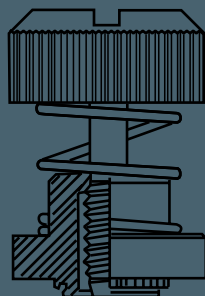
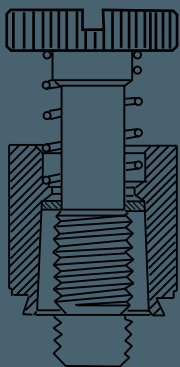
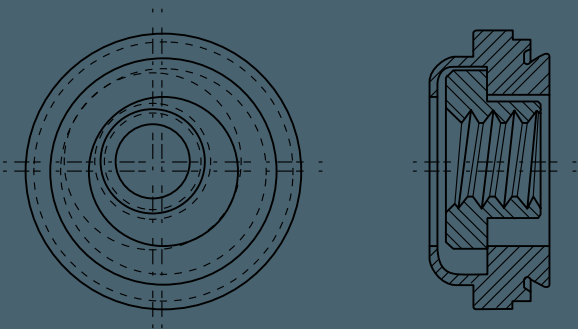
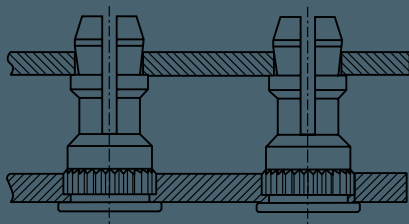
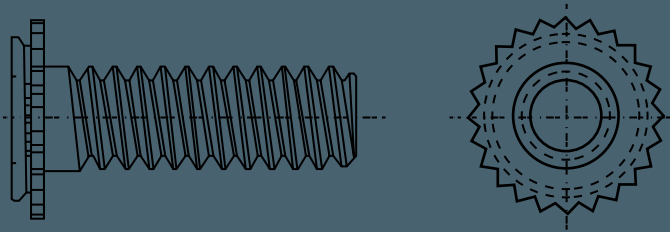




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[www.fastenix.com](http://www.fastenix.com)

**CLINCH**  
ENGINEERING



# Clinch Engineering Catalog



Sold exclusively by Fastenix 4616 Union Bay Place NE Seattle, WA 98105  
Phone: 206.371.7000 Fax: 206.493.2740 E-mail: [sales@fastenix.com](mailto:sales@fastenix.com)



Fastenix is an OEM manufacturer and supplier of fasteners for the sheet metal industry. Our brands Clinch Engineering, Clinch Rivet, Clinch Rivet Nut, and Fastenix tools are made to the highest specifications to allow for defect free assembly at a fraction of the cost.

**ABOUT US:**

Fastenix was founded in 2009 by Mike Wayte and Victor Carlson. With over 40 years of experience in the Sheet Metal Fabrication business, we saw an opportunity in this new global economy for a streamlined supply operation, where we can offer the same quality and superior service – at a fraction of the price. We have assembled a team of ISO9001:2008 and TS-16949 certified factories to bring high quality, RoHS compliant, ASTM standardized products to the North American market. We operate with the highest level of integrity and honesty, and are always customer focused.

**Mike Wayte**

Mike Wayte was NW Regional Manager for R.C. Dudek from 1994-2000. After R.C. Dudek was acquired by PennEngineering®, Mike oversaw all Northwest Operations for Washington, Oregon, Idaho, and Montana. In 2003, Mike founded Fabmatrix, representing a number of premium component lines. Each of these lines quickly became the top sellers in his markets. Mike oversees sales and operations in North America for Fastenix, and is headquartered in Seattle, Washington.

**Victor Carlson**

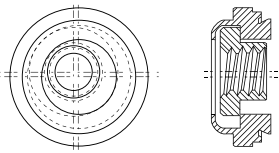
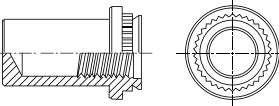
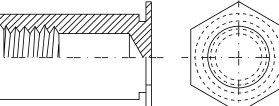
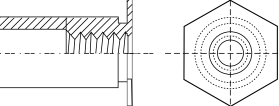
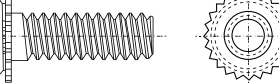
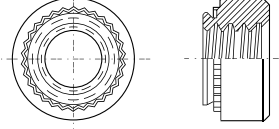
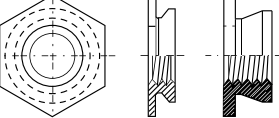
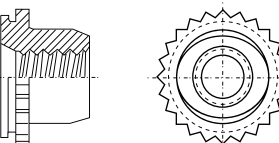
Victor Carlson was President and CEO of R.C. Dudek, one of the largest PEM® distributors. In 2000, he oversaw the sale of R.C. Dudek to PennEngineering®. He has returned from retirement to partner in Fastenix. Carlson is former President of the National Association of Fastener Distributors (NAFD).

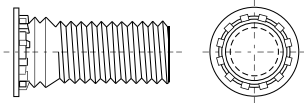
**Location**

Fastenix office and warehouse is located at 4616 Union Bay Place NE, Seattle 98105.

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## CLINCH ENGINEERING SELF-CLINCHING FASTENERS

	<b>TYPE CE-AC, CE-AS FLOATING SELF-CLINCHING FASTENERS</b> • Floating action compensates for mating hole misalignment. Thread sizes #4 to 1/4" and M3 to M6. <b>TYPE CE-AC, CE-AS PERFORMANCE DATA</b>	8 9
	<b>TYPE CE-B, CE-BS SELF-CLINCHING BLIND FASTENERS</b> • Used for applications requiring closed thread ends. Blind end limits screw penetration and excludes foreign matter. Thread sizes #4 to 1/4" and M3 to M6. <b>TYPE CE-B, CE-BS PERFORMANCE DATA</b>	10 11
	<b>TYPE CE-BSO, CE-BSOS SELF-CLINCHING BLIND STANDOFFS</b> • Self-clinching standoffs with blind threads. Thread sizes #4 to #10 and M3 to M5.	12
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	<b>TYPE CE-F FLUSH SELF-CLINCHING FASTENERS</b> Fastener remains flush with both sides in sheets as thin as .060" / 1.5 mm. Thread sizes #2 to 1/4" and M2 to M6. <b>TYPE CE-F PERFORMANCE DATA</b>	20 21
	<b>TYPE CE-FE, CE-FEX, CE-FEO, CE-FEOX MINIATURE SELF-CLINCHING FASTENERS</b> Strong threads in a minimum of space. Available with locking or non-locking threads. Can be installed into sheets as thin as .020" / 0.76 mm. Thread sizes #0 to 1/4" and M2 to M6. <b>TYPE CE-FE, CE-FEX, CE-FEO, CE-FEOX PERFORMANCE DATA</b>	22 23



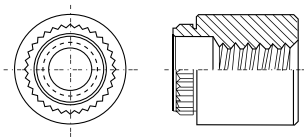
### TYPE CE-FH, CE-FHS SELF-CLINCHING STUDS

- Flush-head studs for sheet thickness of 0.40" / 1 mm and greater.

24

### TYPE CE-FH, CE-FHS PERFORMANCE DATA

25



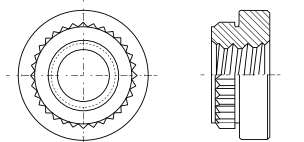
### TYPE CE-KFE, CE-KFSE BROACHING STANDOFFS

- Standoffs available with or without threads for mounting on P.C. boards, for spacing or stacking. Thread sizes #4, #6 and M3..

26

### TYPE CE-KFE, CE-KFSE PERFORMANCE DATA

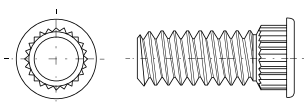
27



### TYPE CE-KF2, CE-KFS2 BROACHING NUTS

- Internally threaded fasteners for mounting on P.C. boards. Thread sizes #2 to #10 and M2 to M5.

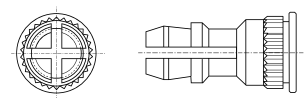
28



### TYPE CE-KFH BROACHING STUDS

- Studs for mounting into P.C. boards which can be used as solderable connectors as well as threaded fasteners. Thread sizes #4 to #10 and M3 to M5

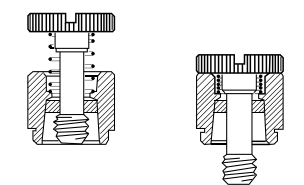
29



### TYPE CE-KSSB BROACHING STANDOFFS

- All-metal standoffs with a spring action to hold a P.C. board securely without screws or other threaded hardware.

30



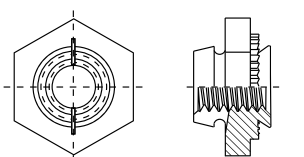
### TYPE CE-PFK BROACHING PANEL FASTENERS

- Panel Fasteners with spring-loaded captive screws for mounting on P.C. boards. Thread sizes #4, #6, and M3.

31

### TYPE CE-KF2, CE-KFS2, CE-KFH, CE-KSSB, CE-PFK PERFORMANCE DATA

32



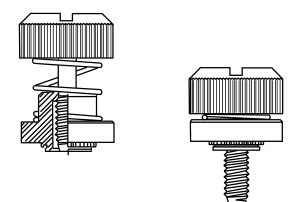
### TYPE CE-LK SELF-LOCKING, SELF-CLINCHING FASTENERS

- Self-locking fasteners provide NASM25027 locking performance without damaging mating threads. Thread sizes #2 to #10 and M2.5 to M5.

33

### TYPE CE-LK PERFORMANCE DATA

34



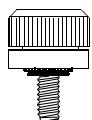
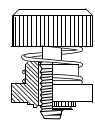
### TYPE CE-PF30, CE-PF31, CE-PF32 LOW-PROFILE PANEL FASTENER ASSEMBLIES

- Panel fasteners with a low profile design with a large knurled head that can be tool or hand actuated. Thread sizes #4 to 1/4" and M3 to M6.

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### TYPE CE-PF30, CE-PF31, CE-PF32 PERFORMANCE DATA

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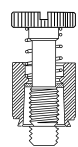
### TYPE CE-PF50, CE-PF60 LOW-PROFILE PANEL FASTENER ASSEMBLIES

37

- Low-profile panel fasteners with a large head and Phillips recess for tool or finger operation.

### TYPE CE-PF50, CE-PF60 PERFORMANCE DATA

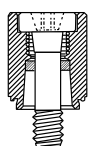
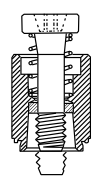
38



### TYPE CE-PFC2, CE-PFS2 PANEL FASTENER ASSEMBLIES

39

- Completely pre-assembled spring-loaded panel fasteners that meet UL 508 "operator access area" requirements. Thread sizes #4 to 1/4" and M3 to M6.



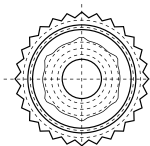
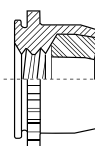
### TYPE CE-PFC2P RECESSED-HEAD PANEL FASTENER ASSEMBLIES

40

- Panel fasteners that are tool-only to meet UL 1950 "service area access" requirements. Thread sizes #4 to 1/4" and M3 to M6.

### TYPE CE-PFC2, CE-PFS2, CE-PFC2P PERFORMANCE DATA

41



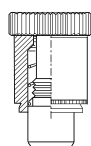
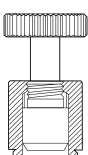
### TYPE CE-PL, CE-PLC NYLON INSERT SELF-LOCKING FASTENERS

42

- Nylon insert prevents thread galling. Locking performance meets NASM25027. Thread sizes #4 to #10 and M3 to M5.

### TYPE CE-PL, CE-PLC PERFORMANCE DATA

43



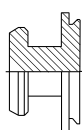
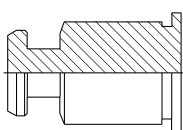
### TYPE CE-PTL2, CE-PSL2 SPRING-LOADED PLUNGER ASSEMBLIES

44

- Used as a retractable drawer-guide stop, indexing pins and latch detents. Can be locked in retracted position. Plunger diameter .250" / 6.4 mm.

### TYPE CE-PTL2, CE-PSL2 PERFORMANCE DATA

44



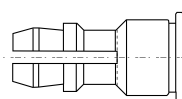
### TYPE CE-SKC, CE-SKC-F SLIP-TOP SELF-CLINCHING STANDOFFS

45

- Designed so that a P.C. board or component can be quickly slipped into place and then removed by sliding the board sideways and lifting it off.

### TYPE CE-SKC, CE-SKC-F PERFORMANCE DATA

46



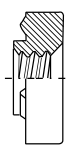
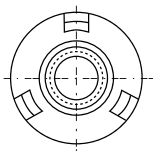
### TYPE CE-SSA, CE-SSS, CE-SSC CLICK-TOP FOR CLINCHING INTO METAL SHEETS

47

- Accurately space a P.C. board or panel from a metal chassis simply by snapping on standoff.

### TYPE CE-SSA, CE-SSS, CE-SSC PERFORMANCE DATA

47



### TYPE CE-WN, CE-WNS SELF-LOCATING PROJECTION WELD NUTS

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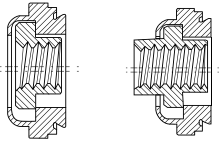
- Prevents burnouts and eliminates the need for indexing and retapping to remove weld spatter. Thread sizes #4 to 1/4" and M3 to M6.

### TYPE CE-WN, CE-WNS PERFORMANCE DATA

49

## HARDWARE THAT INSTALLS INTO STAINLESS STEEL

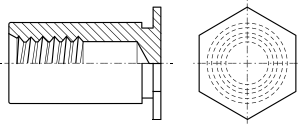
50



### TYPE-CE-A4, CE-LA4 FLOATING SELF-CLINCHING FASTENERS

51

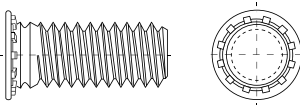
- Permit up to .030" / 0.76 mm total adjustment for mating hole misalignment in stainless steel sheets.



### TYPE CE-BS04 BLIND THREADED STANDOFFS

52

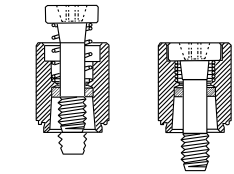
- Provide a permanently mounted fastener that can be used for stacking or spacing components to or from stainless steel panels.



### TYPE CE-FH4, CE-FHP FLUSH HEAD STUDS

53

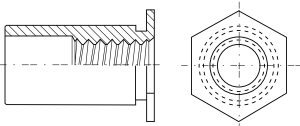
- Can be mounted in stainless steel sheets as thin as 0.40" / 1 mm.



### TYPE CE-PFC4 RECESSED-HEAD PANEL FASTENER ASSEMBLIES

54

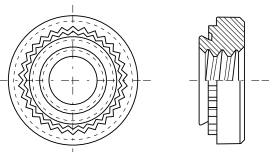
- Provide "tool only" access to your stainless steel assemblies.



### TYPE CE-S04 THRU-HOLE THREADED STANDOFFS

55

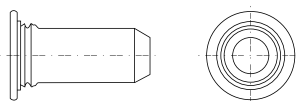
- Provide a permanently mounted fastener that can be used for stacking or spacing components to or from stainless steel panels.



### TYPE CE-SP4 SELF-CLINCHING NUTS

56

- Provide strong load-bearing threads in stainless steel sheets as thin as .030" / 0.8 mm.



### TYPE CE-TP4 FLUSH-HEAD PINS

57

- Specially designed for installation into stainless steel sheets as thin as .040" / 1 mm.

## PERFORMANCE DATA FOR HARDWARE THAT INSTALLS INTO STAINLESS STEEL

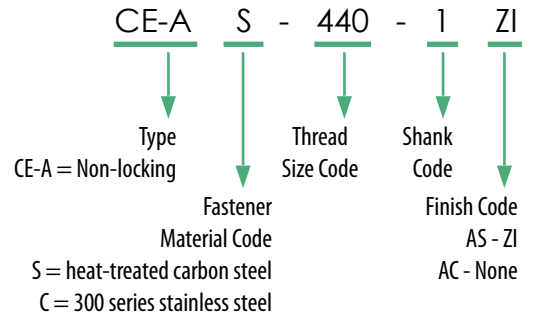
58



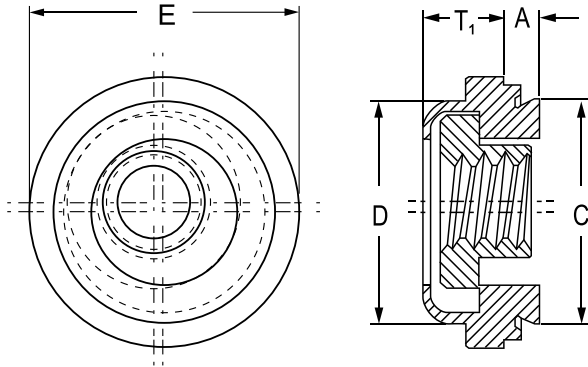
# TYPE CE-AS, CE-AC FLOATING SELF-CLINCHING FASTENERS

# CLINCH ENGINEERING

## PART NUMBER DESIGNATION:



Float - .015"/0.38mm minimum, in all directions from center, .030"/0.76mm total.



**THREADS:**  
Internal ASME B1.1, 2B/ANSI/ASME B1.13M, 6H

**MATERIAL:**  
Retainer: CE-AS - Heat-Treated Carbon Steel  
CE-AC - 300 Series Stainless Steel  
Nut: CE-AS - Carbon Steel  
CE-AC - 300 Series Stainless Steel

**FINISH:**  
CE-AS - Zinc Planted, 5 µm, Colorless  
CE-AC - Passivated and/or tested per ASTM A380

All measurements in inches.

UNIFIED	Thread Size	Type		Thread Code	Shank Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet +0.03-.000	C Max.	D Max.	E ±.015	T <sub>1</sub> Max.	Min. Dist. Hole C/L To Edge
		Non-Locking											
		Fastener Material											
		Steel	300 Series Stainless										
.112-40 (#4-40)	CE-A S	CE-A C	440	1	.038	.038	.290	.289	.290	.360	.130	.30	
				2	.054	.054							
.138-32 (#6-32)	CE-A S	CE-A C	632	1	.038	.038	.328	.327	.335	.390	.130	.32	
				2	.054	.054							
.164-32 (#8-32)	CE-A S	CE-A C	832	1	.038	.038	.368	.367	.365	.440	.130	.34	
				2	.054	.054							
.190-24 (#10-24)	CE-A S	CE-A C	024	1	.038	.038	.406	.405	.405	.470	.170	.36	
				2	.054	.054							
.190-32 (#10-32)	CE-A S	CE-A C	032	1	.038	.038	.406	.405	.405	.470	.170	.36	
				2	.054	.054							
.250-20 (1/4-20)	CE-A S	CE-A C	0420	2	.054	.054	.515	.514	.510	.600	.210	.42	
.250-28 (1/4-28)	CE-A S	CE-A C	0428	2	.054	.054	.515	.514	.510	.600	.210	.42	

All measurements in millimeters.

METRIC	Thread Size x Pitch	Type		Thread Code	Shank Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet +0.08	C Max.	D Max.	E ±0.38	T <sub>1</sub> Max.	Min. Dist. Hole C/L To Edge
		Non-Locking											
		Fastener Material											
		Steel	300 Series Stainless										
M3 x 0.5	CE-A S	CE-A C	M3	1	0.97	0.97	7.37	7.35	7.37	9.14	3.31	7.62	
				2	1.38	1.38							
M4 x 0.7	CE-A S	CE-A C	M4	1	0.97	0.97	9.35	9.33	9.28	11.18	3.31	8.64	
				2	1.38	1.38							
M5 x 0.8	CE-A S	CE-A C	M5	1	0.97	0.97	10.31	10.29	10.29	11.94	4.32	9.14	
				2	1.38	1.38							
M6 x 1	CE-A S	CE-A C	M6	2	1.38	1.38	13.08	13.06	12.96	15.24	5.34	10.67	





# TYPE CE-AS, CE-AC FLOATING SELF-CLINCHING FASTENERS

**CLINCH**  
ENGINEERING

## PERFORMANCE DATA

UNIFIED (inch)	Thread Code	Shank Code	Test Sheet Material								
			2024-T3 Aluminum			5052-H34 Aluminum			Cold-Rolled Steel		
			Installation (lbs.)	Retainer Pushout (lbs.)	Retainer Torque-out (in. lbs.)	Installation (lbs.)	Retainer Pushout (lbs.)	Retainer Torque-out (in. lbs.)	Installation (lbs.)	Retainer Pushout (lbs.)	Retainer Torque-out (in. lbs.)
440	1	2	3000	220	65	1500	215	65	3000	300	85
				225	150	2000	225	80			150
632	1	2	3000	235	110	2000	240	140	3000	300	150
				275	150		250	150			175
832	1	2	3000	240	110	2000	250	140	3000	300	150
				300	150		265	150			200
032	1	2	3500	300	150	2000	300	150	3500	400	150
					200		350	175			200
0420	2	2	5000	300	325	3000	400	325	5000	500	325
0428											

METRIC (mm)	Thread Code	Shank Code	Test Sheet Material								
			2024-T3 Aluminum			5052-H34 Aluminum			Cold-Rolled Steel		
			Installation (kN)	Retainer Pushout (N)	Retainer Torque-out (N•m)	Installation (kN)	Retainer Pushout (N)	Retainer Torque-out (N•m)	Installation (kN)	Retainer Pushout (N)	Retainer Torque-out (N•m)
M3	1	2	13.3	978	7.3	6.7	956	7.3	13.3	1334	9.6
				1000	16.9	8.9	1000	9			16.9
M4	1	2	13.3	1067	12.4	8.9	1112	15.8	13.3	1334	16.9
				1334	16.9		8.9	1178			16.9
M5	1	2	15.6	1334	16.9	8.9	1334	16.9	15.6	1779	16.9
				1334	22.6		8.9	1556			19.7
M6	2	2	22.2	1334	36.7	13.3	1779	36.7	22.2	2224	36.7

- The values reported are averages when all installation specifications and procedures are followed. Variations in mounting hole size, sheet material, and installation procedure will affect results. Performance testing of this product in your application is recommended. We will be happy to provide samples for this purpose.





# TYPE CE-B, CE-BS SELF-CLINCHING BLIND FASTENERS

**CLINCH**  
ENGINEERING

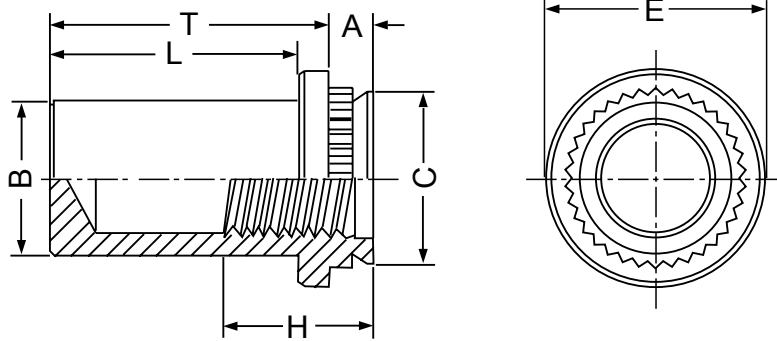
PART NUMBER DESIGNATION:

CE-B - 632 - 1 ZI

(Type - Thread - Shank Code)

THREADS:

Internal, ANSI B1.1 2B / ANSI / ASME B1.13M, 6H



TYPE	MATERIAL	FINISH
CE-B	12L14 / 1215 Heat treated Carbon Steel	Zinc Cr3 Finish Code "ZI"
CE-BS	Stainless Steel 303	Passivated and / or tested per ASTM A380

All measurements in inches.

UNIFIED	Type				Shank Code	A Max	Min. Sheet Thickness	Hole Size + .003 - .000	B Max. Barrel Diameter	C Max. Shank Diameter	E ±.010	H Min. Depth Full Threads	L Max.	T ±.010	Min. Dist. Hole C/L To Edge
	Carbon Steel	Stainless Steel	Thread Size	Thread Code											
	CE-B	CE-BS	.112-40 (#4-40)	440	1	.040	.040	.166	.150	.165	.250	.210	.335	.380	.19
					2	.056	.056								
	CE-B	CE-BS	.138-32 (#6-32)	632	1	.040	.040	.1875	.169	.187	.280	.230	.335	.380	.22
					2	.056	.056								
	CE-B	CE-BS	.164-32 (#8-32)	832	1	.040	.040	.213	.204	.212	.310	.280	.385	.440	.27
					2	.056	.056								
	CE-B	CE-BS	.190-32 (#10-32)	032	1	.040	.040	.250	.235	.249	.340	.280	.385	.440	.28
					2	.056	.056								
	CE-B	CE-BS	.250-20 (#1/4-20)	0420	1	.056	.056	.344	.305	.343	.430	.310	.500	.560	.34
					2	.090	.090								

All measurements in millimeters.

METRIC	Type				Shank Code	A Max	Min. Sheet Thickness	Hole Size + .008 - .000	B Max. Barrel Diameter	C Max. Shank Diameter	E ±.025	H Min. Depth Full Threads	L Max.	T ±.025	Min. Dist. Hole C/L To Edge
	Carbon Steel	Stainless Steel	Thread Size x Pitch	Thread Code											
	CE-B	CE-BS	M3 x 0.5	M3	1	1	1	4.25	3.84	4.22	6.35	5.3	8.5	9.6	4.8
					2	1.4	1.4								
	CE-B	CE-BS	M4 x 0.7	M4	1	1	1	5.4	5.2	5.38	7.95	7.1	9.8	11.2	6.9
					2	1.4	1.4								
	CE-B	CE-BS	M5 x 0.8	M5	1	1	1	6.4	6.02	6.38	8.75	7.1	9.8	11.2	7.1
					2	1.4	1.4								
	CE-B	CE-BS	M6 x 1	M6	1	1.4	1.4	8.75	7.8	8.72	11.11	7.8	12.7	14.3	8.6
					2	2.3	2.3								





# TYPE CE-B, CE-BS SELF-CLINCHING BLIND FASTENERS

## CLINCH ENGINEERING

### PERFORMANCE DATA

UNIFIED (inch)	Thread Code	Shank Code	Sheet Thickness (in.)	Test Sheet Material					
				5052-H34 Aluminum			Cold-Rolled Steel		
				Installation (lbs.)	Pushout (lbs.)	Torque-out (in. lbs.)	Installation (lbs.)	Pushout (lbs.)	Torque-out (in. lbs.)
440	1	2	.040	1600	90	10	2500	125	13
			.056	2000	170	13	3500	230	18
632	1	2	.040	1800	95	17	3000	130	18
			.056	2800	190	22	4000	260	28
832	1	2	.040	2000	105	23	3500	135	30
			.056	3000	220	35	5000	285	45
032	1	2	.040	2100	110	32	4000	140	35
			.056	3500	190	50	5000	250	60
0420	1	2	.056	4000	315	90	6000	400	105
			.090						

METRIC (mm)	Thread Code	Shank Code	Sheet Thickness (mm)	Test Sheet Material					
				5052-H34 Aluminum			Cold-Rolled Steel		
				Installation (kN)	Pushout (N)	Torque-out (N•m)	Installation (kN)	Pushout (N)	Torque-out (N•m)
M3	1	2	1	7.1	400	1.15	11.1	550	1.5
			1.4	9	750	1.47	14	1010	2.05
M4	1	2	1	8.9	470	2.6	15.6	600	3.4
			1.4	12.5	970	4	20	1250	5.1
M5	1	2	1	9.3	480	3.6	17.8	620	4
			1.4	14	845	5.7	25	1112	6.8
M6	1	2	1.4	17.8	1400	10.2	25.7	1760	11.9
			2.3						

- The values reported are averages when all installation specifications and procedures are followed. Variations in mounting hole size, sheet material and installation procedure will affect this data. Performance testing of this product in your application is recommended. We will be happy to provide samples for this purpose.



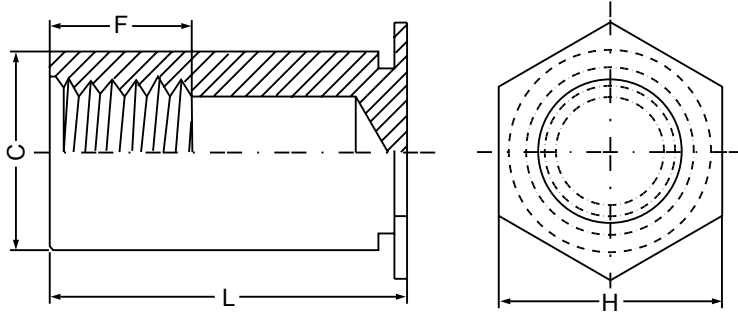


# TYPE CE-BSO, CE-BSOS SELF-CLINCHING STANDOFFS

**CLINCH**  
ENGINEERING

**PART NUMBER DESIGNATION:**  
CE-BSO - 632 - 12 ZI  
(Type - Thread - Length Code Finish)

**THREADS:**  
Internal, ASME B1.1, 2B / ASME B1.13M, 6H



TYPE	MATERIAL	FINISH
CE-BSO	12L14 / 1215 Heat treated Carbon Steel	Zinc Cr3 Finish Code "ZI"
CE-BSOS	Stainless Steel 303	Passivated and / or tested per ASTM A380

## GENERAL DIMENSION DATA

UNIFIED (inch)	Thread Code	Min. Sheet Thickness.	Hole Size In Sheet +0.003 - .000	C +.000 -.005	H Nom.	Min. Dist. Hole C/L To Edge
	440	.040	.166	.165	.187	.23
	6440	.040	.213	.212	.250	.27
	632	.040	.213	.212	.250	.27
	8632	.050	.281	.280	.312	.31
	832	.050	.281	.280	.312	.31
	032	.050	.281	.280	.312	.31

METRIC (mm)	Thread Code	Min. Sheet Thickness.	Hole Size In Sheet +0.08 - .000	C -0.13	H Nom.	Min. Dist. Hole C/L To Edge
	M3	1.02	4.22	4.2	4.8	6
	3.5M3	1.02	5.41	5.39	6.4	6.8
	M3.5	1.02	5.41	5.39	6.4	6.8
	M4	1.27	7.14	7.12	7.9	8
	M5	1.27	7.14	7.12	7.9	8

## THREAD SIZE AND LENGTH SELECTION DATA

All measurements in inches.

UNIFIED	Type				Length "L" +.002 -.005 (Length Code in 32nds of an inch)														
	Steel	Stainless Steel	Thread Size	Thread Code	.312	.375	.437	.500	.562	.625	.687	.750	.812	.875	.937	.100	1.062		
	CE-BSO	CE-BSOS	.112-40 (#4-40)	440 6440	10	12	14	16	18	20	22	24	26	28	30	32	34		
	CE-BSO	CE-BSOS	.138-32 (#6-32)	632 8632	10	12	14	16	18	20	22	24	26	28	30	32	34		
	CE-BSO	CE-BSOS	.164-32 (#8-32) .190-32 (#10-32)	832 032	10	12	14	16	18	20	22	24	26	28	30	32	34		
F Dimension Min.					.156	.187	.250									.375			

All measurements in millimeters.

METRIC	Type				Length "L" +.05 -.13 (Length Code in millimeters)												
	Steel	Stainless Steel	Thread Size	Thread Code	6	8	10	12	14	16	18	20	22	25			
	CE-BSO	CE-BSOS	M3 X 0.5	M3 3.5M3	6	8	10	12	14	16	18	20	22	25			
	CE-BSO	CE-BSOS	M3.5 X 0.6	M3.5	6	8	10	12	14	16	18	20	22	25			
			M4 X 0.7 M5 X 0.8	M4 M5	6	8	10	12	14	16	18	20	22	25			
F Dimension Min.				3.2	4	5	6.5						9.5				



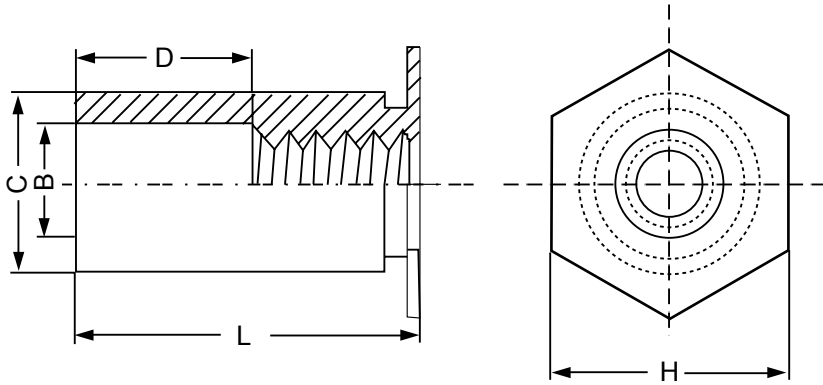


# TYPE CE-SO, CE-SOS SELF-CLINCHING STANDOFFS

**CLINCH**  
ENGINEERING

**PART NUMBER DESIGNATION:**  
CE-SO - 632 - 12 ZI  
(Type - Thread - Length Code Finish)

**THREADS:**  
Internal, ASME B1.1, 2B /ASME B1.13M, 6H



TYPE	MATERIAL	FINISH
CE-SO	12L14 / 1215 Heat treated Carbon Steel	Zinc Cr3 Finish Code "ZI"
CE-SOS	Stainless Steel 303	Passivated and / or tested per ASTM A380

## GENERAL DIMENSION DATA

UNIFIED (inch)	Thread Code	Min. Sheet Thickness.	Hole Size In Sheet +0.003 - .000	C +.000 -.005	H Nom.	B +.005	Min. Dist. Hole C/L To Edge
	440	.040	.166	.165	.187	.125	.23
	6440	.040	.213	.212	.250	.125	.27
	632	.040	.213	.212	.250	.156	.27
	8632	.050	.281	.280	.312	.156	.31
	832	.050	.281	.280	.312	.185	.31
	032	.050	.281	.280	.312	.203	.31

METRIC (mm)	Thread Code	Min. Sheet Thickness.	Hole Size In Sheet +0.08	C -0.13	H Nom.	B ±0.13	Min. Dist. Hole C/L To Edge
	M3	1.02	4.22	4.2	4.8	3.2	6
	3.5M3	1.02	5.41	5.39	6.4	3.2	6.8
	M3.5	1.02	5.41	5.39	6.4	3.9	6.8
	M4	1.27	7.14	7.12	7.9	4.8	8
	M5	1.27	7.14	7.12	7.9	5.35	8

## THREAD SIZE AND LENGTH SELECTION DATA

All measurements in inches.

UNIFIED	Type				Length "L" +.002 -.005 (Length Code in 32nds of an inch)																
	Steel	Stainless Steel	Thread Size	Thread Code	.125	.187	.250	.312	.375	.437	.500	.562	.625	.687	.750	.812	.875	.937	.100	1.062	
	CE-SO	CE-SOS	.112-40 (#4-40)	440 6440	4	6	8	10	12	14	16	18	20	22	24	N/A	N/A	N/A	N/A	N/A	N/A
	CE-SO	CE-SOS	.138-32 (#6-32)	632 8632	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	
	CE-SO	CE-SOS	.164-32 (#8-32) .190-32 (#10-32)	832 032	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	
D Dimension Min. ± 0.010				None				.187				.312				.437					

All measurements in millimeters.

METRIC	Type				Length "L" +.05 -.13 (Length Code in millimeters)																
	Steel	Stainless Steel	Thread Size x Pitch	Thread Code	3	4	6	8	10	12	14	16	18	N/A	N/A	N/A	N/A	N/A	N/A		
	CE-SO	CE-SOS	M3 X 0.5	M3 3.5M3	3	4	6	8	10	12	14	16	18	N/A	N/A	N/A	N/A	N/A	N/A		
	CE-SO	CE-SOS	M3.5 X 0.6	M3.5	3	4	6	8	10	12	14	16	18	20	22	25					
			M4 X 0.7	M4	3	4	6	8	10	12	14	16	18	20	22	25					
		M5 X 0.8	M5	3	4	6	8	10	12	14	16	18	20	22	25						
D Dimension Min. ± 0.25				none				4				8				11					





# TYPE CE-SO, CE-SOS, CE-BSO, CE-BSOS SELF-CLINCHING STANDOFFS

## CLINCH ENGINEERING

### PERFORMANCE DATA

UNIFIED (inch)	Thread Code	Standoff Material	Max. Rec. Tightening Torque For Mating Screw (in. lbs.)	Test Sheet Material							
				.060" 5052-H34 Aluminum				.060" Cold-Rolled Steel			
				Installation (lbs.)	Pushout (lbs.)	Torque-out (in. lbs.)	Pull-thru (lbs.)	Installation (lbs.)	Pushout (lbs.)	Torque-out (in. lbs.)	Pull-thru (lbs.)
				440	Steel	4.75	1100	160	11	280	2200
	Stainless Steel	3.8	1100	160	11	224	2200	225	19	264	
6440	Steel	4.75	1700	300	11	280	3300	420	19	330	
	Stainless Steel	3.8	1700	300	11	224	3300	420	19	264	
632	Steel	8.75	1700	300	25	310	3300	420	35	380	
	Stainless Steel	7	1700	300	25	248	3300	420	35	304	
8632	Steel	8.75	2400	400	25	310	4000	560	35	380	
	Stainless Steel	7	2400	400	25	248	4000	560	35	304	
832, 032	Steel	18, 32	2400	400	45	580	4000	560	75	700	
	Stainless Steel	14.4, 25.6	2400	400	45	464	4000	560	75	560	

METRIC (mm)	Thread Code	Standoff Material	Max. Rec. Tightening Torque For Mating Screw (N•m)	Test Sheet Material							
				1.5 mm 5052-H34 Aluminum				1.5 mm Cold-Rolled Steel			
				Installation (kN)	Pushout (N)	Torque-out (N•m)	Pull-thru (N)	Installation (kN)	Pushout (N)	Torque-out (N•m)	Pull-thru (N)
				M3	Steel	0.55	4.9	710	1.24	1245	9.8
Stainless Steel	0.44	4.9	710		1.24	996	9.8	1000	2.15	1172	
3.5M3	Steel	0.55	7.6	1330	1.24	1245	14.7	1860	2.15	1465	
	Stainless Steel	0.44	7.6	1330	1.24	996	14.7	1860	2.15	1172	
M3.5	Steel	0.91	7.6	1330	2.82	1375	14.7	1860	3.95	1690	
	Stainless Steel	0.73	7.6	1330	2.82	1100	14.7	1860	3.95	1352	
M4, M5	Steel	2, 3.6	10.7	1780	5.08	2575	17.8	2490	8.47	3110	
	Stainless Steel	1.6, 2.88	10.7	1780	5.08	2060	17.8	2490	8.47	2488	

- The values reported are averages when all installation specifications and procedures are followed. Variations in mounting hole size, sheet material and installation procedure will affect this data. Performance testing of this product in your application is recommended. We will be happy to provide samples for this purpose.
- Standoffs installed in sheets thinner than .060"/1.5mm and greater than the specified minimum sheet thickness will have pull-thru, pushout, and torque-out values approximately 80% of tabulated values.



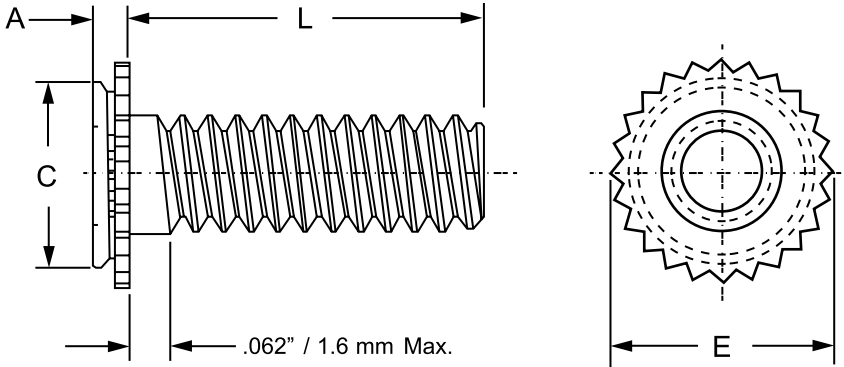
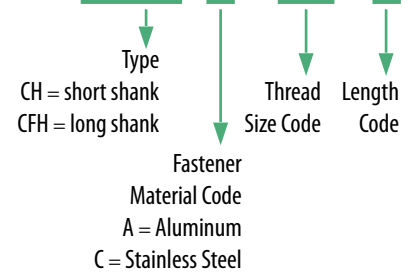


# TYPE CE-CHA, CE-CFHA, CE-CHC AND CE-CFHC CONCEALED-HEAD SELF-CLINCHING STUDS

**CLINCH**  
ENGINEERING

PART NUMBER DESIGNATION:

**CE-CH C - 632 - 6**



**THREADS:**  
External, ASME B1.1 2A / ASME B1.13M, 6g

**MATERIAL:**  
CE-CHA, CE-CFHA: Aluminum  
CE-CHC, CE-CFHC: 300 Series Stainless Steel

**FINISH:**  
CE-CHC, CE-CFHC: Passivated and/or tested per ASTM A380

All measurements in inches.

UNIFIED	Thread Size	Type		Thread Code	Length Code "L" ± .015 (Length Code is in 16ths of an inch)					Min. Sheet Thickness	Blind. Mounting Hole Dia. +.003 -.000	Min. Depth of Blind Hole	A Max.	E ±.010	C Max.	Min. Dist. Hole C/L To Edge	Max. Hole In Attached Parts	
		Aluminum	Stainless Steel		.250	.375	.500	.625	.750									1.00
		.112-40 (#4-40)	CE-CHA		CE-CHC	440	4	6	8									10
.138-32 (#6-32)	CE-CHA	CE-CHC	632	4	6	8	10	12	16	.062 .093	.213	.043 .075	.041 .071	.250	.212	.188	.160	
.164-32 (#8-32)	CE-CHA	CE-CHC	832	4	6	8	10	12	16	.062 .093	.290	.043 .075	.041 .071	.328	.289	.219	.185	
.190-32 (#10-32)	CE-CHA	CE-CHC	032	N/A	6	8	10	12	16	.062 .093	.312	.043 .075	.041 .071	.350	.311	.250	.210	

All measurements in millimeters.

METRIC	Thread Size x Pitch	Type		Thread Code	Length Code "L" ±0.4 (Length code is in millimeters)					Min. Sheet Thickness	Blind. Mounting Hole Dia. +0.08	Min. Depth of Blind Hole	A Max.	E ±0.25	C Max.	Min. Dist. Hole C/L To Edge	Max. Hole In Attached Parts		
		Aluminum	Stainless Steel		6	8	10	12	16									20	N/A
		M3 x 0.5	CE-CHA		CE-CHC	M3	6	8	10									12	16
M4 x 0.7	CE-CHA	CE-CHC	M4	6	8	10	12	16	20	25	1.6 2.4	7.37	1.1 1.91	1.04 1.8	8.33	7.35	5.6	4.6	
M5 x 0.8	CE-CHA	CE-CHC	M5	N/A	NA	10	12	16	20	25	1.6 2.4	7.93	1.1 1.91	1.04 1.8	8.89	7.9	6.4	5.6	

- Blind holes may be deeper than minimums except where sheet material is at or near minimum thickness. Fasteners should always be installed so the angle is flush with the surface of the sheet.
- N/A Not available.





# TYPE CE-CHA, CE-CFHA, CE-CHC AND CE-CFHC CONCEALED-HEAD SELF-CLINCHING STUDS

## CLINCH ENGINEERING

### PERFORMANCE DATA

UNIFIED (inch)	Type	Thread Code	Max. Tightening Torque Ref. (lbs.)	Test Sheet Material			
				Cold-rolled Steel		5052-H34 Aluminum	
				Installation (lbs.)	Pullout (lbs.)	Installation (lbs.)	Pullout (lbs.)
CE-CHC	440	4.75	1,800	240	1,400	130	
	632	9	2,500	260	1,800	160	
	832	18	4,000	270	2,800	180	
	032	32	5,000	290	4,000	210	
CE-CFHC	440	4.75	2,000	240	1,500	200	
	632	9	2,700	350	2,500	260	
	832	18	3,300	440	3,000	310	
	032	32	4,000	680	3,500	360	
CE-CHA	440	2.85	N/R	N/R	1,400	125	
	632	5.4	N/R	N/R	1,800	135	
	832	10.8	N/R	N/R	2,800	145	
	032	19.2	N/R	N/R	4,000	170	
CE-CFHA	440	2.85	N/R	N/R	1,500	190	
	632	5.4	N/R	N/R	2,500	220	
	832	10.8	N/R	N/R	3,000	240	
	032	19.2	N/R	N/R	3,500	300	

METRIC (mm)	Type	Thread Code	Max. Tightening Torque Ref. (N•m)	Test Sheet Material			
				Cold-rolled Steel		5052-H34 Aluminum	
				Installation (kN)	Pullout (N)	Installation (kN)	Pullout (N)
CE-CHC	M3	0.5	8	1065	6.2	575	
	M4	2	17.8	1200	12.5	800	
	M5	3.6	22.2	1290	17.8	930	
CE-CFHC	M3	0.5	8.9	1065	6.7	890	
	M4	2	14.7	1955	13.3	1375	
	M5	3.6	17.8	3020	15.6	1600	
CE-CHA	M3	0.3	N/R	N/R	6.2	555	
	M4	1.2	N/R	N/R	12.5	645	
	M5	2.16	N/R	N/R	17.8	755	
CE-CFHA	M3	0.3	N/R	N/R	6.7	845	
	M4	1.2	N/R	N/R	13.3	1065	
	M5	2.16	N/R	N/R	15.6	1330	

- The installation and pullout values reported are averages when all installation specifications and procedures are followed. Variations in mounting hole size, sheet material and installation procedure will affect this data. Performance testing of this product in your application is recommended. We will be happy to provide samples for this purpose.
- N/R Not recommended.



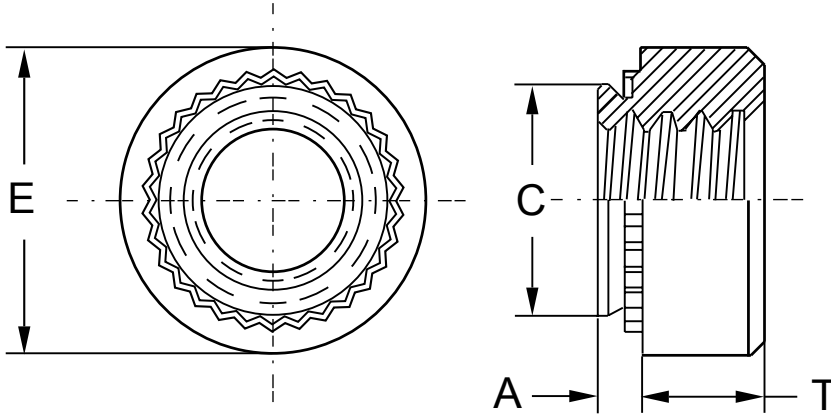


# TYPE CE-S, CE-CLS SELF-CLINCHING NUTS

**CLINCH**  
ENGINEERING

**PART NUMBER DESIGNATION:**  
CE-S - 632 - 1 ZI  
(Type - Thread - Shank Code Finish)

**THREADS:**  
Internal, ASME B1.1, 2B / ASME B1.13M, 6H



TYPE	MATERIAL	FINISH
CE-S	12L14 / 1215 Heat treated Carbon Steel	Zinc Cr3 Finish Code "ZI"
CE-CLS	Stainless Steel 303	Passivated and / or tested per ASTM A380

All measurements in inches.

UNIFIED	Carbon Steel	Stainless Steel	Thread Size	Thread Code	Shank Code	A (Shank) Max	Min. Sheet Thickness	Hole Size +.003 -.000	C Max	E ±.010	T ±.010	Min. Dist. Hole C/L To Edge
	CE-S	CE-CLS	.086-56 (#2-56)	256	0 1 2	.030 .038 .054	.030 .040 .056	.166	.165	.250	.070	.19
	CE-S	CE-CLS	.099-48 (#3-48)	348	0 1 2	.030 .038 .054	.030 .040 .056	.166	.165	.250	.070	.19
	CE-S	CE-CLS	112-40 (#4-40) <i>v</i>	440	0 1 2 3	.030 .038 .054 .087	.030 .040 .056 .091	.166	.165	.250	.070	.19
	CE-S	CE-CLS	.138-32 (#6-32)	632	0 1 2 3	.030 .038 .054 .087	.030 .040 .056 .091	.1875	.187	.280	.070	.22
	CE-S	CE-CLS	.164-32 (#8-32)	832	0 1 2 3	.030 .038 .054 .087	.030 .040 .056 .091	.213	.212	.310	.090	.27
	CE-SS	CE-CLSS	.190-24 (#10-24)	024	0 1 2 3	.030 .038 .054 .087	.030 .040 .056 .091	.250	.249	.340	.090	.28
	CE-SS	CE-CLSS	.190-32 (#10-32)	032	0 1 2 3	.030 .038 .054 .087	.030 .040 .056 .091	.250	.249	.340	.090	.28
	CE-S	CE-CLS	.216-24 (#12-24)	1224	1 2 3	.038 .054 .087	.040 .056 .091	.277	.276	.370	.130	.31
	CE-S	CE-CLS	.250-20 (1/4-20)	0420	0 1 2 3	.045 .054 .087 .120	.047 .056 .091 .125	.344	.343	.440	.170	.34
	CE-S	CE-CLS	.250-28 (1/4-28)	0428	1 2 3	.054 .087 .120	.056 .091 .125	.344	.343	.440	.170	.34
	CE-S	CE-CLS	.313-18 (5/16-18)	0518	1 2 3	.054 .087 .120	.056 .091 .125	.413	.412	.500	.230	.38





# TYPE CE-S, CE-CLS SELF-CLINCHING NUTS

## CLINCH ENGINEERING

CE-S	CE-CLS	.313-24 (5/16-24)	0524	1 2 3	.054 .087 .120	.056 .091 .125	.413	.412	.500	.230	.38
CE-S	CE-CLS	.375-16 (3/8-16)	0616	1 2 3	.087 .120 .235	.091 .125 .250	.500	.499	.560	.270	.44
CE-S	CE-CLS	.375-24 (3/8-24)	0624	1 2 3	.087 .120 .235	.091 .125 .250	.500	.499	.560	.270	.44
CE-S	CE-CLS	.500-13 (1/2-13)	0813	1 2	.120 .235	.125 .250	.656	.655	.810	.360	.63
CE-S	CE-CLS	.500-20 (#1/2-20)	0820	1 2	.120 .235	.125 .250					

All measurements in millimeters.

METRIC	Carbon Steel	Stainless Steel	Thread Size	Thread Code	Shank Code	A (Shank) Max	Min. Sheet Thickness	Hole Size +0.08 -0.00	C Max	E ±0.25	T ±0.25	Min. Dist. Hole C/L To Edge
	CE-S	CE-CLS	M2 x 0.4	M2	0 1 2	.77 .97 1.38	0.8 1 1.4	4.22	4.2	6.3	1.5	4.8
	CE-S	CE-CLS	M2.5 x 0.45	M2.5	0 1 2	.77 .97 1.38	0.8 1 1.4	4.22	4.2	6.3	1.5	4.8
	CE-S	CE-CLS	M3 x 0.5	M3	0 1 2	.77 .97 1.38	0.8 1 1.4	4.22	4.2	6.3	1.5	4.8
	CE-S	CE-CLS	M3.5 x 0.6	M3.5	0 1 2	.77 .97 1.38	0.8 1 1.4	4.75	4.73	7.1	1.5	5.6
	CE-S	CE-CLS	M4 x 0.7	M4	0 1 2	.77 .97 1.38	0.8 1 1.4	5.41	5.38	7.9	2	6.9
	CE-SS	CE-CLSS	M5 x 0.8	M5	0 1 2	.77 .97 1.38	0.8 1 1.4	6.35	6.33	8.7	2	7.1
	CE-S	CE-CLS	M6 x 1	M6	00 0 1 2	.89 1.15 1.38 2.21	0.92 1.2 1.4 2.3	8.75	8.72	11.05	4.08	8.6
	CE-S	CE-CLS	M8 x 1.25	M8	1 2	1.38 2.21	1.4 2.3	10.5	10.47	12.65	5.47	9.7
	CE-S	CE-CLS	M10 x 1.5	M10	1 2	2.21 3.05	2.31 3.18	14	13.97	17.35	7.48	13.5





# TYPE CE-S, CE-CLS SELF-CLINCHING NUTS

## CLINCH ENGINEERING

### PERFORMANCE DATA

UNIFIED (inch)	Type	Thread Code	Shank Code	Test Sheet Material	Installation (lbs.)	Pushout (lbs.)	Torque-out (in. lbs.)	
	UNIFIED (inch)	CE-S CE-CLS	256 348 440	0	5052-H34 Aluminum	1500-2000	63	8
1				90			10	
2				170			13	
3				170			13	
0				105			13	
1				125			15	
CE-S CE-CLS		632	632	0	5052-H34 Aluminum	2500-3000	63	16
				1			95	17
				2			190	22
				3			190	22
				0			110	16
				1			130	20
CE-S CE-CLS	832	832	0	5052-H34 Aluminum	2500-3000	68	21	
			1			105	23	
			2			220	35	
			3			220	35	
			0			110	26	
			1			145	35	
CE-SS CE-CLSS	024 032	024 032	0	5052-H34 Aluminum	2500-3500	68	26	
			1			110	32	
			2			190	50	
			3			225	50	
			0			120	32	
			1			180	40	
CE-S CE-CLS	1224	1224	0	5052-H34 Aluminum	2500-6500	120	63	
			1			285	70	
			2			285	70	
			3			200	74	
			0			350	80	
			1			350	80	
CE-S CE-CLS	0420	0420	0	5052-H34 Aluminum	4000-7000	220	70	
			1			360	125	
			2			315	115	
			3			400	150	
			0			380	120	
			1			420	160	
CE-S CE-CLS	0518 0524	0518 0524	0	5052-H34 Aluminum	4000-7000	380	160	
			1			420	180	
			2			400	270	
			3			460	320	
			0			475	350	
			1			1050	735	

METRIC (mm)	Type	Thread Code	Shank Code	Test Sheet Material	Installation (kN)	Pushout (N)	Torque-out (N•m)	
	METRIC (mm)	CE-S CE-CLS	M2 M2.5 M3	0	5052-H34 Aluminum	6.7-8.9	280	0.9
1				400			1.13	
2				750			1.47	
0				470			1.47	
1				550			1.7	
2				1010			2.03	
CE-S CE-CLS		M3.5	M3.5	0	5052-H34 Aluminum	11.2-13.5	280	1.8
				1			400	1.92
				2			840	2.5
				0			480	1.8
				1			570	2.3
				2			1210	2.3
CE-S CE-CLS		M4	M4	0	5052-H34 Aluminum	11.2-13.4	300	2.37
				1			470	2.6
				2			970	4
				0			490	2.95
				1			645	4
				2			1250	5.1
CE-SS CE-CLSS		M5	M5	0	5052-H34 Aluminum	11.2-15.6	300	3
				1			480	3.6
				2			845	5.7
				0			530	3.6
				1			800	4.5
				2			1112	6.8
CE-S CE-CLS	M6	M6	00	5052-H34 Aluminum	18-32	750	6.5	
			0			970	7.9	
			1			1580	10.2	
			2			1760	14.1	
			00			900	10	
			0			1380	13	
CE-S CE-CLS	M8	M8	0	5052-H34 Aluminum	18-32	1570	13.6	
			1			1870	18.1	
			2			1870	20.3	
			0			1760	17	
			1			1760	32.7	
			2			2020	36.2	

- The values reported are averages when all installation specifications and procedures are followed. Variations in mounting hole size, sheet material and installation force will affect results. Performance testing of this product in your application is recommended. We will be happy to provide samples for this purpose.





# TYPE CE-F FLUSH SELF-CLINCHING FASTENERS

**CLINCH**  
ENGINEERING

**PART NUMBER DESIGNATION:**

CE-F - 440 - 2

(Type - Thread - Shank Code)

**THREADS:**

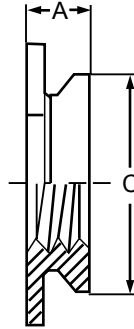
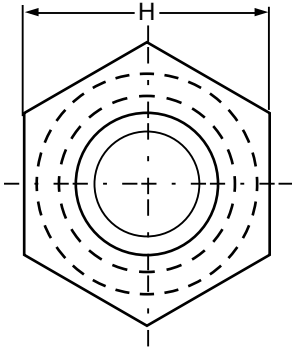
Internal, ASME B1.1 2B / ASME B1.13M, 6H

**MATERIAL:**

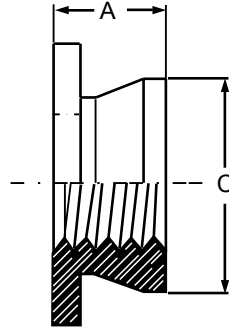
300 SERIES STAINLESS STEEL

**FINISH:**

Passivated and / or tested per ASTM A380



Profile for -1  
shank clinching



Profile for -2  
and higher shank.  
Profile may vary.

All measurements in inches.

UNIFIED	Type			Shank Code	A Max	Min. Sheet Thickness	Hole Size + .003 - .003	C Max.	H Nom.	Min. Dist. Hole C/L To Edge
	Stainless Steel	Thread Size	Thread Code							
CE-F	.086-56 (#2-56)	256	1	.060	.060 - .090	.172	.171	.188	.23	
			2	.090	.091 - UP					
CE-F	.112-40 (#4-40)	440	1	.060	.060 - .090	.172	.171	.188	.23	
			2	.090	.091 - UP					
CE-F	.138-32 (#6-32)	632	1	.060	.060 - .090	.213	.212	.250	.27	
			2	.090	.091 - UP					
CE-F	.164-32 (#8-32)	832	1	.060	.060 - .090	.290	.289	.312	.28	
			2	.090	.091 - UP					
CE-F	.190-32 (#10-32)	032	1	.060	.060 - .090	.312	.311	.343	.31	
			2	.090	.091 - UP					
CE-F	.250-20 (#1/4-20)	0420	3	.120	.125 - .155	.344	.343	.375	.34	
			4	.151	.156 - .186					
			5	.182	.187 - UP					

All measurements in millimeters.

METRIC	Type			Shank Code	A Max	Min. Sheet Thickness	Hole Size + .008 - .000	C Max.	H Nom.	Min. Dist. Hole C/L To Edge
	Stainless Steel	Thread Size x Pitch	Thread Code							
CE-F	M2 x 0.4	M2	1	1.53	1.53 - 2.3	4.37	4.35	4.8	6	
			2	2.3	2.32 - UP					
CE-F	M2.5 x 0.45	M2.5	1	1.53	1.53 - 2.3	4.37	4.35	4.8	6	
			2	2.3	2.32 - UP					
CE-F	M3 x 0.5	M3	1	1.53	1.53 - 2.3	4.37	4.35	4.8	6	
			2	2.3	2.32 - UP					
CE-F	M4 x 0.7	M4	1	1.53	1.53 - 2.3	7.37	7.35	7.9	7.2	
			2	2.3	2.32 - UP					
CE-F	M5 x 0.8	M5	1	1.53	1.53 - 2.3	7.92	7.9	8.7	8	
			2	2.3	2.32 - UP					
CE-F	M6 x 1	M6	3	3.05	3.18 - 3.94	8.74	8.72	9.5	8.8	
			4	3.84	3.96 - 4.72					
			5	4.63	4.75 - UP					





## CLINCH ENGINEERING

### PERFORMANCE DATA

UNIFIED (inch)	Thread Code	Shank Code	Axial Tensile Strength (lbs.)	Max. Screw Tightening Torque (in. lbs.)	Test Sheet Material			
					5052-H34 Aluminum		Cold-Rolled Steel	
					Installation (lbs.)	Pushout (lbs.)	Installation (lbs.)	Pushout (lbs.)
256	1	1	130	1.50	2000	200	3000	200
		2						
440	1	1	165	2.50	2000	200	3000	200
		2						
632	1	1	190	3.50	2000	200	3000	200
		2						
832	1	1	230	5.25	2000	240	4000	240
		2						
032	1	1	280	7.50	2500	240	4000	240
		2						
0420	3	3	1035	36	3500	640	4500	840
		4						
		5						

METRIC (mm)	Thread Code	Shank Code	Axial Tensile Strength (kN)	Max. Screw Tightening Torque (N•m)	Test Sheet Material			
					5052-H34 Aluminum		Cold-Rolled Steel	
					Installation (kN)	Pushout (N)	Installation (kN)	Pushout (N)
M2	1	1	0.57	0.16	8.9	890	13.3	890
		2						
M2.5	1	1	0.68	0.23	8.9	890	13.3	890
		2						
M3	1	1	0.85	0.36	8.9	890	13.3	890
		2						
M4	1	1	1	0.58	8.9	1068	17.8	1068
		2						
M5	1	1	1.3	0.88	11.1	1068	17.8	1068
		2						
M6	3	3	4.5	3.7	15.6	2847	20	3736
		4						
		5						

- The values reported are averages when all installation specifications and procedures are followed. Variations in mounting hole size, sheet material and installation procedure will affect this data. Performance testing of this product in your application is recommended. We will be happy to provide samples for this purpose.
- Failure occurs in screw stripping using a 60 ksi screw and the shortest shank length fastener.
- Head of the CE-F nut may bend and/or fail if screw is over-torqued beyond these values.





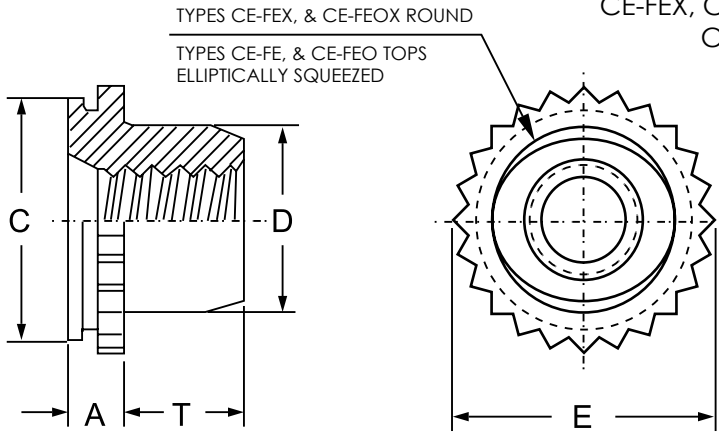
# TYPE CE-FE, CE-FEX, CE-FEO, CE-FEOX MINIATURE SELF-CLINCHING FASTENERS

**CLINCH**  
ENGINEERING

**PART NUMBER DESIGNATION:**  
CE-FEO - 632 - MD  
(Type - Thread Size Code - Finish)

**THREADS:**

CE-FEX, CE-FEOX : Internal, ANSI B1.1, 2B / ANSI / ASMI B1.13M, 6H  
CE-FE, CE-FEO : Internal, MIL-S-8879, UNJ-3B, ANSI B1.21M,  
MJ 4H6H 4H5H(M6 thread)



TYPE	MATERIAL	FINISH
CE-FEX, CE-FEOX	Fastener Material 303 Stainless Steel	Passivated and / or Tested Per ASTM A380
CE-FE, CE-FEO		Black Dry-film Lubricant

All measurements in inches.

UNIFIED	Thread Size	Type		Thread Code	A (Shank) Max.	Sheet Thickness	Hole Size In Sheet +0.03 -0.00	C +.000 -0.05	D Max.	E ±.005	T +.015 -0.00	Min. Dist. Hole C/L To Edge	Max. Hole In Attached Parts
		Non-locking	Self-locking										
	.112-40 (#4-40)	CE-FEOX	CE-FEO	440	.040	.039-.045	.172	.171	.145	.192	.065	.14	.132
		CE-FEX	CE-FE										
	.138-32 (#6-32)	CE-FEOX	CE-FEO	632	.040	.039-.045	.213	.212	.180	.244	.075	.17	.158
		CE-FEX	CE-FE										
	.164-32 (#8-32)	CE-FEOX	CE-FEO	832	.040	.039-.045	.290	.289	.215	.322	.090	.20	.184
		CE-FEX	CE-FE										
	.190-32 (#10-32)	CE-FEOX	CE-FEO	032	.040	.039-.045	.290	.289	.245	.322	.110	.20	.210
		CE-FEX	CE-FE										
	1/4-20	CE-FEX	CE-FE	0420	.060	.059-.070	.344	.343	.318	.384	.120	.28	.270
	1/4-28			0428									

All measurements in millimeters.

METRIC	Thread Size x Pitch	Type		Thread Code	A (Shank) Max.	Sheet Thickness	Hole Size In Sheet +0.08	C -0.13	D Max.	E ±0.13	T +0.4	Min. Dist. Hole C/L To Edge	Max. Hole In Attached Parts
		Non-locking	Self-locking										
	M3 x 0.5	CE-FEOX	CE-FEO	M3	1.02	0.99-1.14	4.39	4.37	3.96	4.88	1.9	3.6	3.5
		CE-FEX	CE-FE										
	M4 x 0.7	CE-FEOX	CE-FEO	M4	1.02	0.99-1.14	7.39	7.37	5.23	8.17	2.55	5.2	4.5
		CE-FEX	CE-FE										
	M5 x 0.8	CE-FEOX	CE-FEO	M5	1.02	0.99-1.14	7.39	7.37	6.48	8.17	3.05	5.2	5.5
		CE-FEX	CE-FE										
	M6 x 1	CE-FEX	CE-FE	M6	1.53	1.5-1.78	8.74	8.72	7.72	9.74	3.3	7.1	6.5





# TYPE CE-FE, CE-FEX, CE-FEO, CE-FEOX MINIATURE SELF-CLINCHING FASTENERS

## CLINCH ENGINEERING

### PERFORMANCE DATA

UNIFIED (inch)	Type	Thread Code	Max. Rec. Tightening Torque (in. lbs.)	Test Sheet Material					
				5052-H34 Aluminum			Cold-Rolled Steel		
				Installation (lbs.)	Pushout (lbs.)	Torque-out (in. lbs.)	Installation (lbs.)	Pushout (lbs.)	Torque-out (in. lbs.)
	CE-FEO, CE-FEOX	440	6.3	900	88	12	1500	140	12
	CE-FE, CE-FEX		10		135	12		210	12
	CE-FEO, CE-FEOX	632	10	1200	105	2100	185	20	
	CE-FE, CE-FEX		15	1300	175		255		
	CE-FEO, CE-FEOX	832	16	1500	155	2500	260	48	
	CE-FE, CE-FEX		25		255		360		
	CE-FEO, CE-FEOX	032	19	1500	155	2500	260	48	
	CE-FE, CE-FEX		30		255		360		
CE-FE, CE-FEX	0420	45	2100	320	110	3500	420	110	
CE-FE, CE-FEX	0428								

METRIC (mm)	Type	Thread Code	Max. Rec. Tightening Torque (N•m)	Test Sheet Material					
				5052-H34 Aluminum			Cold-Rolled Steel		
				Installation (kN)	Pushout (N)	Torque-out (N•m)	Installation (kN)	Pushout (N)	Torque-out (N•m)
	CE-FEO, CE-FEOX	M3	.76	4	391	1.35	6.7	622	1.35
	CE-FE, CE-FEX		1.13		600	934			
	CE-FEO, CE-FEOX	M4	1.8	6.7	689	5.42	11.1	1156	5.42
	CE-FE, CE-FEX		2.8		1134	1601			
	CE-FEO, CE-FEOX	M5	2.2	6.7	689	5.42	11.1	1156	5.42
	CE-FE, CE-FEX		3.5		1134	1601			
	CE-FE, CE-FEX	M6	4.8	9.4	1423	12.43	15.6	1868	12.43

- The values above are representative of pushout and torque-out resistance between the shank of the fastener and the sheet. The installation, pushout and torque-out values reported are averages when all installation specifications and procedures are followed. Variations in mounting hole size, sheet material and installation procedure will affect this data. Performance testing of this product in your application is recommended. We will be happy to provide samples for this purpose.
- For Types CE-FE and CE-FEO fasteners, thread locking performance is equivalent to applicable NASM25027 specifications. Consult technical sheet NASM25027 on our web site for details.
- These torques will ensure that induced preload will not exceed shear strength of knurled collar. These torques consider nut strength only. User must consider screw strength also. When type CE-FE/C E-FEX is installed in sheets thicker than .070" / 1.78 mm or when type CE-FEO/CE-FEOX is installed in sheets thicker than .045" / 1.14 mm, tightening torque must be controlled so that induced preload does not exceed these values.

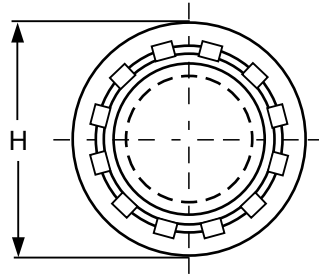
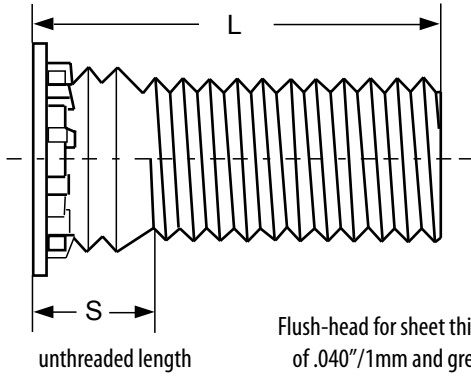




# TYPE CE-FH, CE-FHS SELF-CLINCHING STUDS

**CLINCH**  
ENGINEERING

PART NUMBER DESIGNATION:  
CE-FH - 632 - 12 ZI  
(Type - Thread - Length Code Finish)



TYPE	MATERIAL	FINISH
CE-FH	1018 / 10B21 Heat treated Carbon Steel	Zinc Cr3 Finish Code "ZI"
CE-FHS	302 SERIES Stainless Steel	Passivated and / or tested per ASTM A380

All measurements in inches.

UNIFIED	Type				Length "L" ± .014 (Length Code in 32nds of an inch)										Min. Sheet Thickness	Hole Size + .003 -.000	Max Hole in Attach. Parts	H ±.015	S Max	Min. Dist. Hole C/L Steel To Edge
	Steel	Stainless Steel	Thread Size	Thread Code	.250	.312	.375	.500	.625	.750	.875	1.00	1.25	1.50						
	CE-FH	CE-FHS	.086-56 (#2-56)	256	4	5	6	8	10	12	NA	NA	NA	NA						
CE-FH	CE-FHS	.112-40 (#4-40)	440	4	5	6	8	10	12	14	16	NA	NA	.040	.111	.135	.176	.085	.219	
CE-FH	CE-FHS	.138-32 (#6-32)	632	4	5	6	8	10	12	14	16	20	24	.040	.137	.160	.206	.090	.250	
CE-FH	CE-FHS	.164-32 (#8-32)	832	4	5	6	8	10	12	14	16	20	24	.040	.163	.185	.237	.090	.281	
CE-FH	CE-FHS	.190-24 (#10-24)	024	NA	5	6	8	10	12	14	16	20	24	.040	.189	.210	.256	.100	.281	
CE-FH	CE-FHS	.190-32 (#10-32)	032	NA	5	6	8	10	12	14	16	20	24	.040	.189	.210	.256	.100	.281	
CE-FH	CE-FHS	.250-20 (#1/4-20)	0420	NA	NA	6	8	10	12	14	16	20	24	.062	.249	.270	.337	.135	.312	
CE-FH	CE-FHS	.313-18 (#5/16-18)	0518	NA	NA	NA	8	10	12	14	16	20	24	.093	.311	.333	.376	.160	.375	

All measurements in millimeters.

UNIFIED	Type				Length "L" ± .4 (Length Code in millimeters)										Min. Sheet Thickness	Hole Size ± .08	Max Hole in Attach. Parts	H ± .4	S Max	Min. Dist. Hole C/L Steel To Edge
	Steel	Stainless Steel	Thread Size x Pitch	Thread Code	6	8	10	12	15	18	NA	NA	NA	NA						
	CE-FH	CE-FHS	M2.5 x 0.45	M2.5	6	8	10	12	15	18	NA	NA	NA	NA						
CE-FH	CE-FHS	M3 x 0.5	M3	6	8	10	12	15	18	20	25	NA	NA	1	3	3.6	4.6	2.1	5.6	
CE-FH	CE-FHS	M3.5 x 0.6	M3.5	6	8	10	12	15	18	20	25	30	NA	1	3.5	4.1	5.3	2.25	6.4	
CE-FH	CE-FHS	M4 x 0.7	M4	6	8	10	12	15	18	20	25	30	35	1	4	4.6	5.9	2.4	7.2	
CE-FH	CE-FHS	M5 x 0.8	M5	NA	8	10	12	15	18	20	25	30	35	1	5	5.6	6.5	2.7	7.2	
CE-FH	CE-FHS	M6 x 1	M6	NA	NA	10	12	15	18	20	25	30	35	1.6	6	6.6	8.2	3	7.9	
CE-FH	CE-FHS	M8 x 1.25	M8	NA	NA	NA	12	15	18	20	25	30	35	2.4	8	8.6	9.6	3.7	9.6	





# TYPE CE-FH, CE-FHS SELF-CLINCHING STUDS

## CLINCH ENGINEERING

The values reported here pertain only to the holding power of the stud to the sheet into which it is installed. These values in no way pertain to the axial strength of the threads, allowable tightening torque or design loading of an assembly. The values reported are anticipated destructive averages when all installation specifications and procedures are followed.

When properly installed, Clinch Engineering self-clinching studs should perform better than the values given here.

### PERFORMANCE DATA

UNIFIED (inch)	Thread Code	Max. Nut Tightening Torque (in. lbs.)	Type	Test Sheet Thickness & Material	Sheet Hardness HRB	Installation (lbs.)	Pushout (lbs.)	Torque-out (in. lbs.)	Pull Thru (lbs.)			
	256	2.3		FH	.062" Aluminum	29	2000	100	5	425		
FHS				.062" Aluminum	29	2000	100	4.5	300			
FH				.060" Steel	59	2500	180	5	425			
FHS				.060" Steel	59	2500	180	4.5	300			
FH				.064" Aluminum	29	3800	170	10	650			
FHS				.064" Aluminum	29	3200	170	8	500			
440		5		FH	.060" Steel	59	4300	275	10	650		
				FHS	.060" Steel	59	4700	275	8	500		
				FH	.064" Aluminum	29	3800	180	17	850		
				FHS	.064" Aluminum	29	3500	180	16	775		
				FH	.060" Steel	59	4700	300	20	850		
				FHS	.060" Steel	59	5000	300	16	775		
632	9		FH	.064" Aluminum	29	4800	220	28	1000			
			FHS	.064" Aluminum	29	4500	220	28	940			
			FH	.060" Steel	59	6800	375	40	1270			
			FHS	.060" Steel	59	5500	375	28	1130			
			FH	.064" Aluminum	29	5500	270	30	1220			
			FHS	.064" Aluminum	29	5500	270	30	1220			
832	17		FH	.060" Steel	59	7500	450	60	1410			
			FHS	.060" Steel	59	6800	450	50	1410			
			FH	.093" Aluminum	28	6500	310	65	2300			
			FHS	.093" Aluminum	28	6500	310	65	2100			
			FH	.088" Steel	46	9500	575	100	2550			
			FHS	.088" Steel	46	10000	575	100	2550			
032 024	27 24		FH	.093" Aluminum	28	6500	430	100	2260			
			FHS	.093" Aluminum	28	6700	430	100	2260			
			FH	.093" Steel	46	10000	650	175	3475			
			FHS	.093" Steel	46	11200	650	175	3120			
			0420	58		FH	.064" Aluminum	29	5500	270	30	1220
						FHS	.064" Aluminum	29	5500	270	30	1220
FH	.060" Steel	59				7500	450	60	1410			
FHS	.060" Steel	59				6800	450	50	1410			
FH	.093" Aluminum	28				6500	310	65	2300			
FHS	.093" Aluminum	28				6500	310	65	2100			
0518	120		FH	.088" Steel	46	9500	575	100	2550			
			FHS	.088" Steel	46	10000	575	100	2550			
			FH	.093" Aluminum	28	6500	430	100	2260			
			FHS	.093" Aluminum	28	6700	430	100	2260			
			FH	.093" Steel	46	10000	650	175	3475			
			FHS	.093" Steel	46	11200	650	175	3120			

METRIC (mm)	Thread Code	Max. Nut Tightening Torque (N•m)	Type	Test Sheet Thickness & Material	Sheet Hardness HRB	Installation (kN)	Pushout (N)	Torque-out (N•m)	Pull Thru (N)			
	M2.5	0.41		FH	1.6 mm Aluminum	29	8.9	465	1.0	2600		
FHS				1.6 mm Aluminum	29	11.6	465	0.8	1820			
FH				1.5 mm Steel	59	11.1	740	1.0	2800			
FHS				1.5 mm Steel	59	13.8	740	0.8	1820			
FH				1.6 mm Aluminum	29	12.9	600	1.7	3150			
FHS				1.6 mm Aluminum	29	12.9	600	1.3	2570			
M3		0.74		FH	1.5 mm Steel	59	14.7	820	1.7	3840		
				FHS	1.5 mm Steel	59	14.7	820	1.3	2440		
				FH	1.6 mm Aluminum	29	15.6	800	1.7	3780		
				FHS	1.6 mm Aluminum	29	15.6	800	1.7	3445		
				FH	1.5 mm Steel	59	22.3	1335	2.8	3780		
				FHS	1.5 mm Steel	59	22.3	1335	2.0	3445		
M3.5	1.15		FH	1.6 mm Aluminum	29	20	975	2.9	4448			
			FHS	1.6 mm Aluminum	29	22.3	975	2.9	4180			
			FH	1.5 mm Steel	59	28.9	1780	4.2	5650			
			FHS	1.5 mm Steel	59	26.7	1780	2.9	4775			
			FH	1.6 mm Aluminum	29	24.5	1070	3.5	5170			
			FHS	1.6 mm Aluminum	29	24.5	1070	3.5	4760			
M4	1.7		FH	1.5 mm Steel	59	33.4	2000	6.5	6270			
			FHS	1.5 mm Steel	59	32.5	2000	6.3	6000			
			FH	2.4 mm Aluminum	28	28.9	1660	7.3	10200			
			FHS	2.4 mm Aluminum	28	28.9	1660	7.3	9090			
			FH	2.2 mm Steel	46	44.5	2560	11.3	11300			
			FHS	2.2 mm Steel	46	44.5	2560	10.1	10600			
M5	3.5		FH	2.4 mm Aluminum	28	29.8	1910	11.3	10500			
			FHS	2.4 mm Aluminum	28	29.8	1910	11.3	9540			
			FH	2.4 mm Steel	46	44.5	2890	19.2	15450			
			FHS	2.4 mm Steel	46	49.8	2890	17.5	13630			
			M6	5.9		FH	2.4 mm Steel	46	44.5	2890	19.2	15450
						FHS	2.4 mm Steel	46	49.8	2890	17.5	13630
M8	14.2					FH	2.4 mm Steel	46	44.5	2890	19.2	15450
						FHS	2.4 mm Steel	46	49.8	2890	17.5	13630

- Maximum recommended tightening torques for aluminum studs are 60 percent of these values.





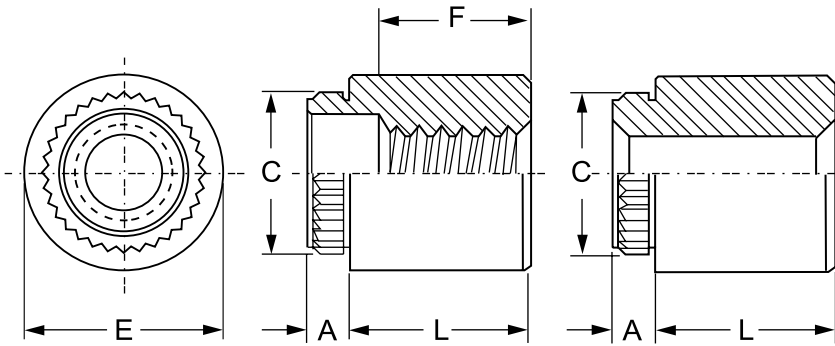
# TYPE CE-KFE, CE-KFSE BROACHING STANDOFFS

**CLINCH**  
ENGINEERING

**PART NUMBER DESIGNATION:**

CE-KFE - 632 - 12 ET

↓                      ↓                      ↓                      ↓  
 Type and Material    Thread or Thru    Length    Finish  
 CE-KFE = carbon steel    Hole Code    Code    Code  
 CE-KFSE = stainless steel



**THREADS:**  
Internal, ASME B1.1 2B / ASME B1.13M, 6H

**MATERIAL:**  
CE-KFE: Carbon Steel  
CE-KFSE: 300 Series Stainless Steel

**FINISH:**  
CE-KFE: Electro-Plated Bright Tin ASTM B 545, Class B With Clear Preservative Coating  
CE-KFSE: Passivated and/or tested per ASTM A380

All measurements in inches.

UNIFIED	Thread Size	Thru Hole +.004 -.003	Type		Thread or Thru Hole Code	Length Code "L" ±.005 (Length Code is in 32nds of an inch)								A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet +.003 - .000	C ±.003	E ±.005	Min. Dist. Hole C/L To Edge
			Carbon Steel	Stainless Steel		.125	.250	.375	.500	.625	.750	.875	1.00						
			.112-40 (#4-40)	N/A		CE-KFE	CE-KFSE	440	4	8	12	16	20						
.138-32 (#6-32)	N/A	CE-KFE	CE-KFSE	632	4	8	12	16	20	24	28	32	.060	.060	.213	.231	.281	.22	
N/A	.116	CE-KFE	CE-KFSE	116	4	8	12	16	20	24	NA	NA	.060	.060	.166	.184	.219	.17	
N/A	.143	CE-KFE	CE-KFSE	143	4	8	12	16	20	24	28	32	.060	.060	.213	.231	.281	.22	
"F" Minimum Thread Length (Where Applicable)					Full			.375 ± .016		.375 Blind									

All measurements in millimeters.

METRIC	Thread Size x Pitch	Thru Hole +0.10 -0.08	Type		Thread or Thru Hole Code	Length Code "L" ±0.13 (Length Code is in millimeters)								A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet +0.08	C ±0.08	E ±0.13	Min. Dist. Hole C/L To Edge
			Carbon Steel	Stainless Steel		3	4	6	8	10	12	14	16						
			M3 x 0.5	N/A		CE-KFE	CE-KFSE	M3	3	4	6	8	10						
N/A	3.6	CE-KFE	CE-KFSE	3.6	3	4	6	8	10	12	14	16	1.53	1.53	5.41	5.87	7.14	5.5	
N/A	4.2	CE-KFE	CE-KFSE	4.2	3	4	6	8	10	12	14	16	1.53	1.53	6.4	6.86	8.74	7.1	
"F" Minimum Thread Length (Where Applicable)					Full			9.5 ± 0.4											

- Blind at shank end with .375" minimum thread length from head end.
- N/A Not applicable.





PERFORMANCE DATA

UNIFIED (inch)	Type	Thread Code	Max. Nut Tightening Torque (lbs.)	Test Sheet Thickness & Test Sheet Material	Installation (lbs.)	Pushout (lbs.)	Torque-out (lbs.)
	CE-KFE CE-KFSE	256	N/A	.060" FR-4 Fiberglass	400	60	6
		440	N/A	.060" FR-4 Fiberglass	400	65	15
		632	N/A	.060" FR-4 Fiberglass	500	80	30
		832	N/A	.060" FR-4 Fiberglass	700	95	35
		032	N/A	.060" FR-4 Fiberglass	700	100	40

METRIC (mm)	Type	Thread Code	Max. Nut Tightening Torque (N•m)	Test Sheet Thickness & Test Sheet Material	Installation (kN)	Pushout (N)	Torque-out (N•m)
	CE-KFE CE-KFSE	M3	N/A	1.5 mm FR-4 Fiberglass	2.2	290	1.7
		M4	N/A	1.5 mm FR-4 Fiberglass	2.2	420	3.4
		M5	N/A	1.5 mm FR-4 Fiberglass	2.9	440	4.5

- The values reported are averages when all installation specifications and procedures are followed. Variations in mounting hole size, sheet material, and installation procedure will affect this data. Performance testing of this product in your application is recommended. We will be happy to provide samples for this purpose or perform the installation for you.
- These are typical values for parts installed in drilled mounting holes. Punched mounting holes yield values approximately 15% less.
- N/A Not applicable.





# TYPE CE-KF2, CE-KFS2 BROACHING NUTS

**CLINCH**  
ENGINEERING

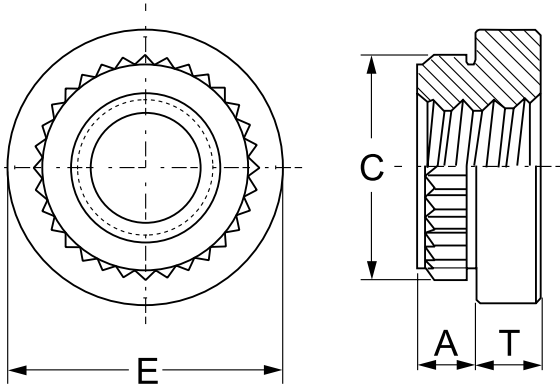
PART NUMBER DESIGNATION:

CE-KF2 - 832 ET

↓  
Type and Material  
CE-KF = carbon steel  
CE-KFS = stainless steel

↓ Thread Code

↓ Finish Code



**THREADS:**

Internal, ASME B1.1 2B / ASME B1.13M 6H

**MATERIAL:**

CE-KF2: Carbon Steel

CE-KFS2: 300 Series Stainless Steel

**FINISH:**

CE-KF2: Electro-Plated Bright Tin ASTM B 545, Class B With Clear Preservative Coating

CE-KFS2: Passivated and/or tested per ASTM A380

**FOR USE IN SHEET HARDNESS:**

CE-KF2: HRB 60 / HB107 or less

CE-KFS2: HRB 70 / HB125 or less

All measurements in inches.

UNIFIED	Thread Size	Type		Thread Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet +.003 - .000	C ±.003	E ±.005	T ±.005	Min. Dist. Hole C/L To Edge
		Carbon Steel	Stainless Steel								
		.086-56 (#2-56)	CE-KF2								
.112-40 (#4-40)	CE-KF2	CE-KFS2	440	.060	.060	.166	.184	.219	.065	0.17	
.138-32 (#8-32)	CE-KF2	CE-KFS2	632	.060	.060	.213	.231	.281	.065	0.22	
.164-32 (#8-32)	CE-KF2	CE-KFS2	832	.060	.060	.250	.268	.344	.065	0.25	
.190-32 (#10-32)	CE-KF2	CE-KFS2	032	.060	.060	.272	.290	.375	.127	0.28	

All measurements in millimeters.

METRIC	Thread Size x Pitch	Type		Thread Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet + 0.08	C ± 0.08	E ± 0.13	T ± 0.13	Min. Dist. Hole C/L To Edge
		Carbon Steel	Stainless Steel								
		M2 x 0.4	CE-KF2								
M2.5 x 0.45	CE-KF2	CE-KFS2	M2.5	1.53	1.53	4.22	4.68	5.56	1.5	4.4	
M3 x 0.5	CE-KF2	CE-KFS2	M3	1.53	1.53	4.22	4.68	5.56	1.5	4.4	
M4 x 0.7	CE-KF2	CE-KFS2	M4	1.53	1.53	6.4	6.86	8.74	2	6.4	
M5 x 0.8	CE-KF2	CE-KFS2	M5	1.53	1.53	6.9	7.37	9.53	3	7.1	

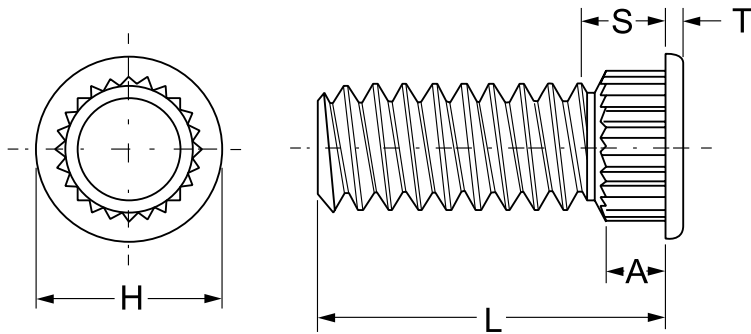
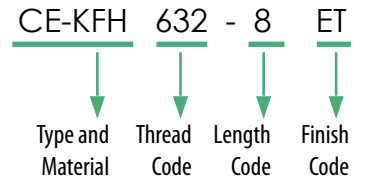




# TYPE CE-KFH BROACHING STUDS

**CLINCH**  
ENGINEERING

PART NUMBER DESIGNATION:



**THREADS:**

External, ASME B1.1 2A / ASME B1.13M 6g

**MATERIAL:**

CDA-510 Phosphor Bronze

**FINISH:**

Electro-Plated Bright Tin ASTM B 545, Class B  
With Clear Preservative Coating

**FOR USE IN SHEET HARDNESS:**

HRB 55 / HB 83 or less

All measurements in inches.

UNIFIED	Thread Size	Type	Thread Code	Length Code "L" ±.010 (Length Code is in 16ths of an inch)						A (Shank) Max.	Min. Sheet Thickness	Hole Size in Sheet +.003 -.000	Max. Hole Size in Attached Parts	H ±.010	S Max.	T ±.005	Min. Dist. Hole C/L To Edge
				.250	.312	.375	.500	.625	.750								
	.112-40 (#4-40)	CE-KFH	440	4	5	6	8	10	12	.065	.060	.120	.145	.180	.09	.020	.15
	.138-32 (#6-32)	CE-KFH	632	4	5	6	8	10	12	.065	.060	.140	.170	.200	.09	.020	.19
	.164-32 (#8-32)	CE-KFH	832	4	5	6	8	10	12	.065	.060	.166	.195	.225	.09	.020	.20
	.190-32 (#10-32)	CE-KFH	032	4	5	6	8	10	12	.065	.060	.189	.220	.250	.09	.020	.20

All measurements in millimeters.

METRIC	Thread Size x Pitch	Type	Thread Code	Length Code "L" ±0.25 (Length Code is in millimeters)						A (Shank) Max.	Min. Sheet Thickness	Hole Size in Sheet +0.08	Max. Hole Size in Attached Parts	H ±0.25	S Max.	T ±0.13	Min. Dist. Hole C/L To Edge
				6	8	10	12	15	18								
	M3 x 0.5	CE-KFH	M3	6	8	10	12	15	18	1.65	1.53	3	3.7	4.58	2.3	0.51	3.8
	M4 x 0.7	CE-KFH	M4	6	8	10	12	15	18	1.65	1.53	4.2	4.8	5.74	2.3	0.51	5.1
	M5 x 0.8	CE-KFH	M5	6	8	10	12	15	18	1.65	1.53	5	5.8	6.6	2.3	0.51	5.3



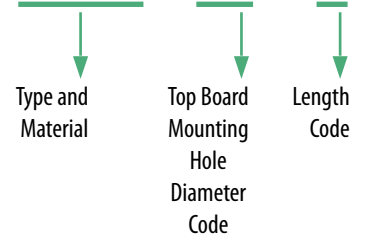


# TYPE CE-KSSB BROACHING STANDOFFS

**CLINCH**  
ENGINEERING

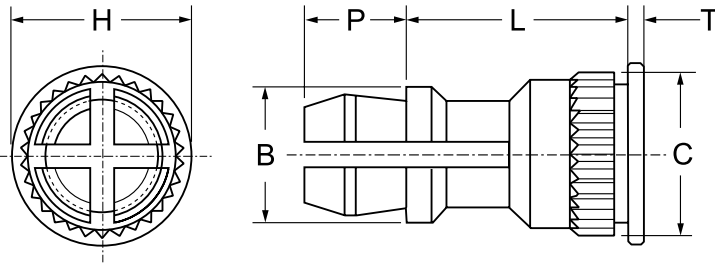
PART NUMBER DESIGNATION:

**CE-KSSB - 156 - 12**



**MATERIAL:**  
CDA-353 Brass

**FOR USE IN SHEET HARDNESS:**  
HRB 65 / HB 116 or less

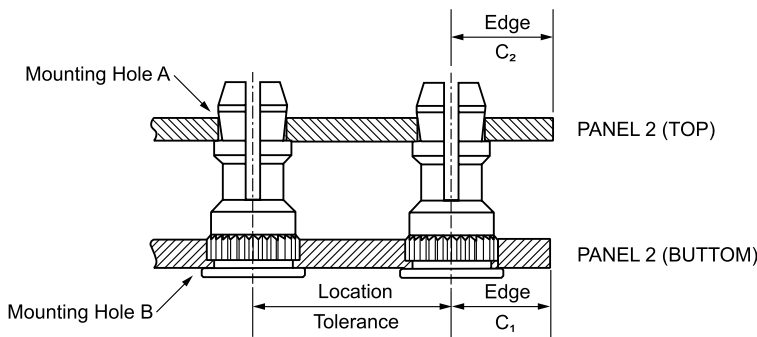


All measurements in inches.

UNIFIED	Type	Top Board Mounting Hole Diameter Code	Length Code "L" ±.005 (Length Code is in 32nds of an inch)										B ±.005	C ±.003	H ±.005	P ±.005	T ±.005
			.250	.312	.375	.437	.500	.562	.625	.750	.875	1.00					
	CE-KSSB	156	8	10	12	14	16	18	20	24	28	32	.188	.226	.250	.141	.020

All measurements in millimeters.

METRIC	Type	Top Board Mounting Hole Diameter Code	Length Code "L" ±0.13 (Length Code is in millimeters)										B ±0.13	C ±0.08	H ±0.13	P ±0.13	T ±0.13
			8	10	12	14	16	18	20	24	28						
	CE-KSSB	4mm	8	10	12	14	16	18	20	24	28	4.8	5.74	6.35	3.58	0.51	



All measurements in inches.

UNIFIED	Type	PANEL 1 (Bottom)						PANEL 2 (Top)				
		Bottom Mounting Hole B +.003 -.000	Material	Hardness Max.	Thickness Min.	Edge Distance C1 Min.	Location Tolerance Max.	Top Mounting Hole A +.003 -.000	Material	Hardness Max.	Thickness Range	Edge Distance C2 Min.
	CE-KSSB	.213	PC Board	HRB 65	.050	.220	±.005	.156	PC Board or Metal	No Limit	.040 - .070	.100

All measurements in millimeters.

METRIC	Type	PANEL 1 (Bottom)						PANEL 2 (Top)				
		Bottom Mounting Hole B +0.08	Material	Hardness Max.	Thickness Min.	Edge Distance C1 Min.	Location Tolerance Max.	Top Mounting Hole A +0.08	Material	Hardness Max.	Thickness Range	Edge Distance C2 Min.
	CE-KSSB	5.4	PC Board	HRB 65	1.25	5.6	±0.13	4	PC Board or Metal	No Limit	1 - 1.8	2.5





# TYPE CE-PFK BROACHING CAPTIVE PANEL SCREWS

**CLINCH**  
ENGINEERING

PART NUMBER DESIGNATION:

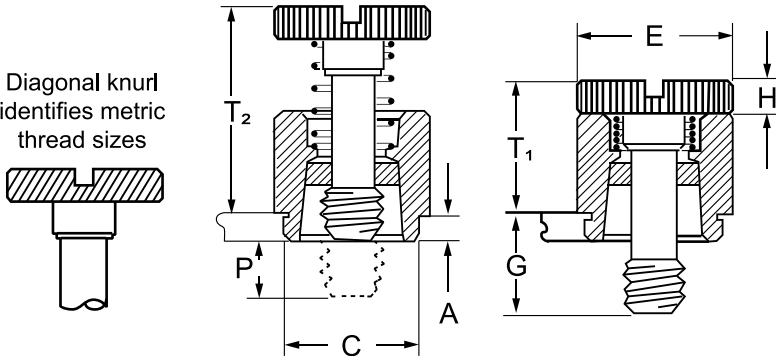
CE-PFK - 632 - 62

↓  
Type and Material

↓  
Thread Code

↓  
Screw Length Code

Diagonal knurl identifies metric thread sizes



**THREADS:**  
External, ASME B1.1 2A / ASME B1.13M 6g

**MATERIAL:**  
300 Series Stainless Steel

**FINISH:**  
Passivated and/Or Tested Per ASTM A380

**FOR USE IN SHEET HARDNESS:**  
HRB 70 / HB125 or less

All measurements in inches.

UNIFIED	Thread Size	Type	Thread Code	Screw Length Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet +.003 -.000	C +.003	E +.015 -.005	G ±.016	H ±.005	P Nom. (2)	T <sub>1</sub> Max.	T <sub>2</sub> Nom.	Min. Dist. Hole C/L To Edge
	.112-40 (#4-40)	CE-PFK	440		40	.060	.060	.265	.283	.310	.250	.072	.000	.36	.54
62					.125										
84					.250										
.138-32 (#6-32)	CE-PFK	632		40	.060	.060	.281	.299	.340	.250	.072	.000	.36	.54	.26
				62								.125			
				84								.250			

All measurements in millimeters.

METRIC	Thread Size x Pitch	Type	Thread Code	Screw Length Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet +0.08	C ±0.08	E +0.4 -0.13	G ±0.4	H ±0.13	P Nom. (2)	T <sub>1</sub> Max.	T <sub>2</sub> Nom.	Min. Dist. Hole C/L To Edge
	M3 x 0.5	CE-PFK	M3		40	1.53	1.53	6.75	7.19	7.87	6.4	1.83	0	9.15	13.72
62					3.2										
84					6.4										

- Retaining rings are plastic with normal 250°F / 120°C temperature limit.
- Screw may protrude .005"/0.13mm beyond nominal dimensions.





# TYPE CE-KF2, CE-KFS2, CE-KFH, CE-KSSB, CE-PFK PERFORMANCE DATA



## PERFORMANCE DATA

### TYPE CE-KF2, CE-KFS2, CE-KFH, AND CE-PFK FASTENERS

UNIFIED (inch)	Type	Thread Code	Max. Nut Tightening Torque (in. lbs.)	Test Sheet Thickness & Test Sheet Material	Installation (lbs.)	Pushout (lbs.)	Torque-out (in. lbs.)
	CE-KF2 CE-KFS2	256	N/A	.060" FR-4 Fiberglass	400	60	6
		440	N/A	.060" FR-4 Fiberglass	400	65	15
		632	N/A	.060" FR-4 Fiberglass	500	80	30
		832	N/A	.060" FR-4 Fiberglass	700	95	35
		032	N/A	.060" FR-4 Fiberglass	700	100	40
	CE-KFH	440	4	.060" FR-4 Fiberglass	400	65	7
		632	8	.060" FR-4 Fiberglass	400	70	11
		832	15	.060" FR-4 Fiberglass	400	80	16
		032	18	.060" FR-4 Fiberglass	400	90	17
CE-PFK	440	N/A	.060" FR-4 Fiberglass	250	55	N/A	
	632	N/A	.060" FR-4 Fiberglass	400	60	N/A	

METRIC (mm)	Type	Thread Code	Max. Nut Tightening Torque (N•m)	Test Sheet Thickness & Test Sheet Material	Installation (kN)	Pushout (N)	Torque-out (N•m)
	CE-KF2 CE-KFS2	M3	N/A	1.5 mm FR-4 Fiberglass	2.2	290	1.7
		M4	N/A	1.5 mm FR-4 Fiberglass	2.2	420	3.4
		M5	N/A	1.5 mm FR-4 Fiberglass	2.9	440	4.5
	CE-KFH	M3	0.45	1.5 mm FR-4 Fiberglass	1.8	285	0.79
		M4	1.6	1.5 mm FR-4 Fiberglass	1.8	355	1.8
		M5	2.1	1.5 mm FR-4 Fiberglass	1.8	400	1.92
CE-PFK	M3	N/A	1.5 mm FR-4 Fiberglass	1.1	245	N/A	

### TYPE CE-KSSB BROACHING STANDOFFS

UNIFIED (inch)	Type	Panel 1 (.060" FR-4 Fiberglass)		Panel 2 (Removable)		
		Installation (lbs.)	Pushout (lbs.)	Max. First On Force (lbs.)	Min. First Off Force (lbs.)	Min. 15th Off Force (lbs.)
	CE-KSSB	500	110	13	3.0	1.0

METRIC (mm)	Type	Panel 1 (1.5 mm FR-4 Fiberglass)		Panel 2 (Removable)		
		Installation (kN)	Pushout (N)	Max. First On Force (N)	Min. First Off Force (N)	Min. 15th Off Force (N)
	CE-KSSB	2.2	484	57.7	13.3	4.4

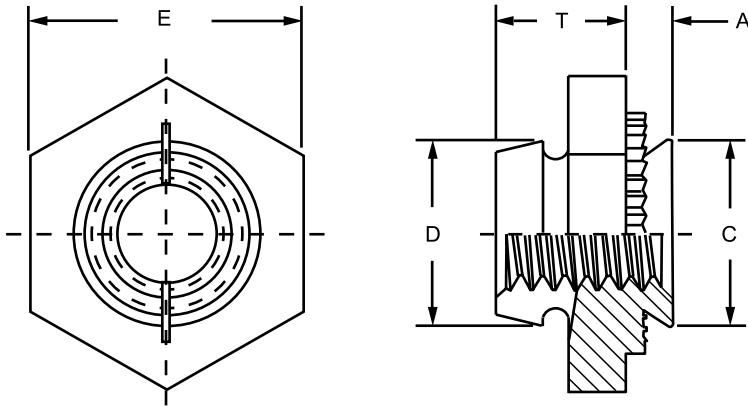
- The values reported are averages when all installation specifications and procedures are followed. Variations in mounting hole size, sheet material, and installation procedure will affect this data. Performance testing of this product in your application is recommended. We will be happy to provide samples for this purpose or perform the installation for you.





# TYPE CE-LK SELF-LOCKING, SELF-CLINCHING FASTENERS

**CLINCH**  
ENGINEERING



**PART NUMBER DESIGNATION:**

CE-LKS - 632 - 1 MD  
(Type Material - Thread Size - Shank Finish)

**THREADS:**

Internal, ANSI B1.1, 3B/ANSI/ASME B1.13M, 6H

**MATERIAL:**

CE-LK: Heat-treated Carbon Steel  
CE-LKS: 300 Series Stainless Steel  
CE-LKA: 7075-T6 Aluminum

**FINISH:**

CE-LK: Black, Dry-film Lubricant Over Zinc Phosphate  
CE-LKS: Black Dry-film Lubricant  
CE-LKA: Plain

**FOR USE IN SHEET HARDNESS:**

CE-LK: HRB 70 / HB 125 or Less  
CE-LKS: HRB 70 / HB 125 or Less  
CE-LKA: HRB 50 / HB 82 or Less

All measurements in inches.

UNIFIED	Type			Thread Size	Thread Code	Shank Code	A (Shank) Max	Min. Sheet Thickness	Hole Size In Sheet +.003 -.000	C Max.	D Max.	E Nom.	T ±.010	Min. Dist. Hole C/L To Edge
	Carbon Steel	Stainless Steel	Aluminum											
	CE-LK	CE-LKS	CE-LKA	.086-56 (#2-56)	256	1	.038	.040	.172	.171	.165	.250	.135	.156
						2	.054	.056						
	CE-LK	CE-LKS	CE-LKA	.112-40 (#4-40)	440	1	.038	.040	.187	.186	.185	.250	.135	.156
						2	.054	.056						
	CE-LK	CE-LKS	CE-LKA	.138-32 (#6-32)	632	1	.038	.040	.219	.218	.220	.312	.145	.187
						2	.054	.056						
	CE-LK	CE-LKS	CE-LKA	.164-32 (#8-32)	832	1	.038	.040	.266	.265	.250	.343	.175	.203
						2	.054	.056						
	CE-LK	CE-LKS	CE-LKA	.190-32 (#10-32)	032	1	.038	.040	.312	.311	.285	.375	.205	.218
						2	.054	.056						

All measurements in millimeters.

METRIC	Type			Thread Size x Pitch	Thread Code	Shank Code	A (Shank) Max	Min. Sheet Thickness	Hole Size In Sheet +.003 -.000	C Max.	D Max.	E Nom.	T ±.010	Min. Dist. Hole C/L To Edge
	Carbon Steel	Stainless Steel	Aluminum											
	CE-LK	CE-LKS	CE-LKA	M2.5 X 0.45	M2.5	1	0.97	1	4.37	4.35	4.45	6.35	3.43	3.9
						2	1.38	1.4						
	CE-LK	CE-LKS	CE-LKA	M3 X 0.5	M3	1	0.97	1	4.75	4.73	4.85	6.35	3.43	4
						2	1.38	1.4						
	CE-LK	CE-LKS	CE-LKA	M4 X 0.7	M4	1	0.97	1	6.76	6.73	6.2	8.73	4.45	5.2
						2	1.38	1.4						
	CE-LK	CE-LKS	CE-LKA	M5 X 0.8	M5	1	0.97	1	7.92	7.9	7.4	9.53	5.21	5.6
						2	1.38	1.4						





# TYPE CE-LK SELF-LOCKING, SELF-CLINCHING FASTENERS

## CLINCH ENGINEERING

### PERFORMANCE DATA

UNIFIED (inch)	Thread Code	Shank Code	Maximum Prevailing Torque In Locking Element (in. lbs.)	Test Sheet Material					
				5052-H34 Aluminum			Cold-Rolled Steel		
				Installation (lbs.)	Pushout (lbs.)	Torque-out (in. lbs.)	Installation (lbs.)	Pushout (lbs.)	Torque-out (in. lbs.)
256	1	2	2.5	1600	130	20	3000	150	20
				2000	150	30	3000	160	20
440	1	2	5	1600	130	25	3000	150	30
				2000	200	35	3000	250	40
632	1	2	10	2400	130	25	4000	150	45
				2700	225	45	4300	275	50
832	1	2	15	2700	150	45	4000	190	50
				3000	250	50	4300	300	70
032	1	2	18	3200	150	90	4000	250	100
				3200	250	105	4300	300	120

METRIC (mm)	Thread Code	Shank Code	Maximum Prevailing Torque In Locking Element (N•m)	Test Sheet Material					
				5052-H34 Aluminum			Cold-Rolled Steel		
				Installation (kN)	Pushout (N)	Torque-out (N•m)	Installation (kN)	Pushout (N)	Torque-out (N•m)
M2.5	1	2	0.45	7.1	578	2.3	13.3	667	2.3
				8.9	667	3.4	13.3	711	2.3
M3	1	2	0.56	7.1	578	2.8	13.3	667	3.4
				8.9	890	4	13.3	1112	4.5
M4	1	2	1.7	12	667	5.1	17.8	845	5.6
				13.3	1112	5.7	19.1	1334	7.9
M5	1	2	2.05	14.2	667	10.2	17.8	1112	11.3
				14.2	1112	11.9	19.1	1334	13.6

- The installation, pushout and torque-out values reported are averages when all installation specifications and procedures are followed. Variations in mounting hole size, panel material and installation procedure will affect this data. Performance testing of this product in your application is recommended. We will be happy to provide samples for this purpose.
- Thread locking performance is equivalent to applicable NASM25027 specifications.





# TYPE CE-PF30 LOW-PROFILE PANEL FASTENER ASSEMBLIES

**CLINCH**  
ENGINEERING

PART NUMBER DESIGNATION:

**CE-PF30 - 832 - 30 CN**

Type and Shank Code	Thread Size Code	Screw Length Code	Finish Code
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**THREADS:**

External, ANSI B1.1, 2A ANSI/ASME B1.13M, 6g

**MATERIAL:**

Retainer: Carbon Steel

Screw: Carbon Steel

Spring: 300 Series Stainless Steel

**FINISH:**

Retainer: CN - Bright nickel over copper flash per ASTM B689

Screw: CN - Bright nickel over copper flash per ASTM B689

**OPTIONAL FINISH:**

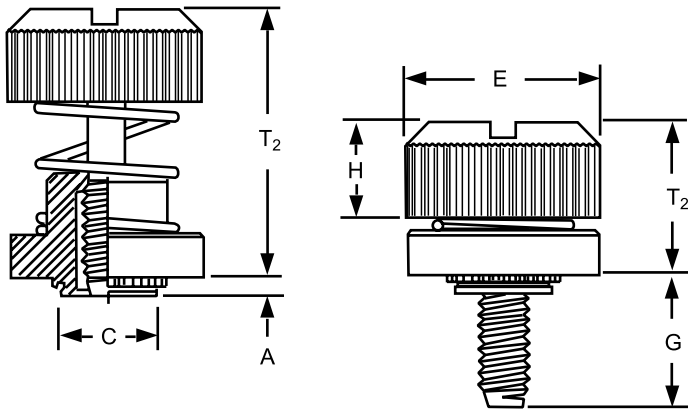
Retainer: BN - Black nitride

Screw: BN - Black nitride

**FOR USE IN SHEET HARDNESS:**

HRB 60 or less (Hardness Rockwell "B" Scale)

HB 107 or less (Hardness Brinell)



All measurements in inches.

UNIFIED	Thread Size	Type	Thread Code	Screw Length Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet +0.03 -0.000	C Max.	E ±.010	G ±.015	H ±.005	T <sub>1</sub> Max.	T <sub>2</sub> Nom.	Min. Dist. Hole C/L To Edge
	.112-40 (#4-40)	CE-PF30	440	30	.030	.030	.203	.202	.406	.300	.202	.325	.595	.26
CE-PF31		.038			.040									
CE-PF32		.058			.060									
.138-32 (#6-32)	CE-PF30	632	30	.030	.030	.219	.218	.438	.300	.202	.325	.595	.28	
	CE-PF31			.038	.040									
	CE-PF32			.058	.060									
.164-32 (#8-32)	CE-PF30	832	30	.030	.030	.250	.249	.468	.300	.207	.330	.600	.29	
	CE-PF31			.038	.040									
	CE-PF32			.058	.060									
.190-32 (#10-32)	CE-PF30	032	30	.030	.030	.312	.311	.530	.300	.220	.335	.605	.33	
	CE-PF31			.038	.040									
	CE-PF32			.058	.060									
.250-20 (1/4-20)	CE-PF32	0420	35	.058	.060	.375	.375	.625	.350	.242	.385	.675	.38	

All measurements in millimeters.

METRIC	Thread Size x Pitch	Type	Thread Code	Screw Length Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet +0.08	C Max.	E ±0.25	G ±0.4	H ±0.13	T <sub>1</sub> Max.	T <sub>2</sub> Nom.	Min. Dist. Hole C/L To Edge
	M3 x 0.5	CE-PF31	M3	30	0.97	1	5.5	5.48	10.31	7.62	5.13	8.26	15.11	6.6
1.48					1.5									
M4 x 0.7	CE-PF31	M4	30	0.97	1	6.4	6.38	11.89	7.62	5.26	8.38	15.24	7.37	
				1.48	1.5									
M5 x 0.8	CE-PF31	M5	30	0.97	1	8	7.98	13.46	7.62	5.59	8.51	15.37	8.38	
				1.48	1.5									
M6 x 1	CE-PF32	M6	35	1.48	1.5	9.5	9.48	15.88	8.89	6.12	9.78	17.15	9.65	





# TYPE CE-PF30 LOW-PROFILE PANEL FASTENER ASSEMBLIES

## CLINCH ENGINEERING

### PERFORMANCE DATA

UNIFIED (inch)	Type	Thread Code	Test Sheet Material	
			5052-H34 Aluminum	
			Installation (lbs.)	Pushout (lbs.)
CE-PF30	440	2200	64	
CE-PF31	440	2200	105	
CE-PF32	440	2200	185	
CE-PF30	632	2400	66	
CE-PF31	632	2400	105	
CE-PF32	632	2400	190	
CE-PF30	832	2800	68	
CE-PF31	832	2800	110	
CE-PF32	832	2800	200	
CE-PF30	032	3500	72	
CE-PF31	032	3500	150	
CE-PF32	032	3500	260	
CE-PF32	0420	4300	320	

METRIC (mm)	Type	Thread Code	Test Sheet Material	
			5052-H34 Aluminum	
			Installation (kN)	Pushout (N)
CE-PF30	M3	9.8	285	
CE-PF31	M3	9.8	465	
CE-PF32	M3	9.8	823	
CE-PF30	M4	12.5	302	
CE-PF31	M4	12.5	489	
CE-PF32	M4	12.5	890	
CE-PF30	M5	15.6	320	
CE-PF31	M5	15.6	667	
CE-PF32	M5	15.6	1156	
CE-PF32	M6	19.1	1423	

- Performance values reported are averages when all installation specifications and procedures are followed. Variations in mounting hole size, sheet material and installation force will affect this data. Performance testing of this product in your application is recommended. We will be happy to provide samples for this purpose.
- Can be used in cold-rolled steel provided sheet hardness does not exceed Rockwell B 60. Performance testing of this product in your application is recommended. We will be happy to provide samples for this purpose.





# TYPE CE-PF50 AND CE-PF60 LOW-PROFILE PANEL FASTENER ASSEMBLIES

**CLINCH**  
ENGINEERING

PART NUMBER DESIGNATION:  
**CE-PF50 - 440 - 1 - CN**

Type and Shank Code	Thread Size Code	Screw Length Code	Finish Code
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**THREADS:**

External, ANSI B1.1, 2A ANSI/ASME B1.13M, 6g

**MATERIAL:**

Knob: Carbon Steel  
Retainer: Carbon Steel  
Screw: Carbon Steel  
Spring: 300 Series Stainless Steel

**FINISH:**

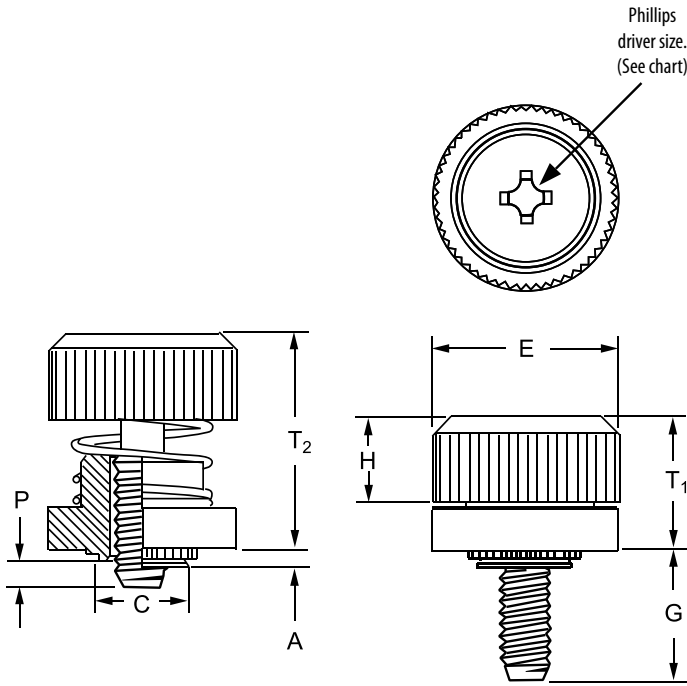
Knob: CN - Bright nickel over copper flash per ASTM B689  
Retainer: CN - Bright nickel over copper flash per ASTM B689  
Screw: CN - Bright nickel over copper flash per ASTM B689

**OPTIONAL FINISH:**

Knob: BN - Black Nitride  
Retainer: BN - Black Nitride  
Screw: BN - Black Nitride

**FOR USE IN SHEET HARDNESS:**

HRB 60 or less (Hardness Rockwell "B" Scale)  
HB 107 or less (Hardness Brinell)



All measurements in inches.

Thread Size	Type		Thread Code	Screw Length Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet +0.03 -0.000	C Max.	E +.015 -.005	G ±.025	H ±.008	P ±.025	T <sub>1</sub> Max.	T <sub>2</sub> Nom.	Driver Size	Min. Dist. Hole C/L To Edge
	Knurled Cap	Smooth Cap														
.112-40 (#4-40)	CE-PF50	CE-PF60	440	0	.030	.030	.203	.202	.406	.230	.207	.000	.340	.520	#1	.26
				1												
	CE-PF51	CE-PF61	440	0	.038	.040	.203	.202	.406	.230	.207	.000	.340	.520	#1	.26
				1												
	CE-PF52	CE-PF62	440	0	.058	.060	.203	.202	.406	.230	.207	.000	.340	.520	#1	.26
				1												
.138-32 (#6-32)	CE-PF50	CE-PF60	632	0	.030	.030	.219	.218	.438	.230	.207	.000	.340	.520	#2	.28
				1												
	CE-PF51	CE-PF61	632	0	.038	.040	.219	.218	.438	.230	.207	.000	.340	.520	#2	.28
				1												
	CE-PF52	CE-PF62	632	0	.058	.060	.219	.218	.438	.230	.207	.000	.340	.520	#2	.28
				1												
.164-32 (#8-32)	CE-PF50	CE-PF60	832	0	.030	.030	.250	.249	.468	.230	.217	.000	.340	.520	#2	.29
				1												
	CE-PF51	CE-PF61	832	0	.038	.040	.250	.249	.468	.230	.217	.000	.340	.520	#2	.29
				1												
	CE-PF52	CE-PF62	832	0	.058	.060	.250	.249	.468	.230	.217	.000	.340	.520	#2	.29
				1												
.190-32 (#10-32)	CE-PF50	CE-PF60	032	0	.030	.030	.312	.311	.530	.230	.225	.000	.360	.530	#2	.33
				1												
	CE-PF51	CE-PF61	032	0	.038	.040	.312	.311	.530	.230	.225	.000	.360	.530	#2	.33
				1												
	CE-PF52	CE-PF62	032	0	.058	.060	.312	.311	.530	.230	.225	.000	.360	.530	#2	.33
				1												
.250-20 (1/4-20)	CE-PF52	CE-PF62	0420	0	.058	.060	.375	.374	.625	.280	.246	.000	.395	.600	#2	.38
				1												

- As with all external plated threads, Class 2A/6g, the maximum major and pitch, after plating, may equal basic sizes and be gauged to Class 3A/4h, per ANSI B1.1, Section 8, Table 3A and ANSI B1.13M, Section 8, Paragraph 8.2.





# TYPE CE-PF50 AND CE-PF60 LOW-PROFILE PANEL FASTENER ASSEMBLIES

**CLINCH**  
ENGINEERING

All measurements in millimeters.

Thread Size x Pitch	Type		Thread Code	Screw Length Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet + 0.08	C Max.	E +.04 - .013	G ± .064	H ± .02	P ± .064	T <sub>1</sub> Max.	T <sub>2</sub> Nom.	Driver Size	Min. Dist. Hole C/L To Edge
	Knurled Cap	Smooth Cap														
M3 x 0.5	CE-PF50	CE-PF60	M3	0	0.77	0.8	5.5	5.48	10.3	5.84	5.26	0	8.64	13.21	#1	6.6
				1												
	CE-PF51	CE-PF61	M3	0	0.97	1	5.5	5.48	10.3	5.84	5.26	0	8.64	13.21	#1	6.6
				1												
	CE-PF52	CE-PF62	M3	0	1.48	1.5	5.5	5.48	10.3	5.84	5.26	0	8.64	13.21	#1	6.6
				1												
M3.5 x 0.6	CE-PF50	CE-PF60	M3.5	0	0.77	0.8	5.56	5.54	11.1	5.84	5.26	0	8.64	13.21	#2	7.1
				1												
	CE-PF51	CE-PF61	M3.5	0	0.97	1	5.56	5.54	11.1	5.84	5.26	0	8.64	13.21	#2	7.1
				1												
	CE-PF52	CE-PF62	M3.5	0	1.48	1.5	5.56	5.54	11.1	5.84	5.26	0	8.64	13.21	#2	7.1
				1												
M4 x 0.7	CE-PF50	CE-PF60	M4	0	0.77	0.8	6.4	6.38	11.9	5.84	5.61	0	8.64	13.46	#2	7.4
				1												
	CE-PF51	CE-PF61	M4	0	0.97	1	6.4	6.38	11.9	5.84	5.61	0	8.64	13.46	#2	7.4
				1												
	CE-PF52	CE-PF62	M4	0	1.48	1.5	6.4	6.38	11.9	5.84	5.61	0	8.64	13.46	#2	7.4
				1												
M5 x 0.8	CE-PF50	CE-PF60	M5	0	0.77	0.8	8	7.98	13.5	5.84	5.72	0	9.15	13.46	#2	8.4
				1												
	CE-PF51	CE-PF61	M5	0	0.97	1	8	7.98	13.5	5.84	5.72	0	9.15	13.46	#2	8.4
				1												
	CE-PF52	CE-PF62	M5	0	1.48	1.5	8	7.98	13.5	5.84	5.72	0	9.15	13.46	#2	8.4
				1												
M6 x 1	CE-PF52	CE-PF62	M6	0	1.48	1.5	9.5	9.48	15.9	7.11	6.25	0	10.04	15.24	#2	9.7
				1												

- As with all external plated threads, Class 2A/6g, the maximum major and pitch, after plating, may equal basic sizes and be gauged to Class 3A/4h, per ANSI B1.1, Section 8, Table 3A and ANSI B1.13M, Section 8, Paragraph 8.2.

## PERFORMANCE DATA

UNIFIED (inch)	Type	Thread Code	Test Sheet Material	
			Aluminum	
			Installation (lbs.)	Pushout (lbs.)
	CE-PF50/CE-PF60	440	2200	64
	CE-PF51/CE-PF61	440	2200	105
	CE-PF52/CE-PF62	440	2200	185
	CE-PF50/CE-PF60	632	2400	66
	CE-PF51/CE-PF61	632	2400	105
	CE-PF52/CE-PF62	632	2400	190
	CE-PF50/CE-PF60	832	2800	68
	CE-PF51/CE-PF61	832	2800	110
	CE-PF52/CE-PF62	832	2800	200
	CE-PF50/CE-PF60	032	3500	72
	CE-PF51/CE-PF61	032	3500	150
	CE-PF52/CE-PF62	032	3500	260
	CE-PF52/CE-PF62	0420	4300	320

METRIC (mm)	Type	Thread Code	Test Sheet Material	
			Aluminum	
			Installation (kN)	Pushout (N)
	CE-PF50/CE-PF60	M3	9.8	285
	CE-PF51/CE-PF61	M3	9.8	465
	CE-PF52/CE-PF62	M3	9.8	823
	CE-PF50/CE-PF60	M3.5	10.7	294
	CE-PF51/CE-PF61	M3.5	10.7	465
	CE-PF52/CE-PF62	M3.5	10.7	845
	CE-PF50/CE-PF60	M4	12.5	302
	CE-PF51/CE-PF61	M4	12.5	489
	CE-PF52/CE-PF62	M4	12.5	890
	CE-PF50/CE-PF60	M5	15.6	320
	CE-PF51/CE-PF61	M5	15.6	667
	CE-PF52/CE-PF62	M5	15.6	1156
	CE-PF52/CE-PF62	M6	19.1	1423

- Performance values reported are averages when all installation specifications and procedures are followed. Variations in mounting hole size, sheet material and installation force will affect this data. Performance testing of this product in your application is recommended. We will be happy to provide samples for this purpose.

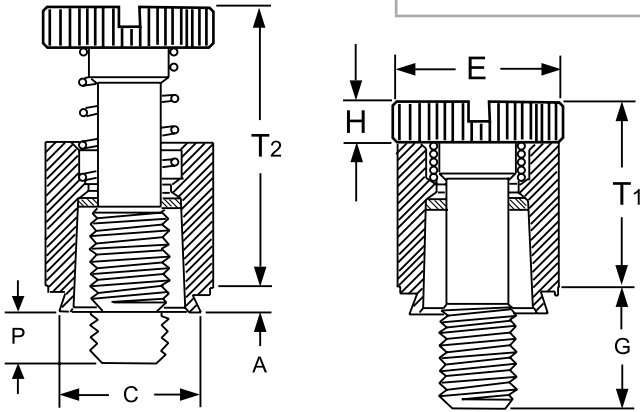




# TYPE CE-PFC2 AND CE-PFS2 PANEL FASTENER ASSEMBLIES

**CLINCH**  
ENGINEERING

	TYPE CE-PFS2	TYPE CE-PFC2
<b>Threads:</b>	External, ANSI B1.1, 2A ANSI/ASME B1.13M, 6g	External, ANSI B1.1, 2A ANSI/ASME B1.13M, 6g
<b>Material:</b>	Retainer: Heat-treated Carbon Steel Screw: Carbon Steel Spring: 300 Series Stainless Steel	Retainer: 300 Series Stainless Steel Screw: 300 Series Stainless Steel Spring: 300 Series Stainless Steel
<b>Finish:</b>	Retainer: CN - Bright nickel over copper flash per ASTM B689 Screw: CN - Bright nickel over copper flash per ASTM B689	Retainer: Passivated and/or tested per ASTM A380 Screw: Passivated and/or tested per ASTM A380
<b>Optional Finish:</b>	Retainer: BN - Black nitride Screw: BN - Black nitride	Retainer: BN - Black nitride Screw: BN - Black nitride
<b>For use in sheet hardness:</b>	HRB 80 or less (Hardness Rockwell "B" Scale) HB 150 or less (Hardness Brinell)	HRB 70 or less (Hardness Rockwell "B" Scale) HB 125 or less (Hardness Brinell)



## PART NUMBER DESIGNATION:

**CE-PFC2 - 832 - 50 - CN**

Type and Material	Thread Size Code	Screw Length Code	Finish Code

All measurements in inches.

UNIFIED	Thread Size (#4-40)	Type		Thread Code	Screw Length Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet +0.03 -0.00	C Max.	E ±.010	G ±.016	H ±0.05	P ±.025	T <sub>1</sub> Max.	T <sub>2</sub> Nom.	Min. Dist. Hole C/L To Edge
		Stainless Steel	Steel													
	.112-40 (#4-40)	CE-PFC2	CE-PFS2	440	40	.060	.060	.265	.264	.312	.250	.072	.000	.360	.540	.25
					62						.375		.125			
	.138-32 (#6-32)	CE-PFC2	CE-PFS2	632	40	.060	.060	.281	.280	.344	.250	.072	.000	.360	.540	.28
					62						.375		.125			
					84						.500		.250			
	.164-32 (#8-32)	CE-PFC2	CE-PFS2	832	50	.060	.060	.312	.311	.375	.312	.082	.000	.450	.690	.31
					72						.437		.125			
					94						.562		.250			
	.190-32 (#10-32)	CE-PFC2	CE-PFS2	032	50	.060	.060	.344	.343	.406	.312	.082	.000	.450	.690	.34
					72						.437		.125			
					94						.562		.250			
	.250-20 (1/4-20)	CE-PFC2	CE-PFS2	0420	60	.060	.060	.413	.412	.468	.375	.097	.000	.580	.880	.38
					82						.500		.125			
					04						.625		.250			

All measurements in millimeters.

METRIC	Thread Size x Pitch	Type		Thread Code	Screw Length Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet +0.08	C Max.	E ±.25	G ±0.4	H ±0.13	P ±0.64	T <sub>1</sub> Max.	T <sub>2</sub> Nom.	Min. Dist. Hole C/L To Edge
		Stainless Steel	Steel													
	M3 x 0.5	CE-PFC2	CE-PFS2	M3	40	1.53	1.53	6.73	6.71	7.92	6.4	1.83	0	9.14	13.72	6.35
					62						9.5		3.2			
											7.9		0			
	M4 x 0.7	CE-PFC2	CE-PFS2	M4	50	1.53	1.53	7.92	7.9	9.53	11.1	2.08	3.2	11.43	17.53	7.87
					72						14.3		6.4			
					94											
	M5 x 0.8	CE-PFC2	CE-PFS2	M5	50	1.53	1.53	8.74	8.72	0.31	7.9	2.08	0	11.47	17.53	8.63
					72						11.1		3.2			
					94						14.3		6.4			
	M6 x 1	CE-PFC2	CE-PFS2	M6	60	1.53	1.53	10.49	10.47	11.89	9.5	2.46	0	14.73	22.35	9.65
					82						12.7		3.2			
					04						15.9		6.4			

- As with all external plated threads, Class 2A/6g, the maximum major and pitch, after plating, may equal basic sizes and be gauged to Class 3A/4h, per ANSI B1.1, Section 8, Table 3A and ANSI B1.13M, Section 8, Paragraph 8.2.

- The plastic retaining rings have temperature limit of 200° F / 93° C.





# TYPE CE-PFC2P RECESSED-HEAD PANEL FASTENER ASSEMBLIES

**CLINCH**  
ENGINEERING

**PART NUMBER DESIGNATION:**  
**CE-PFC2P - 832 - 50**

Type and Material	Thread Size Code	Screw Length Code

**THREADS:**

External, ANSI B1.1, 2A ANSI/ASME B1.13M, 6g

**MATERIAL:**

Retainer: 300 Series Stainless Steel  
Screw: 400 Series Stainless Steel  
Spring: 300 Series Stainless Steel

**FINISH:**

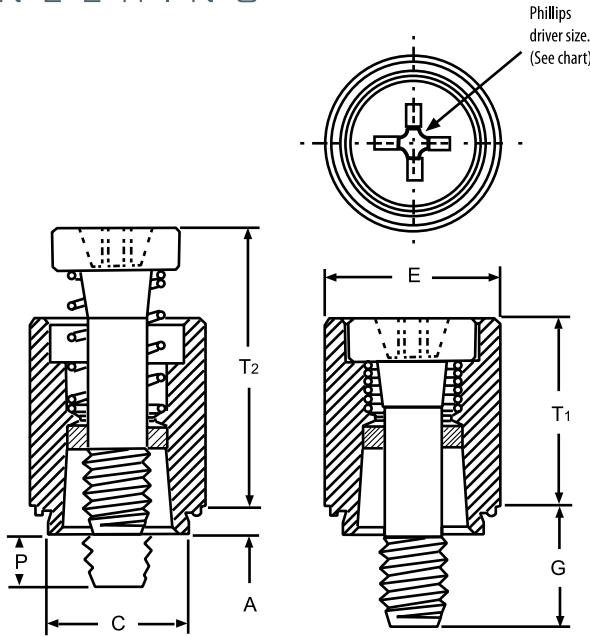
Retainer: Passivated and/or tested per ASTM A380  
Screw: Passivated and/or tested per ASTM A380

**OPTIONAL FINISH:**

Retainer: BN - Black nitride  
Screw: BN - Black nitride

**FOR USE IN SHEET HARDNESS:**

HRB 70 or less (Hardness Rockwell "B" Scale)  
HB 125 or less (Hardness Brinell)



All measurements in inches.

UNIFIED	Thread Size	Type	Thread Code	Screw Length Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet +0.03 -0.00	C Max.	E ±.010	G ±.016	P ±.025	T <sub>1</sub> Max.	T <sub>2</sub> Nom.	Driver Size	Min. Dist. Hole C/L To Edge
	.112-40 (#4-40)	CE-PFC2P	440		40	.060	.060	.265	.264	.312	.250	.000	.370	.540	#1
62					.375						.125				
.138-32 (#6-32)	CE-PFC2P	632		40	.060	.060	.281	.280	.344	.250	.000	.380	.540	#2	.28
				62						.375	.125				
				84						.500	.250				
.164-32 (#8-32)	CE-PFC2P	832		50	.060	.060	.312	.311	.375	.312	.000	.480	.705	#2	.31
				72						.437	.125				
				94						.562	.250				
.190-32 (#10-32)	CE-PFC2P	032		50	.060	.060	.344	.343	.406	.312	.000	.490	.705	#2	.34
				72						.437	.125				
				94						.562	.250				
.250-20 (1/4-20)	CE-PFC2P	0420		60	.060	.060	.413	.412	.468	.375	.000	.620	.905	#3	.38
				82						.500	.125				
				04						.625	.250				

All measurements in millimeters.

METRIC	Thread Size x Pitch	Type	Thread Code	Screw Length Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet +0.08	C Max.	E ±0.25	G ±0.4	P ±0.64	T <sub>1</sub> Max.	T <sub>2</sub> Nom.	Driver Size	Min. Dist. Hole C/L To Edge
	M3 x 0.5	CE-PFC2P	M3		40	1.53	1.53	6.73	6.71	7.92	6.4	0	9.4	13.72	#1
62					9.5						3.2				
50					7.9						0				
M4 x 0.7	CE-PFC2P	M4		72	1.53	1.53	7.92	7.9	9.53	11.1	3.2	12.19	17.91	#2	7.87
				94						14.3	6.4				
				50						7.9	0				
M5 x 0.8	CE-PFC2P	M5		72	1.53	1.53	8.74	8.72	10.31	11.1	3.2	12.45	17.91	#2	8.63
				94						14.3	6.4				
				60						9.5	0				
M6 x 1	CE-PFC2P	M6		82	1.53	1.53	10.49	10.47	11.89	12.7	3.2	15.75	22.99	#3	9.65
				04						15.9	6.4				

- The plastic retaining rings have temperature limit of 200° F / 93° C.





# TYPE CE-PFC2P, CE-PFC2, CE-PFS2 PERFORMANCE DATA

## CLINCH ENGINEERING

### PERFORMANCE DATA

#### TYPE CE-PFC2P, CE-PFC2, CE-PFS2

UNIFIED (inch)	Type	Thread Code	Test Sheet Material			
			Aluminum		Cold-Rolled Steel	
			Installation (lbs.)	Pushout (lbs.)	Installation (lbs.)	Pushout (lbs.)
	CE-PFS2 CE-PFC2 CE-PFC2 P	440	2400	240	3000	300
		632	2700	275	3500	350
		832	2900	300	3800	400
		032	3000	400	4000	500
		0420	3500	400	5000	600

METRIC (mm)	Type	Thread Code	Test Sheet Material			
			Aluminum		Cold-Rolled Steel	
			Installation (kN)	Pushout (N)	Installation (kN)	Pushout (N)
	CE-PFS2 CE-PFC2 CE-PFC2 P	M3	10.7	1068	13.3	1334
		M4	12.9	1334	16.9	1779
		M5	13.3	1779	17.8	2224
		M6	15.6	1779	22.2	2669

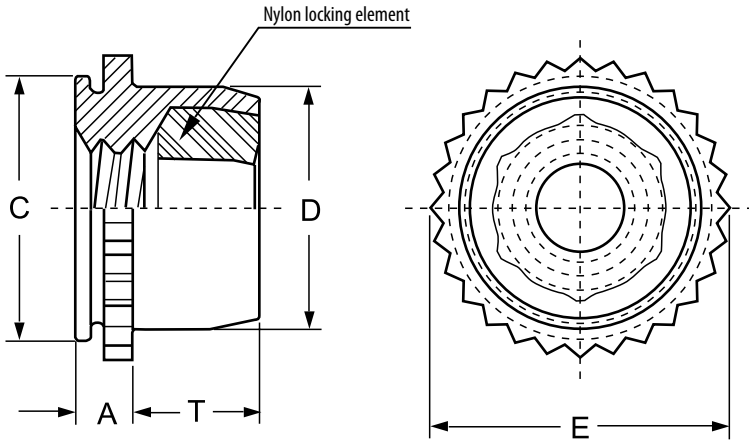
- Performance values reported are averages when all installation specifications and procedures are followed. Variations in mounting hole size, sheet material and installation force (or swaging force for Type PF11MW) will affect this data. Performance testing of this product in your application is recommended. We will be happy to provide samples for this purpose.



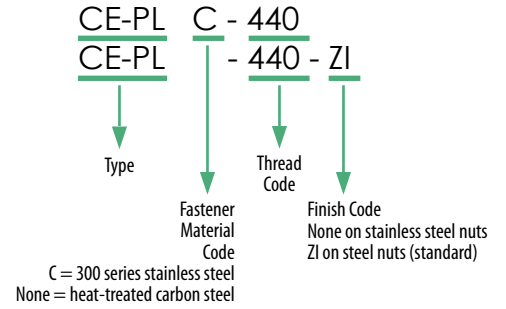


# TYPE CE-PL, CE-PLC NYLON INSERT SELF-LOCKING FASTENERS

**CLINCH**  
ENGINEERING



## PART NUMBER DESIGNATION:



## THREADS:

Internal, ASME B1.1 2B / ASME B1.13M 6H

All measurements in inches.

UNIFIED	Thread Size	Type		Thread Code	A (Shank) Max.	Sheet Thickness (1) (2)	Hole Size In Sheet +0.03-.000	C Max.	D Max.	E Max.	T Max.	Min. Dist. Hole C/L To Edge	Max. Hole In Attached Parts
		Fastener Material											
		Steel	Stainless Steel										
	.112-40 (#4-40)	CE-PL	CE-PLC	440	.060	.060 - .070	.234	.233	.215	.274	.130	.170	.132
	.138-32 (#6-32)	CE-PL	CE-PLC	632	.060	.060 - .070	.265	.264	.246	.305	.130	.190	.158
	.164-32 (#8-32)	CE-PL	CE-PLC	832	.060	.060 - .070	.297	.296	.278	.338	.155	.220	.184
	.190-32 (#10-32)	CE-PL	CE-PLC	032	.060	.060 - .070	.312	.311	.293	.353	.165	.250	.210

All measurements in millimeters.

METRIC	Thread Size x Pitch	Type		Thread Code	A (Shank) Max.	Sheet Thickness (1) (2)	Hole Size In Sheet +0.08	C Max.	D Max.	E Max.	T Max.	Min. Dist. Hole C/L To Edge	Max. Hole In Attached Parts
		Fastener Material											
		Steel	Stainless Steel										
	M3 x 0.5	CE-PL	CE-PLC	M3	1.53	1.53 - 1.78	6	5.98	5.52	7.01	3.56	4.32	3.5
	M4 x 0.7	CE-PL	CE-PLC	M4	1.53	1.53 - 1.78	7.5	7.48	7.01	8.54	4.2	5.59	4.5
	M5 x 0.8	CE-PL	CE-PLC	M5	1.53	1.53 - 1.78	8	7.98	7.52	9	4.45	6.35	5.5

- Can be used in panel thickness of .040" to .060"/1 mm to 1.53 mm provided the fastener is not fully installed. The knurled collar must be left protruding above the sheet to the degree that the sheet thickness is less than .060"/1.53 mm. See installation instructions on page PL-5.
- Knurled collar may fracture if fastener is used in sheets thicker than .070"/1.78 mm and screw is tightened beyond maximum tightening torque.





# TYPE CE-PL, CE-PLC NYLON INSERT SELF-LOCKING FASTENERS

## CLINCH ENGINEERING

### PERFORMANCE DATA

#### FOR TYPES CE-PL AND CE-PLC

UNIFIED (inch)	Thread Code	Max. Rec. Tightening Torque (in. lbs.)	Locking Torque (in. lbs.)	Test Sheet Material											
				.060" 5052-H34 Aluminum			.040" 5052-H34 Aluminum			.060" Cold-rolled Steel			.048" Cold-rolled Steel		
				Installation (lbs.)	Pushout (lbs.)	Torque-out (in. lbs.)	Installation (lbs.)	Pushout (lbs.)	Torque-out (in. lbs.)	Installation (lbs.)	Pushout (lbs.)	Torque-out (in. lbs.)	Installation (lbs.)	Pushout (lbs.)	Torque-out (in. lbs.)
440	9.3	.5 to 5	2000	225	20	1500	160	20	3000	260	20	3000	225	20	
632	12.9	1 to 10	2000	285	30	1500	180	25	3000	290	30	3000	270	30	
832	19.1	1.5 to 15	2000	290	60	1500	180	28	3000	290	60	3000	270	60	
032	26.0	2 to 18	2000	300	70	1500	180	40	3000	350	70	3000	310	70	

METRIC (mm)	Thread Code	Max. Rec. Tightening Torque (N•m)	Locking Torque (N•m)	Test Sheet Material											
				1.5 mm 5052-H34 Aluminum			1 mm 5052-H34 Aluminum			1.5 mm Cold-rolled Steel			1.2 mm Cold-rolled Steel		
				Installation (kN)	Pushout (N)	Torque-out (N•m)	Installation (kN)	Pushout (N)	Torque-out (N•m)	Installation (kN)	Pushout (N)	Torque-out (N•m)	Installation (kN)	Pushout (N)	Torque-out (N•m)
M3	1.13	.056 to .56	8.9	1000	2.25	6.67	710	2.25	13.34	1156	2.25	13.34	1000	2.25	
M4	2.3	.169 to 1.69	8.9	1290	6.77	6.67	800	3.16	13.34	1290	6.77	13.34	1200	6.77	
M5	3.12	.226 to 2.03	8.9	1330	7.9	6.67	800	4.51	13.34	1557	7.9	13.34	1380	7.9	

- The values reported are averages when all installation specifications and procedures are followed. Variations in mounting hole size, sheet material, and installation procedure will affect this data. Performance testing of this product in your application is recommended. We will be happy to provide samples for this purpose.
- For types PL and PLC fasteners, thread locking performance is equivalent to applicable NASM25027 specifications.
- The maximum locking torque and the minimum breakaway will fall within these values for the first fifteen cycles when tested in accordance with the locking torque test procedure specified in NASM25027.





# TYPE CE-PTL2 AND CE-PSL2 SPRING-LOADED PLUNGER ASSEMBLIES

**CLINCH**  
ENGINEERING

**PART NUMBER DESIGNATION:**

CE-PTL2 - 04 - 4 CN  
(Type - Plunger Dia. - Plunger Leng. Finish)

**MATERIAL:**

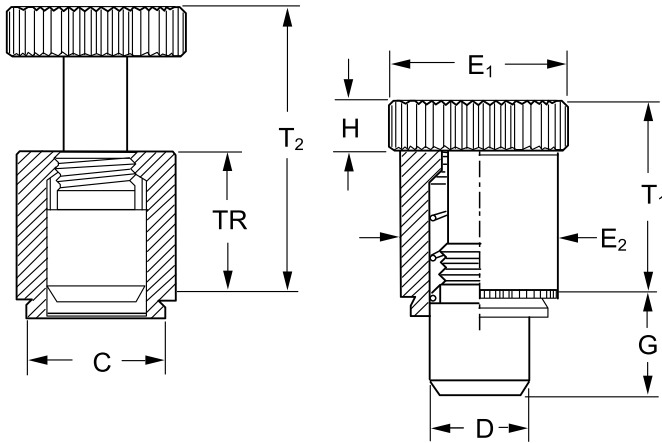
Plunger: Heat-treated Carbon Steel  
Retainer: Heat-treated Carbon Steel

**FINISH:**

Plunger: Bright nickel over copper flash per ASTM B689  
Retainer: Bright nickel over copper flash per ASTM B689

**FOR USE IN SHEET HARDNESS:**

HRB 80 or less (Hardness Rockwell "B" Scale)  
HB 150 or less (Hardness Brinell)



All measurements in inches.

UNIFIED	Type	Plunger Diameter Code	Plunger Length Code	Min. Sheet Thickness	Hole Size In Sheet +.003 -.000	C Max.	D +.000 -.005	E <sub>1</sub> ±.010	E <sub>2</sub> ±.010	G ±.010	H ±.010	T <sub>1</sub> ±.010	T <sub>2</sub> Nom.	TR ±.005	Min. Dist. Hole C/L To Edge
	CE-PTL2	04	4	.060	.328	.327	.250	.50	.406	.310	.17	.595	.895	.430	.34
	CE-PSL2	04	4	.060	.328	.327	.250	.50	.406	.310	.17	.510	.780	.350	.34

All measurements in millimeters.

METRIC	Type	Plunger Diameter Code	Plunger Length Code	Min. Sheet Thickness	Hole Size In Sheet + 0.08	C Max.	D - 0.13	E <sub>1</sub> ± 0.25	E <sub>2</sub> ± 0.25	G ± 0.25	H ± 0.25	T <sub>1</sub> ± 0.25	T <sub>2</sub> Nom.	TR ± 0.13	Min. Dist. Hole C/L To Edge
	CE-PTL2	04	4	1.53	8.33	8.31	6.35	12.7	10.3	7.87	4.32	15.11	22.73	10.92	8.64
	CE-PSL2	04	4	1.53	8.33	8.31	6.35	12.7	10.3	7.87	4.32	12.95	19.81	8.89	8.64

- Lockout feature available on special order.

## PERFORMANCE DATA

UNIFIED (inch)	Type	Test Sheet Material			
		Aluminum		Cold-Rolled Steel	
		Installation (lbs.)	Pushout (lbs.)	Installation (lbs.)	Pushout (lbs.)
CE-PTL2	3000	400	4000	500	
CE-PSL2					

METRIC (mm)	Type	Test Sheet Material			
		Aluminum		Cold-Rolled Steel	
		Installation (kN)	Pushout (N)	Installation (kN)	Pushout (N)
CE-PTL2	13.3	1779	17.8	2224	
CE-PSL2					

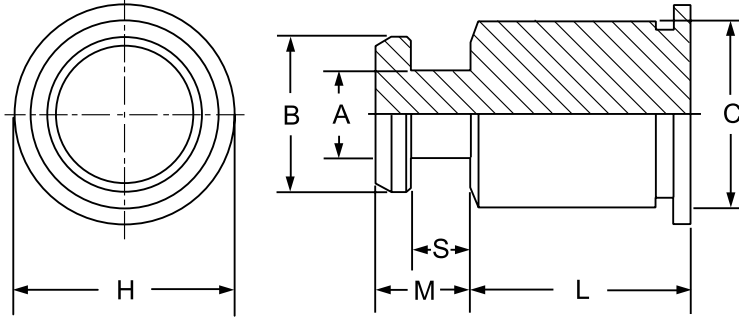
- Performance values reported are averages when all installation specifications and procedures are followed. Variations in mounting hole size, sheet material and installation force will affect this data. Performance testing of this product in your application is recommended. We will be happy to provide samples for this purpose.



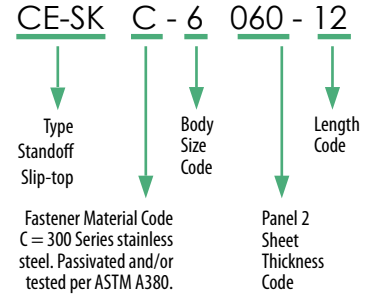


# TYPE CE-SKC AND CE-SKC-F SLIP-TOP SELF-CLINCHING STANDOFF

**CLINCH**  
ENGINEERING



**PART NUMBER DESIGNATION:**



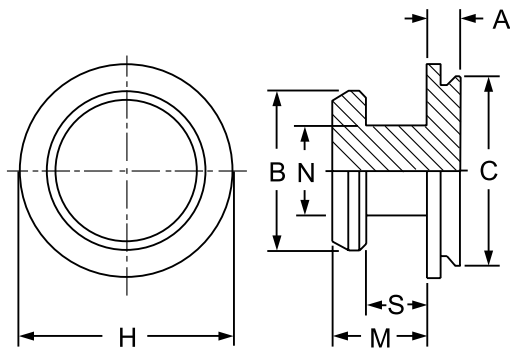
**TYPE CE-SKC DIMENSIONAL DATA**

All measurements in inches.

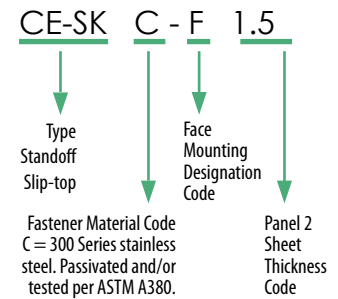
UNIFIED	Type	Body Size - Sheet Code	Length "L" ± .005 (Length Code in 32nds of an inch)												A	B	C	S	M	H	D	
	Stainless Steel	Code	.063	.125	.188	.250	.312	.375	.437	.500	.562	.625	.750	.875	1.00	± .003	± .003	Max.	± .003	Max.	Nom.	Anvil Hole + .003 - .000
	CE-SKC	6060	2	4	6	8	10	12	14	16	18	20	24	28	32	.099	.177	.212	.068	.108	.250	.216

All measurements in millimeters.

METRIC	Type	Body Size - Sheet Code	Length "L" ± 0.13 (Length Code in millimeters)												A	B	C	S	M	H	D
	Stainless Steel	Code	2	4	6	8	10	12	14	16	18	20	22	25	± 0.08	± 0.08	Max.	± 0.08	Max.	Nom.	Anvil Hole + 0.08
	CE-SKC	61.5	2	4	6	8	10	12	14	16	18	20	22	25	2.51	4.5	5.39	1.72	2.75	6.35	5.49



**PART NUMBER DESIGNATION:**



**TYPE CE-SKC-F DIMENSIONAL DATA**

All measurements in inches.

UNIFIED	Type	Face Mounting Designation Code	Sheet Thickness Code	A	B	C	H	M	N	S	D
	Stainless Steel	Code	Code	Max.	± .003	Max.	Nom.	Max.	± .003	± .003	Anvil Hole + .003 - .000
	CE-SKC	F	1.5	.039	.177	.212	.237	.108	.099	.068	.184

All measurements in millimeters.

METRIC	Type	Face Mounting Designation Code	Sheet Thickness Code	A	B	C	H	M	N	S	D
	Stainless Steel	Code	Code	Max.	± 0.08	Max.	Nom.	Max.	± 0.08	± 0.08	Anvil Hole + 0.08
	CE-SKC	F	1.5	1	4.5	5.39	6.02	2.75	2.5	1.72	4.67





# TYPE CE-SKC AND CE-SKC-F PERFORMANCE DATA

## CLINCH ENGINEERING

### PERFORMANCE DATA

#### TYPE CE-SKC

Installation and Pushout

UNIFIED (inch)	Body Size - Sheet Code	Test Sheet Material			
		.060" 5052-H34 Aluminum		.060" Cold-Rolled Steel	
		Installation (lbs.)	Pushout (lbs.)	Installation (lbs.)	Pushout (lbs.)
6060		1600	250	3200	600

METRIC (mm)	Body Size - Sheet Code	Test Sheet Material			
		1.52 mm 5052-H34 Aluminum		1.52 mm Cold-Rolled Steel	
		Installation (kN)	Pushout (N)	Installation (kN)	Pushout (N)
61.5		7.1	1100	14.2	2600

Side-Load

UNIFIED (inch)	Body Size - Sheet Code	Test Sheet Material																							
		5052-H34 Aluminum												Cold-Rolled Steel											
		Test Sheet Thick.																							
		.040" <sup>(1)</sup>						.060"						.040"						.060"					
		Length Codes												Length Codes											
		-2	-4	-6	-8	-10	-12	-14	-16	-20	-24	-32	-2	-4	-6	-8	-10	-12	-14	-16	-20	-24	-32		
		Side-Load Force Max. (lbs.)												Side-Load Force Max. (lbs.)											
6060	130	95	82	63	52	44	38	34	27	22	17	185	120	197	153	126	106	92	81	66	55	42			

METRIC (mm)	Body Size - Sheet Code	Test Sheet Material																							
		5052-H34 Aluminum												Cold-Rolled Steel											
		Test Sheet Thick.																							
		1 mm <sup>(1)</sup>						1.5 mm						1 mm						1.5 mm					
		Length Codes												Length Codes											
		-2	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-25	-2	-4	-6	-8	-10	-12	-14	-16	-18	-20	-22	-25
		Side-Load Force Max. (N)												Side-Load Force Max. (N)											
61.5	545	370	296	228	184	156	136	116	104	96	88	76	735	490	696	540	440	372	320	280	252	228	208	184	

#### TYPE CE-SKC-F

Installation, Pushout and Side-Load

UNIFIED (inch)	Type	Test Sheet Material					
		.060" 5052-H34 Aluminum			.060" Cold-Rolled Steel		
		Installation (lbs.)	Pushout (lbs.)	Side-Load Force Max. (lbs.)	Installation (lbs.)	Pushout (lbs.)	Side-Load Force Max. (lbs.)
CE-SKC-F		1100	120	120	2100	160	185

METRIC (mm)	Type	Test Sheet Material					
		1.52 mm 5052-H34 Aluminum			1.52 mm Cold-Rolled Steel		
		Installation (kN)	Pushout (N)	Side-Load Force Max. (N)	Installation (kN)	Pushout (N)	Side-Load Force Max. (N)
CE-SKC-F		4.9	533	533	9.3	711	822

- .040"/1mm test sheet material thickness was used for the -2 and -4 CE-SKC standoffs due to the short length of the parts.
- The values reported are averages when all installation specifications and procedures are followed. Variations in mounting hole size, panel material and installation procedure will affect this data. Performance testing of this product in your application is recommended. We will be happy to provide samples for this purpose.

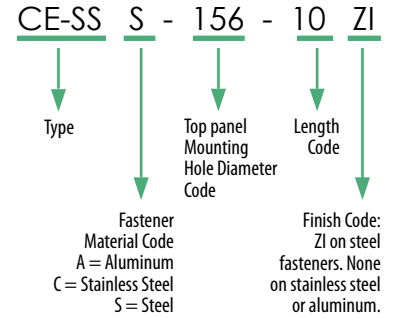
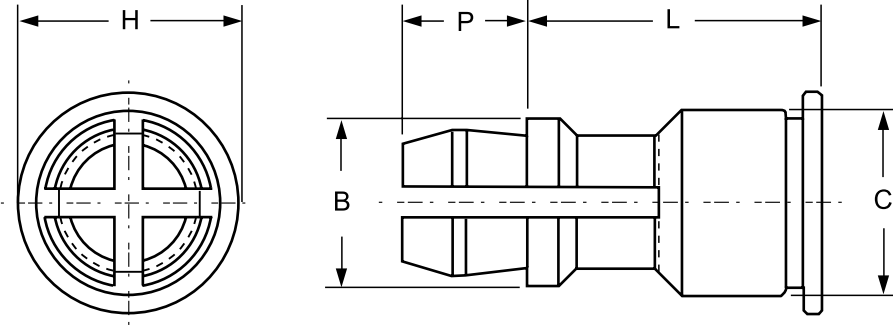




# TYPES CE-SSA, CE-SSS, CE-SSC CLICK-TOP FOR CLINCHING INTO METAL SHEETS

## CLINCH ENGINEERING

### PART NUMBER DESIGNATION:



### FASTENER MATERIAL:

Type CE-SSA: Aluminum  
Type CE-SSS: Carbon Steel  
Type C E-SSC: 400 Series Stainless Steel

### FINISH:

Type CE-SSA: Plain Finish  
Type CE-SSS: Zinc plated, 5µm, colorless, plus clear chromate  
Type CE-SSC: Passivated and/or tested per ASTM A380

All measurements in inches.

UNIFIED	Type			Top Panel Mounting Hole Diameter Code	Length "L" ± .005 (Length Code in 32nds of an inch)									B ± .005	C Max.	H ± .005	P ± .005
	Fastener Material																
	Aluminum	Carbon Steel	Stainless Steel														
CE-SSA	CE-SSS	CE-SSC	156	.250	.312	.375	.437	.500	.562	.625	.750	.875	1.00	.188	.212	.250	.141

All measurements in millimeters.

METRIC	Type			Top Panel Mounting Hole Diameter Code	Length "L" ± .013 (Length Code in millimeters)									B ±0.13	C Max.	H ±0.13	P ±0.13
	Fastener Material																
	Aluminum	Carbon Steel	Stainless Steel														
CE-SSA	CE-SSS	CE-SSC	4mm	8	10	12	14	16	18	20	22	25	4.78	5.39	6.35	3.58	

## PERFORMANCE DATA

UNIFIED (inch)	Type	Panel 1			Panel 2 (Removable)		
		Test Sheet Material	Installation (lbs.)	Pushout (lbs.)	Max. First on Snap Force (lbs.)	Min. First off Snap Force (lbs.)	Min. 15th off Snap Force (lbs.)
CE-SSA	Aluminum	1500	200	13	3	1	
CE-SSS	Aluminum	1500	200	20	6	2	
CE-SSS	Cold-rolled Steel	3500	400	20	6	2	
CE-SSC	Cold-rolled Steel	3600	400	20	6	2	

METRIC (mm)	Type	Panel 1			Panel 2 (Removable)		
		Test Sheet Material	Installation (kN)	Pushout (N)	Max. First on Snap Force (N)	Min. First off Snap Force (N)	Min. 15th off Snap Force (N)
CE-SSA	Aluminum	6.7	880	58	13	4	
CE-SSS	Aluminum	6.7	880	89	27	9	
CE-SSS	Cold-rolled Steel	15.5	1780	89	27	9	
CE-SSC	Cold-rolled Steel	16	1780	89	27	9	

- The installation and pushout values reported are averages when all installation specifications and procedures are followed. Variations in mounting hole size, panel material and installation procedure will affect this data. Performance testing of this product in your application is recommended. We will be happy to provide samples for this purpose.





# TYPE CE-WN SELF-LOCATING PROJECTION WELD NUTS

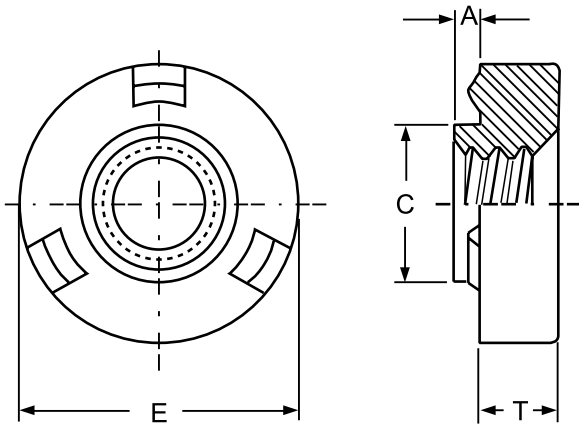
**CLINCH**  
ENGINEERING

**PART NUMBER DESIGNATION:**  
CE-WN - 832 - 0 CU  
(Type & Material - Thread - Shank Finish)

**THREADS:**  
Internal, ANSI B1.1, 2B/ANSI/ASME B1.13M, 6H

**MATERIAL:**  
CE-WN: Carbon Steel  
CE-WNS: 300 Series Stainless Steel

**FINISH:**  
CE-WN - CU: Copper Flash  
CE-WNS: Passivated and/or tested per ASTM A380.



All measurements in inches.

	Thread Size	Type		Thread Code	Shank Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet +0.04 - .000	C Max.	E +.000 - .010	T ±.004	Min. Dist. Hole C/L To Edge
		Steel	Stainless Steel									
UNIFIED	.112-40 (#4-40)	CE-WN	CE-WNS	440	0	.030	.030	.173	.172	.308	.063	.154
	.138-32 (#6-32)	CE-WN	CE-WNS	632	0	.030	.030	.193	.192	.341	.093	.171
	.164-32 (#8-32)	CE-WN	CE-WNS	832	0	.030	.030	.218	.217	.371	.107	.186
	.190-24 (#10-24)	CE-WN	CE-WNS	024	0	.030	.030	.250	.249	.44	.155	.22
	.190-32 (#10-32)	CE-WN	CE-WNS	032	0	.030	.030	.250	.249	.44	.155	.22
	.250-20 (1/4-20)	CE-WN	CE-WNS	0420	0	.048	.048	.316	.315	.522	.185	.261

All measurements in millimeters.

	Thread Size x Pitch	Type		Thread Code	Shank Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet +0.1	C Max.	E -0.25	T ±0.1	Min. Dist. Hole C/L To Edge
		Steel	Stainless Steel									
METRIC	M3 x 0.5	CE-WN	CE-WNS	M3	0	0.77	0.77	4.4	4.37	7.82	1.48	3.91
	M4 x 0.7	CE-WN	CE-WNS	M4	0	0.77	0.77	5.54	5.51	9.42	2.58	4.71
	M5 x 0.8	CE-WN	CE-WNS	M5	0	0.77	0.77	6.35	6.32	11.18	3.77	5.59
	M6 x 1	CE-WN	CE-WNS	M6	0	1.22	1.22	8.03	8	13.26	4.56	6.63





# TYPE CE-WN SELF-LOCATING PROJECTION WELD NUTS

**CLINCH**  
ENGINEERING

## PERFORMANCE DATA

UNIFIED (inch)	Type	Thread Code	Test Sheet Material			
			.060" Cold-rolled Steel		.060" 302 Stainless Steel	
			Pushout (lbs.)	Torque-out (lbs.)	Pushout (lbs.)	Torque-out (lbs.)
CE-WN		440	500	13	N/A	N/A
		632	640	22	N/A	N/A
		832	760	33	N/A	N/A
		032	880	56	N/A	N/A
		0420	1000	185	N/A	N/A
CE-WNS		440	N/A	N/A	680	13
		632	N/A	N/A	800	28
		832	N/A	N/A	850	45
		032	N/A	N/A	900	110
		0420	N/A	N/A	1000	200

METRIC (mm)	Type	Thread Code	Test Sheet Material			
			1.5 mm Cold-rolled Steel		1.5 mm 302 Stainless Steel	
			Pushout (N)	Torque-out (N•m)	Pushout (N)	Torque-out (N•m)
CE-WN		M3	2220	1.4	N/A	N/A
		M4	3380	3.7	N/A	N/A
		M5	3910	6.3	N/A	N/A
		M6	4445	20.9	N/A	N/A
	CE-WNS		M3	N/A	N/A	3020
		M4	N/A	N/A	3780	5
		M5	N/A	N/A	4000	12.4
		M6	N/A	N/A	4445	22.5
		M6	N/A	N/A	4445	22.5

N/A Not Applicable.

- The pushout and torque-out values reported are averages when all installation specifications and procedures are followed. Performance testing of this product in your application is recommended. To request your free samples, please visit [www.fastenix.com](http://www.fastenix.com)





## HARDWARE THAT INSTALLS INTO STAINLESS STEEL

The “magic” of self-clinching is the fastener must have a harder Rockwell Hardness than the parent material to ensure proper and permanent installation. Installing self-clinching fasteners into stainless steel is challenging due to the fundamental hardness of the material. In this catalog section we have developed fasteners specifically for installation into stainless steel. Critical to this process is sharpened punches for a clean hole. A dull punch will work-harden the hole, creating difficult conditions to install in a stainless steel sheet.

**Type CE-A4** non-locking and **Type CE-LA4** self-locking self-clinching floating nuts will permit up to .030”/0.76mm total adjustment for mating hole misalignment in stainless steel sheets.

**Type CE-BSO4 AND CE-SO4** standoffs provide a permanently mounted fastener that can be used for stacking or spacing components to or from stainless steel panels.

**Type CE-FH4 AND CE-FHP** self-clinching, flush-head studs can be mounted in stainless steel sheets as thin as .040”/1mm.

**Type CE-PFC4** panel fasteners provide “tool only” access to your stainless steel assemblies.

**Type CE-TP4** self-clinching pins are specifically designed for installation into stainless steel sheets as thin as .040”/1 mm.

**Type CE-SP4** nuts provide strong load-bearing threads in stainless steel sheets as thin as .030”/0.8mm.

Fasteners made from precipitation hardened grade stainless and A286 stainless are particularly useful in applications such as outdoor equipment, medical devices and chemical and food processing equipment or anywhere corrosive element exposure is possible.



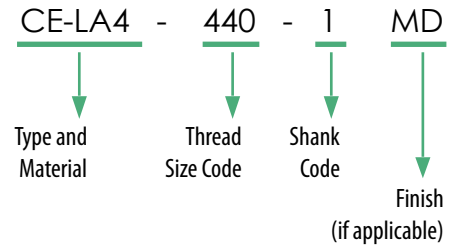


# TYPE CE-A4 AND CE-LA4 FLOATING SELF-CLINCHING FASTENERS

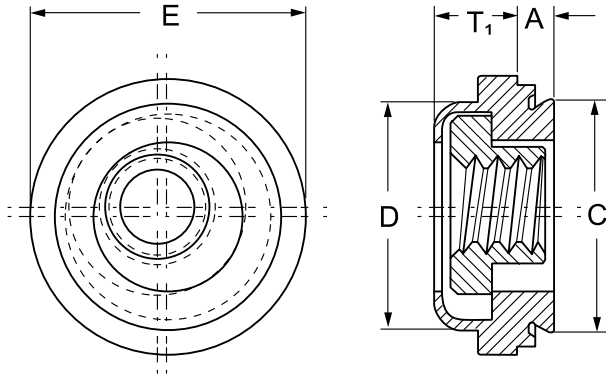
**CLINCH**  
ENGINEERING

- Speeds assembly by compensating for mating hole misalignment.
- Permanent installation into stainless steel sheets as thin as .038" / 0.97 mm and greater.
- Provides high torque-out and pushout resistance in stainless panels.

**PART NUMBER DESIGNATION:**

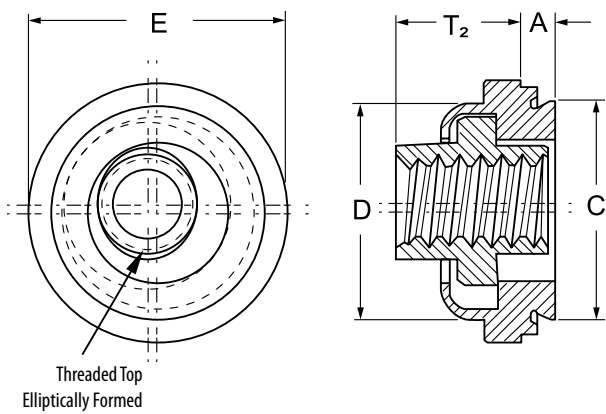


**NON-LOCKING TYPE CE-A4**



Float – .015" / 0.38 mm minimum, in all directions from center, .030" / 0.76 mm total.

**SELF-LOCKING Type CE-LA4**



**THREADS:**  
CE-A4 : Internal, ASME B1.1 2B / ASME B1.13M, 6H  
CE-LA4 : Self-locking, Internal ASME B1.1, 3B / ASME B1.13M, 6H

**MATERIAL:**  
Retainer : 400 Series Stainless Steel  
Insert: 300 Series Stainless Steel

**FINISH:**  
CE-A4 : Passivated and/or Tested per ASTM A380  
CE-LA4 Retainer : Passivated and/or Tested per ASTM A380  
CE-LA4 Insert : Black Dry-film Lubricant

**SHEET HARDNESS:**  
HRB 88 / HB 183 or less

All measurements in inches.

	Thread Size	Type		Thread Code	Shank Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet +0.03–.000	C Max.	D Max.	E ±.015	T <sub>1</sub> Max.	T <sub>2</sub> Max.	Min. Dist. Hole C/L To Edge
		Non-Locking	Self-Locking											
UNIFIED	.112-40 (#4-40)	CE-A4	CE-LA4	440	1	.038	.038	.290	.289	.290	.360	.130	.190	.30
	.138-32 (#6-32)	CE-A4	CE-LA4	632	1	.038	.038	.328	.327	.335	.390	.130	.200	.32
	.164-32 (#8-32)	CE-A4	CE-LA4	832	1	.038	.038	.368	.367	.365	.440	.130	.210	.34
	.190-32 (#10-32)	CE-A4	CE-LA4	032	1	.038	.038	.406	.405	.405	.470	.170	.270	.36

All measurements in millimeters.

	Thread Size x Pitch	Type		Thread Code	Shank Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet + 0.08	C Max.	D Max.	E ± 0.38	T <sub>1</sub> Max.	T <sub>2</sub> Max.	Min. Dist. Hole C/L To Edge
		Non-Locking	Self-Locking											
METRIC	M3 x 0.5	CE-A4	CE-LA4	M3	1	0.97	0.97	7.37	7.35	7.37	9.14	3.31	4.83	7.62
	M4 x 0.7	CE-A4	CE-LA4	M4	1	0.97	0.97	9.35	9.33	9.28	11.18	3.31	5.34	8.64
	M5 x 0.8	CE-A4	CE-LA4	M5	1	0.97	0.97	10.31	10.29	10.29	11.94	4.32	6.86	9.14

– The increased hardness of stainless steel panels requires careful consideration when installing self-clinching fasteners .





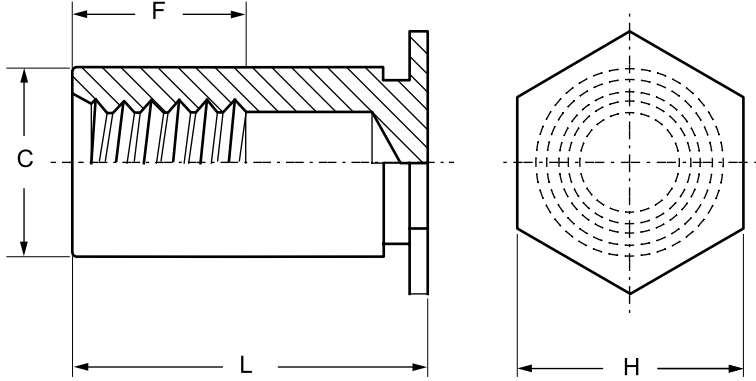
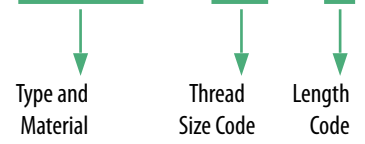
# TYPE CE-BSO4 BLIND THREADED STANDOFFS

**CLINCH**  
ENGINEERING

- Ideal for stacking or spacing.
- Installed with closed end heads flush with one surface of the mounting sheet.
- For use in sheets of HRB 88 or less.

PART NUMBER DESIGNATION:

**CE-BSO4 - 440 - 8**



Clinching profile may vary.

**THREADS:**  
Internal, ASME B1.1 2B / ASME B1.13M, 6H

**MATERIAL:**  
400 Series Stainless Steel

**FINISH:**  
Passivated and/or Tested per ASTM A380

**SHEET HARDNESS:**  
HRB 88 / HB 183 or less

## PERFORMANCE DATA

All measurements in inches.

UNIFIED (inch)	Thread Code	Min. Sheet Thickness	Hole Size In Sheet +.003 -.000	C +.000 -.005	H Nom.	Min. Dist. Hole C/L To Edge
	440	.040	.166	.165	.187	.23
6440	.040	.213	.212	.250	.28	
632	.040	.213	.212	.250	.28	
8632	.050	.281	.280	.312	.33	
832	.050	.281	.280	.312	.33	
032	.050	.281	.280	.312	.33	

All measurements in millimeters.

METRIC (mm)	Thread Code	Min. Sheet Thickness	Hole Size In Sheet +0.08	C -0.13	H Nom.	Min. Dist. Hole C/L To Edge
	M3	1.02	4.22	4.2	4.8	6
3.5M3	1.02	5.41	5.39	6.4	7.1	
M3.5	1.02	5.41	5.39	6.4	7.1	
M4	1.27	7.14	7.12	7.9	8.4	
M5	1.27	7.14	7.12	7.9	8.4	

## THREAD SIZE AND LENGTH SELECTION DATA

All measurements in inches.

UNIFIED	Thread Size	Type	Thread Code	Length "L" +.002 -.005 (Length Code in 32nds of an inch)												
				.312	.375	.437	.500	.562	.625	.687	.750	.812	.875	.937	1.00	1.062
.112-40 (#4-40)	CE-BSO4	440	10	12	14	16	18	20	22	24	26	28	30	32	34	
		6440	10	12	14	16	18	20	22	24	26	28	30	32	34	
.138-32 (#6-32)	CE-BSO4	632	10	12	14	16	18	20	22	24	26	28	30	32	34	
		8632	10	12	14	16	18	20	22	24	26	28	30	32	34	
.164-32 (#8-32)	CE-BSO4	832	10	12	14	16	18	20	22	24	26	28	30	32	34	
.190-32 (#10-32)		032	10	12	14	16	18	20	22	24	26	28	30	32	34	
F Dimension Min.				.156	.187	.250										.375

All measurements in millimeters.

METRIC	Thread Size x Pitch	Type	Thread Code	Length "L" +0.05 -0.13 (Length Code in millimeters)										
				6	8	10	12	14	16	18	20	22	25	
M3 x 0.5	CE-BSO4	M3	6	8	10	12	14	16	18	20	22	25		
		3.5M3	6	8	10	12	14	16	18	20	22	25		
M3.5 x 0.6	CE-BSO4	M3.5	6	8	10	12	14	16	18	20	22	25		
M4 x 0.7		M4	6	8	10	12	14	16	18	20	22	25		
M5 x 0.8		M5	6	8	10	12	14	16	18	20	22	25		
F Dimension Min.				3.2	4	5	6.5						9.5	

- To minimize sheet distortion and maximize product performance, use a centerline-to-edge value greater or equal to the value specified.
- The increased hardness of stainless steel panels requires careful consideration when installing self-clinching fasteners.



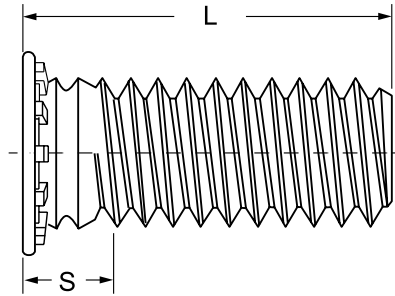
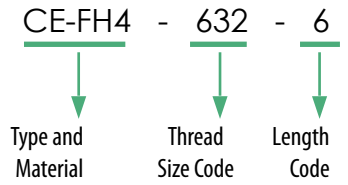


# TYPE CE-FH4 AND CE-FHP FLUSH-HEAD STUDS

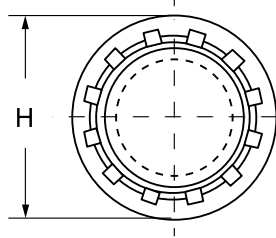
**CLINCH**  
ENGINEERING

- Permanent installation into stainless steel sheets as thin as .040" / 1 mm.
- Type FHP offers high corrosion resistance and ideal for medical, foodservice, and marine applications.
- For use in sheets of HRB 92 or less.

**PART NUMBER DESIGNATION:**



unthreaded length



**THREADS:**  
External, ASME B1.1 2A / ASME B1.13M, 6g

**MATERIAL:**  
CE-FH4: 400 Series Stainless Steel  
CE-FHP: Age Hardened A286 Stainless Steel

**FINISH:**  
Passivated and/or Tested per ASTM A380

**SHEET HARDNESS:**  
HRB 92/ HB 202 or less

All measurements in inches.

UNIFIED	Thread Size	Type		Thread Code	Length Code "L" ± .015 (Length code in 16ths of an inch)										Sheet Thickness	Hole Size In Sheet +.003 - .000	Max. Hole In Attach. Parts	H ±.015	S Max.	Min. Dist. Hole C/L To Edge
					.250	.312	.375	.500	.625	.750	.875	1.00	1.25	1.50						
	.112-40 (#4-40)	CE-FH4	CE-FHP	440	4	5	6	8	10	12	14	16	N/A	N/A	.040-.095	.111	.135	.176	.085	.219
	.138-32 (#6-32)	CE-FH4	CE-FHP	632	4	5	6	8	10	12	14	16	20	24	.040-.095	.137	.160	.206	.090	.250
	.164-32 (#8-32)	CE-FH4	CE-FHP	832	4	5	6	8	10	12	14	16	20	24	.040-.095	.163	.185	.237	.090	.281
	.190-32 (#10-32)	CE-FH4	CE-FHP	032	N/A	5	6	8	10	12	14	16	20	24	.040-.095	.189	.210	.256	.100	.281
	.250-20 (1/4-20)	CE-FH4	N/A	0420	N/A	N/A	6	8	10	12	14	16	20	24	.062-.117	.249	.270	.337	.135	.312

All measurements in millimeters.

METRIC	Thread Size x Pitch	Type		Thread Code	Length Code "L" ± 0.4 (Length Code in millimeters)										Sheet Thickness	Hole Size In Sheet +0.08	Max. Hole In Attach. Parts	H ±0.4	S Max.	Min. Dist. Hole C/L To Edge
					6	8	10	12	15	18	20	25	N/A	N/A						
	M3 x 0.5	CE-FH4	CE-FHP	M3	6	8	10	12	15	18	20	25	N/A	N/A	1 - 2.4	3	3.6	4.6	2.1	5.6
	M4 x 0.7	CE-FH4	CE-FHP	M4	6	8	10	12	15	18	20	25	30	35	1 - 2.4	4	4.6	5.9	2.4	7.2
	M5 x 0.8	CE-FH4	CE-FHP	M5	N/A	8	10	12	15	18	20	25	30	35	1 - 2.4	5	5.6	6.5	2.7	7.2
	M6 x 1	CE-FH4	N/A	M6	N/A	N/A	10	12	15	18	20	25	30	35	1.6 - 3	6	6.6	8.2	3	7.9

- The increased hardness of stainless steel panels requires careful consideration when installing self-clinching fasteners .
- N/A Not Available.





# TYPE CE-PFC4 RECESSED-HEAD PANEL FASTENER ASSEMBLIES

**CLINCH**  
ENGINEERING

PART NUMBER DESIGNATION:  
**CE-PFC4 - 832 - 50**

Type and Material	Thread Size Code	Screw Length Code
-------------------	------------------	-------------------

**THREADS:**

External, ANSI B1.1, 2A ANSI/ASME B1.13M, 6g

**MATERIAL:**

Retainer: 400 Series Stainless Steel

Screw: 400 Series Stainless Steel

Spring: 300 Series Stainless Steel

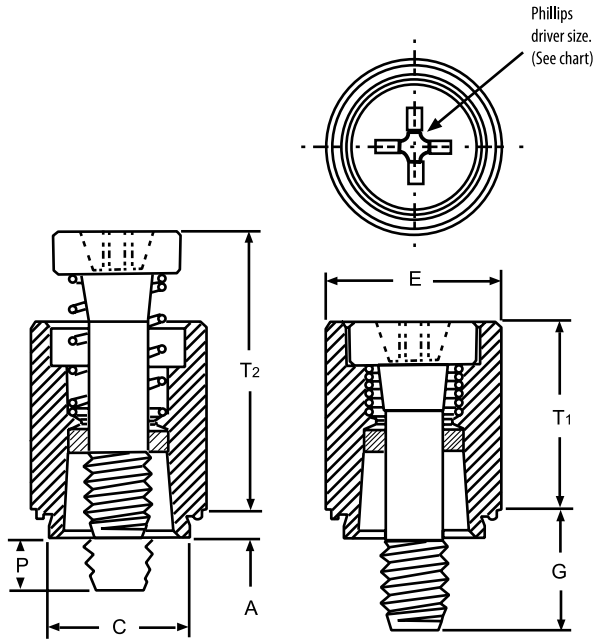
**FINISH:**

Retainer: Passivated and/or tested per ASTM A380

Screw: Passivated and/or tested per ASTM A380

**FOR USE IN SHEET HARDNESS:**

HRB 88 / HB 183 or less



All measurements in inches.

UNIFIED	Thread Size	Type	Thread Code	Screw Length Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet +0.03 -0.00	C Max.	E ±.010	G ±.016	P ±.025	T <sub>1</sub> Max.	T <sub>2</sub> Nom.	Driver Size	Min. Dist. Hole C/L To Edge
	.112-40 (#4-40)	CE-PFC4	440	40	40	.060	.060	.265	.264	.344	.250	.000	.370	.540	#1
62					.375						.125				
40					.250						.000				
.138-32 (#6-32)	CE-PFC4	632	62	62	.060	.060	.281	.280	.375	.375	.125	.380	.540	#2	.28
				84						.500	.250				
				50						.312	.000				
.164-32 (#8-32)	CE-PFC4	832	72	72	.060	.060	.312	.311	.406	.437	.125	.480	.705	#2	.31
				94						.562	.250				
				50						.312	.000				
.190-32 (#10-32)	CE-PFC4	032	72	72	.060	.060	.344	.343	.437	.437	.125	.490	.705	#2	.34
				94						.562	.250				
				50						.312	.000				

All measurements in millimeters.

METRIC	Thread Size x Pitch	Type	Thread Code	Screw Length Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet +0.08	C Max.	E ±0.25	G ±0.4	P ±0.64	T <sub>1</sub> Max.	T <sub>2</sub> Nom.	Driver Size	Min. Dist. Hole C/L To Edge
	M3 x 0.5	CE-PFC4	M3	40	40	1.53	1.53	6.73	6.71	8.74	6.4	0	9.4	13.72	#1
62					9.5						3.2				
50					7.9						0				
M4 x 0.7	CE-PFC4	M4	72	72	1.53	1.53	7.92	7.9	10.31	11.1	3.2	12.19	17.91	#2	7.87
				94						14.3	6.4				
				50						7.9	0				
M5 x 0.8	CE-PFC4	M5	72	72	1.53	1.53	8.74	8.72	11.1	11.1	3.2	12.45	17.91	#2	8.63
				94						14.3	6.4				
				50						7.9	0				

- The plastic retaining rings have temperature limit of 200° F / 93° C.



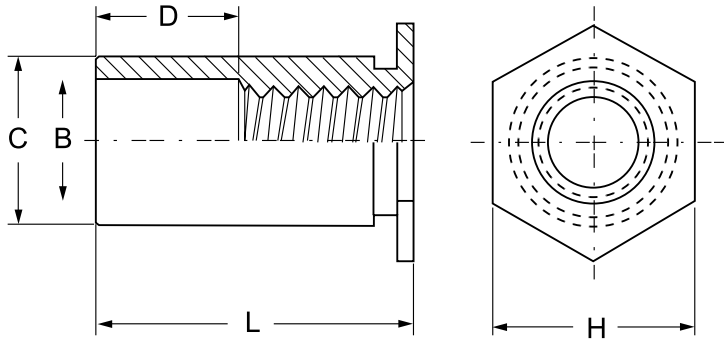
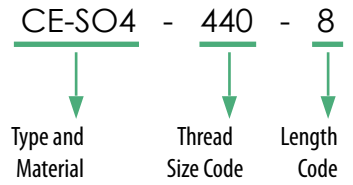


# TYPE CE-SO4 THRU-HOLE THREADED STANDOFFS

**CLINCH**  
ENGINEERING

- Ideal for stacking or spacing.
- Installed with heads flush with one surface of the mounting sheet.
- Available unthreaded for spacing multi-panel assemblies.
- For use in sheets of HRB 88 or less.

PART NUMBER DESIGNATION:



**THREADS:**  
Internal, ASME B1.1 2B / ASME B1.13M, 6H

**MATERIAL:**  
400 Series Stainless Steel

**FINISH:**  
Passivated and/or Tested per ASTM A380

**SHEET HARDNESS:**  
HRB 88 / HB 183 or less

## PERFORMANCE DATA

All measurements in inches.

UNIFIED (inch)	Thread Code	Min. Sheet Thickness	Hole Size In Sheet +.003 -.000	B Counter-Bore Dia. ±.005	C +.000 -.005	H Nom.	Min. Dist. Hole C/L To Edge
6440	.040	.213	.125	.212	.250	.28	
632	.040	.213	.156	.212	.250	.28	
8632	.050	.281	.156	.280	.312	.33	
832	.050	.281	.188	.280	.312	.33	
032	.050	.281	.203	.280	.312	.33	

All measurements in millimeters.

METRIC (mm)	Thread Code	Min. Sheet Thickness	Hole Size In Sheet +0.08	B Counter-Bore Dia. ±.005	C -0.13	H Nom.	Min. Dist. Hole C/L To Edge
3.5M3	1.02	5.41	3.25	5.39	6.4	7.1	
M3.5	1.02	5.41	3.9	5.39	6.4	7.1	
M4	1.27	7.14	4.8	7.12	7.9	8.4	
M5	1.27	7.14	5.35	7.12	7.9	8.4	

## THREAD SIZE AND LENGTH SELECTION DATA

All measurements in inches.

UNIFIED	Thread Size	Type	Thread Code	Length "L" +.002-.005 (Length Code in 32nds of an inch)															
				.125	.187	.250	.312	.375	.437	.500	.562	.625	.687	.750	.812	.875	.937	1.00	1.062
	.112-40 (#4-40)	CE-SO4	440	4	6	8	10	12	14	16	18	20	22	24	N/A	N/A	N/A	N/A	N/A
			6440																
	.138-32 (#6-32)	CE-SO4	632	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34
			8632																
	.164-32 (#8-32)	CE-SO4	832	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34
			032																
	.190-32 (#10-32)																		
D Dimension ±.010				None				.187				.312				.437			

All measurements in millimeters.

METRIC	Thread Size x Pitch	Type	Thread Code	Length "L" +.005-.013 (Length Code in millimeters)															
				3	4	6	8	10	12	14	16	18	N/A	N/A	N/A				
	M3 x 0.5	CE-SO4	M3																
			3.5M3																
	M3.5 x 0.6	CE-SO4	M3.5																
			M4																
	M4 x 0.7																		
	M5 x 0.8																		
D Dimension ±.010				None				4				8				11			

- To minimize sheet distortion and maximize product performance, use a centerline-to-edge value greater or equal to the value specified.
- The increased hardness of stainless steel panels requires careful consideration when installing self-clinching fasteners.
- N/A Not Available.





# TYPE CE-SP4 SELF-CLINCHING NUTS

**CLINCH**  
ENGINEERING

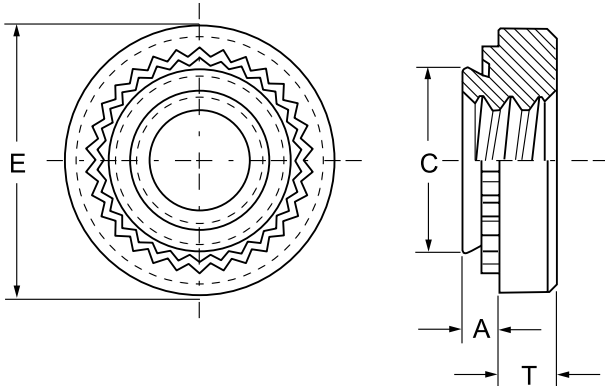
- After installation, reverse side of sheet remains flush and smooth.
- For use in sheets of HRB 90 or less.
- Corrosion resistance similar to 300 series stainless steel.

PART NUMBER DESIGNATION:

**CE-SP4** - **440** - **2**

↓                      ↓                      ↓

Type and Material      Thread Size Code      Shank Code



**THREADS:**  
Internal, ASME B1.1 2B / ASME B1.13M, 6H

**MATERIAL:**  
400 Series Stainless Steel

**FINISH:**  
Passivated and/or Tested per ASTM A380

**SHEET HARDNESS:**  
HRB 90 / HB 192 or less

All measurements in inches.

UNIFIED	Thread Size	Type	Thread Code	Shank Code	A (Shank) Max.	Rec. Min. Sheet Thickness	Hole Size In Sheet +0.03-.000	C Max.	E ±.010	T ±.010	Min. Dist. Hole C/L To Edge
	.112-40 (#4-40)	CE-SP	440	0	.030	.030	.166	.165	.250	.070	.19
1				.038	.040						
2				.054	.056						
.138-32 (#6-32)	CE-SP	632	0	.030	.030	.1875	.187	.280	.070	.22	
			1	.038	.040						
			2	.054	.056						
.164-32 (#8-32)	CE-SP	832	0	.030	.030	.213	.212	.310	.090	.27	
			1	.038	.040						
			2	.054	.056						
.190-32 (#10-32)	CE-SP	032	0	.030	.030	.250	.249	.340	.090	.28	
			1	.038	.040						
			2	.054	.056						
.250-20 (1/4-20)	CE-SP	0420	1	.054	.056	.344	.343	.440	.170	.34	
.313-18 (5/16-18)	CE-SP	0518	1	.054	.056	.413	.412	.500	.230	.38	
.375-16 (3/8-16)	CE-SP	0616	2	.120	.125	.500	.499	.560	.270	.44	

All measurements in millimeters.

METRIC	Thread Size x Pitch	Type	Thread Code	Shank Code	A (Shank) Max.	Rec. Min. Sheet Thickness	Hole Size In Sheet +0.08	C Max.	E ±0.25	T ±0.25	Min. Dist. Hole C/L To Edge
	M3 x 0.5	CE-SP	M3	0	0.77	0.8	4.22	4.2	6.3	1.5	4.8
1				0.97	1.01						
2				1.38	1.4						
M4 x 0.7	CE-SP	M4	0	0.77	0.8	5.41	5.39	7.9	2	6.9	
			1	0.97	1.01						
			2	1.38	1.4						
M5 x 0.8	CE-SP	M5	0	0.77	0.8	6.4	6.33	8.7	2	7.1	
			1	0.97	1.01						
			2	1.38	1.4						
M6 x 1	CE-SP	M6	1	1.38	1.4	8.75	8.73	11.1	4.1	8.6	
M8 x 1.25	CE-SP	M8	1	1.38	1.4	10.5	10.47	12.65	5.47	9.7	
M10 x 1.5	CE-SP	M10	1	2.21	2.31	14	13.97	17.35	7.48	13.5	

- The increased hardness of stainless steel panels requires careful consideration when installing self-clinching fasteners .



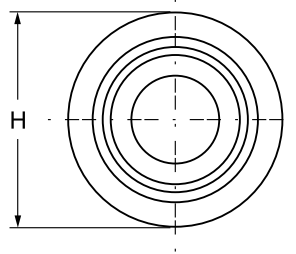
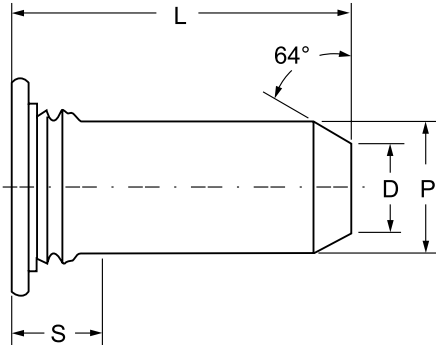
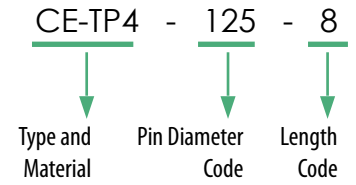


# TYPE CE-TP4 FLUSH-HEAD PINS

**CLINCH**  
ENGINEERING

- Permanent installation into stainless steel sheets as thin as .040" / 1 mm.
- Satisfies a wide range of positioning, pivot, and alignment applications.
- Chamfered end makes mating hole location easy.

PART NUMBER DESIGNATION:



**MATERIAL:**

400 Series Stainless Steel

**FINISH:**

Passivated and/or Tested per ASTM A380

**SHEET HARDNESS:**

HRB 92/ HB 202 or less

All measurements in inches.

UNIFIED	Pin Diameter P ±.002	Type	Pin Diameter Code	Length Code "L" ±.015 (Length code in 16ths of an inch)					Min. Sheet Thickness	Hole Size In Sheet +.003 - .000	D ±.006	H ±.015	S Max.	Min. Dist. Hole C/L To Edge
		Stainless Steel		.375	.500	.625	.750	1.00						
				.125	CE-TP4	125	6	8						
	.187	CE-TP4	187	6	8	10	12	16	.040	.205	.132	.270	.090	.280
	.250	CE-TP4	250	N/A	8	10	12	16	.040	.272	.177	.335	.090	.310

All measurements in millimeters.

METRIC	Pin Diameter P ±0.05	Type	Pin Diameter Code	Length Code "L" ± 0.4 (Length Code in millimeters)					Min. Sheet Thickness	Hole Size In Sheet +0.08	D ±0.15	H ±0.4	S Max.	Min. Dist. Hole C/L To Edge
		Stainless Steel		8	10	12	16	N/A						
				3	CE-TP4	3mm	8	10						
	4	CE-TP4	4mm	8	10	12	16	N/A	1	4.5	2.82	6.12	2.29	7.1
	5	CE-TP4	5mm	N/A	10	12	16	20	1	5.5	3.53	7.19	2.29	7.6
	6	CE-TP4	6mm	N/A	N/A	12	16	20	1	6.5	4.24	8.13	2.29	7.9

- The increased hardness of stainless steel panels requires careful consideration when installing self-clinching fasteners .
- N/A Not Available.





# PERFORMANCE DATA FOR HARDWARE THAT INSTALLS INTO STAINLESS STEEL

## CLINCH ENGINEERING

### PERFORMANCE DATA

All measurements in inches.

Part Number	Max. Nut Tightening Torque (in. lbs.)	Max. Rec. Tightening Torque For Mating Screw (in. lbs.)	Test Sheet Material – 300 Series Stainless Steel			
			Installation (lbs.)	Pushout (lbs.)	Torque-out (in. lbs.)	Pull Thru (lbs.)
CE-SP-440-0	–	–	8000	130	14	–
CE-SP-440-1	–	–	9000	165	17	–
CE-SP-440-2	–	–	10000	290	18	–
CE-SP-632-0	–	–	8500	140	18	–
CE-SP-632-1	–	–	9500	170	24	–
CE-SP-632-2	–	–	10500	340	28	–
CE-SP-832-0	–	–	9000	145	30	–
CE-SP-832-1	–	–	10000	180	37	–
CE-SP-832-2	–	–	11000	360	45	–
CE-SP-032-0	–	–	9500	180	35	–
CE-SP-032-1	–	–	10500	230	45	–
CE-SP-032-2	–	–	11500	400	60	–
CE-SP-0420-1	–	–	13500	450	150	–
CE-SP-0518-1	–	–	14800	470	170	–
CE-SP-0616-2	–	–	20000	700	370	–
CE-S04/CE-BS04-440	–	4.75	5500	360	17	600
CE-S04/CE-BS04-6440	–	4.75	9500	647	17	680
CE-S04/CE-BS04-632	–	8.75	9500	647	30	680
CE-S04/CE-BS04-8632	–	8.75	10500	900	30	1392
CE-S04/CE-BS04-832	–	18	10500	900	53	1517
CE-S04/CE-BS04-032	–	32	10500	900	71	1368
CE-FH4-440-L	6	–	9000	450	16	800
CE-FH4-632-L	11	–	9500	540	27	1350
CE-FH4-832-L	21	–	11200	780	58	1800
CE-FH4-032-L	33	–	12000	1050	95	2250
CE-FH4-0420-L	70	–	23000	1600	156	3900
CE-FHP-440-L	6	–	9000	520	10.6	605
CE-FHP-632-L	11	–	9500	670	19.5	940
CE-FHP-832-L	21	–	11200	785	37.5	1415
CE-FHP-032-L	33	–	12000	920	59.5	1500
CE-TP4-125	–	–	8000	350	–	–
CE-TP4-187	–	–	12000	570	–	–
CE-TP4-250	–	–	14000	650	–	–
CE-PFC4-440	–	–	9100	350	–	–
CE-PFC4-632	–	–	10300	400	–	–
CE-PFC4-832	–	–	10800	450	–	–
CE-PFC4-032	–	–	11800	550	–	–
CE-A4/CE-LA4-440	–	–	9000	200	85	–
CE-A4/CE-LA4-632	–	–	10000	200	85	–
CE-A4/CE-LA4-832	–	–	12000	200	85	–
CE-A4/CE-LA4-032	–	–	13000	250	125	–

All measurements in millimeters.

Part Number	Max. Nut Tightening Torque (N•m)	Max. Rec. Tightening Torque For Mating Screw (N•m)	Test Sheet Material – 300 Series Stainless Steel			
			Installation (kN)	Pushout (N)	Torque-out (N•m)	Pull Thru (N)
CE-SP-M3-0	–	–	35.6	575	1.58	–
CE-SP-M3-1	–	–	40	725	1.92	–
CE-SP-M3-2	–	–	44.5	1290	2.03	–
CE-SP-M4-0	–	–	40	645	3.38	–
CE-SP-M4-1	–	–	44.5	800	4.18	–
CE-SP-M4-2	–	–	49	1600	5.08	–
CE-SP-M5-0	–	–	42.3	800	3.95	–
CE-SP-M5-1	–	–	46.7	1025	5.08	–
CE-SP-M5-2	–	–	51.2	1775	6.77	–
CE-SP-M6-1	–	–	60	2000	17	–
CE-SP-M8-1	–	–	66	2100	19	–
CE-SP-M10-1	–	–	80	2150	38	–
CE-S04/CE-BS04-M3	–	0.55	24.5	1493	2.36	2650
CE-S04/CE-BS04-3.5M3	–	0.55	42.3	2877	2.36	3025
CE-S04/CE-BS04-M3.5	–	0.91	42.3	2877	3.06	3025
CE-S04/CE-BS04-M4	–	2	46.7	4003	6.34	6458
CE-S04/CE-BS04-M5	–	3.6	46.7	4003	8.89	6226
CE-FH4-M3-L	.9	–	40	2220	1.8	3500
CE-FH4-M4-L	2.1	–	50	3210	6.5	8000
CE-FH4-M5-L	4.3	–	53	3575	10.7	10000
CE-FH4-M6-L	7.2	–	71	4200	15.9	14900
CE-FHP-M4-L	2.1	–	50	3000	3.9	6000
CE-FHP-M5-L	4.3	–	53	3890	7.35	7320
CE-TP4-3mm	–	–	35	1556	–	–
CE-TP4-4mm	–	–	45	2335	–	–
CE-TP4-5mm	–	–	54	2535	–	–
CE-TP4-6mm	–	–	60	1891	–	–
CE-PFC4-M3	–	–	40.5	1557	–	–
CE-PFC4-M4	–	–	48	2002	–	–
CE-PFC4-M5	–	–	52.5	2447	–	–
CE-A4/CE-LA4-M3	–	–	40	890	9.6	–
CE-A4/CE-LA4-M4	–	–	53	890	9.6	–
CE-A4/CE-LA4-M5	–	–	57	1100	14.1	–

- The values reported are averages when all installation specifications and procedures are followed. Variations in mounting hole size, sheet material, and installation force will affect results. Performance testing of this product in your application is recommended. We will be happy to provide samples for this purpose.



## DECIMAL EQUIVALENTS & DRILL SIZE CHART

DRILL SIZE	INCH (Dec.)	METRIC (mm)	DRILL SIZE	INCH (Dec.)	METRIC (mm)	DRILL SIZE	INCH (Dec.)	METRIC (mm)	DRILL SIZE	INCH (Dec.)	METRIC (mm)	DRILL SIZE	INCH (Dec.)	METRIC (mm)
80	.0135	,343	50	.0700	1,778	22	.1570	3,988	G	.2610	6,630	31/64	.4844	12,304
79	.0145	,368	49	.0730	1,854	21	.1590	4,039	17/64	.2656	6,746	1/2	.5000	12,700
1/64	.0156	,396	48	.0760	1,930	20	.1610	4,089	H	.2660	6,756	33/64	.5156	13,096
78	.0160	,406	5/64	.0781	1,984	19	.1660	4,216	I	.2720	6,909	17/32	.5312	13,492
77	.0180	,457	47	.0785	1,994	18	.1695	4,305	J	.2770	7,036	35/64	.5469	13,891
76	.0200	,508	46	.0810	2,057	11/64	.1719	4,366	K	.2810	7,137	9/16	.5625	14,288
75	.0210	,533	45	.0820	2,083	17	.1730	4,394	9/32	.2812	7,142	37/64	.5781	14,684
74	.0225	,572	44	.0860	2,184	16	.1770	4,496	L	.2900	7,366	19/32	.5938	15,083
73	.0240	,609	43	.0890	2,261	15	.1800	4,572	M	.2950	7,493	39/64	.6094	15,479
72	.0250	,635	42	.0935	2,375	14	.1820	4,623	19/64	.2969	7,541	5/8	.6250	15,875
71	.0260	,660	3/32	.0938	2,383	13	.1850	4,700	N	.3020	7,671	41/64	.6406	16,271
70	.0280	,711	41	.0960	2,438	3/16	.1875	4,763	5/16	.3125	7,938	21/32	.6562	16,667
69	.0292	,742	40	.0980	2,489	12	.1890	4,801	O	.3160	8,026	43/64	.6719	17,066
68	.0310	,787	39	.0995	2,527	11	.1910	4,851	P	.3230	8,204	11/16	.6875	17,463
1/32	.0312	,792	38	.1015	2,578	10	.1935	4,915	21/64	.3281	8,334	45/64	.7031	17,859
67	.0320	,813	37	.1040	2,642	9	.1960	4,978	Q	.3320	8,433	23/32	.7188	18,258
66	.0330	,838	36	.1065	2,705	8	.1990	5,055	R	.3390	8,611	47/64	.7344	18,654
65	.0350	,889	7/64	.1094	2,779	7	.2010	5,105	11/32	.3438	8,733	3/4	.7500	19,050
64	.0360	,914	35	.1100	2,794	13/64	.2031	5,159	S	.3480	8,839	49/64	.7656	19,446
63	.0370	,940	34	.1110	2,819	6	.2040	5,182	T	.3580	9,093	25/32	.7812	19,842
62	.0380	,965	33	.1130	2,870	5	.2055	5,220	23/64	.3594	9,129	51/64	.7969	20,241
61	.0390	,991	32	.1160	2,946	4	.2090	5,309	U	.3680	9,347	13/16	.8125	20,638
60	.0400	1,016	31	.1200	3,048	3	.2130	5,410	3/8	.3750	9,525	53/64	.8281	21,034
59	.0410	1,041	1/8	.1250	3,175	7/32	.2188	5,558	V	.3770	9,576	27/32	.8438	21,433
58	.0420	1,067	30	.1285	3,264	2	.2210	5,613	W	.3860	9,804	55/64	.8594	21,829
57	.0430	1,092	29	.1360	3,454	1	.2280	5,791	25/64	.3906	9,921	7/8	.8750	22,225
56	.0465	1,181	28	.1405	3,569	A	.2340	5,944	X	.3970	10,084	57/64	.8906	22,621
3/64	.0469	1,191	9/63	.1406	3,571	13-64	.2344	5,954	Y	.4040	10,262	29/32	.9062	23,017
55	.0520	1,321	27	.1440	3,658	B	.2380	6,045	13/32	.4062	10,317	59/64	.9219	23,416
54	.0550	1,397	26	.1470	3,734	C	.2420	6,147	Z	.4130	10,490	15/16	.9375	23,813
53	.0595	1,511	25	.1495	3,797	D	.2460	6,248	27/64	.4219	10,716	61/64	.9531	24,209
1/16	.0625	1,588	24	.1520	3,861	1-4	.2500	6,350	7/16	.4375	11,113	31/32	.9688	24,608
52	.0635	1,613	23	.1540	3,912	E	.2500	6,350	29/64	.4531	11,509	63/64	.9844	25,004
51	.0670	1,702	5/32	.1562	3,967	F	.2570	6,528	15/32	.4688	11,908	1	1.000	25,400

**DECIMAL EQUIVALENT OF STANDARD GAUGE SHEET ALUMINUM & SHEET METAL**

NO. OF GAUGE	GAUGE		NO. OF GAUGE	GAUGE		NO. OF GAUGE	GAUGE	
	ALUM (B & S)	STEEL (U.S. Std.)		ALUM (B & S)	STEEL (U.S. Std.)		ALUM (B & S)	STEEL (U.S. Std.)
10	.1019	.1345	17	.0453	.0538	24	.0201	.0239
11	.0907	.1196	18	.0403	.0478	25	.0179	.0209
12	.0808	.1046	19	.0359	.0418	26	.0159	.0179
13	.0720	.0897	20	.0320	.0359	27	.0142	.0164
14	.0641	.0747	21	.0285	.0329	28	.0126	.0149
15	.0571	.0673	22	.0253	.0299	29	.0113	.0135
16	.0508	.0598	23	.0226	.0269	30	.0100	.0120

**SUGGESTED ASSEMBLY TORQUE VALUES TO PRODUCE CORRESPONDING BOLT LOADS**

THREAD SIZE	SAE GRADE 5 BOLTS		
	CLAMP LOAD (LBS.)	ASSEMBLY TORQUE	
		DRY	PLATED
#4-40	380	8	6
#6-32	580	16	12
#8-32	900	30	22
#10-24	1120	43	32
#10-32	1285	49	36
1/4 - 20	2000	96	75
1/4 - 28	2300	120	86
5/16-18	3350	204	156
5/16-24	3700	228	168
3/8-16	4950	360	276
3/8-24	5600	420	300

**METRIC CONVERSIONS**

LENER	Multiply INCHES	by 25.4	to get MILLIMETERS (MM)	Multiply MILLIMETERS (MM)	by .03937	to get INCHES
	Multiply FEET	by 0.3048	to get METERS (M)	Multiply METERS (M)	by 3.281	to get FEET
	Multiply INCHES	by 2.54	to get CENTIMETERS (CM)	Multiply CENTIMETERS (CM)	by .3937	to get INCHES
TORQUE	Multiply INCH-POUNDS	by 0.11298	to get NEWTON-METERS (Nm)	Multiply NEWTON-METERS (Nm)	by 8.851	to get INCH-POUNDS
	Multiply FOOT-POUNDS	by 1.3558	to get NEWTON-METERS (Nm)	Multiply NEWTON-METERS (Nm)	by 0.7376	to get FOOT-POUNDS
FORCE	Multiply POUNDS	by .00445	to get KILO-NEWTONS (kN)	Multiply KILO-NEWTONS (kN)	by 224.72	to get POUNDS



