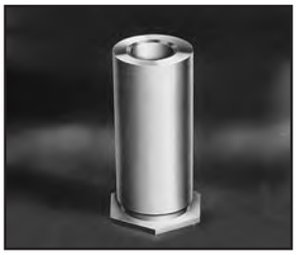


# Self-Clinching Standoffs

## 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 A380 |
| CFSOA | 7075-T6 Aluminum | None |

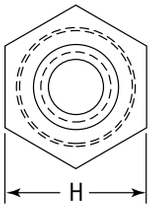
*See Finish Spec. on Page 6.

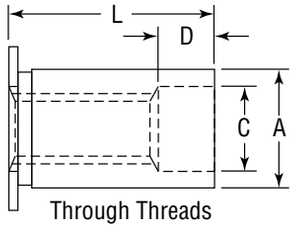
Thread: Internal 2B, ANSI B1.1 (6H, ANSI/ASME B1.13M).

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.**

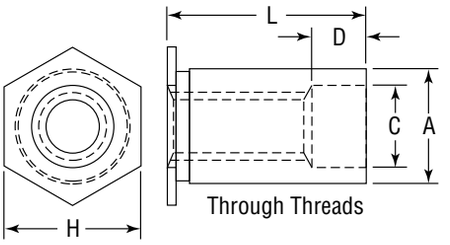
### *Dimensions & Specifications*

| Thread Size | Part Number | L Length +.002 -.005 in. .125 | .1875 | .250 | .3125 | .375 | .4375 | .500 | .5625 | .625 | .6875 | .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 CFSOS 440 CFSOA | -4 | -6 | -8 | -10 | -12 | -14 | -16 | -18 | -20 | -22 | -24 | | | | | | .166 | .165 | .1875 | .125 | .23 | .040 |
| #4-40 | CFSO CFSOS 6440 CFSOA | -4 | -6 | -8 | -10 | -12 | -14 | -16 | -18 | -20 | -22 | -24 | | | | | | .213 | .212 | .25 | .125 | .27 | .040 |
| D ±.0156 | | None | | | | .1875 | | | | .3125 | | | | .4375 | | | | | | | | | |

# Self-Clinching Standoffs

## Series CFSO, CFSOS, CFSOA (Through Threads)

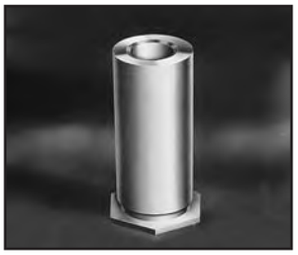
Continued from previous page.




**All Measurements In Inches.**

### *Dimensions & Specifications*

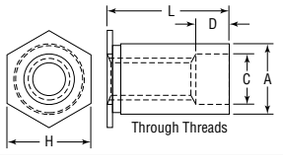
| Thread Size | Part Number | L Length +.002 –.005 in. .125 | .1875 | .250 | .3125 | .375 | .4375 | .500 | .5625 | .625 | .6875 | .750 | .8125 | .875 | .9375 | 1.00 | 1.0625 | +.003 –.000 | A Dim. +.000 –.005 | H Hex Dim. (Nom.) | C Counter-bore ±.005 | Min. | Min. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| #6-32 | CFSO CFSOS 632 CFSOA | -4 | -6 | -8 | -10 | -12 | -14 | -16 | -18 | -20 | -22 | -24 | -26 | -28 | -30 | -32 | -34 | .213 | .212 | .25 | .156 | .27 | .04 |
| #6-32 | CFSO CFSOS 8632 CFSOA | -4 | -6 | -8 | -10 | -12 | -14 | -16 | -18 | -20 | -22 | -24 | -26 | -28 | -30 | -32 | -34 | .281 | .280 | .3125 | .156 | .31 | .05 |
| #8-32 | CFSO CFSOS 832 CFSOA | -4 | -6 | -8 | -10 | -12 | -14 | -16 | -18 | -20 | -22 | -24 | -26 | -28 | -30 | -32 | -34 | .281 | .280 | .3125 | .188 | .31 | .05 |
| #10-32 | CFSO CFSOS 1032 CFSOA | -4 | -6 | -8 | -10 | -12 | -14 | -16 | -18 | -20 | -22 | -24 | -26 | -28 | -30 | -32 | -34 | .281 | .280 | .3125 | .203 | .31 | .05 |
| 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 3 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 25 | +.08 –.00 | A Dim. +.00 –.13 | H Hex Dim. (Nom.) | C Counter-bore ± .13 | Min. | Min. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| M3x0.5 | CFSO<br>CFSOS M3<br>CFSOA | -3 | -4 | -6 | -8 | -10 | -12 | -14 | -16 | -18 | | | | 4.22 | 4.19 | 4.8 | 3.2 | 6.0 | 1.0 |
| M3x0.5 | CFSO<br>CFSOS 3.5M3<br>CFSOA | -3 | -4 | -6 | -8 | -10 | -12 | -14 | -16 | -18 | | | | 5.41 | 5.38 | 6.4 | 3.2 | 7.0 | 1.0 |
| M3.5x0.6 | CFSO<br>CFSOS M3.5<br>CFSOA | -3 | -4 | -6 | -8 | -10 | -12 | -14 | -16 | -18 | -20 | -22 | -25 | 5.41 | 5.38 | 6.4 | 4.0 | 7.0 | 1.0 |
| M4x0.7 | CFSO<br>CFSOS M4<br>CFSOA | -3 | -4 | -6 | -8 | -10 | -12 | -14 | -16 | -18 | -20 | -22 | -25 | 7.14 | 7.11 | 7.9 | 4.8 | 8.0 | 1.3 |
| M5x0.8 | CFSO<br>CFSOS M5<br>CFSOA | -3 | -4 | -6 | -8 | -10 | -12 | -14 | -16 | -18 | -20 | -22 | -25 | 7.14 | 7.11 | 7.9 | 5.35 | 8.0 | 1.3 |
| 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 A380 |
| CFBSOA | 7075-T6 Aluminum | None |

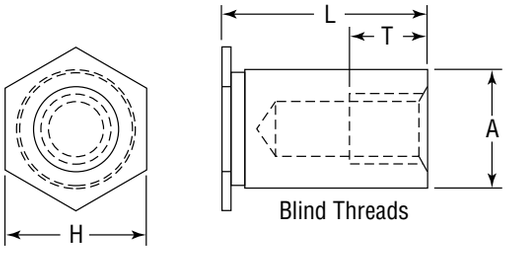
*See Finish Spec. on Page 6.

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:

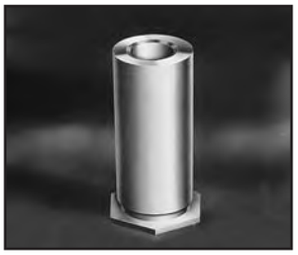
CFBSOS 6440-10

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

**All Measurements In Inches.**

### *Dimensions & Specifications*

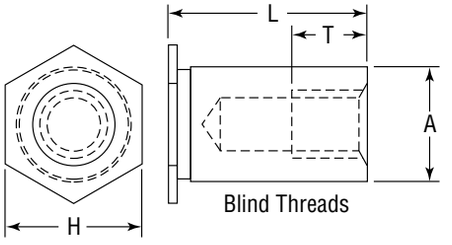
| Thread Size | Part Number | L Length +.002 –.005 in. .3125 | .375 | .4375 | .500 | .5625 | .625 | .6875 | .750 | .8125 | .875 | .9375 | 1.00 | 1.0625 | +.003 –.000 | A Dim. +.000 –.005 | H Hex Dim. (Nom.) | Min. | Min. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| #4-40 | CFBSO CFBSOS 440 CFBSOA | -10 | -12 | -14 | -16 | -18 | -20 | -22 | -24 | -26 | -28 | -30 | -32 | -34 | .166 | .165 | .1875 | .23 | .040 |
| #4-40 | CFBSO CFBSOS 6440 CFBSOA | -10 | -12 | -14 | -16 | -18 | -20 | -22 | -24 | -26 | -28 | -30 | -32 | -34 | .213 | .212 | .25 | .27 | .040 |
| T Min. | | .1563 | | .1875 | .25 | | | .375 | | | | | | | | | | | |



# Self-Clinching Standoffs

## Series CFBSO, CFBSOS, CFBSOA (Blind Threads)

Continued from previous page.




**All Measurements In Inches.**

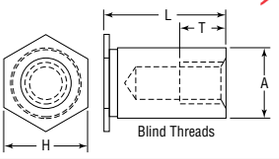
### *Dimensions & Specifications*

| Thread Size | Part Number | L Length +.002 –.005 in. .3125 | .375 | .4375 | .500 | .5625 | .625 | .6875 | .750 | .8125 | .875 | .9375 | 1.00 | 1.0625 | +.003 –.000 | A Dim. +.000 –.005 | H Hex Dim. (Nom.) | Min. | Min. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| #6-32 | CFBSO CFBSOS 632 CFBSOA | -10 | -12 | -14 | -16 | -18 | -20 | -22 | -24 | -26 | -28 | -30 | -32 | -34 | .213 | .212 | .25 | .27 | .04 |
| #6-32 | CFBSO CFBSOS 8632 CFBSOA | -10 | -12 | -14 | -16 | -18 | -20 | -22 | -24 | -26 | -28 | -30 | -32 | -34 | .281 | .280 | .3125 | .31 | .05 |
| #8-32 | CFBSO CFBSOS 832 CFBSOA | -10 | -12 | -14 | -16 | -18 | -20 | -22 | -24 | -26 | -28 | -30 | -32 | -34 | .281 | .280 | .3125 | .31 | .05 |
| #10-32 | CFBSO CFBSOS 1032 CFBSOA | -10 | -12 | -14 | -16 | -18 | -20 | -22 | -24 | -26 | -28 | -30 | -32 | -34 | .281 | .280 | .3125 | .31 | .05 |
| T Min. | | .1563 | | .1875 | .25 | | | .375 | | | | | | | | | | | |

# Self-Clinching Standoffs

## Series CFBSO, CFBSOS, CFBSOA (Blind Threads)

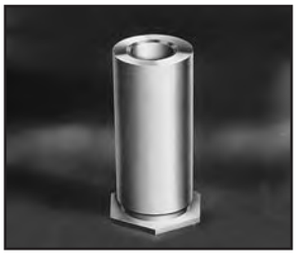
Continued from previous page.




**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<br>CFBSOS M3<br>CFBSOA | | -8 | -10 | -12 | -14 | -16 | -18 | -20 | -22 | -25 | 4.22 | 4.19 | 4.8 | 6.0 | 1.0 |
| M3x0.5 | CFBSO<br>CFBSOS 3.5M3<br>CFBSOA | -6 | -8 | -10 | -12 | -14 | -16 | -18 | -20 | -22 | -25 | 5.41 | 5.38 | 6.4 | 7.0 | 1.0 |
| M3.5x0.6 | CFBSO<br>CFBSOS M3.5<br>CFBSOA | -6 | -8 | -10 | -12 | -14 | -16 | -18 | -20 | -22 | -25 | 5.41 | 5.38 | 6.4 | 7.0 | 1.0 |
| M4x0.7 | CFBSO<br>CFBSOS M4<br>CFBSOA | | -8 | -10 | -12 | -14 | -16 | -18 | -20 | -22 | -25 | 7.14 | 7.11 | 7.9 | 8.0 | 1.3 |
| M5x0.8 | CFBSO<br>CFBSOS M5<br>CFBSOA | | -8 | -10 | -12 | -14 | -16 | -18 | -20 | -22 | -25 | 7.14 | 7.11 | 7.9 | 8.0 | 1.3 |
| 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

| | | | Sheet Material: .060 in. 5052-H34 Aluminum | | | | .060 in. Cold-rolled Steel | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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.) |
| 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 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) |
| 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.