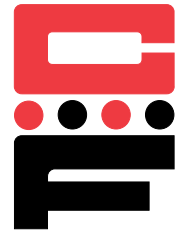
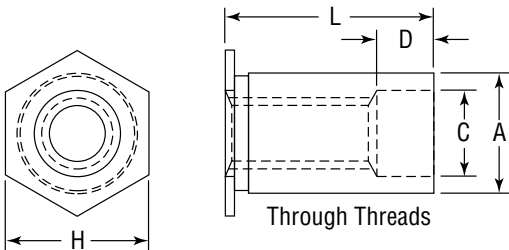


Self-Clinching Standoffs

Series CFSO, CFSOS, CFSOA



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	303 Stainless Steel	Passivated ASTM A380
CFSOA	7075-T6 Aluminum	None

*Spec. ASTM B633-85

Thread: Class 2B, MIL-S-7742; (6H ISO Metric).

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:

CFSO6 440-4



All Measurements In Inches

Dimensions & Specifications

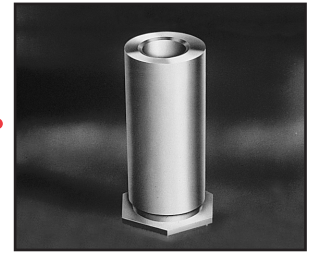
Thread Size	Part Number	L Length +.002 -.005 in.															A Dim. +.003 -.000	H Hex Dim. (Nom.)	C Counter- bore ±.005	Min.	Min.							
		.125	.1875	.250	.3125	.375	.4375	.500	.5625	.625	.6875	.750	.8125	.875	.9375	1.00						1.0625						
#4-40	CFSO																											
	CFSOS 440	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-24						.166	.165	.1875	.125	.23	.040					
	CFSOA																											
#4-40	CFSO																											
	CFSOS 6440	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-24						.213	.212	.25	.125	.27	.040					
	CFSOA																											
D ±.0156		None			.1875			.3125			.4375																	

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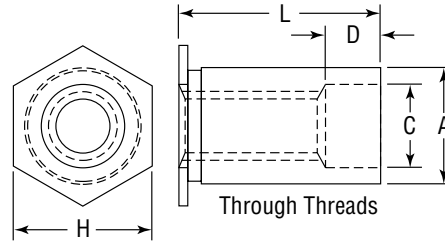


Self-Clinching Standoffs

Series CFSO, CFSOS, CFSOA



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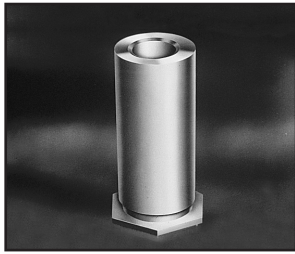


All Measurements In Inches

Dimensions & Specifications

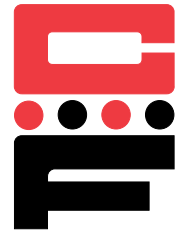
Thread Size	Part Number	L Length +.002 -.005 in.															A Dim.	H Hex Dim. (Nom.)	C Counter- bore ±.005	Min.	Min.		
		.125	.1875	.250	.3125	.375	.4375	.500	.5625	.625	.6875	.750	.8125	.875	.9375	1.00						1.0625	
#6-32	CFSO																	.213	.212	.25	.156	.27	.04
	CFSOS 632	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34						
	CFSOA																						
#6-32	CFSO																	.281	.280	.3125	.156	.31	.05
	CFSOS 8632	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34						
	CFSOA																						
#8-32	CFSO																	.281	.280	.3125	.188	.31	.05
	CFSOS 832	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34						
	CFSOA																						
#10-32	CFSO																	.281	.280	.3125	.203	.31	.05
	CFSOS 1032	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34						
	CFSOA																						
D ±.0156		None			.1875			.3125			.4375												

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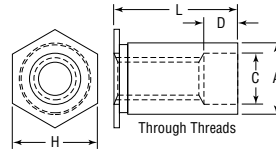


Self-Clinching Standoffs

Series CFSO, CFSOS, CFSOA






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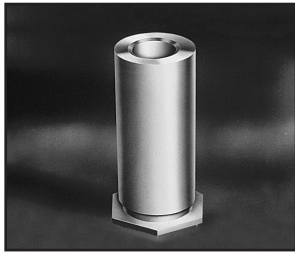


All Measurements In Millimeters

Dimensions & Specifications

Thread Size	Part Number	L Length +.05 -.13 mm											 +.08 -.00	A Dim. +.00 -.13	H Hex Dim. (Nom.)	C Counter- bore ± 0.13	 Min.	 Min.	
		3	4	6	8	10	12	14	16	18	20	22							25
M3	CFSO CFSOS M3 CFSOA	-3	-4	-6	-8	-10	-12	-14	-16	-18				4.2	4.19	4.8	3.2	6.0	1.0
M3	CFSO CFSOS 3.5M3 CFSOA	-3	-4	-6	-8	-10	-12	-14	-16	-18				5.4	5.38	6.4	3.2	7.0	1.0
M3.5	CFSO CFSOS M3.5 CFSOA	-3	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-25	5.4	5.38	6.4	4.0	7.0	1.0
M4	CFSO CFSOS M4 CFSOA	-3	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-25	7.2	7.11	7.9	4.8	8.0	1.3
M5	CFSO CFSOS M5 CFSOA	-3	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-25	7.2	7.11	7.9	5.35	8.0	1.3
D ± 0.4		None			4.0			8.0			11.0								

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Self-Clinching Standoffs

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



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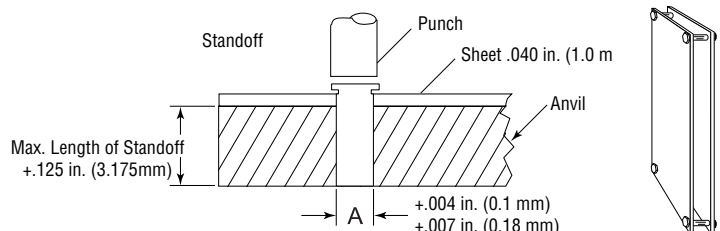
Installation & Performance Data

Sheet Material: .060 in. 5052-H34 Aluminum						.060 in. Cold-rolled Steel					
Thread Code	Standoff Material	Installation (lbs.)	Pushout (lbs.)	Torque-out (in.- lbs.)	Pull Through (lbs.)	Installation (lbs.)	Pushout (lbs.)	Torque-out (in.- lbs.)	Pull Through (lbs.)	Rec Tighten Torque Max. (in.- lbs.)	
INCH (in.)	440	Steel	1075	155	10	270	2100	220	18	325	4.7
		Stainless Steel	1075	155	10	220	2100	220	18	260	3.6
		Aluminum	1075	155	10	160	nr	nr	nr	nr	2.7
	6440, 632	Steel	1680	290	24	300	3200	410	32	375	4.6, 8.6
		Stainless Steel	1680	290	24	235	3200	410	32	300	3.6, 6.8
		Aluminum	1680	290	24	180	nr	nr	nr	nr	2.7, 5.1
	8632, 832, 1032	Steel	2350	380	44	560	3900	550	72	690	8.6, 17, 30
		Stainless Steel	2350	380	44	450	3900	550	72	550	6.8, 13, 24
		Aluminum	2350	380	44	340	nr	nr	nr	nr	5.2, 10, 17
Sheet Material: 1.5mm 5052-H34 Aluminum						1.5mm Cold-rolled Steel					
Thread Code	Standoff Material	Installation (kN)	Pushout (N)	Torque-out (N•m)	Pull Through (N)	Installation (kN)	Pushout (N)	Torque-out (N•m)	Pull Through (N)	Rec Tighten Torque Max. (N•m)	
METRIC (mm)	M3	Steel	4.7	700	1.2	1230	9.6	990	2.1	1450	0.5
		Stainless Steel	4.7	700	1.2	985	9.6	990	2.1	1150	0.4
		Aluminum	4.7	700	1.2	740	nr	nr	nr	nr	0.3
	3.5M3	Steel	7.4	1310	2.79	1350	14.5	1850	3.9	1670	0.5
		Stainless Steel	7.4	1310	2.79	1100	14.5	1850	3.9	1350	0.4
		Aluminum	7.4	1310	2.79	810	nr	nr	nr	nr	0.3
	M4, M5	Steel	10.5	1750	5.01	2550	17.6	2460	8.45	3100	1.9, 3.4
		Stainless Steel	10.5	1750	5.01	2020	17.6	2460	8.45	2450	0.9, 2.7
		Aluminum	10.5	1750	5.01	1525	nr	nr	nr	nr	1.1, 2.1

nr = Not recommended.

RECOMMENDED INSTALLATION PROCEDURE

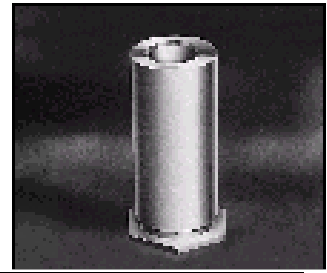
1. Insert Standoff through hole in sheet into anvil.
2. Apply only sufficient squeezing force between parallel surfaces of punch and anvil to embed hex head flush in sheet. Avoid excessive pressures.





Self-Clinching Standoffs

Series CFBSO, CFBSOS, CFBSOA



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. (1.0mm) and up. No secondary operation, such as reaming or deburring, is necessary prior to installation

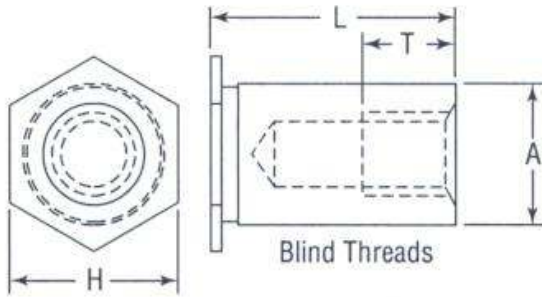
Series	Material	Finish *
CFBSO	Heat Treated Carbon Steel	Zinc* Clear
CFBSOS	303 Stainless Steel	Passivated ASTM A380
CFBSOA	7075-T6 Aluminum	None

*Spec. ASTM B633-85
 Thread: Class 2B, MIL-S-7742; (6H ISO Metric)
 Use in:

CFBSO for material with Rockwell Hardness of B88 or less.

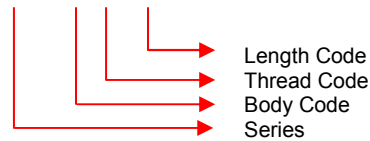
CFBSOS for material with Rockwell Hardness of B-70 or less

CFBSOA for material with Rockwell Hardness of B-50 or less






Part Number Structure:

CFBSO 6440-10



All Measurements in Inches.

Dimensions & Specifications

Thread Size	Part Number	L LENGTH +.002 - .005 in.																 A Dim. +.003 -.000 +.000 -.005	H Hex Dim. (Nom.) Min.	 Min.	 Min.	
		.125	.1875	.250	.3125	.375	.4375	.500	.5625	.625	.6875	.750	.8125	.875	.9375	1.00	1.0625					
#4-40	CFBSO																					
	CFBSOS 440				-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34	.166	.165	.1875	.23	.040
	CFBSOA																					
#4-40	CFBSO																					
	CFBSOS6440				-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34	-.213	.212	.25	.27	.040
	CFBSOA																					
T Dim. Min.						.1563	.1875	.250									.375					

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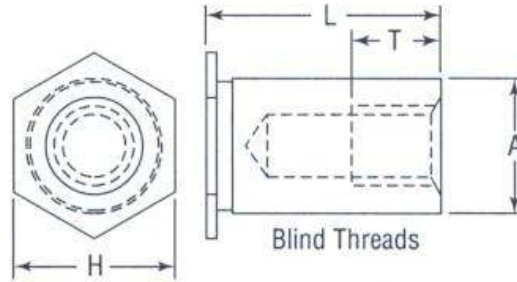


Self-Clinching Standoffs

Series CFBSO, CFBSOS, CFBSOA






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All Measurements In Inches.

Dimensions & Specifications

Thread Size	Part Number	L LENGTH +.002 - .005 in.															 A Dim. +.000 -.005	H Hex Dim. (Nom.)	 Min.	 Min.		
		.125	.1875	.250	.3125	.375	.4375	.500	.5625	.625	.6875	.750	.8125	.875	.9375	1.00					1.0625	
#6-32	CFBSO CFBSOS 632 CFBSOA				-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34	.213	.212	.25	.27	.040
#6-32	CFBSO CFBSOS8632 CFBSOA				-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34	.213	.280	.25	.27	.040
#8-32	CFBSO CFBSOS832 CFBSOA				-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34	.281	.280	.3125	.31	.05
#1032	CFBSO CFBSOS1032 CFBSOA				-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34	.281	.280	.3125	.31	.05
T Dim. Min.					.1563	.1875		.250									.375					

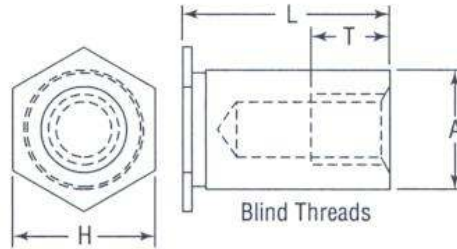


Self-Clinching Standoffs

Series CFBSO, CFBSOS, CFBSOA






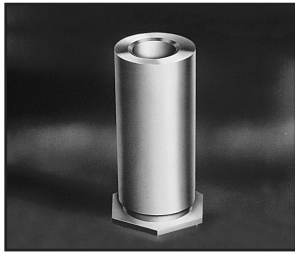
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All Measurements In Millimeter.

Dimensions & Specifications

Thread Size	Part Number	L LENGTH +.05 - .13 mm												 +.08 -.00	A Dim. +.00 -.13	H Hex Dim. (Nom.)	 Min.	 Min.
		3	4	6	8	10	12	14	16	18	20	22	25					
M3	CFBSO																	
	CFBSOS M3				-8	-10	-12	-14	-16	-18	-20	-22	-25	4.2	4.19	4.8	6.0	1.0
	CFBSOA																	
M3	CFBSO																	
	CFBSOS3.5M3			-6	-8	-10	-12	-14	-16	-18	-20	-22	-25	5.4	5.38	6.4	7.0	1.0
	CFBSOA																	
M3.5	CFBSO																	
	CFBSOS M3.5			-6	-8	-10	-12	-14	-16	-18	-20	-22	-25	5.4	5.38	6.4	7.0	1.0
	CFBSOA																	
M4	CFBSO																	
	CFBSOS M4				-8	-10	-12	-14	-16	-18	-20	-22	-25	7.2	7.11	7.9	8.0	1.3
	CFBSOA																	
M5	CFBSO																	
	CFBSOS M5				-8	-10	-12	-14	-16	-18	-20	-22	-25	7.2	7.11	7.9	8.0	1.3
	CFBSOA																	
T Dim. Min.				3.2	4.0	5.0	6.5	9.5										



Self-Clinching Standoffs

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



Continued from previous page.

Installation & Performance Data

Sheet Material: .060 in. 5052-H34 Aluminum						.060 in. Cold-rolled Steel					
Thread Code	Standoff Material	Installation (lbs.)	Pushout (lbs.)	Torque-out (in.- lbs.)	Pull Through (lbs.)	Installation (lbs.)	Pushout (lbs.)	Torque-out (in.- lbs.)	Pull Through (lbs.)	Rec Tighten Torque Max. (in.- lbs.)	
											INCH (in.)
Stainless Steel	1075	155	10	220	2100	220	18	260	3.6		
Aluminum	1075	155	10	160	nr	nr	nr	nr	2.7		
6440, 632	Steel	1680	290	24	300	3200	410	32	375	4.6, 8.6	
	Stainless Steel	1680	290	24	235	3200	410	32	300	3.6, 6.8	
	Aluminum	1680	290	24	180	nr	nr	nr	nr	2.7, 5.1	
8632, 832, 1032	Steel	2350	380	44	560	3900	550	72	690	8.6, 17, 30	
	Stainless Steel	2350	380	44	450	3900	550	72	550	6.8, 13, 24	
	Aluminum	2350	380	44	340	nr	nr	nr	nr	5.2, 10, 17	
Sheet Material: 1.5mm 5052-H34 Aluminum						1.5mm Cold-rolled Steel					
Thread Code	Standoff Material	Installation (kN)	Pushout (N)	Torque-out (N•m)	Pull Through (N)	Installation (kN)	Pushout (N)	Torque-out (N•m)	Pull Through (N)	Rec Tighten Torque Max. (N•m)	
											METRIC (mm)
Stainless Steel	4.7	700	1.2	985	9.6	990	2.1	1150	0.4		
Aluminum	4.7	700	1.2	740	nr	nr	nr	nr	0.3		
3.5M3	Steel	7.4	1310	2.79	1350	14.5	1850	3.9	1670	0.5	
	Stainless Steel	7.4	1310	2.79	1100	14.5	1850	3.9	1350	0.4	
	Aluminum	7.4	1310	2.79	810	nr	nr	nr	nr	0.3	
M4, M5	Steel	10.5	1750	5.01	2550	17.6	2460	8.45	3100	1.9, 3.4	
	Stainless Steel	10.5	1750	5.01	2020	17.6	2460	8.45	2450	0.9, 2.7	
	Aluminum	10.5	1750	5.01	1525	nr	nr	nr	nr	1.1, 2.1	

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.

