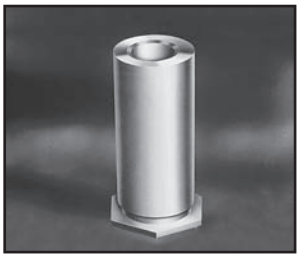


Self-Clinching Standoffs

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

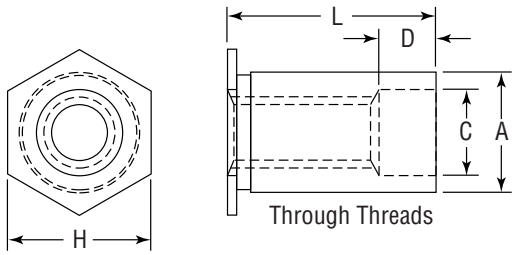
*See Finish Spec. on Page 6.

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

- Length Code
- Thread Code
- Body Code (if applicable)
- Series

All Measurements In Inches.

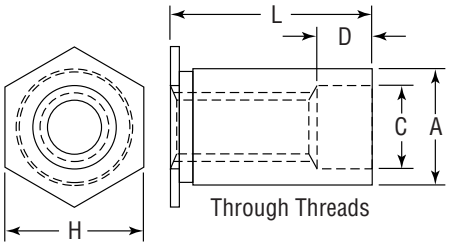
Dimensions & Specifications

Thread Size	Part Number	L Length +.002 -.005 in. .125	.187	.250	.312	.375	.437	.500	.562	.625	.687	.750	.8125	.875	.9375	1.00	1.0625	+.003 −.000	A Dim. +.000 −.005	H Hex Dim. (Nom.)	C Counter-bore ±.005	Min.	Min.
#4-40	CFSO	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-24						.166	.165	.187	.125	.23	.040
	CFSOS 440	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-24											
	CFSOA	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-24											
#4-40	CFSO	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-24						.213	.212	.25	.125	.27	.040
	CFSOS 6440	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-24											
	CFSOA	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-24											
D ±.0156		None				.1875				.3125				.4375									

Self-Clinching Standoffs

Series CFSO, CFSOS, CFSOA (Through Threads)

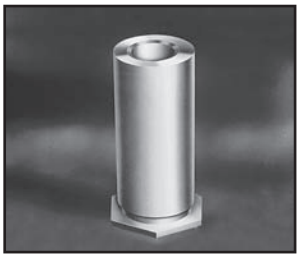
Continued from previous page.



All Measurements In Inches.

Dimensions & Specifications

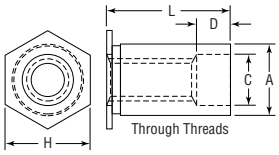
Thread Size	Part Number	L Length +.002 –.005 in. .125	.187	.250	.312	.375	.437	.500	.562	.625	.687	.750	.812	.875	.937	1.00	1.062	+.003 –.000	A Dim. +.000 –.005	H Hex Dim. (Nom.)	C Counter-bore ±.005	Min.	Min.
#6-32	CFSO	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34	.213	.212	.25	.156	.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									



Self-Clinching Standoffs

Series CFSO, CFSOS, CFSOA (Through Threads)

Continued from previous page.



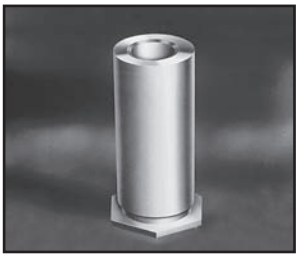
All Measurements In Millimeters.

Dimensions & Specifications

Thread Size	Part Number	L Length +.05 –.13 mm												+.08 –.00	A Dim. +.00 –.13	H Hex Dim. (Nom.)	C Counter-bore ±.13	Min.	Min.
		3	4	6	8	10	12	14	16	18	20	22	25						
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							

Self-Clinching Standoffs

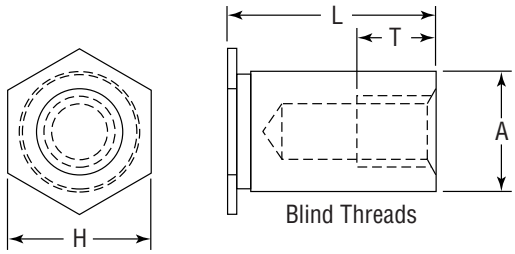
Series CFBSO, CFBSOS, CFBSOA (Blind Threads)



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: Inernal 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:

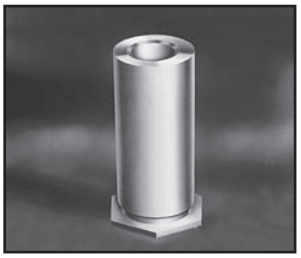
CFBSOS 6440-10

- Length Code
- Thread Code
- Body Code (if applicable)
- Series

All Measurements In Inches.

Dimensions & Specifications

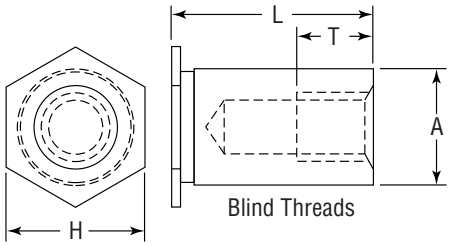
Thread Size	Part Number	L Length +.002 –.005 in. .312	.375	.437	.500	.562	.625	.687	.750	.812	.875	.937	1.00	1.062	+.003 –.000	A Dim. +.000 –.005	H Hex Dim. (Nom.)	Min.	Min.
#4-40	CFBSO	-10	-12	-14	-16	-18	-20	-22	-24	-26	-28	-30	-32	-34	.166	.165	.187	.23	.040
	CFBSOS 440	-10	-12	-14	-16	-18	-20	-22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



Self-Clinching Standoffs

Series CFBSO, CFBSOS, CFBSOA (Blind Threads)

Continued from previous page.



All Measurements In Inches.

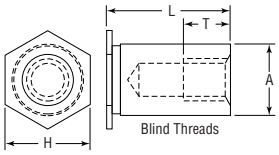
Dimensions & Specifications

Thread Size	Part Number	L Length +.002 –.005 in. .312	.375	.437	.500	.562	.625	.687	.750	.812	.875	.937	1.00	1.062	+.003 –.000	A Dim. +.000 –.005	H 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											

Self-Clinching Standoffs

Series CFBSO, CFBSOS, CFBSOA (Blind Threads)

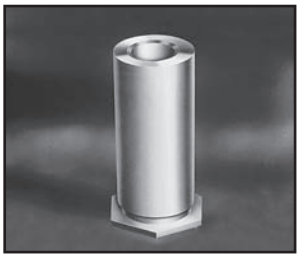
Continued from previous page.



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.)	Min.	Min.
		6	8	10	12	14	16	18	20	22	25					
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								



Self-Clinching Standoffs

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

Continued from previous page.

Installation & Performance Data

	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.)
		Sheet Material:	.060 in. 5052-H34 Aluminum				.060 in. Cold-rolled Steel				
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
	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)
		Sheet Material:	1.5mm 5052-H34 Aluminum				1.5mm Cold-rolled Steel				
METRIC (mm)	M3	Steel	4.7	700	1.2	1230	9.6	990	2.1	1450	.5
		Stainless Steel	4.7	700	1.2	985	9.6	990	2.1	1150	.4
		Aluminum	4.7	700	1.2	740	nr	nr	nr	nr	.3
	3.5M3	Steel	7.4	1310	2.79	1230	14.5	1850	3.9	1450	.5
		Stainless Steel	7.4	1310	2.79	1100	14.5	1850	3.9	1150	.4
		Aluminum	7.4	1310	2.79	810	nr	nr	nr	nr	.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	1.5, 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 an anvil to embed hex head flush in sheet. Avoid excessive pressures.