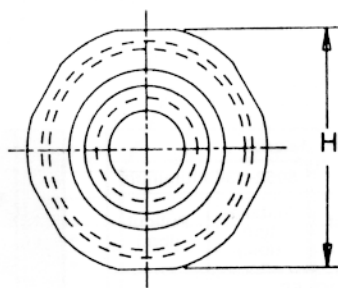
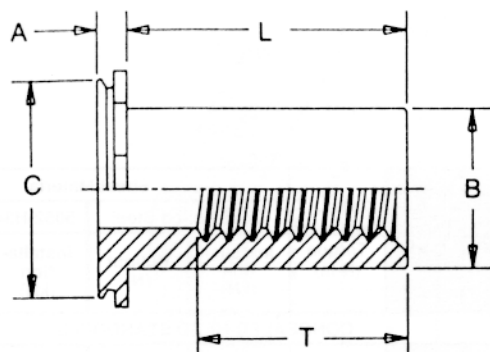
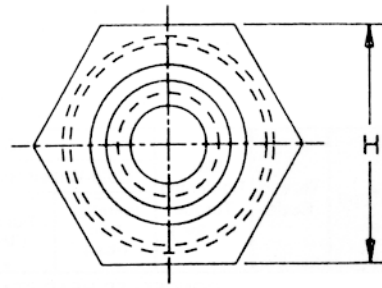


STAINLESS STEEL STANDOFFS TYPES CSS, CSOS



TYPE CSS



TYPE CSOS

All dimensions are in inches.

UNIFIED	Thread Size	Type	Thread Code	Length Code "L" (Length code is in 16ths of an inch) +.002 —.005								Min. Sheet Thickness	Blind Mounting Hole Dia. +.003 —.000	Min. Depth of Blind Hole (1)	Min. Depth Full Thd. T(2)	A Max.	B Max. (4)	C Max.	H ±.005	Min. Dist. Hole C/L to Edge
		Stainless Steel		.187	.250	.312	.375	.500	.625	.750	1.00									
	.112-40 (#4-40)	CSS	440	3 ⁽²⁾	4	5	6	8 ⁽³⁾	10 ^{NS(3)}	12 ^{NS(3)}	16 ^{NS(3)}	.062	.213	.043	.188	.043	.165	.212	.250	.188
		CSOS										.093		.075		.075				
	.138-32 (#6-32)	CSS	632	3 ⁽²⁾	4 ⁽²⁾	5	6	8 ⁽³⁾	10 ⁽³⁾	12 ⁽³⁾	16 ^{NS(3)}	.062	.290	.043	.250	.043	.213	.289	.312	.219
		CSOS										.093		.075		.075				
	.164-32 (#8-32)	CSS	832 ^{NS}	3 ⁽²⁾	4 ⁽²⁾	5	6	8 ⁽³⁾	10 ⁽³⁾	12 ⁽³⁾	16 ⁽³⁾	.062	.312	.043	.250	.043	.245	.311	.344	.250
		CSOS										.093		.075		.075				
	.190-32 (#10-32)	CSS	032 ^{NS}	3 ⁽²⁾	4 ⁽²⁾	5 ⁽²⁾	6 ⁽²⁾	8	10 ⁽³⁾	12 ⁽³⁾	16 ⁽³⁾	.062	.344	.043	.375	.043	.290	.343	.375	.281
		CSOS										.093		.075		.075				
	.250-20 (1/4-20)	CSS	0420 ^{NS}	3 ⁽²⁾	4 ⁽²⁾	5 ⁽²⁾	6 ⁽²⁾	8	10	12 ⁽³⁾	16 ⁽³⁾	.062	.390	.043	.375	.043	.354	.389	.438	.375
		CSOS										.093		.075		.075				

All dimensions are in millimeters.

METRIC	Thread Size x Pitch	Type	Thread Code	Length Code "L" (Length code is in millimeters) +0.05 —0.13								Min. Sheet Thickness	Blind Mounting Hole Diameter +0.08	Min. Depth of Blind Hole (1)	Min. Depth Full Thd. T(2)	A Max.	B Max. (4)	C Max.	H ±0.13	Min. Dist. Hole C/L to Edge
		Stainless Steel																		
	M3 x 0.5	CSS	M3	4 ⁽²⁾	6 ⁽²⁾	8 ⁽⁵⁾	10 ⁽³⁾	12 ^{NS(3)}	16 ^{NS(3)}	20 ^{NS(3)}	25 ^{NS(3)}	1.6	5.4	1.09	5	1.09	4.2	5.38	6.35	4.8
		CSOS										2.4		1.91		1.91				
	M4 x 0.7	CSS	M4	4 ^{NS(2)}	6 ⁽²⁾	8	10 ⁽⁵⁾	12 ⁽³⁾	16 ⁽³⁾	20 ^{NS(3)}	25 ^{NS(3)}	1.6	7.95	1.09	6.5	1.09	6.23	7.9	8.74	6.4
		CSOS										2.4		1.91		1.91				
	M5 x 0.8	CSS	M5 ^{NS}	4 ⁽²⁾	6 ⁽²⁾	8 ⁽²⁾	10	12	16 ⁽³⁾	20 ⁽³⁾	25 ⁽³⁾	1.6	8.75	1.09	9.6	1.09	7.37	8.71	9.53	7.2
		CSOS										2.4		1.91		1.91				
	M6 x 1	CSOS	M6 ^{NS}	4 ⁽²⁾	6 ⁽²⁾	8 ⁽²⁾	10	12	16 ⁽³⁾	20 ⁽³⁾	25 ⁽³⁾	2.4	9.9	1.91	9.6	1.91	9	9.88	11.11	9.5

- (1) Blind mounting holes may be deeper than minimums except where sheet material is at or near minimum thickness. Fasteners should always be installed so that the flange is flush with the surface of the sheet.
- (2) For shorter standoff lengths, when "L" is less than "T", minimum thread depth will be equal to "L". Screws with lengths exceeding "L" should not be used for they may cause "jacking-out" of standoff from the sheet.
- (3) Type CSS and CSOS are blind at one end.
- (4) If standoff is used as a bushing, the hole in attached part must not exceed "B" plus .020" (0.51mm).
- (5) Type CSOS is blind at one end.

NS — Not stocked. Available on special order.

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MATERIAL & FINISH SPECIFICATIONS

TYPE	Threads		Material		Finish		For Use in Sheet Hardness of:
	External, ANSI B1.1 2A / ANSI / ASME B1.13M, 6g	Internal, ANSI B1.1 2B / ANSI / ASME B1.13M, 6H	2024-T4 Aluminum	300 Series Stainless Steel	No Finish	Passivated and/or tested per ASTM A380	
CHA	•	•	•	•	•	•	•
CFHA	•	•	•	•	•	•	•
CHC	•	•	•	•	•	•	•
CFHC	•	•	•	•	•	•	•
CSS	•	•	•	•	•	•	•
CSOS	•	•	•	•	•	•	•

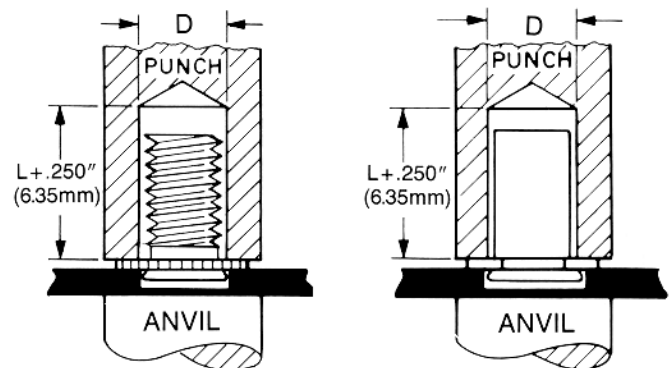
INSTALLATION

1. Mill a blind hole to the correct minimum depth.*
2. Place shank of fastener into mounting hole.
3. Place the hardened punch, as shown in the drawing, over the fastener with the anvil under the fastener.
4. With punch and anvil surfaces parallel, apply squeezing force until flange is flush with mounting sheet.

* End mills available from Penn Engineering & Manufacturing Corp. See chart below.

Types CFHA, CFHC, CHC, CHA
Concealed-head studs

Types CSOS, CSS
Concealed-head standoffs



PUNCH "D" DIMENSIONS

All dimensions are in inches. (+.003 —.000)

Type	Thread Code				
	440	632	832	032	0420
CHA	.127	.152	.179	.205	—
CHC	.127	.152	.179	.205	—
CFHA	.127	.152	.179	.205	—
CFHC	.127	.152	.179	.205	—
CSS	.170	.218	.250	.295	.358
CSOS	.170	.218	.250	.295	.358

All dimensions are in millimeters. (+0.08)

Type	Thread Code			
	M3	M4	M5	M6
CHA	3.4	4.4	5.4	—
CHC	3.4	4.4	5.4	—
CFHA	3.4	4.4	5.4	—
CFHC	3.4	4.4	5.4	—
CSS	4.33	6.36	7.5	9.13
CSOS	4.33	6.36	7.5	9.13

END MILL DESIGNATIONS

Double-ended, two-flute H.S.S. center-cutting end mills are available from stock.

Penn Engineering & Manufacturing Corp. does not manufacture center-cutting end mills, but we do keep a supply in stock for your convenience.

Thread Code	Fastener Type	Required Size End Mill	PEM Part No.
440, M3	CFHC, CHC, CFHA, CHA Studs	.172"	CHM-172
	CSOS, CSS Standoffs	.213"	CHM-213
632	CFHC, CHC, CFHA, CHA Studs	.213"	CHM-213
	CSOS, CSS Standoffs	.290"	CHM-290
832, M4	CFHC, CHC, CFHA, CHA Studs	.290"	CHM-290
	CSOS, CSS Standoffs	.312"	CHM-312
032, M5	CFHC, CHC, CFHA, CHA Studs	.312"	CHM-312
	CSOS, CSS Standoffs	.344"	CHM-344
0420, M6	CSOS Standoffs	.390"	CHM-390

Specifications subject to change without notice.



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