

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 to embed the head of the stud flush in the sheet. In most cases, when using sheets .060"/1.51 mm and thicker, the anvil requires only a straight thru hole to accommodate the stud. For sheets less than .060"/1.51 mm, the hole requires a countersink for metal flow around the shank of the stud.

Tooling for sheet thicknesses less than .060" / 1.51 mm with #2 thru #10 / M2.5 thru M5 thread sizes and less than .093" / 2.36 mm for 1/4" / M6 threads.



Tooling for sheet thicknesses .060" / 1.51 mm and greater with #2 thru #10 / M2.5 thru M5 thread sizes and .093" / 2.36 mm and greater for 1/4" and 5/16" / M6 and M8 threads.

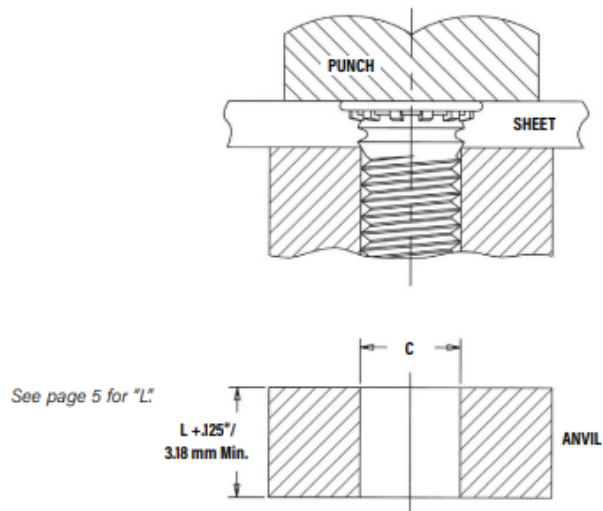


Fig 1.

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Size	Stud Length (mm)	ASMPT Part Number	PEM Part Number	Min. Sheet Thickness (mm)	Hole Size in Sheet +0.08	Push Out (N)	Torque Out (Nm)
M2,5	6	88701700	FH-M2.5-6-ZI	1	2.5	740	1.0
	8	88701701	FH-M2.5-8-ZI				
	10	88701702	FH-M2.5-10-ZI				
	12	88701703	FH-M2.5-12-ZI				
	15	88701704	FH-M2.5-15-ZI				
	18	88701705	FH-M2.5-18-ZI				
M3	6	88701706	FH-M3-6-ZI		3	820	1.7
	8	88701707	FH-M3-8-ZI				
	10	88701708	FH-M3-10-ZI				
	12	88701709	FH-M3-12-ZI				
	15	88701710	FH-M3-15-ZI				
	18	88701711	FH-M3-18-ZI				
	20	88701712	FH-M3-20-ZI				
M4	25	88701713	FH-M3-25-ZI				
	6	88701714	FH-M4-6-ZI		4	1780	4.2
	8	88701715	FH-M4-8-ZI				
	10	88701716	FH-M4-10-ZI				
	12	88701717	FH-M4-12-ZI				
	15	88701718	FH-M4-15-ZI				
	18	88701719	FH-M4-18-ZI				
	20	88701720	FH-M4-20-ZI				
	25	88701721	FH-M4-25-ZI				
	30	88701722	FH-M4-30-ZI				
M5	35	88701723	FH-M4-35-ZI				
	8	88701724	FH-M5-8-ZI		5	2000	6.5
	10	88701725	FH-M5-10-ZI				
	12	88701726	FH-M5-12-ZI				
	15	88701727	FH-M5-15-ZI				
	18	88701728	FH-M5-18-ZI				
	20	88701729	FH-M5-20-ZI				
	25	88701730	FH-M5-25-ZI				
	30	88701731	FH-M5-30-ZI				
M6	35	88701732	FH-M5-35-ZI				
	10	88701733	FH-M6-10-ZI	1.6	6	2560	11.3
	12	88701734	FH-M6-12-ZI				
	15	88701735	FH-M6-15-ZI				
	18	88701736	FH-M6-18-ZI				
	20	88701737	FH-M6-20-ZI				
	25	88701738	FH-M6-25-ZI				
	30	88701739	FH-M6-30-ZI				
	35	88701740	FH-M6-35-ZI				
M8	12	88701741	FH-M8-12-ZI	2.4	8	2890	19.2
	15	88701742	FH-M8-15-ZI				
	18	88701743	FH-M8-18-ZI				
	20	88701744	FH-M8-20-ZI				
	25	88701745	FH-M8-25-ZI				
	30	88701746	FH-M8-30-ZI				
	35	88701747	FH-M8-35-ZI				

Table 1 – Carbon Steel ASMPT-PEM® Cross Reference

Issue	01	02	03	04	05	06	07	08
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Size	Stud Length (mm)	ASMPT Part Number	PEM Part Number	Min. Sheet Thickness (mm)	Hole Size in Sheet +0.08	Push Out (N)	Torque Out (Nm)
M2,5	6	88701748	FHS-M2.5-6	1	2.5	465	0.8
	8	88701749	FHS-M2.5-8				
	10	88701750	FHS-M2.5-10				
	12	88701751	FHS-M2.5-12				
	15	88701752	FHS-M2.5-15				
	18	88701753	FHS-M2.5-18				
M3	6	88701754	FHS-M3-6		3	600	1.3
	8	88701755	FHS-M3-8				
	10	88701756	FHS-M3-10				
	12	88701757	FHS-M3-12				
	15	88701758	FHS-M3-15				
	18	88701759	FHS-M3-18				
	20	88701760	FHS-M3-20				
M4	25	88701761	FHS-M3-25				
	6	88701762	FHS-M4-6		4	975	2.9
	8	88701763	FHS-M4-8				
	10	88701764	FHS-M4-10				
	12	88701765	FHS-M4-12				
	15	88701766	FHS-M4-15				
	18	88701767	FHS-M4-18				
	20	88701768	FHS-M4-20				
	25	88701769	FHS-M4-25				
	30	88701770	FHS-M4-30				
M5	35	88701771	FHS-M4-35				
	8	88701772	FHS-M5-8		5	1070	3.5
	10	88701773	FHS-M5-10				
	12	88701774	FHS-M5-12				
	15	88701775	FHS-M5-15				
	18	88701776	FHS-M5-18				
	20	88701777	FHS-M5-20				
	25	88701778	FHS-M5-25				
	30	88701779	FHS-M5-30				
	35	88701780	FHS-M5-35				
M6	10	88701781	FHS-M6-10	1.6	6	1660	7.3
	12	88701782	FHS-M6-12				
	15	88701783	FHS-M6-15				
	18	88701784	FHS-M6-18				
	20	88701785	FHS-M6-20				
	25	88701786	FHS-M6-25				
	30	88701787	FHS-M6-30				
	35	88701788	FHS-M6-35				
M8	12	88701789	FHS-M8-12	2.4	8	1910	11.3
	15	88701790	FHS-M8-15				
	18	88701791	FHS-M8-18				
	20	88701792	FHS-M8-20				
	25	88701793	FHS-M8-25				
	30	88701794	FHS-M8-30				
	35	88701795	FHS-M8-35				

Table 2 – Stainless Steel ASMPT-PEM® Cross Reference

Issue	01	02	03	04	05	06	07	08
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Size	Stud Length (mm)	ASMPT Part Number	PEM Part Number	Min. Sheet Thickness (mm)	Hole Size in Sheet +0.08	Push Out (N)	Torque Out (Nm)
M3	6	88701796	FH4-M3-6	1	3	2220	1.8
	8	88701797	FH4-M3-8				
	10	88701798	FH4-M3-10				
	12	88701799	FH4-M3-12				
	15	88701800	FH4-M3-15				
	18	88701801	FH4-M3-18				
	20	88701802	FH4-M3-20				
	25	88701803	FH4-M3-25				
M4	6	88701804	FH4-M4-6		4	3210	6.5
	8	88701805	FH4-M4-8				
	10	88701806	FH4-M4-10				
	12	88701807	FH4-M4-12				
	15	88701808	FH4-M4-15				
	18	88701809	FH4-M4-18				
	20	88701810	FH4-M4-20				
	25	88701811	FH4-M4-25				
	30	88701812	FH4-M4-30				
	35	88701813	FH4-M4-35				
M5	8	88701814	FH4-M5-8		5	3560	10.7
	10	88701815	FH4-M5-10				
	12	88701816	FH4-M5-12				
	15	88701817	FH4-M5-15				
	18	88701818	FH4-M5-18				
	20	88701819	FH4-M5-20				
	25	88701820	FH4-M5-25				
	30	88701821	FH4-M5-30				
	35	88701822	FH4-M5-35				
M6	10	88701823	FH4-M6-10	1.6	6	4200	15.9
	12	88701824	FH4-M6-12				
	15	88701825	FH4-M6-15				
	18	88701826	FH4-M6-18				
	20	88701827	FH4-M6-20				
	25	88701828	FH4-M6-25				
	30	88701829	FH4-M6-30				
	35	88701830	FH4-M6-35				

Table 3 – Hard Stainless Steel ASMPT-PEM® Cross Reference

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