

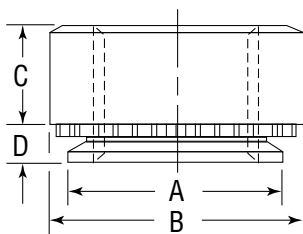


Self-Clinching Nuts

Series C & CS



C & CS nuts provide strong load-bearing threads in sheet metal and other thin section assemblies. Some C & CS nuts meet specification features of NASM45938/1.



Series	Material	Finish
C	Heat-treated Carbon Steel	Zinc* Clear
CS	300 Series Stainless Steel	Passivated ASTM A967

*See Finish Spec. on Page 6.

Thread: Internal 2B, ANSI B1.1
(6H, ANSI/ASME B1.13M).

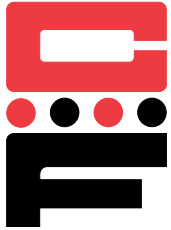
Use In: C – Materials with HRB-80 or less.

CS – Materials with HRB-70 or less.

Dimensions & Specifications

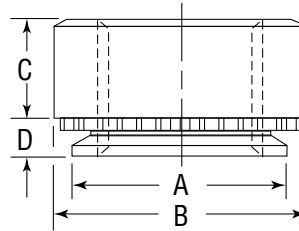
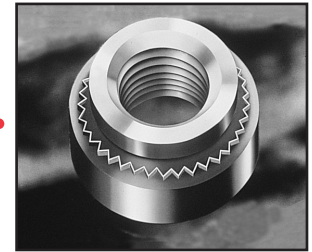
Thread Size	Part Number		D Max.	Min.	+.003 in. -.000	A Max.	B ±.01 in.	C ±.01 in.	Min.
	Carbon Steel	Stainless Steel							
#2-56	C256-0	CS256-0	.030	.030	.166	.165	.250	.070	.19
	C256-1	CS256-1	.038	.040					
	C256-2	CS256-2	.054	.056					
	C256-3	CS256-3	.087	.090					
#3-48	C348-0	CS348-0	.030	.030	.166	.165	.250	.070	.19
	C348-1	CS348-1	.038	.040					
	C348-2	CS348-2	.054	.056					
	C348-3	CS348-3	.087	.090					
#4-40	C440-0	CS440-0	.030	.030	.166	.165	.250	.070	.19
	C440-1	CS440-1	.038	.040					
	C440-2	CS440-2	.054	.056					
	C440-3	CS440-3	.087	.090					
#6-32	C632-0	CS632-0	.030	.030	.1875	.187	.280	.070	.22
	C632-1	CS632-1	.038	.040					
	C632-2	CS632-2	.054	.056					
	C632-3	CS632-3	.087	.090					
#8-32	C832-0	CS832-0	.030	.030	.213	.212	.310	.090	.27
	C832-1	CS832-1	.038	.040					
	C832-2	CS832-2	.054	.056					
	C832-3	CS832-3	.087	.090					

Continued on next page.



Self-Clinching Nuts

Series C & CS

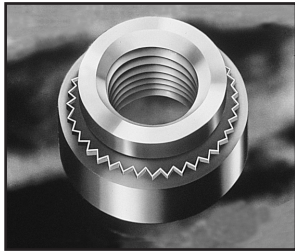


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Dimensions & Specifications

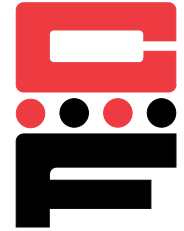
Thread Size	Part Number		D Max.	Min.	+0.003 in. -0.000	A Max.	B ±.01 in.	C ±.01 in.	Min.
	Carbon Steel	Stainless Steel							
#10-24	C1024-0	CS1024-0	.030	.030	.250	.249	.340	.090	.28
	C1024-1	CS1024-1	.038	.040					
	C1024-2	CS1024-2	.054	.056					
	C1024-3	CS1024-3	.087	.090					
#10-32	C1032-0	CS1032-0	.030	.030	.250	.249	.340	.090	.28
	C1032-1	CS1032-1	.038	.040					
	C1032-2	CS1032-2	.054	.056					
	C1032-3	CS1032-3	.087	.090					
#12-24	C1224-1	CS1224-1	.038	.040	.277	.276	.370	.130	.31
	C1224-2	CS1224-2	.054	.056					
	C1224-3	CS1224-3	.087	.090					
1/4-20	C420-0	CS420-0	.045	.047	.344	.343	.440	.170	.34
	C420-1	CS420-1	.054	.056					
	C420-2	CS420-2	.087	.090					
	C420-3	CS420-3	.120	.125					
1/4-28	C428-1	CS428-1	.054	.056	.344	.343	.440	.170	.34
	C428-2	CS428-2	.087	.090					
	C428-3	CS428-3	.120	.125					
5/16-18	C518-1	CS518-1	.054	.056	.413	.412	.500	.230	.38
	C518-2	CS518-2	.087	.090					
	C518-3	CS518-3	.120	.125					
5/16-24	C524-1	CS524-1	.054	.056	.413	.412	.500	.230	.38
	C524-2	CS524-2	.087	.090					
	C524-3	CS524-3	.120	.125					
3/8-16	C616-1	CS616-1	.087	.090	.500	.499	.560	.270	.44
	C616-2	CS616-2	.120	.125					
	C616-3	CS616-3	.235	.250					
3/8-24	C624-1	CS624-1	.087	.090	.500	.499	.560	.270	.44
	C624-2	CS624-2	.120	.125					
	C624-3	CS624-3	.235	.250					
1/2-13	C813-1	CS813-1	.120	.125	.656	.655	.810	.360	.63
	C813-2	CS813-2	.235	.250					

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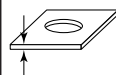
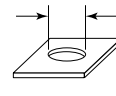
Self-Clinching Nuts

Series C & CS



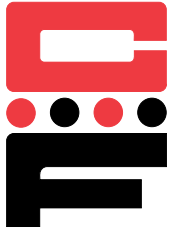
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Dimensions & Specifications

	Part Number		D Max.			A Max.	B ±.25 mm	C ±.25 mm	
	Carbon Steel	Stainless Steel							
M2 x 0.4	CM2-0	CSM2-0	.77	.8	4.22	4.20	6.35	1.5	4.8
	CM2-1	CSM2-1	.97	1.0					
	CM2-2	CSM2-2	1.38	1.4					
	CM2-3	CSM2-3	2.21	2.29					
M2.5 x 0.45	CM2.5-0	CSM2.5-0	.77	.8	4.22	4.20	6.35	1.5	4.8
	CM2.5-1	CSM2.5-1	.97	1.0					
	CM2.5-2	CSM2.5-2	1.38	1.4					
	CM2.5-3	CSM2.5-3	2.21	2.29					
M3 x 0.5	CM3-0	CSM3-0	.77	.8	4.22	4.20	6.35	1.5	4.8
	CM3-1	CSM3-1	.97	1.0					
	CM3-2	CSM3-2	1.38	1.4					
	CM3-3	CSM3-3	2.21	2.29					
M3.5 x 0.6	CM3.5-0	CSM3.5-0	.77	.8	4.75	4.73	7.11	1.5	5.6
	CM3.5-1	CSM3.5-1	.97	1.0					
	CM3.5-2	CSM3.5-2	1.38	1.4					
	CM3.5-3	CSM3.5-3	2.21	2.29					
M4 x 0.7	CM4-0	CSM4-0	.77	.8	5.41	5.38	7.87	2.0	6.9
	CM4-1	CSM4-1	.97	1.0					
	CM4-2	CSM4-2	1.38	1.4					
	CM4-3	CSM4-3	2.21	2.29					
M5 x 0.8	CM5-0	CSM5-0	.77	.8	6.35	6.33	8.64	2.0	7.1
	CM5-1	CSM5-1	.97	1.0					
	CM5-2	CSM5-2	1.38	1.4					
	CM5-3	CSM5-3	2.21	2.29					
M6 x 1.0	CM6-0	CSM6-0	1.15	1.2	8.75	8.73	11.18	4.08	8.6
	CM6-1	CSM6-1	1.38	1.4					
	CM6-2	CSM6-2	2.21	2.29					
	CM6-3†	CSM6-3	3.05	3.18					
M8 x 1.25	CM8-1	CSM8-1	1.38	1.4	10.5	10.47	12.7	5.47	9.7
	CM8-2	CSM8-2	2.21	2.29					
	CM8-3†	CSM8-3	3.05	3.2					
M10 x 1.5	CM10-1	CSM10-1	2.21	2.29	14.0	13.97	17.35	7.48	13.5
	CM10-2	CSM10-2	3.05	3.18					
	CM10-3†	CSM10-3†	6.00	6.4					
M12 x 1.75	CM12-1†	CSM12-1†	3.05	3.18	17.0	16.95	20.57	8.5	16
	CM12-2†	CSM12-2†	6.00	6.4					

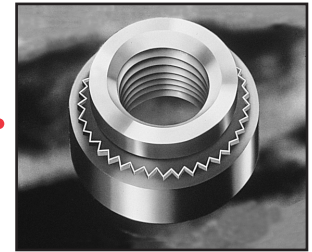
†Not stocked, available upon special order.

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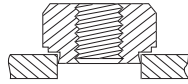


Self-Clinching Nuts

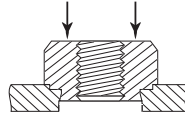
Series C & CS



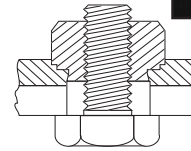
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Fastener Must Be Installed
Squarley In Hole

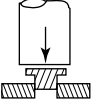
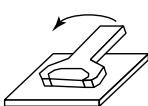
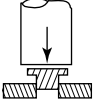
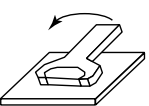


Squeezing Force Is Applied
To Head Of Fastener

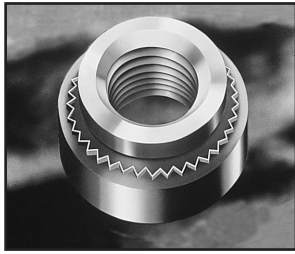


Install Bolt Or Screw
From Opposite Side
Of Head Of Fastener

Installation & Performance Data

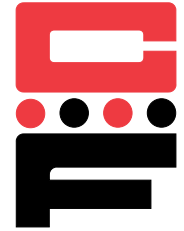
			Cold-rolled Steel			5052-H34 Aluminum		
								
Thread Size	Shank Code		Installation Force (lbs.)	Pushout (lbs.)	Torque-out (in.-lbs.)	Installation Force (lbs.)	Pushout (lbs.)	Torque-out (in.-lbs.)
INCH (in.)	#2-56	-0	2500-3500	105	13	1500-2000	63	8
	#3-48	-1		125	15		90	10
	#4-40	-2		230	18		170	13
		-3		230	18		170	13
	#6-32	-0	3000-6000	110	16	2500-3000	63	16
		-1		130	20		95	17
		-2		275	28		190	22
		-3		275	28		190	22
	#8-32	-0	4000-6000	110	26	2500-3000	68	21
		-1		145	35		105	23
		-2		285	45		220	35
		-3		285	45		220	35
	#10-24	-0	4000-9000	120	30	2500-3000	68	20
	#10-32	-1		180	40		110	32
		-2		320	60		190	50
		-3		320	60		225	50
	#12-24	-1	5000-6500	200	74	2500-6500	120	63
		-2		350	80		285	70
		-3		350	80		285	70
	1/4-20	-0	6000-8000	315	115	4000-7000	220	70
	1/4-28	-1		400	150		360	90
		-2-3						125
	5/16-18	-1	6000-8000	420	165	4000-7000	380	120
	5/16-24	-2-3		420	180		380	160
	3/8-16	-1-2-3	7000-11000	460	320	5000-8000	400	270
	3/8-24							
	1/2-13	-1-2	10000-15000	1050	735		475	350

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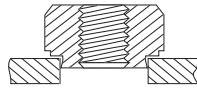


Self-Clinching Nuts

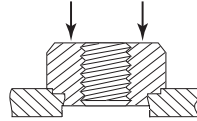
Series C & CS



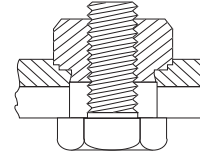
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Fastener Must Be Installed
Squarely In Hole



Squeezing Force Is Applied
To Head Of Fastener



Install Bolt Or Screw
From Opposite Side
Of Head Of Fastener

Installation & Performance Data

			Cold-rolled Steel			5052-H34 Aluminum		
			 Installation Force (kN)	 Pushout (N)	 Torque- out (N•m)	 Installation Force (kN)	 Pushout (N)	 Torque- out (N•m)
METRIC (mm)	Thread Size	Shank Code						
	M2	-0	11.2-15.6	470	1.47	6.7-8.9	280	.9
	M2.5	-1		550	1.7		400	1.13
	M3	-2		1010	2.03		750	1.47
		-3		1100	2.0		850	1.47
	M3.5	-0	13.4-26.7	480	1.8	11.2-13.5	280	1.8
		-1		570	2.3		400	1.92
		-2		1210	2.3		840	2.5
		-3		1300	2.5		1050	2.8
	M4	-0	18-27	490	2.95	11.2-13.4	300	2.37
		-1		645	4		470	2.6
		-2		1250	5.1		970	4.0
		-3		1300	4.2		1100	4.0
	M5	-0	18-38	530	3.6	11.2-15.6	300	3.0
		-1		800	4.5		480	3.6
		-2		1112	6.8		845	5.7
		-3		1500	6.0		1225	5.7
	M6	-0	27-36	1380	13	18-32	970	7.9
		-1		1760	17		1580	10.2
		-2		1760	17		1580	14.1
	M8	-1	27-36	1870	18.7	18-32	1570	13.6
		-2-3			20.3			18.1
	M10	-1-2	32-50	2020	36.2	22-36	1760	32.7
	M12	-1-2	44-67	4670	83.1	31-40	2113	39.5



Self-Clinching Standoffs

Series CFSO, CFSOS, CFSOA

(Through Threads)



CFSO self-clinching standoffs are designed for quick, easy installation with any standard pneumatic, hydraulic or mechanical press. Through-threaded standoffs are used in metal panels with thickness of .040 in. (1.0 mm) and up. No secondary operation, such as reaming or deburring, is necessary prior to installation.

Series	Material	Finish
CFSO	Heat-treated Carbon Steel	Zinc* Clear
CFSOS	300 Series Stainless Steel	Passivated ASTM A967
CFSOA	7075-T6 Aluminum	None

*See Finish Spec. on Page 6.

Thread: Internal 2B, ANSI B1.1 (6H, ANSI/ASME B1.13M).

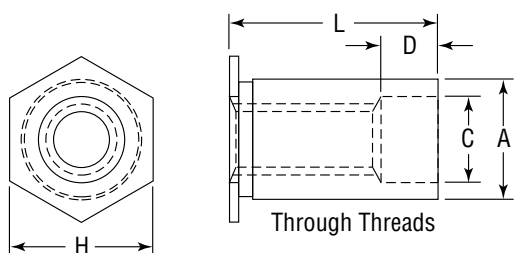
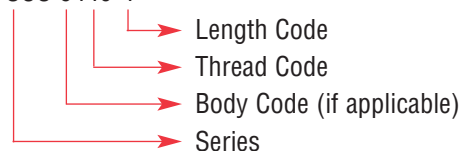
Use in: CFSO for materials with Rockwell Hardness of B-80 or less.

CFSOS for materials with Rockwell Hardness of B-70 or less.

CFSOA for materials with Rockwell Hardness of B-50 or less.

Part Number Structure:

CFSOS 6440-4



All Measurements In Inches.

Dimensions & Specifications

	Part Number	L Length +.002 -.005 in.																	A Dim. +.000 -.005	H Hex Dim. (Nom.)	C Counter- bore ±.005																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
		.125	.187	.250	.312	.375	.437	.500	.562	.625	.687	.750	.8125	.875	.9375	1.00	1.0625							+.003	-.000																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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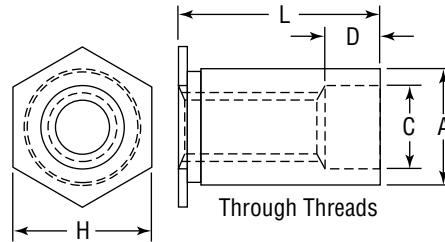
Self-Clinching Standoffs

Series CFSO, CFSOS, CFSOA

(Through Threads)



Continued from previous page.



All Measurements In Inches.

Dimensions & Specifications

	Thread Size	Part Number	L Length +.002 −.005 in.															 +.003 −.000	A Dim. +.000 −.005	H Hex Dim. (Nom.)	C Counter- bore ±.005	 Min.	 Min.
			.125	.187	.250	.312	.375	.437	.500	.562	.625	.687	.750	.812	.875	.937	1.00						
#6-32	CFSO	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34	.213	.212	.25	.156	.27	.04
	CFSOS 632	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34						
	CFSOA	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34						
#6-32	CFSO	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34	.281	.280	.312	.156	.31	.05
	CFSOS 8632	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34						
	CFSOA	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34						
#8-32	CFSO	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34	.281	.280	.312	.188	.31	.05
	CFSOS 832	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34						
	CFSOA	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34						
#10-32	CFSO	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34	.281	.280	.312	.203	.31	.05
	CFSOS 1032	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34						
	CFSOA	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34						
D ±.0156		None			.1875			.3125			.4375												

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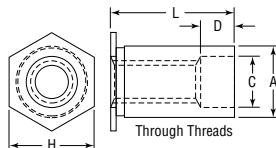


Self-Clinching Standoffs

Series CFSO, CFSOS, CFSOA (Through Threads)



Continued from previous page.



All Measurements In Millimeters.

Dimensions & Specifications

 Thread Size	Part Number	L Length +.05 -.13 mm													A	H	C		
		3	4	6	8	10	12	14	16	18	20	22	25	+ .08 - .00	Dim. + .00 - .13	Hex Dim. (Nom.)	Counter- bore ± .13	Min.	Min.
M3x0.5	CFSO	-3	-4	-6	-8	-10	-12	-14	-16	-18				4.22	4.2	4.8	3.2	6.0	1.0
	CFSOS M3	-3	-4	-6	-8	-10	-12	-14	-16	-18									
	CFSOA	-3	-4	-6	-8	-10	-12	-14	-16	-18									
M3x0.5	CFSO	-3	-4	-6	-8	-10	-12	-14	-16	-18				5.41	5.39	6.4	3.2	6.8	1.0
	CFSOS 3.5M3	-3	-4	-6	-8	-10	-12	-14	-16	-18									
	CFSOA	-3	-4	-6	-8	-10	-12	-14	-16	-18									
M3.5x0.6	CFSO	-3	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-25	5.41	5.39	6.4	4.0	6.8	1.0
	CFSOS M3.5	-3	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-25						
	CFSOA	-3	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-25						
M4x0.7	CFSO	-3	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-25	7.14	7.12	7.9	4.8	8.0	1.27
	CFSOS M4	-3	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-25						
	CFSOA	-3	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-25						
M5x0.8	CFSO	-3	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-25	7.14	7.12	7.9	5.35	8.0	1.27
	CFSOS M5	-3	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-25						
	CFSOA	-3	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-25						
D ±.4		None			4.0			8.0			11.0								

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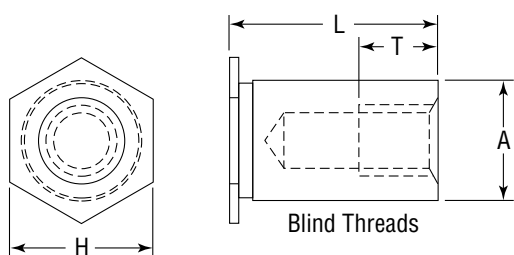


Self-Clinching Standoffs

Series CFBSO, CFBSOS, CFBSOA (Blind Threads)



CFBSO self-clinching standoffs are designed for quick, easy installation with any standard pneumatic, hydraulic or mechanical press. Blind standoffs are used in metal panels with thickness of .040 in. (1.0 mm) and up. No secondary operation, such as reaming or deburring, is necessary prior to installation.



Series	Material	Finish
CFBSO	Heat-treated Carbon Steel	Zinc* Clear
CFBSOS	300 Series Stainless Steel	Passivated ASTM A967
CFBSOA	7075-T6 Aluminum	None

*See Finish Spec. on Page 6.

Thread: Internal 2B ANSI B1.1 (6H, ANSI/ASME B1.13M).

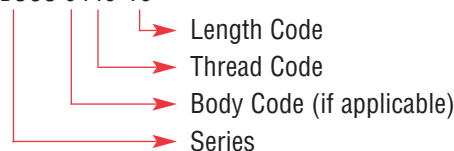
Use in: CFBSO for materials with Rockwell Hardness of B-80 or less.

CFBSOS for materials with Rockwell Hardness of B-70 or less.

CFBSOA for materials with Rockwell Hardness of B-50 or less.

Part Number Structure:

CFBSOS 6440-10



All Measurements In Inches.

Dimensions & Specifications

	Thread Size	Part Number	L Length +.002 -.005 in.													A Dim.	H Hex Dim.		
			.312	.375	.437	.500	.562	.625	.687	.750	.812	.875	.937	1.00	1.062	+.003 -.000	+.000 -.005	(Nom.)	Min.
#4-40	CFBSO	-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34	.166	.165	.187	.23	.040
	CFBSOS 440	-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34					
	CFBSOA	-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34					
#4-40	CFBSO	-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34	.213	.212	.25	.27	.040
	CFBSOS 6440	-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34					
	CFBSOA	-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34					
T Min.			.156		.187		.25			.375									

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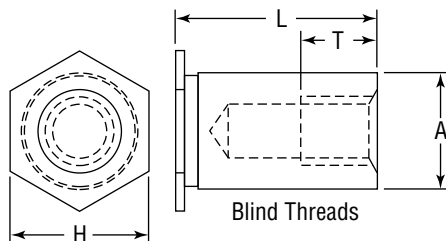
Self-Clinching Standoffs

Series CFBSO, CFBSOS, CFBSOA

(Blind Threads)



Continued from previous page.



All Measurements In Inches.

Dimensions & Specifications

	Thread Size	Part Number	L Length +.002 -.005 in.													A	H			
			.312	.375	.437	.500	.562	.625	.687	.750	.812	.875	.937	1.00	1.062	+.003 -.000	Dim. +.000 -.005	Hex Dim. (Nom.)	Min.	Min.
#6-32	CFBSO		-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34	.213	.212	.25	.27	.04
	CFBSOS 632		-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34					
	CFBSOA		-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34					
#6-32	CFBSO		-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34	.281	.280	.312	.31	.05
	CFBSOS 8632		-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34					
	CFBSOA		-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34					
#8-32	CFBSO		-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34	.281	.280	.312	.31	.05
	CFBSOS 832		-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34					
	CFBSOA		-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34					
#10-32	CFBSO		-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34	.281	.280	.312	.31	.05
	CFBSOS 1032		-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34					
	CFBSOA		-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34					
T Min.			.156		.187		.25			.375										

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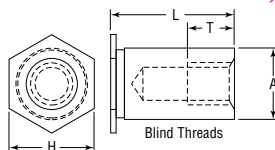


Self-Clinching Standoffs

Series CFBSO, CFBSOS, CFBSOA (Blind Threads)



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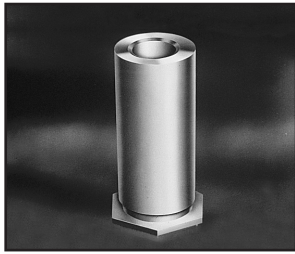


All Measurements In Millimeters.

Dimensions & Specifications

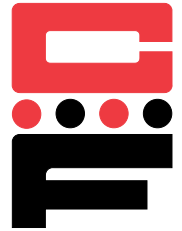
 Thread Size	Part Number	L Length +.05 -.13 mm											A	H		
		6	8	10	12	14	16	18	20	22	25	+ .08 - .00	Dim. +.00 - .13	Hex Dim. (Nom.)	Min.	Min.
M3x0.5	CFBSO	-6	-8	-10	-12	-14	-16	-18	-20	-22	-25	4.22	4.2	4.8	6.0	1.0
	CFBSOS M3	-6	-8	-10	-12	-14	-16	-18	-20	-22	-25					
	CFBSOA	-6	-8	-10	-12	-14	-16	-18	-20	-22	-25					
M3x0.5	CFBSO	-6	-8	-10	-12	-14	-16	-18	-20	-22	-25	5.41	5.39	6.4	6.8	1.0
	CFBSOS 3.5M3	-6	-8	-10	-12	-14	-16	-18	-20	-22	-25					
	CFBSOA	-6	-8	-10	-12	-14	-16	-18	-20	-22	-25					
M3.5x0.6	CFBSO	-6	-8	-10	-12	-14	-16	-18	-20	-22	-25	5.41	5.39	6.4	6.8	1.0
	CFBSOS M3.5	-6	-8	-10	-12	-14	-16	-18	-20	-22	-25					
	CFBSOA	-6	-8	-10	-12	-14	-16	-18	-20	-22	-25					
M4x0.7	CFBSO	-6	-8	-10	-12	-14	-16	-18	-20	-22	-25	7.14	7.12	7.9	8.0	1.27
	CFBSOS M4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-25					
	CFBSOA	-6	-8	-10	-12	-14	-16	-18	-20	-22	-25					
M5x0.8	CFBSO	-6	-8	-10	-12	-14	-16	-18	-20	-22	-25	7.14	7.12	7.9	8.0	1.27
	CFBSOS M5	-6	-8	-10	-12	-14	-16	-18	-20	-22	-25					
	CFBSOA	-6	-8	-10	-12	-14	-16	-18	-20	-22	-25					
T Min.		3.2	4.0		5.0	6.5		9.5								

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Self-Clinching Standoffs

Series CFSO, CFSOS, CFSOA, CFBSO, CFBSOS & CFBSOA



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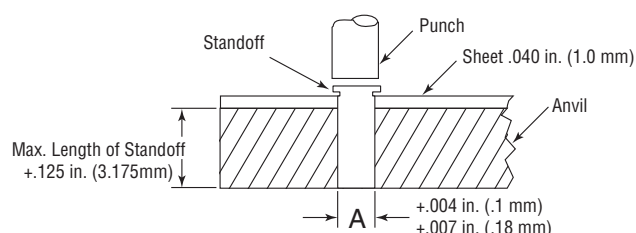
Installation & Performance Data

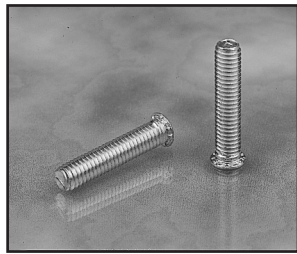
Sheet Material: .060 in. 5052-H34 Aluminum						.060 in. Cold-rolled Steel					
INCH (in.)											
	Thread Code	Standoff Material	Installation Force (lbs.)	Pushout (lbs.)	Torque-out (in.-lbs.)	Pull Through (lbs.)	Installation Force (lbs.)	Pushout (lbs.)	Torque-out (in.-lbs.)	Pull Through (lbs.)	Rec. Tighten Torque Max. (in.-lbs.)
	440	Steel	1100	160	11	280	2200	225	19	330	4.75
		Stainless Steel	1100	160	11	224	2200	225	19	264	3.8
		Aluminum	1100	160	11	168	nr	nr	nr	nr	2.85
	6440, 632	Steel	1700	300	25	280	3300	420	35	380	4.75, 8.75
		Stainless Steel	1700	300	25	248	3300	420	35	304	3.8, 7
		Aluminum	1700	300	25	186	nr	nr	nr	nr	2.85, 5.25
	8632, 832, 1032	Steel	2400	400	45	580	4000	560	75	700	8.75, 18, 32
		Stainless Steel	2400	400	45	464	4000	560	75	560	7, 14.4, 25.6
Aluminum		2400	400	45	348	nr	nr	nr	nr	5.25, 11, 19	
Sheet Material: 1.5mm 5052-H34 Aluminum						1.5mm Cold-rolled Steel					
METRIC (mm)	Thread Code	Standoff Material	Installation Force (kN)	Pushout (N)	Torque-out (N•m)	Pull Through (N)	Installation Force (kN)	Pushout (N)	Torque-out (N•m)	Pull Through (N)	Rec. Tighten Torque Max. (N•m)
	M3	Steel	4.9	710	1.24	1245	9.8	1000	2.15	1465	.55
		Stainless Steel	4.9	710	1.24	996	9.8	1000	2.15	1172	.44
		Aluminum	4.9	710	1.24	747	nr	nr	nr	nr	.33
	3.5M3	Steel	7.6	1330	2.82	1245	14.7	1860	3.95	1465	.55
		Stainless Steel	7.6	1330	2.82	996	14.7	1860	3.95	1172	.44
		Aluminum	7.6	1330	2.82	747	nr	nr	nr	nr	.33
	M4, M5	Steel	10.7	1780	5.08	2575	17.8	2490	8.47	3110	2, 3.6
		Stainless Steel	10.7	1780	5.08	2060	17.8	2490	8.47	2488	1.6, 2.88
		Aluminum	10.7	1780	5.08	1545	nr	nr	nr	nr	1.2, 2.16

nr = Not recommended.

RECOMMENDED INSTALLATION PROCEDURE

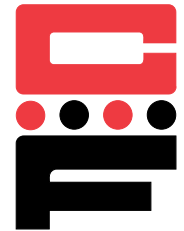
1. Insert Standoff through hole in sheet into anvil.
2. Apply only sufficient squeezing force between parallel surfaces of punch and anvil to embed hex head flush in sheet. Avoid excessive pressures.



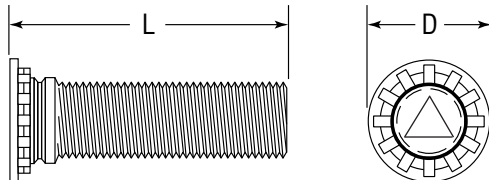


Self-Clinching Studs

Series CH, CHS & CHA



CH studs provide a strong flush-head assembly in material as thin as .040 in. (1.0 mm) with high torque-out and pushout performance.



Part Number Structure:

CH 256-4

Length Code

Thread Code

Series

Series	Material	Finish
CH	Heat-treated Carbon Steel	Zinc* Clear
CHS	300 Series Stainless Steel	Passivated ASTM A967
CHA	2024-T4 Aluminum	None

*See Finish Spec. on Page 6.

Thread: External 2A, ANSI B1.1 (6g ANSI/ASME B1.13M). **

Use in: CH- Materials with HRB-80 or less.

CHS- Materials with HRB-70 or less.

CHA- Materials with HRB-50 or less.

**See Note 3 on Page 6 for Gauging Spec.

Dimensions & Specifications

	Thread Size	Thread Code	L Length $\pm .015$ in.										D $\pm .015$	+ .003 - .000	Max. ^{††} Rec. Nut Tight. Torque in.-lbs.	Min.	Min.
			.250	.312	.375	.500	.625	.750	.875	1.00	1.25	1.50					
INCH (in.)	#2-56	256	-4	-5	-6	-8	-10	-12 [†]					.144	.085	2.5	.187	.040
	#4-40	440	-4	-5	-6	-8	-10	-12	-14	-16 [†]	-20		.176	.111	5	.219	.040
	#6-32	632	-4	-5	-6	-8	-10	-12	-14	-16	-20	-24 [†]	.206	.137	10	.250	.040
	#8-32	832	-4	-5	-6	-8	-10	-12	-14	-16	-20	-24 [†]	.237	.163	15	.281	.040
	#10-24	1024		-5 [†]	-6	-8	-10	-12	-14	-16	-20	-24 [†]	.256	.189	25	.281	.040
	#10-32	1032		-5 [†]	-6	-8	-10	-12	-14	-16	-20	-24	.256	.189	30	.281	.040
	1/4-20	420			-6	-8	-10	-12	-14	-16	-20	-24	.337	.249	55	.312	.062
	5/16-18	518				-8	-10	-12	-14	-16	-20	-24	.376	.311	115	.375	.093

[†] Not stocked, available on special order.

^{††} For aluminum studs, values are 60% of those listed.

Dimensions & Specifications

	Thread Size	Thread Code	L Length $\pm .4$ mm													D $\pm .4$	+ .08 - .00	Max. ^{††} Rec. Nut Tight. Torque N•m	Min.	Min.
			6	8	10	12	15	18	20	22	25	28	30	35	38					
METRIC (mm)	M2.5x0.45	M2.5	-6 [†]	-8 [†]	-10 [†]	-12 [†]	-15 [†]	-18 [†]								4.1	2.5	3.1	5.4	1.0
	M3x0.5	M3	-6 [†]	-8	-10	-12	-15	-18	-20	-22	-25					4.6	3.0	3.6	5.6	1.0
	M3.5x0.6	M3.5	-6	-8	-10	-12	-15	-18	-20	-22	-25	-28	-30			5.3	3.5	4.1	6.4	1.0
	M4x0.7	M4	-6 [†]	-8	-10	-12	-15	-18	-20	-22	-25	-28	-30	-35	-38	5.9	4.0	4.6	7.2	1.0
	M5x0.8	M5		-8 [†]	-10	-12	-15	-18	-20	-22	-25	-28	-30	-35	-38	6.5	5.0	5.6	7.2	1.0
	M6x1.0	M6			-10	-12	-15	-18	-20	-22	-25	-28	-30	-35	-38	8.2	6.0	6.6	7.9	1.6
	M8x1.25	M8				-12 [†]	-15	-18	-20	-22	-25	-28	-30	-35	-38	9.6	8.0	9.6	9.6	2.4

Note: Studs are available in lengths up to 3 in. (76.2 mm) upon special order for 1/4-20/M6 and larger.

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Self-Clinching Studs

Series CH, CHS & CHA

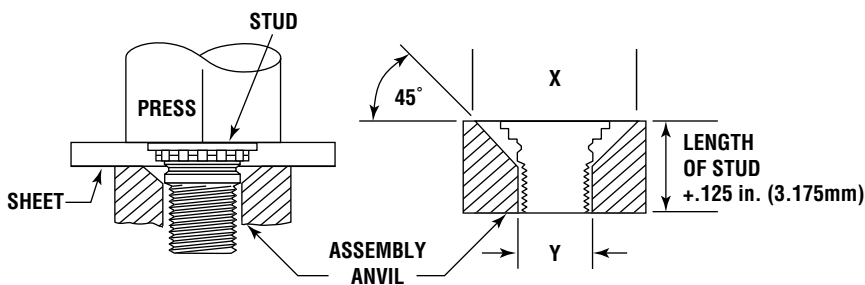


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TOOLING

Note 1.

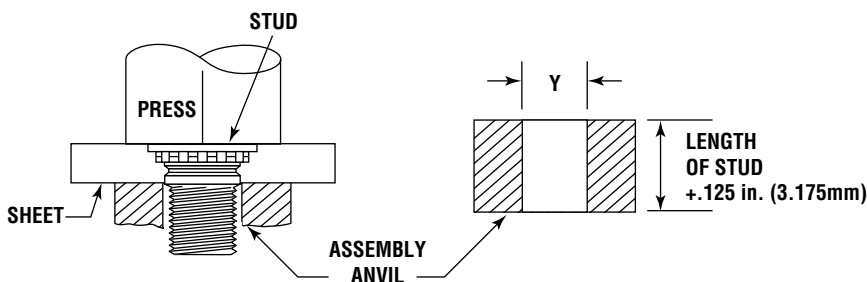
For material thickness of .059 in. or less, a countersunk hole is needed in the anvil.



Tooling for sheet thickness .059 in. (1.51mm) and less with #2 (M2.5) thru #10 (M5) thread sizes and less than .093 in. (2.3mm) for 1/4 in. (M6) threads.

Note 2.

For material thickness of .060 in. or more, a through-hole is needed in the anvil.

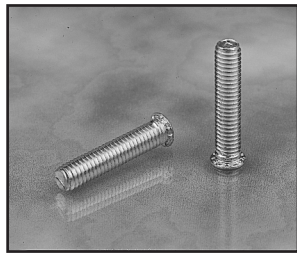


Tooling for sheet thickness .060 in. (1.51mm) minimum and greater with #2 (M2.5) thru #10 (M5) thread sizes and .092 in. (2.3mm) minimum and greater for 1/4 in. (M6) and 5/16 in. (M8) threads.

	Thread Code	Anvil Dimensions (in.)	
		X +.004	Y +.003
INCH (in.)	256	.110	.087
	440	.136	.113
	632	.162	.139
	832	.188	.165
	1024	.216	.191
	1032	.216	.191
	420	.295	.250
	518	.334	.3125

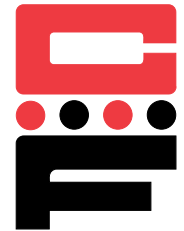
	Thread Code	Anvil Dimensions (mm)	
		X +.1	Y +.08
METRIC (mm)	M2.5	3.1	2.53
	M2.5	3.6	3.03
	M2.5	4.1	3.53
	M2.5	4.6	4.03
	M2.5	5.6	5.03
	M2.5	6.6	6.03
	M2.5	8.6	8.03

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Self-Clinching Studs

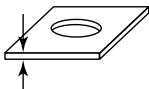
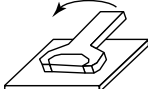
Series CH, CHS & CHA



Continued from previous page.

Note: Values based on stainless steel studs (steel stud values may be higher).

Installation & Performance Data

					
	Thread Code	Sheet Thickness & Material	Installation Force (lbs.)	Pushout (lbs.)	Torque-out (in.-lbs.)
INCH (in.)	256	.062 Aluminum	2000	100	5
		.060 Steel	2500	180	5
	440	.064 Aluminum	3800	170	10
		.060 Steel	4300	275	10
	632	.064 Aluminum	3800	180	17
		.060 Steel	4700	300	20
	832	.064 Aluminum	4800	220	28
		.060 Steel	6800	375	40
	1024 1032	.064 Aluminum	5500	270	30
		.060 Steel	6800	440	60
METRIC (mm)	420	.093 Aluminum	6500	310	65
		.088 Steel	9500	575	100
	518	.093 Aluminum	6500	430	100
		.093 Steel	10000	650	175
	Thread Code	Sheet Thickness & Material	Installation Force (kN)	Pushout (N)	Torque-out (N•m)
	M2.5	1.6 Aluminum	8.9	465	1.0
		1.5 Steel	11.1	740	1.0
	M3	1.6 Aluminum	12.9	600	1.7
		1.5 Steel	14.7	820	1.7
	M3.5	1.6 Aluminum	15.6	800	1.7
		1.5 Steel	22.3	1335	2.8
	M4	1.6 Aluminum	20.0	975	2.9
		1.5 Steel	28.9	1780	4.2
	M5	1.6 Aluminum	24.5	1070	3.5
		1.5 Steel	33.4	2000	6.5
	M6	2.4 Aluminum	28.9	1660	7.3
		2.2 Steel	44.5	2560	11.3
	M8	2.4 Aluminum	29.8	1910	11.3
		2.2 Steel	44.5	2890	19.2