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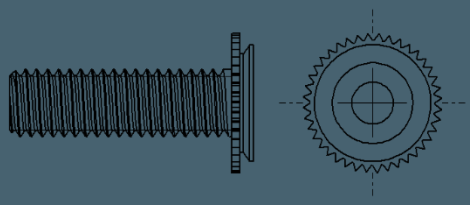
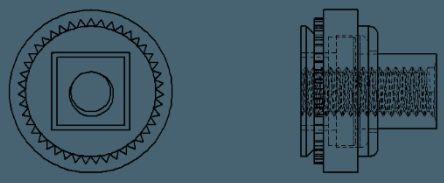
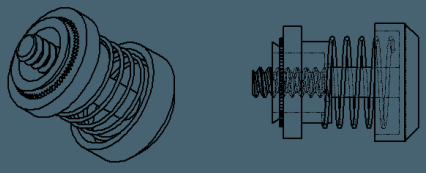
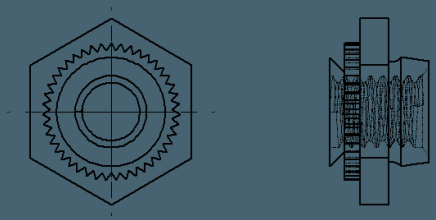
ENGINEERING









Clinch Engineering Catalog

Distributed by Clinch Northwest. 4616 Union Bay PL NE, Seattle WA 98105
Phone: (206) 371-7000 | Email: sales@clinchnorthwest.com

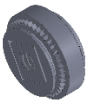
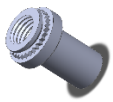
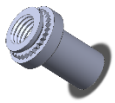
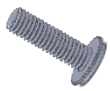
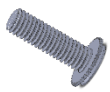
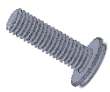
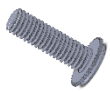
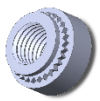
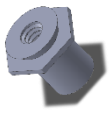
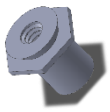
ABOUT US:

Founded by Mike Wayte with nearly 30 years in the Self-Clinch hardware industry, 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.

Location

Clinch Northwest office is located at:
4640 Union Bay Place NE, Unit B
Seattle, WA 98105

Part Number Cross Reference Chart

Clinch Engineering™ Fasteners	Clinch Engineering™ Series	Series Description	PEM® Series	Captive® Series
	FL	**Fl**oater, steel, zinc plated	AS	CFAS
	FLS	**FL**oater **S**tainless	AC	CFAC
	NB	**N**ut **B**lind, steel, zinc plated	B	CFB
	NBS	**N**ut **B**lind **S**tainless	BS	CFBS
	STB	**ST**andoff **B**lind, steel	BSO	CFBSO
	STBS	**ST**andoff **B**lind, **S**tainless steel	BSOS	CFBSOS
	STBA	**ST**andoff **B**lind, **A**luminum	BSOA	CFBSOA
	COA1	**CO**ncealed **A**luminum	CHA	CFA-1
	COS1	**CO**ncealed **S**tainless	CHC	CFC-1
	COA2	**CO**ncealed **A**luminum, larger shank	CFHA	CFA-2
	COS2	**CO**ncealed **S**tainless, larger shank	CFHC	CFC-2
	NA	**N**ut **A**luminum	CLA	CA
	STCO1	**ST**andoff **C**oncealed **S**hort	CSS	CFHS-1
	STCO2	**ST**andoff **C**oncealed **L**ong	CSOS	CFHS-2

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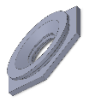
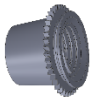
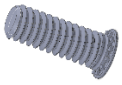
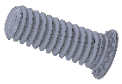
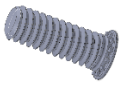
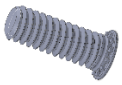
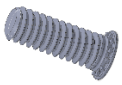
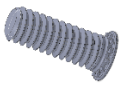
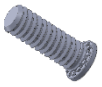
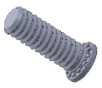
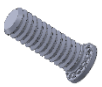
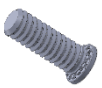
Clinch Engineering™ Fasteners	Clinch Engineering™ Series	Series Description	PEM® Series	Captive® Series
	NF	**N**ut, **F**lush	F	CFL
	MIN2L	**MIN**iature **L**ocking, larger shank	FE	CFE
	MIN1L	**MIN**iature **L**ocking	FEO	CFEO
	MIN2	**MIN**iature, larger shank	FEX	CFEX
	MIN1	**MIN**iature	FEOX	CFEOX
	FS	**F**lush **S**tud, steel, zinc plated	FH	CH
	FSS	**F**lush **S**tud **S**tainless	FHS	CHS
	FSA	**F**lush **S**tud **A**luminum	FHA	CHA
	FS4	**F**lush **S**tud **4**00 series	FH4	CHTS
	FSL	Non-**F**lush **S**tud, **L**ow displacement, steel, zinc	FHL	CHE
	FSLS	Non-**F**lush **S**tud, **L**ow displacement, **S**tainless	FHLS	CHES
	FSHT	Non-**F**lush **S**tud, **H**igh strength, **T**hin sheet	HFE	HCW
	FSH	Non-**F**lush **S**tud, **H**igh strength, steel, zinc plated	HFH	HCH
	FSHS	Non-**F**lush **S**tud, **H**igh strength, **S**tainless	HFHS	HCHS
	FSHB	Non-**F**lush **S**tud, **H**igh strength, **B**rass	HFHB	HCHB

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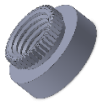
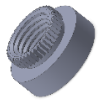
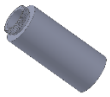
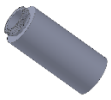
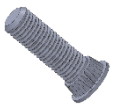
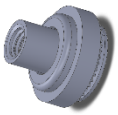
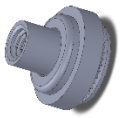
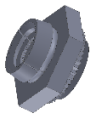
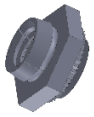
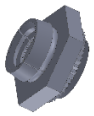
Clinch Engineering™ Fasteners	Clinch Engineering™ Series	Series Description	PEM® Series	Captive® Series
	NE	**N**ut for **E**lectronic boards, Broaching	KF2	
	NES	**N**ut for **E**lectronic boards, **S**tainless, Broaching	KFS2	CKFS2
	STE	**ST**andoff for **E**lectronics, broaching	KFE	CKFE
	STES	**ST**andoff for **E**lectronics, **S**tainless, broaching	KFSE	CKFSE
	FSE	**F**lush **S**tud for **E**lectronics, broaching	KFH	CKFH
	STTB	**ST**andoff**,** Click-Top, broaching **B**rass	KSSB	CFKSSB
	FLL	**FL**oater, **L**ocking	LAS	CFFS
	FLLS	**FL**oater, **L**ocking, **S**tainless	LAC	CFFC
	NL	**N**ut **L**ocking	LK	CRT
	NLS	**N**ut **L**ocking, **S**tainless	LKS	
	NLA	**N**ut **L**ocking, **A**luminum	LKA	
	FMS	**F**lush **M**ount **S**crew	PS10	CFS2

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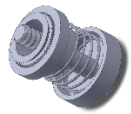
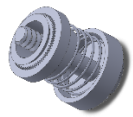
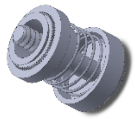
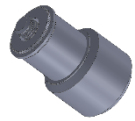
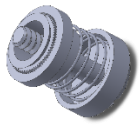
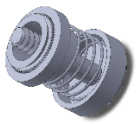
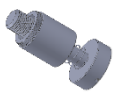
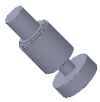
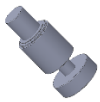
Clinch Engineering™ Fasteners	Clinch Engineering™ Series	Series Description	PEM® Series	Captive® Series
	PAL0	**PA**nel fastener, **L**ow profile, 0.030 shank	PF30	LPH-0
	PAL1	**PA**nel fastener, **L**ow profile, 0.038 shank	PF31	LPH-1
	PAL2	**PA**nel fastener, **L**ow profile, 0.058 shank	PF32	LPH-2
	PALK	**PA**nel, **L**arge **K**nob	PF11	PSK
	PAK	**PA**nel fastener, low profile**,** **K**nurled cap	PF50	
	PAS	**PA**nel fastener, low profile, **S**mooth cap	PF60	
	PPS	**P**anel fastener, **S**teel	PFC2	CPFC2
	PPSS	**P**anel fastener, **S**tainless **S**teel	PFS2	
	PPSSP	**P**anel fastener, **S**tainless **S**teel, **P**hilips head	PFC2P	
	BCPS	**B**roaching **C**aptive **P**anel **S**crews	PFK	CPFK
	SPP1	**SP**ring-loaded **P**lunger, NON locking	PSL2	CPN
	SPP2	**SP**ring-loaded **P**lunger, Locking	PTL2	CPR

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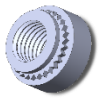
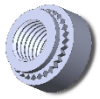
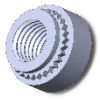
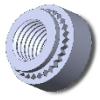
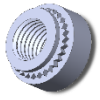
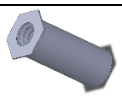
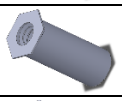
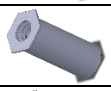
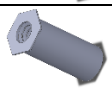
	NT	**N**u**T**, steel, zinc plated	S	C
	NT	**N**u**T**, steel, zinc plated	SS	C
	NTS	**N**u**T** **S**tainless	CLS	CS
	NTS	**N**u**T** **S**tainless	CLSS	CS
	NTU	**N**u**T**, **U**ltra thin	SMPS	
	STST	**ST**andoff **S**lip-**T**op	SKC	CFSKC
	ST	**ST**andoff, thru-hole, steel, zinc plated	SO	CFSO
	STS	**ST**andoff**, S**tainlesss, thru-hole	SOS	CFSOS
	STA	**ST**andoff**, A**luminum, thru-hole	SOA	CFSOA
	ST4	**ST**andoff, **4**00 series, thru-hole	SO4	CF4-S0
	STB4	**ST**andoff, **4**00 series, **B**lind	BSO4	CF4-BS0
	STG	**ST**andoff **G**rounding	SOSG	CFSOSG
	STGA	**ST**andoff **G**rounding, **A**luminum	SOAG	CFSOAG

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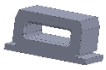
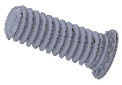
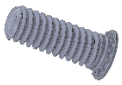
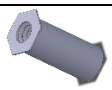
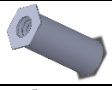
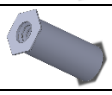
Clinch Engineering™ Fasteners	Clinch Engineering™ Series	Series Description	PEM® Series	Captive® Series
	STCA	**ST**andoff **C**lick top, **A**luminum	SSA	CFSSA
	STC	**ST**andoff **C**lick top, steel	SSS	CFSSS
	STCS	**ST**andoff **C**lick top, **S**tainless	SSC	CFSSC
	CAT	**CA**ble **T**ie	TDS	
	FST	Non-**F**lush **S**tud, **T**hin sheet, steel, zinc plated	TFH	TCH
	FSTS	Non-**F**lush **S**tud, **T**hin sheet, **S**tainless	TFHS	TCHS
	PIN	**PIN**s, stainless steel	TPS	
	PIN4	**PIN**s, **4**00 series stainless	TP4	
	STT	**ST**andoff **T**hin sheet, steel, zinc plated	TSO	CFT
	STTS	**ST**andoff **T**hin sheet, **S**tainless	TSOS	CFTS
	STTA	**ST**andoff **T**hin sheet, **A**luminum	TSOA	CFTA
	MIN3	**MIN**iature Fastener	U	
	MIN3L	**MIN**iature, **L**ocking	UL	
	NPW	**N**ut **P**rojection **W**eld	WN	CFWN
	NPWS	**N**ut **P**rojection **W**eld, **S**tainless	WNS	CFWNS

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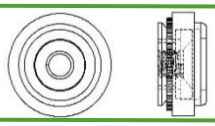
CLINCH ENGINEERING SELF-CLINCHING FASTENERS

HARDWARE THAT INSTALLS INTO STAINLES STEEL



TYPE FL4, FLL4

Floating action compensates for mating hole misalignment.
Thread sizes #4 to ¼" and M3 to M6. Thread locking.

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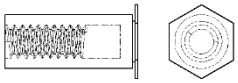
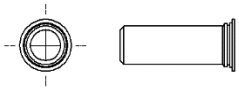


TYPE STB4 SELF-CLINCHING BLIND STANDOFF

Self-clinching standoffs with blind threads.
Thread sizes #4 to #10 and M3 to M5.

Pg. 53



TYPE PIN4 FLUSH HEAD SELF-CLINCHING PILOT PIN

Flush-head pin for positioning, pivot, or alignment.
Unthreaded.

Pg. 54

TYPE FS4 SELF-CLINCHING FLUSH-HEAD STUDS

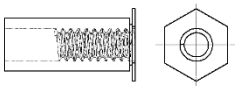
Flush-head studs for sheet thickness of 0.40" / 1 mm and greater.

Pg. 55

TYPE FLL4 FLOATING LOCKING FASTENERS

Floating action compensates for mating hole misalignment.
Thread sizes #4 to ¼" and M3 to M6. Thread locking.

Pg. 56



TYPE ST4 SELF-CLINCHING STANDOFFS

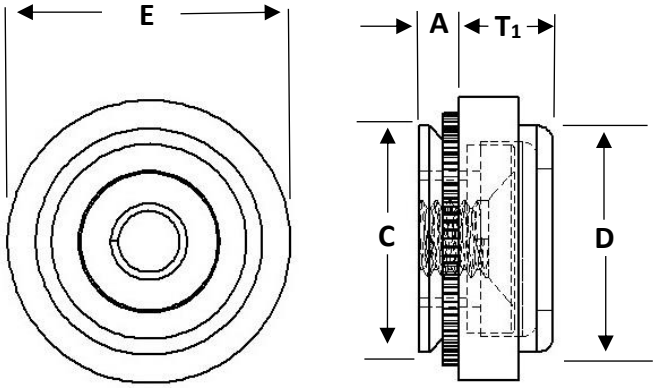
Self-clinching standoffs with thru-hole threads.
Thread sizes #4 to #10 and M3 to M5.

Pg. 57

PART NUMBER DESIGNATION

FL S - 440 - 1 ZI

- **FL** — Type: Non-locking Floater
- **S** — Material: None = heat-treated carbon steel; S = 300 series stainless steel
- **440** — Thread Size Code
- **1** — Shank Code
- **ZI** — Finish Code



THREADS:

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

MATERIAL:

Retainer: FL – Heat-treated Carbon Steel
FLS – 300 Series Stainless Steel
Nut: FL – Carbon Steel
FLS - 300 Series Stainless

FINISH:

FL – Zinc Plated, 5 µm, Colorless
FLS – Passivated and/or Tested per ASTM A380

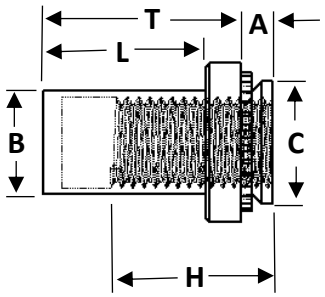
All measurements in inches.

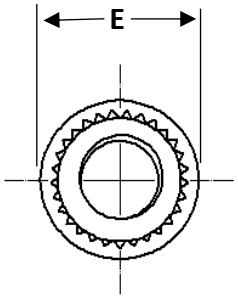
	Type: Non-Locking: Fastener Material: Steel	Type: Non-Locking: Fastener Material: 300 Series Stainless Steel	Thread Size	Thread Code	Shank Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size in Sheet +0.03 -.000	C Max.	D Max.	E ± 0.15	T_1 Max.	Min. Dist. Hole C/L to Edge
UNIFIED	FL	FLS	.112-40 (#4-40)	440	1	.038	.038	.290	.289	.290	.360	.130	.30
					2	.054	.054						
	FL	FLS	.138-32 (#6-32)	632	1	.038	.038	.328	.327	.335	.390	.130	.32
					2	.054	.054						
	FL	FLS	.164-32 (#8-32)	832	1	.038	.038	.368	.367	.365	.440	.130	.34
					2	.054	.054						
	FL	FLS	.190-24 (#10-24)	024	1	.038	.038	.406	.405	.405	.470	.170	.36
					2	.054	.054						
	FL	FLS	.190-32 (#10-32)	032	1	.038	.038	.406	.405	.405	.470	.170	.36
					2	.054	.054						
	FL	FLS	.250-20 (1/4-20)	0420	2	.054	.054	.515	.514	.510	.600	.210	.42
	FL	FLS	.250-28 (1/4-28)	0428	2	.054	.054	.515	.514	.510	.600	.210	.42

All measurements in millimeters.

	Type: Non-Locking: Fastener Material: Steel	Type: Non-Locking: Fastener Material: 300 Series Stainless Steel	Thread Size x Pitch	Thread Code	Shank Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size in Sheet +0.08	C Max.	D Max.	E ± 0.38	T_1 Max.	Min. Dist. Hole C/L to Edge
METRIC	FL	FLS	M3 x 0.5	M3	1	0.97	0.97	7.37	7.35	7.37	9.14	3.31	7.62
					2	1.38	1.38						
	FL	FLS	M4 x 0.7	M4	1	0.97	0.97	9.35	9.33	9.28	11.18	3.31	8.64
					2	1.38	1.38						
	FL	FLS	M5 x 0.8	M5	1	0.97	0.97	10.31	10.29	10.29	11.94	4.32	9.14
					2	1.38	1.38						
	FL	FLS	M6 x 1	M6	2	1.38	1.38	13.08	13.06	12.96	15.24	5.34	10.67

CLINCH ENGINEERING





PART NUMBER DESIGNATION

NB S - 440 - 1 ZI

- NB: Type — Blind Nut
- S: Material — None = heat-treated carbon steel; S = 300 series stainless steel
- 440: Thread Size Code
- 1: Shank Code
- ZI: Finish Code

THREADS:

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

MATERIAL:

NB – Heat-treated Carbon Steel
NBS - 300 Series Stainless

FINISH:

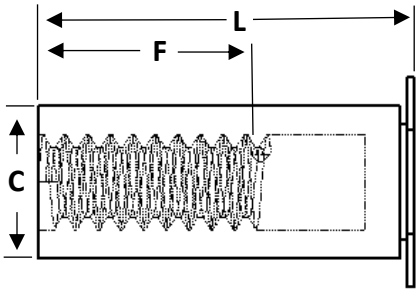
NB – Zinc Plated, 5 µm, Colorless
NBS – Passivated and/or Tested per ASTM A380

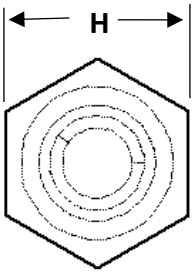
All measurements in inches.

	Type		Thread Size	Thread Code	Shank Code	A Max.	Min. Sheet Thickness	Hole Size in Sheet +0.03 -.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													
UNIFIED	NB	NBS	.112-40 (#4-40)	440	1	.040	.040	.166	.150	.165	.250	.210	.335	.380	.19
					2	.056	.056								
	NB	NBS	.138-32 (#6-32)	632	1	.040	.040	.1875	.169	.187	.280	.230	.335	.380	.22
					2	.056	.056								
	NB	NBS	.164-32 (#8-32)	832	1	.040	.040	.213	.204	.212	.310	.280	.385	.440	.27
					2	.056	.056								
	NB	NBS	.190-32 (#10-32)	032	1	.040	.040	.250	.235	.249	.340	.280	.385	.440	.28
					2	.056	.056								
	NB	NBS	.250-20 (1/4-20)	0420	1	.056	.056	.344	.305	.343	.430	.310	.500	.560	.34
					2	.090	.090								

All measurements in millimeters.

	Type		Thread Size x Pitch	Thread Code	Shank Code	A Max.	Min. Sheet Thickness	Hole Size in Sheet +0.008 -.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													
METRIC	NB	NBS	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								
	NB	NBS	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								
	NB	NBS	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								
	NB	NBS	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								





PART NUMBER DESIGNATION

STB S - 440 - 10 ZI

- STB: Type Blind Standoff
- S: Material — None = carbon steel; S = stainless steel; A = aluminum
- 440: Thread Size Code
- 10: Length Code
- ZI: Finish Code

THREADS:

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

MATERIAL:

STB – Heat-treated Carbon Steel
STBS - 300 Series Stainless
STBA – 7075-T6 Aluminum

FINISH:

STB – Zinc Plated, 5 µm, Colorless
STBS – Passivated and/or Tested per ASTM A380

GENERAL DIMENSION DATA

	Thread Code	Min. Sheet Thickness	Hole Size in Sheet +0.03 -.000	C +.000 - .005	H Nom.	Min. Dist. Hole C/L to Edge
UNIFIED	440	.040	.116	.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

	Thread Code	Min. Sheet Thickness	Hole Size in Sheet +0.08 -.000	C - 0.13	H Nom.	Min. Dist. Hole C/L to Edge
METRIC	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

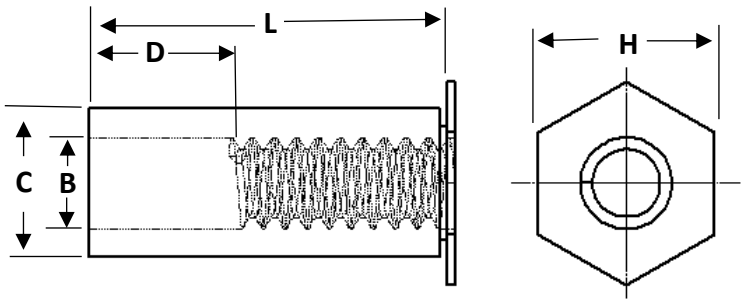
THREAD SIZE AND LENGTH SELECTION DATA

All measurements in inches.

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

All measurements in millimeters.

	Type					Length "L" + .05 -.13 (Length Code in millimeters)									
	Steel	Stainless Steel	Aluminum	Thread Size	Thread Code										
METRIC	STB	STBS	STBA	M3 x 0.5	M3	6	8	10	12	14	16	18	20	22	25
					3.5M3										
	STB	STBS	STBA	M3.5 x 0.6	M3.5	6	8	10	12	14	16	18	20	22	25
	STB	STBS	STBA	M4 x 0.7	M4	6	8	10	12	14	16	18	20	22	25
	STB	STBS	STBA	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			



PART NUMBER DESIGNATION

ST S - 440 - 10 ZI

- **ST** — Type: Thru-Hole Standoff
- **S** — Material: None = carbon steel; S = stainless steel; A = aluminum
- **440** — Thread Size Code
- **10** — Length Code
- **ZI** — Finish Code

THREADS:

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

MATERIAL:

ST – Heat-treated Carbon Steel
STS - 300 Series Stainless
STA – 7075-T6 Aluminum

FINISH:

ST – Zinc Plated, 5 µm, Colorless
STS – Passivated and/or Tested per ASTM A380

GENERAL DIMENSION DATA

	Thread Code	Min. Sheet Thickness	Hole Size in Sheet +0.03 -.000	C +.000 - .005	H Nom.	Min. Dist. Hole C/L to Edge
UNIFIED	440	.040	.116	.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

	Thread Code	Min. Sheet Thickness	Hole Size in Sheet +0.08 -.000	C - 0.13	H Nom.	B ± 0.13	Min. Dist. Hole C/L to Edge
METRIC	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.

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

All measurements in millimeters.

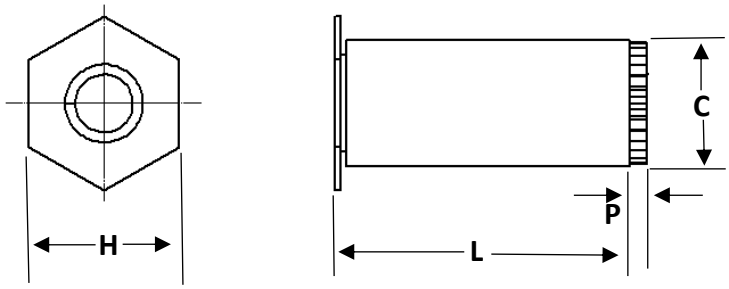
	Type					Length "L" + .05 -.13 (Length Code in millimeters)									
	Steel	Stainless Steel	Aluminum	Thread Size	Thread Code										
METRIC	ST	STS	STA	M3 x 0.5	M3	3	4	6	8	10	12	14	16	18	N/A
					3.5M3										
	ST	STS	STA	M3.5 x 0.6	M3.5	3	4	6	8	10	12	14	16	18	20
	ST	STS	STA	M4 x 0.7	M4	3	4	6	8	10	12	14	16	18	20
	ST	STS	STA	M5 x 0.8	M5	3	4	6	8	10	12	14	16	18	20
	D Dimension Min. ± 0.25					None				4			8		

CLINCH ENGINEERING

PART NUMBER DESIGNATION

STG A - 6440 - 10

- STG: Type Grounding Standoff
- A: None = Stainless Steel, A = Aluminum
- 6440: Length Code
- 10: Finish Code



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

MATERIAL:
STG - 300 Series Stainless
STGA – 7075-T6 Aluminum

FINISH:
STG – Passivated and/or Tested per ASTM A380

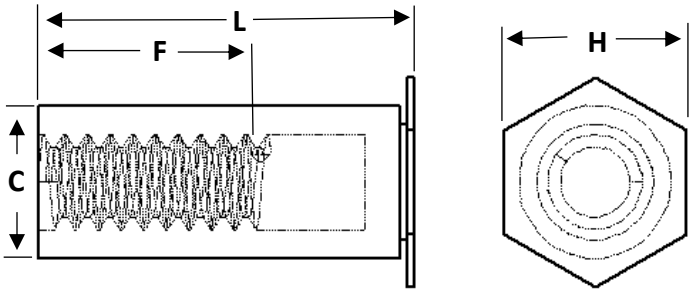
All measurements in inches.

	Type		Thread Code	Thread Size	Min. Sheet Thickness	Hole Size in Sheet +.003 -.000	C +.000 -.005	H ±.005	P Nom.	Min. Dist. Hole C/L to Edge	Length "L" +.010 -.000 (Length Code is in 32nds of an inch)						
	Stainless Steel	Aluminum									.125	.187	.250	.312	.375	.437	.500
Unified	STG	STGA	6440	.112-40 (#4-40)	.040	.213	.212	.250	.030	.27	4	6	8	10	12	14	16
	STG	STGA	8632	.138-32 (#6-32)	.050	.281	.280	.312	.030	.31	4	6	8	10	12	14	16

All measurements in millimeters.

	Type		Thread Code	Thread Size x Pitch	Min. Sheet Thickness	Hole Size in Sheet +0.08	C -0.13	H ±0.25	P Nom.	Min. Dist. Hole C/L to Edge	Length "L" +0.25 (Length Code is in millimeters)					
	Stainless Steel	Aluminum														
METRIC	STG	STGA	3.5M3	M3 x 0.5	1	5.4	5.39	6.4	0.76	6.8	3	4	6	8	10	12

CLINCH ENGINEERING



PART NUMBER DESIGNATION

STT S - 440 - 10 ZI

- **STT** — Type: Standoff for thin sheets
- **S** — Material: None = carbon steel; S = stainless steel; A = aluminum
- **440** — Thread Size Code
- **10** — Length Code
- **ZI** — Finish Code

THREADS:

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

MATERIAL:

STT – Heat-treated Carbon Steel
STTS - 300 Series Stainless
STTA – 7075-T6 Aluminum

FINISH:

STT – Zinc Plated, 5 µm, Colorless
STTS – Passivated and/or Tested per ASTM A380

GENERAL DIMENSION DATA

	Thread Code	Min. Sheet Thickness	Hole Size in Sheet +0.003 -.000	C +.000 - .005	F Min. Thread Depth	H Nom.	Min. Dist. Hole C/L to Edge
UNIFIED	256	.025	.166	.165	.200	.187	.23
	6256	.025	.213	.212		.250	.27
	440	.025	.166	.165	.220	.187	.23
	6440	.025	.213	.212		.250	.27
	632	.025	.213	.212	.270	.250	.27

	Thread Code	Min. Sheet Thickness	Hole Size in Sheet +0.08	C -0.13	F Min. Thread Depth	H Nom.	Min. Dist. Hole C/L to Edge
METRIC	M25	0.63	4.22	4.2	5.2	4.8	5.8
	6M25	0.63	5.41	5.39		6.4	7.1
	M3	0.63	4.22	4.2	6.2	4.8	5.8
	6M3	0.63	5.41	5.39		6.4	7.1
	M35	0.63	5.41	5.39	7	6.4	7.1

THREAD SIZE AND LENGTH SELECTION DATA

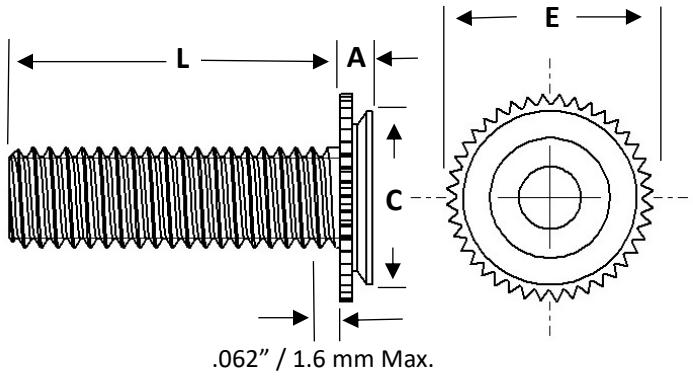
All measurements in inches.

	Type					Length "L" ±.003											
	Steel	Stainless Steel	Aluminum	Thread Size	Thread Code	.090	.125	.187	.250	.312	.375	.437	.500	.562	.625	.687	.750
UNIFIED	STT	STTS	STTA	.086-56 (#2-56)	256	090	125	187	250	312	375	437	500	562	625	687	750
					6256												
	STT	STTS	STTA	.112-40 (#4-40)	440	090	125	187	250	312	375	437	500	562	625	687	750
					6440												
	STT	STTS	STTA	.138-32 (#6-32)	632		125	187	250	312	375	437	500	562	625	687	750

All measurements in millimeters.

	Type					Length "L" ± 0.08									
	Steel	Stainless Steel	Aluminum	Thread Size	Thread Code	2.00	3.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00	18.00
METRIC	STT	STTS	STTA	M2.5 x 0.45	M25	200	300	400	600	800	1000	1200	1400	1600	1800
					6M25										
	STT	STTS	STTA	M3 x 0.5	M3	200	300	400	600	800	1000	1200	1400	1600	1800
					6M3										
	STT	STTS	STTA	M3.5 x 0.6	M35		300	400	600	800	1000	1200	1400	1600	1800

CLINCH ENGINEERING



.062" / 1.6 mm Max.

PART NUMBER DESIGNATION

CO S 1 - 440 6

- **CO** — Type: Concealed-Head
- **S** — Material: S = 300 series stainless steel; A = Aluminum
- **1** — Shank Thickness
- **440** — Thread Size Code
- **6** — Length Code

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

MATERIAL:
COS – 300 Series Stainless Steel
COA - Aluminum

FINISH:
COS – Passivated and/or Tested per ASTM A380

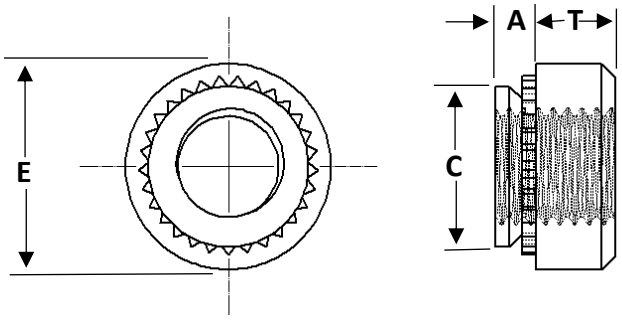
All measurements in inches.

	Type		Thread Size	Thread Code	Min. Sheet Thickness	A Max	Min. Depth of Blind Hole	Blind Mounting Hole Dia. +.003 -.000	E ±.010	C Max.	Min. Dist. Hole C/L to Edge	Max. Hole in Attached Parts	Length Code "L" ± .015 (Length Code is in 16th of an inch)				
	Aluminum	Stainless Steel											.250	.375	.500	.625	.750
UNIFIED	COA1	COS1	.112-40 (#4-40)	440	.062	.041	.043	.172	.205	.171	.156	.135	4	6	8	10	12
	COA2	COS2			.093	.071	.075										
	COA1	COS1	.138-32 (#6-32)	632	.062	.041	.043	.213	.250	.212	.188	.160	4	6	8	10	12
	COA2	COS2			.093	.071	.075										
	COA1	COS1	.164-32 (#8-32)	832	.062	.041	.043	.290	.328	.289	.219	.185	4	6	8	10	12
	COA2	COS2			.093	.071	.075										
	COA1	COS1	.190-32 (#10-32)	032	.062	.041	.043	.312	.350	.311	.250	.210	N/A	6	8	10	12
	COA2	COS2			.093	.071	.075										

All measurements in millimeters.

	Type		Thread Size x Pitch	Thread Code	Min. Sheet Thickness	A Max	Min. Depth of Blind Hole	Blind Mounting Hole Dia. +.008	E ±0.25	C Max.	Min. Dist. Hole C/L to Edge	Max. Hole in Attached Parts	Length Code "L" ± 0.4 (Length Code is in millimeters)				
	Aluminum	Stainless Steel															
UNIFIED	COA1	COS1	M3 x 0.5	M3	1.6	1.04	1.1	4.37	5.21	4.35	4	3.6	6	8	10	12	16
	COA2	COS2			2.4	1.8	1.91										
	COA1	COS1	M4 x 0.7	M4	1.6	1.04	1.1	7.37	8.33	7.35	5.6	4.6	6	8	10	12	16
	COA2	COS2			2.4	1.8	1.91										
	COA1	COS1	M5 x 0.8	M5	1.6	1.04	1.1	7.93	8.89	7.9	6.4	5.6	N/A	N/A	10	12	16
	COA2	COS2			2.4	1.8	1.91										

- 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.



PART NUMBER DESIGNATION

NT S - 440 - 1 ZI

- **NT** — Type: Self-Clinching Nut
- **S** — Material: None = heat-treated carbon steel; S = 300 series stainless steel; A = Aluminum
- **440** — Thread Size Code
- **1** — Shank Code
- **ZI** — Finish Code

THREADS:

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

MATERIAL:

NT – Heat-treated Carbon Steel
NTS - 300 Series Stainless
NA – 2024-T4 Aluminum

FINISH:

NT – Zinc Plated, 5 µm, Colorless
NTS – Passivated and/or Tested per ASTM A380

All measurements in inches.

	Carbon Steel	Stainless Steel	Aluminum	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
UNIFIED	NT	NTS	NA	.086-56 (#2-56)	256	0	.030	.030	.166	.165	.250	.070	.19
						1	.038	.040					
						2	.054	.056					
	NT	NTS	NA	.099-48 (#3-48)	348	0	.030	.030	.166	.165	.250	.070	.19
						1	.038	.040					
						2	.054	.056					
	NT	NTS	NA	.112-40 (#4-40)	440	0	.030	.030	.166	.165	.250	.070	.19
						1	.038	.040					
						2	.054	.056					
						3	.087	.091					
	NT	NTS	NA	.138-32 (#6-32)	632	0	.030	.030	.1875	.187	.280	.070	.22
						1	.038	.040					
						2	.054	.056					
						3	.087	.091					
	NT	NTS	NA	.164-32 (#8-32)	832	0	.030	.030	.213	.212	.310	.090	.27
						1	.038	.040					
						2	.054	.056					
						3	.087	.091					
	NT	NTS	NA	.190-24 (#10-24)	024	0	.030	.030	.250	.249	.340	.090	.28
						1	.038	.040					
						2	.054	.056					
						3	.087	.091					
	NT	NTS	NA	.190-32 (#10-32)	032	0	.030	.030	.250	.249	.340	.090	.28
						1	.038	.040					
						2	.054	.056					
						3	.087	.091					
	NT	NTS	NA	.216-24 (#12-24)	1224	1	.038	.040	.277	.276	.370	.130	.31
						2	.054	.056					
						3	.087	.091					
	NT	NTS	NA	.250-20 (1/4-20)	0420	0	.045	.047	.344	.343	.440	.170	.34
						1	.054	.056					
						2	.087	.091					
						3	.120	.125					
	NT	NTS	NA	.250-28 (1/4-28)	0428	1	.054	.056	.344	.343	.440	.170	.34
						2	.087	.091					
						3	.120	.125					
	NT	NTS	NA	.313-18 (5/16-18)	0518	1	.054	.056	.413	.412	.500	.230	.38
						2	.087	.091					
						3	.120	.125					

	Carbon Steel	Stainless Steel	Aluminum	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
UNIFIED	NT	NTS	NA	.313-24 (5/16-24)	0524	1	.054	.056	.413	.412	.500	.230	.38
						2	.087	.091					
						3	.120	.125					
	NT	NTS	NA	.375-16 (3/8-16)	0616	1	.087	.091	.500	.499	.560	.270	.44
						2	.120	.125					
						3	.235	.250					
	NT	NTS	NA	.375-24 (3/8-24)	0624	1	.087	.091	.500	.499	.560	.270	.44
						2	.120	.125					
						3	.235	.250					
	NT	NTS	NA	.500-133 (1/2-13)	0813	1	.120	.125	.656	.655	.810	.360	.63
						2	.235	.250					
	NT	NTS	NA	.500-20 (1/2-20)	0820	1	.120	.125	.656	.655	.810	.360	.63
						2	.235	.250					

All measurements in millimeters.

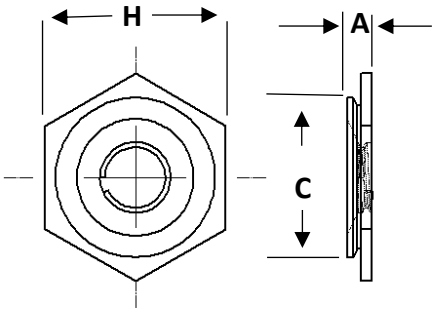
	Carbon Steel	Stainless Steel	Aluminum	Thread Size x Pitch	Thread Code	Shank Code	A (Shank) Max	Min. Sheet Thickness	Hole Size + .08 - .00	C Max.	E ± .25	T ± .25	Min. Dist. Hole C/L To Edge
METRIC	NT	NTS	NA	M2 x 0.4	M2	0	.77	0.8	4.22	4.2	6.3	1.5	4.8
						1	.97	1					
						2	1.38	1.4					
	NT	NTS	NA	M2.5 x 0.45	M2.5	0	.77	0.8	4.22	4.2	6.3	1.5	4.8
						1	.97	1					
						2	1.38	1.4					
	NT	NTS	NA	M3 x 0.5	M3	0	.77	0.8	4.22	4.2	6.3	1.5	4.8
						1	.97	1					
						2	1.38	1.4					
	NT	NTS	NA	M3.5 x 0.6	M3.5	0	.77	0.8	4.75	4.73	7.1	1.5	5.6
						1	.97	1					
						2	1.38	1.4					
	NT	NTS	NA	M4 x 0.7	M4	0	.77	0.8	5.41	5.38	7.9	2	6.9
						1	.97	1					
						2	1.38	1.4					
	NT	NTS	NA	M5 x 0.8	M5	0	.77	0.8	6.35	6.33	8.7	2	7.1
						1	.97	1					
						2	1.38	1.4					
	NT	NTS	NA	M6 x 1	M6	00	.89	.92	8.75	8.72	11.05	4.08	8.6
						0	1.15	1.2					
						1	1.38	1.4					
						2	2.21	2.3					
	NT	NTS	NA	M8 x 1.25	M8	1	1.38	1.4	10.5	10.47	12.65	5.47	9.7
						2	2.21	2.3					
	NT	NTS	NA	M10 x 1.5	M10	1	2.21	2.31	14	13.97	17.35	7.48	13.5
						2	3.05	3.18					

CLINCH ENGINEERING

PART NUMBER DESIGNATION

NF - 440 - 2

- NF: Type Flush Nut
- 440: Thread Code
- 2: Shank Code



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

MATERIAL:
300 Series Stainless

FINISH:
Passivated and/or Tested per ASTM A380

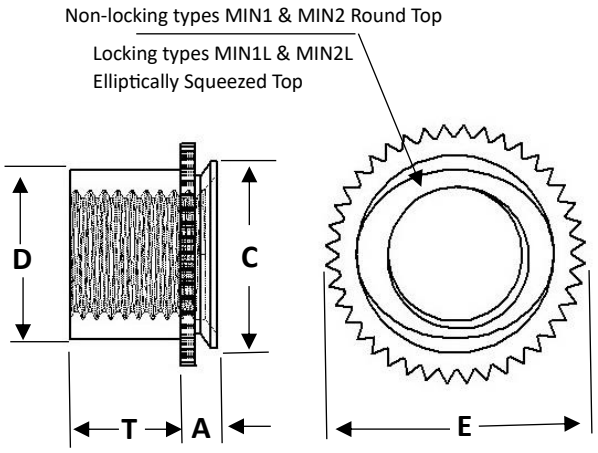
All measurements in inches.

	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							
UNIFIED	NF	.086-56 (#2-56)	256	1	.060	.060-.090	.172	.171	.188	.23
				2	.090	.091				
	NF	.112-40 (#4-40)	440	1	.060	.060-.090	.172	.171	.188	.23
				2	.090	.091				
	NF	.138-32 (#6-32)	632	1	.060	.060-.090	.213	.212	.250	.27
				2	.090	.091				
	NF	.164-32 (#8-32)	832	1	.060	.060-.090	.290	.289	.312	.28
				2	.090	.091				
	NF	.190-32 (#10-32)	032	1	.060	.060-.090	.312	.311	.343	.31
				2	.090	.091				
	NF	.250-20 (1/4-20)	0420	3	.120	.125-.155	.344	.343	.375	.34
				4	.151	.156-.186				
				5	.182	.187				

All measurements in millimeters.

	Type			Shank Code	A Max.	Min. Sheet Thickness	Hole Size	C Max.	H Nom.	Min. Dist. Hole C/L To Edge
	Stainless Steel	Thread Size x Pitch	Thread Code							
METRIC	NF	M2 x 0.4	M2	1	1.53	1.53-2.3	4.37	4.35	4.8	6
				2	2.3	2.32				
	NF	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				
	NF	M3 x 0.5	M3	1	1.53	1.53-2.3	4.37	4.35	4.8	6
				2	2.3	2.32				
	NF	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				
	NF	M5 x 0.8	M5	1	1.53	1.53-2.3	7.92	7.9	8.7	8
				2	2.3	2.32				
	NF	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				

CLINCH ENGINEERING



PART NUMBER DESIGNATION

MIN 1 L - 440

- MIN — Type: Miniature Self-Clinching Fasteners
- 1 — Shank Length Code
- L — L = Locking; None = non-locking
- 440 — Thread Code

THREADS:

Non-Locking: Internal ASME B1.1, 2B/ASME B1.13M, 6H
Locking: Internal, MIL-S-8879, UNJ-3B, ANSI B1.21M

MATERIAL:

300 Series Stainless

FINISH:

Passivated and/or Tested per ASTM A380

All measurements in inches.

	Type		Thread Code	Thread Size	A (Shank) Max.	Sheet Thickness	Hole Size In Sheet +0.03-.000	C +.000 -.005	D Max.	E ±.005	T +.015 -.000	Min. Dist. Hole C/L To Edge	Max. Hole In Attached Parts
	Non-Locking	Self-Locking											
UNIFIED	MIN1	MIN1L	440	.112-40 (#4-40)	.040	.039-.045	.172	.171	.145	.192	.065	.14	.132
	MIN2	MIN2L			.060	.059-.070							
	MIN1	MIN1L	632	.138-32 (#6-32)	.040	.039-.045	.213	.212	.180	.244	.075	.17	.158
	MIN2	MIN2L			.060	.059-.070							
	MIN1	MIN1L	832	.164-32 (#8-32)	.040	.039-.045	.290	.289	.215	.322	.090	.20	.184
	MIN2	MIN2L			.060	.059-.070							
	MIN1	MIN1L	032	.190-32 (#10-32)	.040	.039-.045	.290	.289	.245	.322	.110	.20	.210
	MIN2	MIN2L			.060	.059-.070							
	MIN2	MIN2L	0420	1/4-20	.060	.059-.070	.344	.343	.318	.384	.120	.28	.270
			0428	1/4-28									

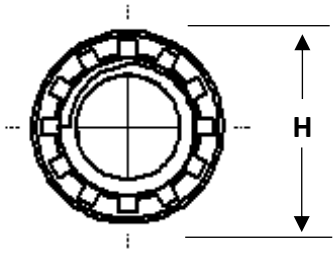
All measurements in millimeters.

	Type		Thread Code	Thread Size x Pitch	A (Shank) Max.	Sheet Thickness	Hole Size In Sheet +0.08	C -.13	D Max.	E ±.13	T +0.4	Min. Dist. Hole C/L To Edge	Max. Hole In Attached Parts
	Non-Locking	Self-Locking											
METRIC	MIN1	MIN1L	M3	M3 x 0.5	1.02	0.99-1.14	4.39	4.37	3.96	4.88	1.9	3.6	3.5
	MIN2	MIN2L			1.53	1.5-1.78							
	MIN1	MIN1L	M4	M4 x 0.7	1.02	0.99-1.14	7.39	7.37	5.23	8.17	2.55	5.2	4.5
	MIN2	MIN2L			1.53	1.5-1.78							
	MIN1	MIN1L	M5	M5 x 0.8	1.02	0.99-1.14	7.39	7.37	6.48	8.17	3.05	5.2	5.5
	MIN2	MIN2L			1.53	1.5-1.78							
	MIN1	MIN1L	M6	M6 x 1	1.53	1.5-1.78	8.74	8.72	7.72	9.74	3.3	7.1	6.5
	MIN2	MIN2L											

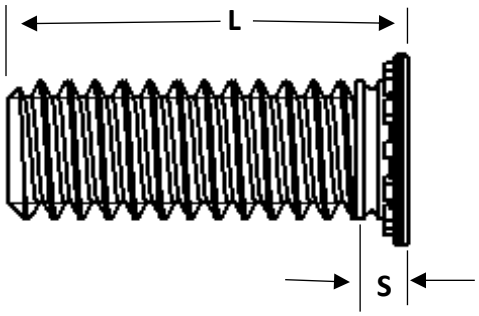
PART NUMBER DESIGNATION

FS **S** **632** - **10** **ZI**

- **FS** — Type: Flush-head stud
- **S** — Material: None = carbon steel; S = 300 series stainless steel; A = Aluminum
- **632** — Thread Size Code
- **10** — Length Code
- **ZI** — Finish Code



Flush-head for sheet thickness of .040”/1mm and greater



unthreaded length

THREADS:

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

MATERIAL:

FS – Heat-treated Carbon Steel
FSS – 300 Series Stainless Steel
FSA - Aluminum

FINISH:

FS – Zinc Plated, 5 µm, Colorless
FSS – Passivated and/or Tested per ASTM A380

All measurements in inches.

	Type					Min. Sheet Thickness	Hole Size +.003 -.000	Max Hole in Attach. Parts	H ±.015	S Max	Min. Dist. Hole C/L Steel to Edge	Length “L” ± .014 (Length Code in 16ths of an inch)				
	Steel	Stainless Steel	Aluminum	Thread Code	Thread Size							.250	.312	.375	.500	.625
UNIFIED	FS	FSS	FSA	256	.086-56 (#2-56)	.040	.085	.105	.144	.075	.187	4	5	6	8	10
	FS	FSS	FSA	440	.112-40 (#4-40)	.040	.111	.135	.176	.085	.219	4	5	6	8	10
	FS	FSS	FSA	632	.138-32 (#6-32)	.040	.137	.160	.206	.090	.250	4	5	6	8	10
	FS	FSS	FSA	832	.164-32 (#8-32)	.040	.163	.185	.237	.090	.281	4	5	6	8	10
	FS	FSS	FSA	024	.190-24 (#10-24)	.040	.189	.210	.256	.100	.281		5	6	8	10
	FS	FSS	FSA	032	.190-32 (#10-32)	.040	.189	.210	.256	.100	.281		5	6	8	10
	FS	FSS	FSA	0420	.250-20 (#1/4-20)	.062	.249	.270	.337	.135	.312			6	8	10
	FS	FSS	FSA	0518	.313-18 (#5/16-18)	.093	.311	.333	.376	.160	.375				8	10

All measurements in millimeters.

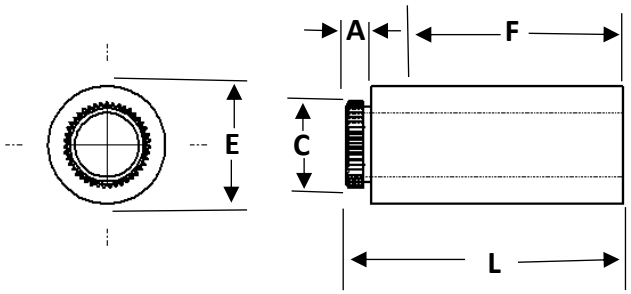
	Type					Min. Sheet Thickness	Hole Size ± .08	Max Hole in Attach. Parts	H ±.4	S Max	Min. Dist. Hole C/L Steel to Edge	Length “L” ± .4 (Length Code in millimeters)				
	Steel	Stainless Steel	Aluminum	Thread Code	Thread Size x Pitch											
METRIC	FS	FSS	FSA	M2.5	M2.5 x 0.45	1	2.5	3.1	4.1	1.95	5.4	6	8	10	12	15
	FS	FSS	FSA	M3	M3 x 0.5	1	3	3.6	4.6	2.1	5.6	6	8	10	12	15
	FS	FSS	FSA	M3.5	M3.5 x 0.6	1	3.5	4.1	5.3	2.25	6.4	6	8	10	12	15
	FS	FSS	FSA	M4	M4 x 0.7	1	4	4.6	5.9	2.4	7.2	6	8	10	12	15
	FS	FSS	FSA	M5	M5 x 0.8	1	5	5.6	6.5	2.7	7.2		8	10	12	15
	FS	FSS	FSA	M6	M6 x 1	1.6	6	6.6	8.2	3	7.9			10	12	15
	FS	FSS	FSA	M8	M8 x 1.25	2.4	8	8.6	9.6	3.7	9.6				12	15

CLINCH ENGINEERING

PART NUMBER DESIGNATION

STE S - 632 – 12 ET

- **STE** — Type: Broaching standoff for Electronics
- **S** — Material: None = carbon steel; S = 300 series stainless steel
- **632** — Thread Code
- **12** — Length Code
- **ET** — Finish Code



THREADS:

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

MATERIAL:

STE – Carbon Steel
STES - 300 Series Stainless Steel

FINISH:

STE - Electro-Plated Bright Tin ASTM B 545, Class B With Clear Preservative Coating
STES - Passivated and/or Tested per ASTM A380

All measurements in inches.

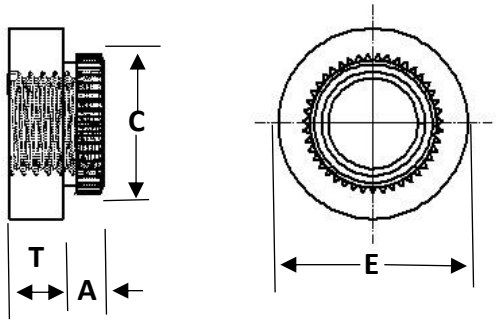
	Type					A (Shank) Max.	Min. Sheet Thickness	Hole Size in Sheet +.003 -.000	C ±.003	E ±.005	Min. Dist. Hole C/L To Edge	Length Code "L" ±.005 (Length Code in 32nds of an inch)			
	Carbon Steel	Stainless Steel	Thread Code	Thread Size	Thru Hole +.004 -.003							.125	.250	.375	.500
UNIFIED	STE	STES	440	.112-40 (#4-40)		.060	.060	.166	.184	.219	.17	4	8	12	16
	STE	STES	632	.138-32 (#6-32)		.060	.060	.213	.213	.281	.22	4	8	12	16
	STE	STES	116		.116	.060	.060	.166	.166	.219	.17	4	8	12	16
	STE	STES	143		.143	.060	.060	.213	.213	.281	.22	4	8	12	16
						"F" Minimum Thread Length (Where Applicable)						Full			.375± .016

All measurements in millimeters.

	Type					A (Shank) Max.	Min. Sheet Thickness	Hole Size in Sheet +0.08	C ±0.08	E ±.013	Min. Dist. Hole C/L To Edge	Length Code "L" ±.005 (Length Code in 32nds of an inch)				
	Carbon Steel	Stainless Steel	Thread Code	Thread Size x Pitch	Thru Hole +.010 -.08											
METRIC	STE	STES	M3	M3 x 0.5		1.53	1.53	4.22	4.68	5.56	4.4	3	4	6	8	10
	STE	STES	3.6		3.6	1.53	1.53	5.41	5.87	7.14	5.5	3	4	6	8	10
	STE	STES	4.2		4.2	1.53	1.53	6.4	6.86	8.74	7.1	3	4	6	8	10
						"F" Minimum Thread Length (Where Applicable)						Full				

- Blind at shank end with .375" minimum thread length from head end.

CLINCH ENGINEERING



PART NUMBER DESIGNATION

NE S 832 - ET

- NE: Type Broaching Nuts
- S: None = Carbon Steel; S = Stainless
- 832: Thread Code
- ET: Finish Code

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

MATERIAL:
NE – Carbon Steel
NES - 300 Series Stainless Steel

FINISH:
NE - Electro-Plated Bright Tin ASTM B 545, Class B With Clear Preservative Coating
NES - Passivated and/or Tested per ASTM A380

FOR USE IN SHEET HARDNESS:
NE – HRB 60 / HB107 or less
NES – HRB 70 / HB125 or less

All measurements in inches.

	Type		Thread Code	Thread Size	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									
UNIFIED	NE	NES	256	.086-56 (#2-56)	.060	.060	.147	.165	.219	.065	0.16
	NE	NES	440	.112-40 (#4-40)	.060	.060	.166	.184	.219	.065	0.17
	NE	NES	632	.138-32 (#6-32)	.060	.060	.213	.231	.281	.065	0.22
	NE	NES	832	.164-32 (#8-32)	.060	.060	.250	.268	.344	.065	0.25
	NE	NES	032	.190-32 (#10-32)	.060	.060	.272	.290	.375	.127	0.28

All measurements in millimeters.

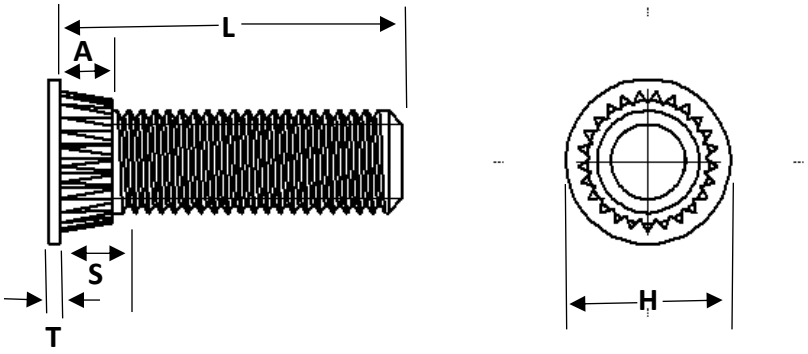
	Type		Thread Code	Thread Size x Pitch	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet +.08	C ±.08	E ±.13	T ±.13	Min. Dist. Hole C/L To Edge
	Carbon Steel	Stainless Steel									
METRIC	NE	NES	M2	M2 x 0.4	1.53	1.53	3.73	4.19	5.56	1.5	4.2
	NE	NES	M2.5	M2.5 x 0.45	1.53	1.53	4.22	4.68	5.56	1.5	4.4
	NE	NES	M3	M3 x 0.5	1.53	1.53	4.22	4.68	5.56	1.5	4.4
	NE	NES	M4	M4 x 0.7	1.53	1.53	6.4	6.86	8.74	2	6.4
	NE	NES	M5	M5 x 0.8	1.53	1.53	6.9	7.37	9.53	3	7.1

CLINCH ENGINEERING

PART NUMBER DESIGNATION

FSE 632 - 8 ET

- FSE — Type Broaching Stud
- 632 — Thread Code
- 8 — Length Code
- ET — Finish Code



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 / HB83 or less

All measurements in inches.

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

All measurements in millimeters.

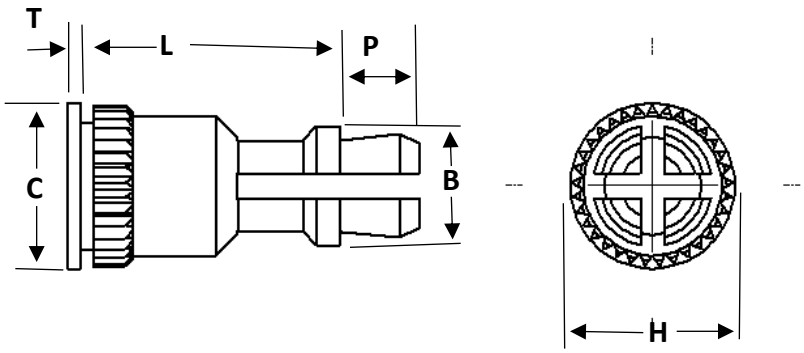
	Type	Thread Code	Thread Size x Pitch	A (Shank) Max.	Min. Sheet Thickness	Hole Size +.08	Max Hole Size in Attached Parts	H ±0.25	S Max	T ±0.13	Min. Dist. Hole C/L Steel to Edge	Length "L" ± 0.25 (Length Code in millimeters)			
METRIC	FSE	M3	M3 x 0.5	1.65	1.53	3	3.7	4.58	2.3	0.51	3.8	6	8	10	12
	FSE	M4	M4 x 0.7	1.65	1.53	4.2	4.8	5.74	2.3	0.51	5.1	6	8	10	12
	FSE	M5	M5 x 0.8	1.65	1.53	5	5.8	6.6	2.3	0.51	5.3	6	8	10	12

CLINCH ENGINEERING

PART NUMBER DESIGNATION

STTB - 156 - 12

- STTB: Type Broaching Standoff
- 156: Hole Diameter Code
- 12: Length Code



MATERIAL:

CDA-353 Brass

FOR USE IN SHEET HARDNESS:

HRB 65 / HB 116 or less

All measurements in inches.

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

All measurements in millimeters.

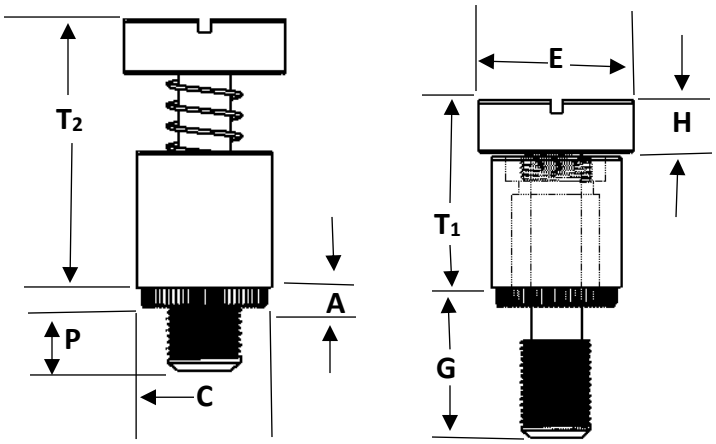
	Type	Top Board Mounting Hole Diameter	Length Code "L" ±.13 (Length Code is in millimeters)										B ±0.13	C ±0.08	H ±0.13	P ±0.13	T ±0.13
METRIC	STTB	4mm	8	10	12	14	16	18	20	24	28	32	4.8	5.74	6.35	3.58	0.51

CLINCH ENGINEERING

PART NUMBER DESIGNATION

BCPS - 632 - 62

- BCPS: Type — Broaching panel fastener
- 632: Thread Code
- 62: Length Code



THREADS:

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

MATERIAL:

Retainer & Screw & Spring – 300 Series Stainless Steel
Retainer Ring – Nylon, temperature limit 200 ° F / 93 ° C

FINISH:

Retainer & Screw – Passivated and/or tested per ASTM A380

All measurements in inches.

	Type	Thread Code	Thread Size	Screw Length	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet +.003 -.000	C ± .003	E ± .010	G ± .016	H ± .005	P ± .025	T_1 Max.	T_2 Nom.	Min. Dist. Hole C/L to Edge
UNIFIED	BCPS	440	.112-40 (#4-40)	40	.060	.060	.265	.283	.312	.250	.072	.000	.36	.54	.20
				62						.375		.125			
				84						.500		.250			
	BCPS	632	.138-32 (#6-32)	40	.060	.060	.281	.299	.344	.250	.072	.000	.36	.54	.26
				62						.375		.125			
				84						.500		.250			

All measurements in millimeters.

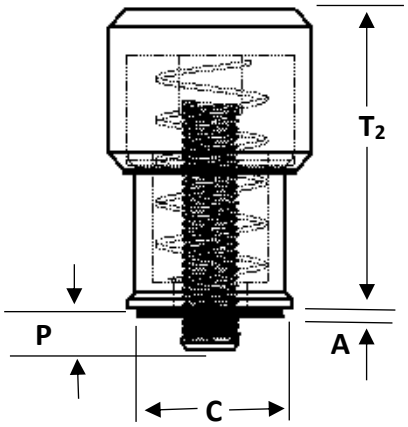
	Type	Thread Code	Thread Size	Screw Length	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet +.003 -.000	C ± 0.08	E ± .25	G ± 0.4	H ± 0.13	P ± 0.64	T_1 Max.	T_2 Nom.	Min. Dist. Hole C/L to Edge
METRIC	BCPS	M3	M3 x 0.5	40	1.53	1.53	6.73	7.19	7.92	6.4	1.83	0	9.14	13.72	5.08
				62						9.5		3.2			
				84						12.7		6.4			

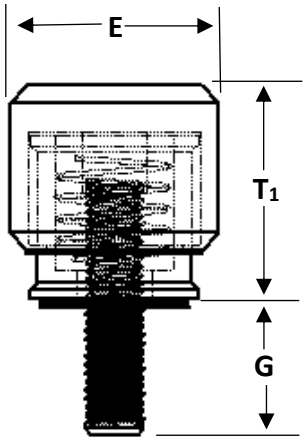
CLINCH ENGINEERING

PART NUMBER DESIGNATION

PAL K - 632 - 1

- PAL – Type panel fastener
- K – Knurled Cap, S – Smooth Cap
- 632 – Thread Code
- 1 – Length Code





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

MATERIAL:
Knob – Aluminum
Retainer – Hardened Carbon Steel
Screw – 400 Series Stainless Steel
Spring – 300 Series Stainless Steel

FINISH:
Retainer – Bright Nickel Over Copper Flash, per ASTM B689, Type II
Screw – Passivated and/or tested per ASTM A380

FOR USE IN SHEET HARDNESS:
HRB 80 or less / HB 150 or less

All measurements in inches.

	Type		Thread Code	Thread Size	Screw Length Code	A Max.	Min. Sheet Thickness	Hole Size In Sheet +.003 -.000	C Max	E ± .010	G ± .025	P ± .025	T_1 Nom.	T_2 Nom.	Driver Size	Min. Dist. Hole C/L to Edge
	Knurled Cap	Smooth Cap														
UNIFIED	PALK	PALS	440	.112-40 (#4-40)	0	.036	.036	.219	.218	.417	.170	.000	.310	.450	#1	.28
					1						.230	.060				
					2						.290	.120				
	PALK	PALS	632	.138-32 (#6-32)	0	.036	.036	.250	.249	.450	.230	.000	.450	.640	#2	.29
					1						.290	.060				
					2						.350	.120				
	PALK	PALS	832	.164-32 (#8-32)	0	.036	.036	.312	.311	.514	.230	.000	.450	.640	#2	.33
					1						.290	.060				
					2						.350	.120				
	PALK	PALS	032	.190-32 (#10-32)	0	.036	.036	.312	.311	.514	.230	.000	.450	.640	#2	.33
					1						.290	.060				
					2						.350	.120				
	PALK	PALS	0420	.250-20 (1/4-20)	0	.036	.036	.375	.374	.575	.290	.000	.530	.790	#3	.46
					1						.350	.060				
					2						.410	.120				

CLINCH ENGINEERING

All measurements in millimeters.

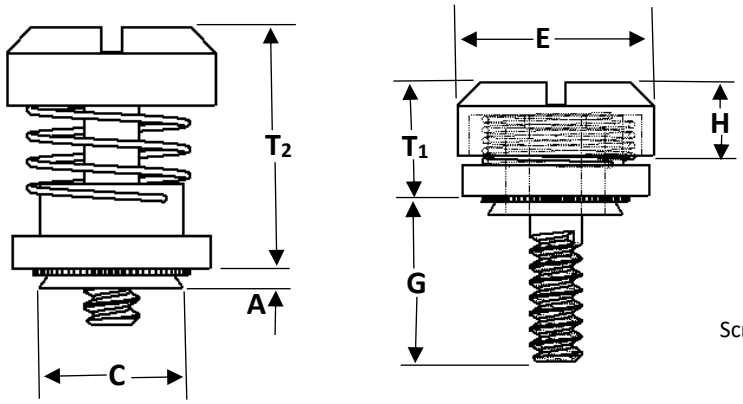
	Type		Thread Code	Thread Size x Pitch	Screw Length Code	A Max.	Min. Sheet Thickness	Hole Size In Sheet +.08	C Max	E ± .25	G ± .64	P ± .64	T_1 Nom.	T_2 Nom.	Driver Size	Min. Dist. Hole C/L to Edge
	Knurled Cap	Smooth Cap														
METRIC	PALK	PALS	M3	M3 x 0.5	0	0.92	0.92	5.56	5.54	10.59	4.32	0	7.87	11.43	#1	7.11
					1						5.84	1.52				
					2						7.37	3.05				
	PALK	PALS	M3.5	M3.5 x 0.6	0	0.92	0.92	6.35	6.33	11.43	5.84	0.	11.43	16.26	#2	7.37
					1						7.37	1.52				
					2						8.89	3.05				
	PALK	PALS	M4	M4 x 0.7	0	0.92	0.92	7.92	7.9	13.06	5.84	0	11.43	16.26	#2	8.38
					1						7.37	1.52				
					2						8.89	3.05				
	PALK	PALS	M5	M5 x 0.8	0	0.92	0.92	7.92	7.9	13.06	5.84	0	11.43	16.26	#2	8.38
					1						7.37	1.52				
					2						8.89	3.05				
	PALK	PALS	M6	M6 x 1	0	0.92	0.92	9.53	9.5	14.61	7.37	0	13.46	20.07	#3	11.68
					1						8.89	1.52				
					2						10.41	3.05				

CLINCH ENGINEERING

PART NUMBER DESIGNATION

PAL 0 - 632 - 30 CN

- PAL — Type panel fastener
- 0 — Shank Code
- 632 — Thread Code
- 30 — Screw Length Code
- CN — Finish Code



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

MATERIAL:
Retainer – Carbon Steel
Screw – Hardened Carbon Steel (#4-40 and M3 sizes only)
Carbon Steel (all other sizes)
Spring – 300 Series Stainless Steel

FINISH:
Retainer – Bright Nickel Over Copper Flash, per ASTM B689, Type II
Screw – Bright Nickel Over Copper Flash, per ASTM B689, Type II

FOR USE IN SHEET HARDNESS:
HRB 60 or less / HB 107 or less

All measurements in inches.

	Type	Thread Code	Thread Size	Screw Length Code	A Max.	Min. Sheet Thickness	Hole Size In Sheet +.003 -.000	C Max	E ± .010	G ± .025	H ± .005	T_1 Nom.	T_2 Nom.	Min. Dist. Hole C/L to Edge
UNIFIED	PAL0	440	.112-40 (#4-40)	30	.030	.030	.203	.202	.406	.300	.202	.325	.595	.26
	PAL1				.038	.040								
	PAL2				.058	.060								
	PAL0	632	.138-32 (#6-32)	30	.030	.030	.219	.218	.438	.300	.202	.325	.595	.28
	PAL1				.038	.040								
	PAL2				.058	.060								
	PAL0	832	.164-32 (#8-32)	30	.030	.030	.250	.249	.468	.300	.207	.330	.600	.29
	PAL1				.038	.040								
	PAL2				.058	.060								
	PAL0	032	.190-32 (#10-32)	30	.030	.030	.312	.311	.530	.300	.220	.335	.605	.33
	PAL1				.038	.040								
	PAL2				.058	.060								
	PAL2	0420	.250-20 (1/4-20)	35	.056	.060	.375	.374	.625	.350	.242	.385	.675	.38

All measurements in millimeters.

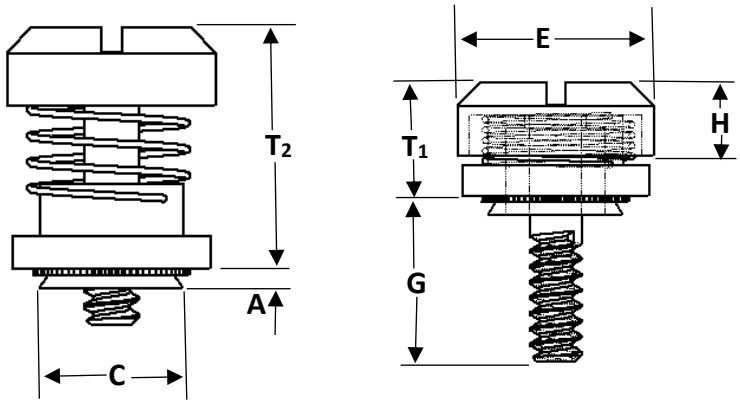
	Type	Thread Code	Thread Size X Pitch	Screw Length Code	A Max.	Min. Sheet Thickness	Hole Size In Sheet +.08	C Max	E ± 0.25	G ± 0.4	H ± 0.13	T_1 Max.	T_2 Nom.	Min. Dist. Hole C/L to Edge
METRIC	PAL1	M3	M3 x 0.5	30	0.97	1	5.5	5.48	10.31	7.62	5.13	826	15.11	6.6
	PAL2				1.48	1.5								
	PAL1	M4	M4 x 0.7	30	0.97	1	6.4	6.38	11.89	7.62	5.26	8.38	15.24	7.37
	PAL2				1.48	1.5								
	PAL1	M5	M5 x 0.8	30	0.97	1	8	7.98	13.46	7.62	5.59	8.51	15.37	8.38
	PAL2				1.48	1.5								
	PAL2	M6	M6 x 1	35	1.48	1.5	9.5	9.48	15.88	8.89	6.12	9.78	17.15	9.65

CLINCH ENGINEERING

PART NUMBER DESIGNATION

PA K 0 - 632 - 0 CN

- PA — Type Panel Fastener
- K — K = Knurled Cap, S = Smooth Cap
- 0 — Shank Code
- 632 — Thread Code
- 0 — Screw Length Code
- CN — Finish Code



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

MATERIAL:
Knob & Retainer – Carbon Steel
Screw – Hardened Carbon Steel
Spring – 300 Series Stainless Steel

FINISH:
Bright Nickel Over Copper Flash, per ASTM B689, Type II

FOR USE IN SHEET HARDNESS:
HRB 60 or less / HB 107 or less

All measurements in inches.

	Type		Thread Code	Thread Size	Screw Length Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet +.003 -.000	C Max.	E ±.010	G ±.025	H ±.008	P ±.025	T_1 Max.	T_2 Nom.	Driver Size	Min. Dist. Hole C/L to Edge
	Knurled Cap	Smooth Cap															
UNIFIED	PAK0	PAS0	440	.112-40 (#4-40)	0	.030	.030	.203	.202	.406	.230	.207	.000	.340	.520	#1	.26
					1						.290		.060				
	PAK1	PAS1			0	.038	.040				.230		.000				
					1						.290		.052				
	PAK2	PAS2			0	.058	.060				.230		.000				
					1						.290		.032				
	PAK0	PAS0	632	.138-32 (#6-32)	0	.030	.030	.219	.218	.438	.230	.207	.000	.340	.520	#2	.28
					1						.290		.060				
	PAK1	PAS1			0	.038	.040				.230		.000				
					1						.290		.052				
	PAK2	PAS2			0	.058	.060				.230		.000				
					1						.290		.032				
	PAK0	PAS0	832	.164-32 (#8-32)	0	.030	.030	.249	.249	.468	.230	.217	.000	.340	.520	#2	.29
					1						.290		.060				
	PAK1	PAS1			0	.038	.040				.230		.000				
					1						.290		.052				
	PAK2	PAS2			0	.058	.060				.230		.000				
					1						.290		.032				
	PAK0	PAS0	032	.190-32 (#10-32)	0	.030	.030	.311	.311	.530	.230	.225	.000	.340	.530	#2	.33
					1						.290		.060				
	PAK1	PAS1			0	.038	.040				.230		.000				
					1						.290		.052				
	PAK2	PAS2			0	.058	.060				.230		.000				
					1						.290		.032				
	PAK2	PAS2	0420	.250-20 (1/4-20)	0	.058	.060	.375	.374	.625	.280	.246	.000	.395	.600	#2	.38
					1						.340		.060				

CLINCH ENGINEERING

All measurements in millimeters.

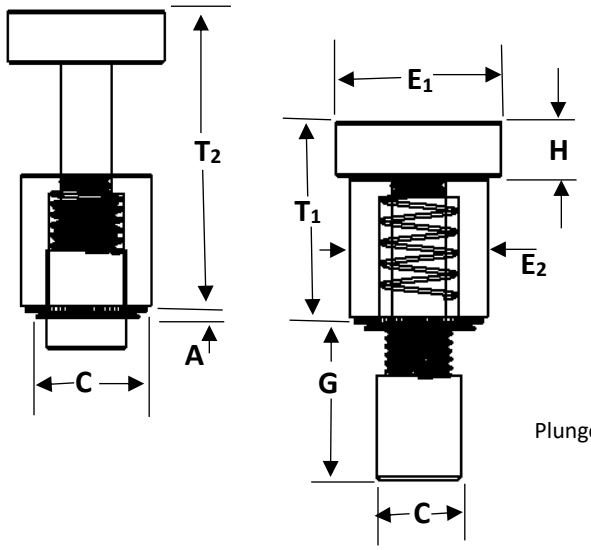
	Type		Thread Code	Thread Size	Screw Length Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet +.08	C Max.	E ±0.25	G ±0.64	H ±0.2	P ±0.64	T_1 Max.	T_2 Nom.	Driver Size	Min. Dist. Hole C/L to Edge
	Knurled Cap	Smooth Cap															
METRIC	PAK0	PAS0	M3	M3 x 0.5	0	0.77	0.8	5.5	5.48	10.3	5.84	5.26	0	8.64	13.21	#1	6.6
					1						7.37		1.52				
	PAK1	PAS1			0	0.97	1				5.84		0				
					1						7.37		1.32				
	PAK2	PAS2			0	1.48	1.5				5.84		0				
					1						7.37		0.81				
	PAK0	PAS0	M3.5	M3.5 x 0.6	0	0.77	0.8	5.56	5.54	11.1	5.84	5.26	0	8.64	13.21	#2	7.1
					1						7.37		1.52				
	PAK1	PAS1			0	0.97	1				5.84		0				
					1						7.37		1.32				
	PAK2	PAS2			0	1.48	1.5				5.84		0				
					1						7.37		0.81				
	PAK0	PAS0	M4	M4 x 0.7	0	0.77	0.8	6.4	6.38	11.9	5.84	5.51	0	8.64	13.46	#2	7.4
					1						7.37		1.52				
	PAK1	PAS1			0	0.97	1				5.84		0				
					1						7.37		1.32				
	PAK2	PAS2			0	1.48	1.5				5.84		0				
					1						7.37		0.81				
	PAK0	PAS0	M5	M5 x 0.8	0	0.77	0.8	8	7.98	13.5	5.84	5.72	0	8.64	13.46	#2	8.4
					1						7.37		1.52				
	PAK1	PAS1			0	0.97	1				5.84		0				
					1						7.37		1.32				
	PAK2	PAS2			0	1.48	1.5				5.84		0				
					1						7.37		0.81				
	PAK2	PAS2	M6	M6 x 1	0	1.48	1.5	9.5	9.48	15.9	7.11	6.25	0	10.04	15.24	#2	9.7
					1						8.64		1.52				

CLINCH ENGINEERING

PART NUMBER DESIGNATION

SPP 1 - 04 - 4 CN

- SPP — Type: Spring-loaded Plunger
- 1 — 1 = Non-locking, 2 = Locking
- 04 — Plunger Diameter Code
- 4 — Plunger Length Code
- CN — Finish Code



MATERIAL:

Plunger & Retainer – Hardened Carbon Steel
Spring – 300 Series Stainless Steel

FINISH:

Plunger & Retainer - Bright Nickel Over Copper Flash, per ASTM B689, Type II

FOR USE IN SHEET HARDNESS:

HRB 80 or less / HB 150 or less

All measurements in inches.

	Type		Plunger Diameter Code	Plunger Length Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size in Sheet +.003 -.000	C Max.	D +.000 -.005	E_1 ±.010	E_2 ±.010	G ±.010	H ±.010	T_1 ±.010	T_2 Nom.	Min. Dist. Hole C/L to Edge
UNIFIED	Locking	SPP2	04	4	.058	.060	.328	.327	.250	.50	.406	.310	.17	.595	.895	.34
	Non-Locking	SPP1	04	4	.058	.060	.328	.327	.250	.50	.406	.310	.17	.510	.780	.34

All measurements in millimeters.

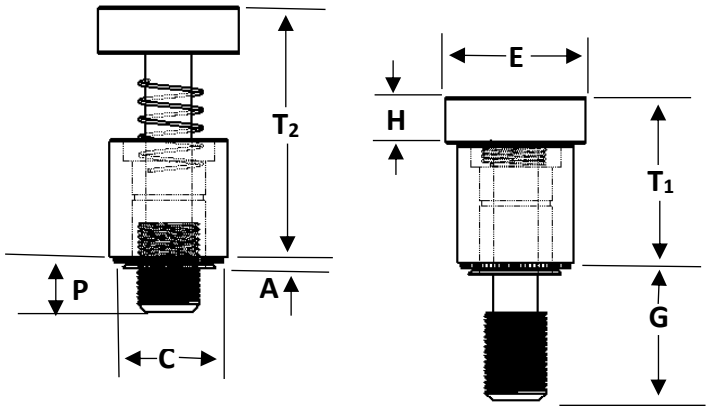
	Type		Plunger Diameter Code	Plunger Length Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size in Sheet +.08	C Max.	D +0.13	E_1 ±0.25	E_2 ±0.25	G ±0.25	H ±0.25	T_1 ±0.25	T_2 Nom.	Min. Dist. Hole C/L to Edge
METRIC	Locking	SPP2	04	4	1.47	1.53	8.33	8.31	6.35	12.7	10.3	7.87	4.32	15.11	22.73	8.64
	Non-Locking	SPP1	04	4	1.47	1.53	8.33	8.31	6.35	12.7	10.3	7.87	4.32	12.95	19.81	8.64

CLINCH ENGINEERING

PART NUMBER DESIGNATION

PPS S - 632 - 40 CN

- PPS — Type: Spring-loaded Plunger
- S — None = Steel; S = Stainless Steel
- 632 — Thread Size Code
- 40 — Screw Length Code
- CN — Finish Code



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

MATERIAL:
Retainer, Screw, Spring – 300 Series Stainless Steel
Retaining Ring – Nylon, temperature limit 200° F / 93 ° C

FINISH:
Retainer & Screw – Passivated and/or tested per ASTM A380

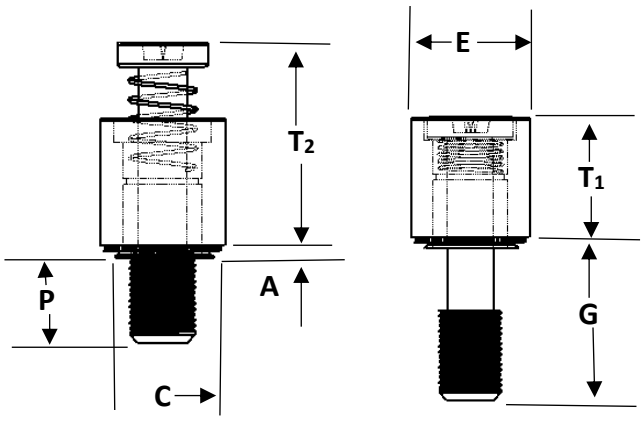
FOR USE IN SHEET HARDNESS:
HRB 70 or less / HB 125 or less

All measurements in inches.

	Type		Thread Code	Thread Size	Screw Length Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size in Sheet +.003 -.000	C Max.	E ±.010	G ±.016	H ±.005	P ±.025	T_1 Max.	T_1 Nom.	Min. Dist. To Edge
	Stainless Steel	Steel														
UNIFIED	PPSS	PPS	440	.112-40 (#4-40)	40	.060	.060	.265	.264	.312	.250	.072	.000	.360	.540	.25
					62						.375		.125			
	PPSS	PPS	632	.138-32 (#6-32)	40	.060	.060	.281	.280	.344	.250	.072	.000	.360	.540	.28
					62						.375		.125			
					84						.500		.250			
	PPSS	PPS	832	.164-32 (#8-32)	50	.060	.060	.312	.311	.375	.312	.082	.000	.450	.690	.31
					72						.437		.125			
					94						.562		.250			
	PPSS	PPS	032	.190-32 (#10-32)	50	.060	.060	.344	.343	.406	.312	.082	.000	.450	.690	.34
					72						.437		.125			
					94						.562		.250			
	PPSS	PPS	0420	.250-20 (1/4-20)	60	.060	.060	.413	.412	.468	.375	.097	.000	.580	.880	.38
					82						.500		.125			
					04						.625		.250			

All measurements in millimeters.

	Type		Thread Code	Thread Size x Pitch	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	P ±0.64	T_1 Max.	T_1 Nom.	Min. Dist. To Edge
	Stainless Steel	Steel														
METRIC	PPSS	PPS	M3	M3 x 0.5	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			
	PPSS	PPS	M4	M4 x 0.7	50	1.53	1.53	7.92	7.9	9.53	7.9	2.08	0	11.43	17.53	7.87
					72						11.1		3.2			
					94						14.3		6.4			
	PPSS	PPS	M5	M5 x 0.8	50	1.53	1.53	8.74	8.72	10.31	7.9	2.08	0	11.47	17.53	8.63
					72						11.1		3.2			
					94						14.3		6.4			
	PPSS	PPS	M6	M6 x 1	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			



PART NUMBER DESIGNATION

PPS P - 632 - 40 BN

- PPS: Type — Recessed-head panel fastener
- P: Phillips head
- 632: Thread Size Code
- 40: Screw Length Code
- BN: Finish Code

THREADS:

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

MATERIAL:

Retainer & Spring – 300 Series Stainless Steel
Screw – 400 Series Stainless Steel
Retaining Ring – Nylon, temperature limit 200° F / 93 ° C

FINISH:

Retainer & Screw – Passivated and/or tested per ASTM A380

FOR USE IN SHEET HARDNESS:

HRB 70 or less / HB 125 or less

All measurements in inches.

	Type	Thread Code	Thread Size	Screw Length Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size in Sheet +.003 -.000	C Max.	E ±.010	G ±.016	P ±.025	T_1 Max.	T_1 Nom.	Driver Size	Min. Dist. To Edge
UNIFIED	PPSSP	440	.112-40 (#4-40)	40	.060	.060	.265	.264	.312	.250	.000	.370	.540	#1	.25
				62						.375	.125				
	PPSSP	632	.138-32 (#6-32)	40	.060	.060	.281	.280	.344	.250	.000	.380	.540	#2	.28
				62						.375	.125				
				84						.500	.250				
	PPSSP	832	.164-32 (#8-32)	50	.060	.060	.312	.311	.375	.312	.000	.480	.705	#2	.31
				72						.437	.125				
				94						.562	.250				
	PPSSP	032	.190-32 (#10-32)	50	.060	.060	.344	.343	.406	.312	.000	.490	.705	#2	.34
				72						.437	.125				
				94						.562	.250				
	PPSSP	0420	.250-20 (1/4-20)	60	.060	.060	.413	.412	.468	.375	.000	.620	.905	#3	.38
				82						.500	.125				
				04						.625	.250				

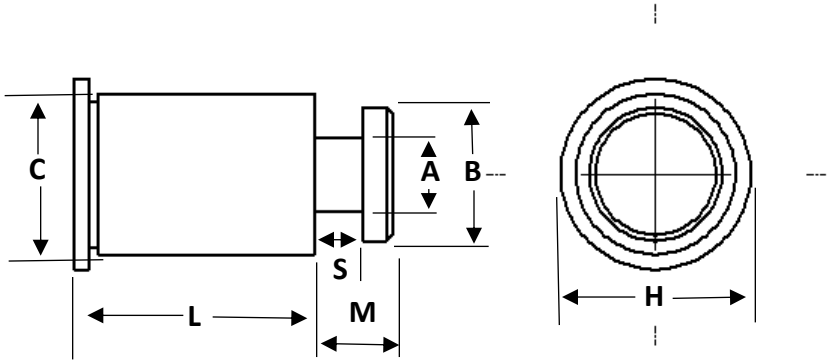
All measurements in millimeters.

	Type	Thread Code	Thread Size x Pitch	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_1 Max.	T_1 Nom.	Driver Size	Min. Dist. To Edge
METRIC	PPSS	M3	M3 x 0.5	40	1.53	1.53	6.73	6.71	7.92	6.4	0	9.4	13.72	#1	6.35
				62						9.5	3.2				
	PPSS	M4	M4 x 0.7	50	1.53	1.53	7.92	7.9	9.53	7.9	0	12.19	17.91	#2	7.87
				72						11.1	3.2				
				94						14.3	6.4				
	PPSS	M5	M5 x 0.8	50	1.53	1.53	8.74	8.72	10.31	7.9	0	12.45	17.91	#2	8.63
				72						11.1	3.2				
				94						14.3	6.4				
	PPSS	M6	M6 x 1	60	1.53	1.53	10.49	10.47	11.89	9.5	0	15.75	22.99	#3	9.65
				82						12.7	3.2				
				04						15.9	6.4				

PART NUMBER DESIGNATION

STST - 6 060 - 12

- STST — Type: Slip-top standoff
- 6 — Body size code
- 060 — Panel 2 Sheet Thickness Code
- 12 — Length Code



MATERIAL:
300 Series Stainless Steel

FINISH:
Passivated and/or Tested per ASTM A380

TYPE STST DIMENSION DATA

All measurements in inches.

	Type	Body Size-Sheet Code	Length "L" ±.005 (Length Code in 32nds of an inch)								A ±.003	B ±.003	C Max.	S ±.003	M Max.	H Nom.	D Anvil Hole +.003 -.000
UNIFIED	Stainless Steel		.063	.125	.188	.250	.312	.375	.437	.500							
	STST	6060	2	4	6	8	10	12	14	16	.009	.177	.212	.068	.108	.250	.216

All measurements in millimeters.

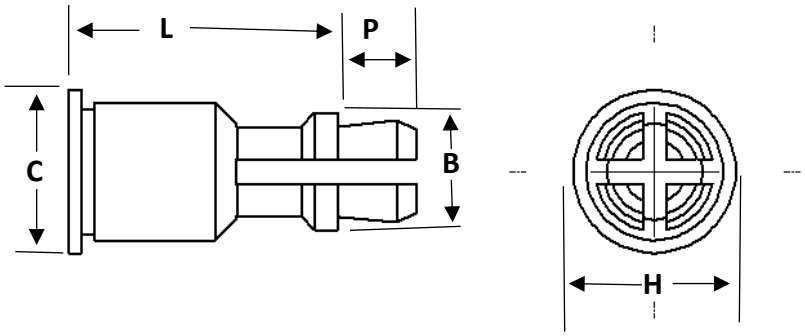
	Type	Body Size-Sheet Code	Length "L" ±.13 (Length Code in millimeters)								A ±.08	B ±.08	C Max.	S ±.08	M Max.	H Nom.	D Anvil Hole +.08
UNIFIED	Stainless Steel																
	STST	61.5	2	4	6	8	10	12	14	16	2.51	4.5	5.39	1.72	2.75	6.35	5.49

CLINCH ENGINEERING

PART NUMBER DESIGNATION

STC S - 156 - 12 ZI

- STC: Type — Click-top Standoff
- S: None = Carbon Steel; S = Stainless Steel; A = Aluminum
- 156: Top Panel Mounting Hole Diameter Code
- 12: Length Code
- ZI: Finish Code



MATERIAL:

STC – Carbon Steel
STCS – 400 Series Stainless Steel
STCA - Aluminum

FINISH:

STC - Zinc Plated, 5 µm, Colorless, plus clear chromate
STCS - Passivated and/or tested per ASTM A380

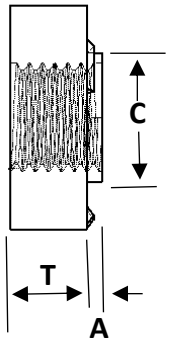
All measurements in inches.

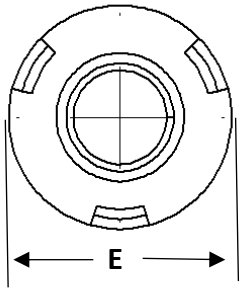
	Type			Top Board Mounting Hole Diameter	Length Code "L" ±.005 (Length Code is in 32nds of an inch)										B ±.005	C Max.	H ±.005	P ±.005
UNIFIED	Fastener Material																	
	Carbon Steel	Stainless Steel	Aluminum		.250	.312	.375	.437	.500	.562	.625	.750	.875	1.00				
	STC	STCS	STCA	156	8	10	12	14	16	18	20	24	28	32	.188	.226	.250	.141

All measurements in millimeters.

	Type			Top Board Mounting Hole Diameter	Length Code "L" ±.013 (Length Code is in millimeter)										B ±0.13	C Max.	H ±0.13	P ±0.13
METRIC	Fastener Material																	
	Carbon Steel	Stainless Steel	Aluminum															
	STC	STCS	STCA	4 mm	8	10	12	14	16	18	20	22	25	30	4.78	5.39	6.35	3.58

CLINCH ENGINEERING





PART NUMBER DESIGNATION

NPW S 832 - 0 CU

- NPW — Type: Projection Weld Nut
- S — None = Carbon Steel; S = Stainless
- 832 — Thread Code
- 0 — Shank Code
- CU — Finish Code

THREADS:

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

MATERIAL:

NPW – Carbon Steel
NPWS - 300 Series Stainless Steel

FINISH:

NPW – Copper Flash
NPWS - Passivated and/or Tested per ASTM A380

All measurements in inches.

	Type		Thread Size	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
	Carbon Steel	Stainless Steel										
UNIFIED	NPW	NPWS	.112-40 (#4-40)	440	0	.030	.030	.173	.172	.308	.063	.154
	NPW	NPWS	.138-32 (#6-32)	632	0	.030	.030	.193	.192	.341	.093	.171
	NPW	NPWS	.164-32 (#8-32)	832	0	.030	.030	.218	.217	.371	.107	.186
	NPW	NPWS	.190-24 (#10-24)	024	0	.030	.030	.250	.249	.44	.155	.22
	NPW	NPWS	.190-32 (#10-32)	032	0	.030	.030	.250	.249	.44	.155	.22
	NPW	NPWS	.250-20 (1/4-20)	0420	0	.048	.048	.316	.315	.522	.185	.261

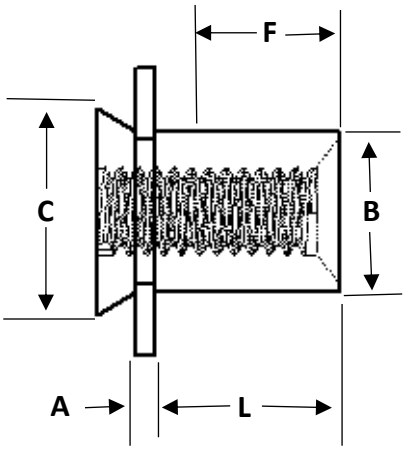
All measurements in millimeters.

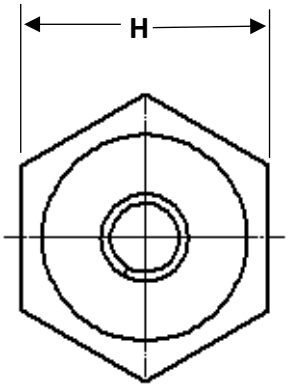
	Type		Thread Size x Pitch	Thread Code	Shank Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet +0.1	C Max.	E -0.25	T ±0.1	Min. Dist. Hole C/L To Edge
	Carbon Steel	Stainless Steel										
METRIC	NPW	NPWS	M3 x 0.5	M3	0	0.77	0.77	4.4	4.37	7.82	1.48	3.91
	NPW	NPWS	M4 x 0.7	M4	0	0.77	0.77	5.54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

PART NUMBER DESIGNATION

STCO 1 - 440 - 10

- STCO — Type Concealed Head Standoff
- 1 — Sheet Thickness
- 440 — Thread Size Code
- 10 — Length Code





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

MATERIAL:
300 Series Stainless

FINISH:
Passivated and/or Tested per ASTM A380

FOR USE IN SHEET HARDNESS:
HRB 70 / HB 125 or less

All measurements in inches.

	Type	Thread Code	Thread Size	Min. Sheet Thickness	Blind Mounting Hole Dia. +.003 -.000	Min. Depth of Blind Hole	Min. Depth Full Thread F	A (Shank) Max.	B Max.	C Max.	H Nom.	Min. Dist. Hole C/L to Edge	Length Code "L" +.002 - .005 (Length code is in 16ths of an inch)				
													.187	.250	.312	.375	.500
UNIFIED	STCO1	440	.112-40 (#4-40)	.062	.213	.043	.188	.041	.165	.212	.250	.188	3	4	5	6	8
	STCO2			.093		.075		.072									
	STCO1	632	.138-32 (#6-32)	.062	.290	.043	.250	.041	.213	.289	.312	.219	3	4	5	6	8
	STCO2			.093		.075		.072									
	STCO1	832	.164-32 (#8-32)	.062	.312	.043	.250	.041	.245	.311	.344	.250	3	4	5	6	8
	STCO2			.093		.075		.072									
	STCO1	032	.190-32 (#10-32)	.062	.344	.043	.375	.041	.290	.343	.375	.281	3	4	5	6	8
	STCO2			.093		.075		.072									
	STCO1	0420	.250-20 (1/4-20)	.063	.309	.043	.375	.041	.354	.389	.438	.375	3	4	5	6	8
	STCO2			.093		.075		.072									

All measurements in millimeters.

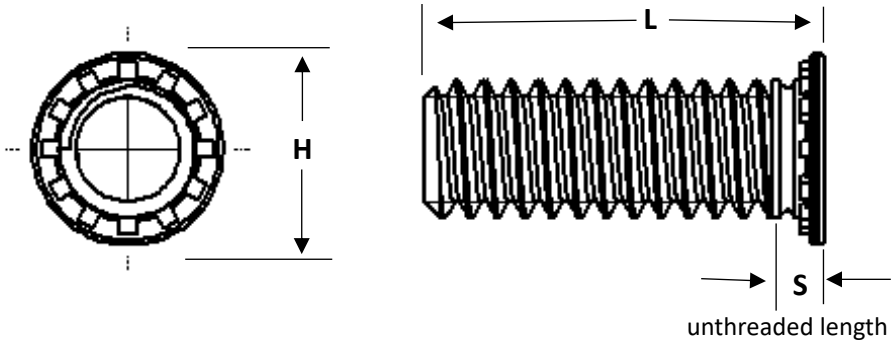
	Type	Thread Code	Thread Size x Pitch	Min. Sheet Thickness	Blind Mounting Hole Dia. +0.08	Min. Depth of Blind Hole	Min. Depth Full Thread F	A (Shank) Max.	B Max.	C Max.	H Nom.	Min. Dist. Hole C/L to Edge	Length Code "L" +0.05 –0.13 (Length code is in millimeters)				
METRIC	STCO1	M3	M3 x 0.5	1.6	5.41	1.1	5	1.04	4.2	5.39	6.35	4.8	4	6	8	10	12
	STCO2			2.4		1.91		1.83									
	STCO1	M4	M4 x 0.7	1.6	7.92	1.1	6.5	1.04	6.23	7.9	8.74	6.4	4	6	8	10	12
	STCO2			2.4		1.91		1.83									
	STCO1	M5	M5 x 0.8	1.6	8.74	1.1	9.6	1.04	7.37	8.72	9.53	7.2	4	6	8	10	12
	STCO2			2.4		1.91		1.83									
	STCO2	M6	M6 x 1	2.4	9.9	1.91	9.6	1.83	9	9.89	11.11	9.5	4	6	8	10	12

CLINCH ENGINEERING

PART NUMBER DESIGNATION

FSL **S** **632** - **10** **ZI**

- **FSL** — Type: Flush-head stud
- **S** — Material: None = carbon steel; S = 300 series stainless steel
- **632** — Thread Size Code
- **10** — Length Code
- **ZI** — Finish Code



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

MATERIAL:
FSL – Heat-treated Carbon Steel
FSLS – 300 Series Stainless Steel

FINISH:
FSL – Zinc Plated, 5 µm, Colorless
FSLS – Passivated and/or Tested per ASTM A380

All measurements in inches.

	Type				Min. Sheet Thickness	Hole Size +.003 -.000	Max Hole in Attach. Parts	H ±.015	S Max	Min. Dist. Hole C/L Steel to Edge	Length "L" ± .015 (Length Code in 16ths of an inch)					
	Steel	Stainless Steel	Thread Code	Thread Size							.250	.312	.375	.500	.625	.750
UNIFIED	FSL	FSLS	256	.086-56 (#2-56)	.040	.085	.100	.112	.080	.098	4	5	6	8	10	12
	FSL	FSLS	440	.112-40 (#4-40)	.040	.111	.126	.138	.085	.124	4	5	6	8	10	12
	FSL	FSLS	632	.138-32 (#6-32)	.040	.137	.152	.164	.090	.150	4	5	6	8	10	12
	FSL	FSLS	832	.164-32 (#8-32)	.040	.163	.178	.190	.090	.176	4	5	6	8	10	12
	FSL	FSLS	032	.190-32 (#10-32)	.040	.189	.204	.225	.100	.210		5	6	8	10	12

All measurements in millimeters.

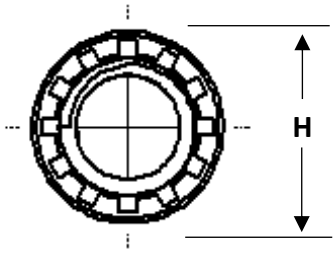
	Type				Min. Sheet Thickness	Hole Size ± .08	Max Hole in Attach. Parts	H ±.4	S Max	Min. Dist. Hole C/L Steel to Edge	Length "L" ± .4 (Length Code in millimeters)							
	Steel	Stainless Steel	Thread Code	Thread Size x Pitch														
METRIC	FSL	FSLS	M2.5	M2.5 x 0.45	1	2.5	2.9	3.15	2.1	2.8	6	8	10	12	15	18		
	FSL	FSLS	M3	M3 x 0.5	1	3	3.2	3.65	2.1	3.3	6	8	10	12	15	18	20	25
	FSL	FSLS	M3.5	M3.5 x 0.6	1	3.5	3.9	4.15	2.3	3.8	6	8	10	12	15	18	20	25
	FSL	FSLS	M4	M4 x 0.7	1	4	4.5	4.65	2.4	4.3	6	8	10	12	15	18	20	25
	FSL	FSLS	M5	M5 x 0.8	1	5	5.2	5.9	2.7	5.6		8	10	12	15	18	20	25

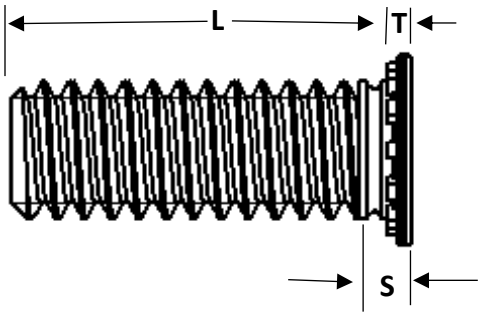
CLINCH ENGINEERING

PART NUMBER DESIGNATION

FST S 632 - 10 ZI

- FST — Type: Non-Flush Stud
- S — Material: None = carbon steel; S = 300 series stainless steel
- 632 — Thread Size Code
- 10 — Length Code
- ZI — Finish Code





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

MATERIAL:
FSL – Heat-treated Carbon Steel
FSLS – 300 Series Stainless Steel

FINISH:
FSL – Zinc Plated, 5 µm, Colorless
FSLS – Passivated and/or Tested per ASTM A380

All measurements in inches.

	Type				Min. Sheet Thickness	Hole Size +.003 -.000	Max Hole in Attach. Parts	H ±.015	S Max	Min. Dist. Hole C/L Steel to Edge	Length "L" ± .015 (Length Code in 16ths of an inch)					
	Steel	Stainless Steel	Thread Code	Thread Size							.250	.312	.375	.500	.625	.750
UNIFIED	FST	FSTS	256	.086-56 (#2-56)	.020	.085	.105	.141	.070	.187	4	5	6	8	10	12
	FST	FSTS	440	.112-40 (#4-40)	.020	.111	.131	.176	.070	.219	4	5	6	8	10	12
	FST	FSTS	632	.138-32 (#6-32)	.020	.137	.157	.137	.070	.250	4	5	6	8	10	12
	FST	FSTS	832	.164-32 (#8-32)	.020	.163	.183	.163	.070	.281	4	5	6	8	10	12
	FST	FSTS	024	.190-24 (#10-24)	.020	.189	.209	.189	.090	.281		5	6	8	10	12
	FST	FSTS	032	.190-32 (#10-32)	.020	.189	.209	.189	.090	.281		5	6	8	10	12

All measurements in millimeters.

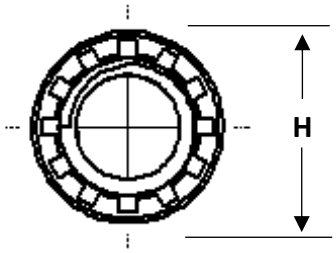
	Type				Min. Sheet Thickness	Hole Size ± .08	Max Hole in Attach. Parts	H ±.4	S Max	Min. Dist. Hole C/L Steel to Edge	Length "L" ± .4 (Length Code in millimeters)							
	Steel	Stainless Steel	Thread Code	Thread Size x Pitch														
METRIC	FST	FSTS	M3	M3 x 0.5	.51	3	3.3	4.5	1.8	5.6	6	8	10	12	15	18	20	25
	FST	FSTS	M4	M4 x 0.7	.51	4	4.7	5.8	1.8	7.2		8	10	12	15	18	20	25
	FST	FSTS	M5	M5 x 0.8	.51	5	5.3	6.4	2.3	7.2		8	10	12	15	18	20	25

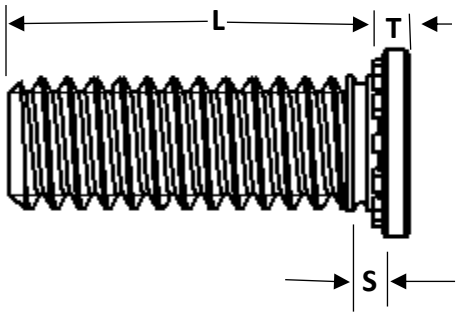
CLINCH ENGINEERING

PART NUMBER DESIGNATION

FSH S 632 - 10 ZI

- FSH: Type — Hight Strength Stud
- S: Material — None = carbon steel; S = 300 series stainless steel; B = Phosphor Bronze
- 632: Thread Size Code
- 10: Length Code
- ZI: Finish Code





unthreaded length

THREADS:

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

MATERIAL:

FSH – Heat-treated Carbon Steel
FSHS – 300 Series Stainless Steel
FSHB – Phosphor Bronze

FINISH:

FSH – Zinc Plated, 5 µm, Colorless
FSHS – Passivated and/or Tested per ASTM A380

All measurements in inches.

	Type					Min. Sheet Thickness	Hole Size +.005 -.000	Max Hole in Attach. Parts	H ±.01	S Max	Min. Dist. Hole C/L Steel to Edge	Length "L" ± .015 (Length Code in 16ths of an inch)				
	Steel	Stainless Steel	Phosphor Bronze	Thread Code	Thread Size							.500	.750	1.00	1.25	1.50
UNIFIED	FSH	FSHS	FSHB	032	.190-32 (#10-32)	.05	.190	.252	.300	.105	.415	8	12	16	20	24
	FSH	FSHS	FSHB	0420	.250-20 (#1/4-20)	.06	.250	.312	.380	.125	.460	8	12	16	20	24
	FSH	FSHS	FSHB	0518	.313-18 (#5/16-18)	.075	.312	.374	.480	.140	.500	8	12	16	20	24
	FSH	FSHS	FSHB	0616	.375-16 (3/8-16)	.090	.375	.437	.580	.155	.530		12	16	20	24

All measurements in millimeters.

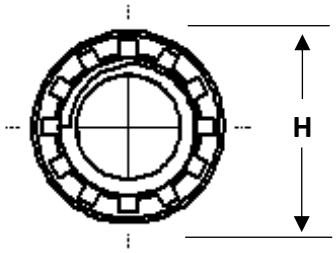
	Type					Min. Sheet Thickness	Hole Size ±0.13	Max Hole in Attach. Parts	H ±0.25	S Max	Min. Dist. Hole C/L Steel to Edge	Length "L" ±0.4 (Length Code in millimeters)				
	Steel	Stainless Steel	Phosphor Bronze	Thread Code	Thread Size x Pitch							15	20	25	30	35
METRIC	FSH	FSHS	FSHB	M5	M5 x 0.8	1.3	5	6.4	7.8	2.7	10.7	15	20	25	30	35
	FSH	FSHS	FSHB	M6	M6 x 1	1.5	6	7.5	9.4	2.8	11.5	15	20	25	30	35
	FSH	FSHS	FSHB	M8	M8 x 1.25	2	8	9.5	12.5	3.5	12.7	15	20	25	30	35
	FSH	FSHS	FSHB	M10	M10 x 1.5	2.3	10	11.5	15.7	4.1	13.7	15	20	25	30	35

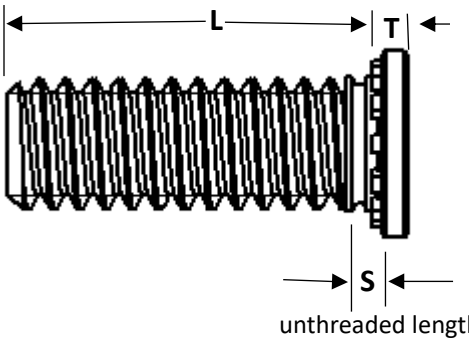
CLINCH ENGINEERING

PART NUMBER DESIGNATION

FSHT - 632 - 10 ZI

- FSHT: Type — High strength studs for thin sheets
- 632: Thread Size Code
- 10: Length Code
- ZI: Finish Code





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

MATERIAL:
Heat-treated Carbon Steel

FINISH:
Zinc Plated, 5 µm, Colorless

All measurements in inches.

	Type			Min. Sheet Thickness	Hole Size +.005 -.000	Max Hole in Attach. Parts	H ±.01	S Max	Min. Dist. Hole C/L Steel to Edge	Length "L" ± .015 (Length Code in 16ths of an inch)						
	Steel	Thread Code	Thread Size							.500	.750	1.00	1.25	1.50	1.75	2.00
UNIFIED	FSHT	032	.190-32 (#10-32)	.040	.190	.280	.357	.102	.360	8	12	16	20	24	28	32
	FSHT	0420	.250-20 (#1/4-20)	.040	.250	.340	.462	.118	.470	8	12	16	20	24	28	32
	FSHT	0518	.313-18 (#5/16-18)	.060	.312	.402	.312	.133	.560	8	12	16	20	24	28	32

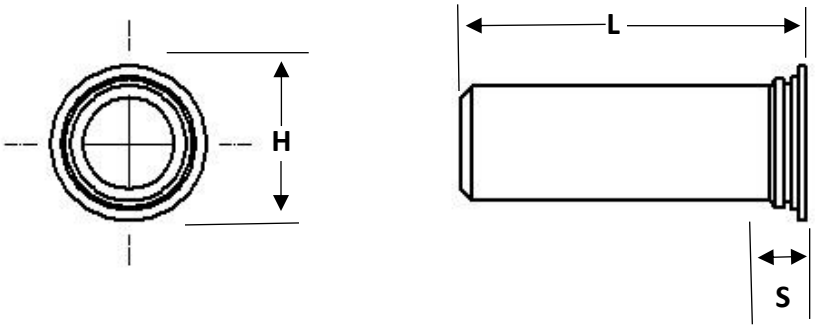
All measurements in millimeters.

	Type			Min. Sheet Thickness	Hole Size ±0.13	Max Hole in Attach. Parts	H ±0.25	S Max	Min. Dist. Hole C/L Steel to Edge	Length "L" ±0.4 (Length Code in millimeters)						
	Steel	Thread Code	Thread Size x Pitch							15	20	25	30	35	40	50
METRIC	FSHT	M5	M5 x 0.8	1	5	7.3	9.6	2.6	10	15	20	25	30	35	40	50
	FSHT	M6	M6 x 1	1	6	8.3	11.35	2.8	11.5	15	20	25	30	35	40	50
	FSHT	M8	M8 x 1.25	1	8	10.3	15.3	3.3	14.5	15	20	25	30	35	40	50

PART NUMBER DESIGNATION

PINS - 125 - 10

- PINS: Type — High strength studs for thin sheets
- 125: Pin Diameter Code
- 10: Length Code



MATERIAL:

300 Series Stainless steel

FINISH:

Passivated and/or Tested Per ASTM A380

All measurements in inches.

	Type 300 Series Stainless Steel	Pin Diameter Code	Pin Diameter P ±.002	Min. Sheet Thickness	Hole Size in Sheet +.003 -.000	D ±.006	H ±.015	S Max.	Min. Dist. Hole C/L to Edge	Length Code "L" ±.015 (Length Code in 16ths of an inch)				
										.375	.500	.625	.750	1.00
UNIFIED	PINS	125	.125	.040	.144	.090	.205	.090	.250	6	8	10	12	
	PINS	187	.187	.040	.205	.132	.270	.090	.280	6	8	10	12	16
	PINS	250	.250	.040	.272	.177	.335	.090	.310	6	8	10	12	16

All measurements in millimeters.

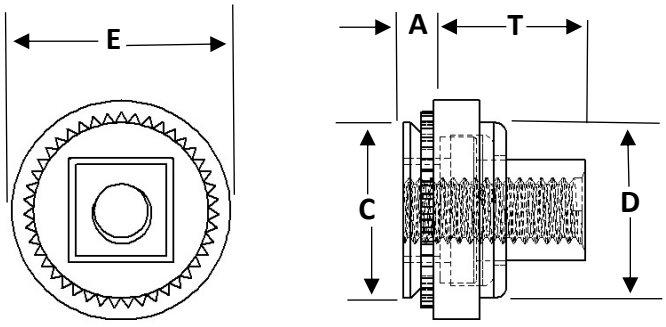
	Type 300 Series Stainless Steel	Pin Diameter Code	Pin Diameter P ±.05	Min. Sheet Thickness	Hole Size in Sheet +.08	D ±.15	H ±.4	S Max.	Min. Dist. Hole C/L to Edge	Length Code "L" ±.4 (Length Code in millimeters)					
METRIC	PINS	3MM	3	1	3.5	2.11	5.2	2.29	6.4	6	8	10	12	16	
	PINS	4MM	4	1	4.5	2.82	6.12	2.29	7.1	6	8	10	12	16	
	PINS	5MM	5	1	5.5	3.53	7.19	2.29	7.6			10	12	16	20
	PINS	6MM	6	1	6.5	4.24	8.13	2.29	7.9				12	16	20

CLINCH ENGINEERING

PART NUMBER DESIGNATION

FLL S - 440 - 1 CN

- FLL: Type Locking Floater
- S: Retainer Material — None = heat-treated carbon steel; S = 300 series stainless steel
- 440: Thread Size Code
- 1: Shank Code
- CN: Finish Code



THREADS:

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

MATERIAL:

Retainer: FL – Heat-treated Carbon Steel
FLS – 300 Series Stainless Steel
Nut: FL – Carbon Steel
FLS - 300 Series Stainless

FINISH:

FL – Zinc Plated, 5 µm, Colorless
FLS – Passivated and/or Tested per ASTM A380

All measurements in inches.

	Type Locking Fastener Material: Steel	Type Locking Fastener Material: 300 Series Stainless Steel	Thread Size	Thread Code	Shank Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size in Sheet +0.03 -.000	C Max.	D Max.	E ± 0.15	T Max.	Min. Dist. Hole C/L to Edge
UNIFIED	FLL	FLLS	.112-40 (#4-40)	440	1	.038	.038	.290	.289	.290	.360	.190	.30
					2	.054	.054						
	FLL	FLLS	.138-32 (#6-32)	632	1	.038	.038	.328	.327	.335	.390	.200	.32
					2	.054	.054						
	FLL	FLLS	.164-32 (#8-32)	832	1	.038	.038	.368	.367	.365	.440	.210	.34
					2	.054	.054						
	FLL	FLLS	.190-24 (#10-24)	024	1	.038	.038	.406	.405	.405	.470	.270	.36
					2	.054	.054						
	FLL	FLLS	.190-32 (#10-32)	032	1	.038	.038	.406	.405	.405	.470	.270	.36
					2	.054	.054						
	FLL	FLLS	.250-20 (1/4-20)	0420	2	.054	.054	.515	.514	.510	.600	.310	.42
	FLL	FLLS	.250-28 (1/4-28)	0428	2	.054	.054	.515	.514	.510	.600	.310	.42

All measurements in millimeters.

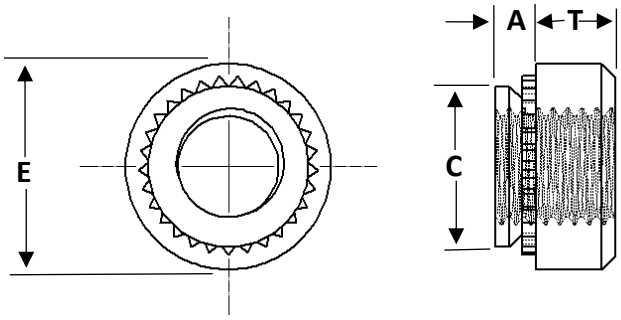
	Type Non-Locking Fastener Material: Steel	Type Non-Locking Fastener Material: 300 Series Stainless Steel	Thread Size x Pitch	Thread Code	Shank Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size in Sheet +0.08	C Max.	D Max.	E ± 0.38	T Max.	Min. Dist. Hole C/L to Edge
METRIC	FLL	FLLS	M3 x 0.5	M3	1	0.97	0.97	7.37	7.35	7.37	9.14	4.83	7.62
					2	1.38	1.38						
	FLL	FLLS	M4 x 0.7	M4	1	0.97	0.97	9.35	9.33	9.28	11.18	5.34	8.64
					2	1.38	1.38						
	FLL	FLLS	M5 x 0.8	M5	1	0.97	0.97	10.31	10.29	10.29	11.94	6.86	9.14
					2	1.38	1.38						
	FLL	FLLS	M6 x 1	M6	2	1.38	1.38	13.08	13.06	12.96	15.24	7.88	10.67

CLINCH ENGINEERING

PART NUMBER DESIGNATION

NTU - 440

- NTU: Type — Self-clinching nut
- 440: Thread Size Code



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

MATERIAL:
300 Series Stainless

FINISH:
Passivated and/or Tested per ASTM A380

All measurements in inches.

	Type	Thread Code	Thread Size	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet +.003 -.000	C Max.	E ±.010	T ±.010	Min. Dist. Hole C/L to Edge
UNIFIED	NTU	256	.086-56 (#2-56)	.024	.025	.136	.135	.220	.065	.15
	NTU	440	.112-40 (#4-40)	.024	.025	.166	.165	.220	.065	.17
	NTU	632	.138-32 (#6-32)	.024	.025	.187	.186	.252	.065	.20

All measurements in millimeters.

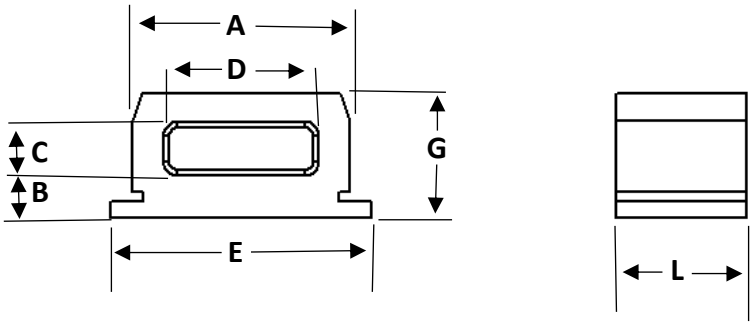
	Type	Thread Code	Thread Size	A (Shank) Max.	Min. Sheet Thickness	Hole Size In Sheet +.08	C Max.	E ±.25	T ±.25	Min. Dist. Hole C/L to Edge
METRIC	NTU	M2.5	M2.5 x 0.45	0.61	0.64	3.8	3.79	5.6	1.4	3.7
	NTU	M3	M3 x 0.5	0.61	0.64	4.24	4.22	5.6	1.4	4.3
	NTU	M3.5	M3.5 x 0.6	0.61	0.64	4.75	4.73	6.4	1.4	5.1

CLINCH ENGINEERING

PART NUMBER DESIGNATION

CAT - 40 - 4

- CAT: Type Cable Tie
- 40: Load Rating
- 4: Length Code



MATERIAL:
17-4 Stainless Steel

FINISH:
Passivated and/or Tested per ASTM A380

All measurements in inches.

	Stainless Steel	Profile	Length Code	Length L ±.003	Sheet Thickness	Hole Size in Sheet +.002 -.001	A ±.003	B ±.006	C ±.006	D ±.006	E ±.006	Height G ±.006	Min. Hole Edge To Sheet Edge K	Min. Hole Edge To Sheet Edge M
UNIFIED	CAT	40	4	.121	.040-.050	.250 x .125	.246	.055	.065	.160	.308	.150	.040	.147
	CAT	60	6	.184	.040-.070	.312 x .187	.308	.075	.065	.205	.370	.180	.040	.196
	CAT	175	12	.371	.040-.125	.500 x .375	.496	.130	.095	.360	.562	.285	.040	.262

All measurements in millimeters.

	Stainless Steel	Profile	Length Code	Length L ±.08	Sheet Thickness	Hole Size in Sheet +0.05 - 0.03	A ±0.08	B ±0.15	C ±0.15	D ±0.15	E ±0.15	Height G ±0.15	Min. Hole Edge To Sheet Edge K	Min. Hole Edge To Sheet Edge M
METRIC	CAT	40	4	3.07	1.02 – 1.27	6.35 x 3.18	6.25	1.4	1.65	4.06	7.82	3.81	1.02	3.73
	CAT	60	6	4.67	1.02 – 1.78	7.93 x 4.75	7.82	1.91	1.65	5.21	9.4	4.57	1.02	4.98
	CAT	175	12	9.42	1.02 – 3.18	12.7 x 9.53	12.6	3.3	2.4	9.14	14.28	7.24	1.02	6.65

CLINCH ENGINEERING

HARDWARE THAT INSTALLS INTO STAINLES 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 sharpening punches for a clean hole. A dull punch will work-harden the hole, creating difficult conditions to install in a stainless-steel sheet.

Type FL4 non-locking and FLL4 self-locking self-clinching floating nuts will permit up to .030”/0.76mm total adjustment for mating hole misalignment in stainless steel sheets.

Type STB4 AND ST4 standoffs provide a permanently mounted fastener that can be used for stacking or spacing components to or from stainless steel panels.

Type FS4 AND FSP self-clinching, flush-head studs can be mounted in stainless steel sheets as thin as .040”/1mm.

Type PPS4 panel fasteners provide “tool only” access to your stainless-steel assemblies.

Type PIN4 self-clinching pins are specifically designed for installation into stainless steel sheets as thin as .040”/1 mm.

Type N400 nuts provide strong load-bearing threads in stainless steel sheets as thin as .030”/0.8mm.

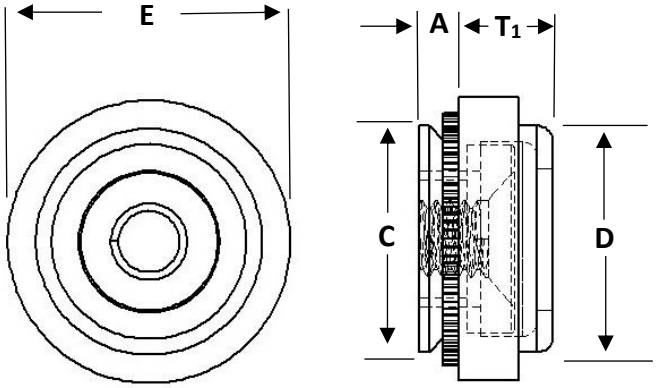
Fasteners made from precipitation hardened grade stainless and A286 stainless are particularly useful in applications such as outdoor equipment, medical devices, and chemical and food processing equipment or anywhere corrosive element exposure is possible.

CLINCH ENGINEERING

PART NUMBER DESIGNATION

FL L 4 - 440 - 1 ZI

- **FL** — Type: Non-locking Floater
- **L** — Material: None = heat-treated carbon steel; S = 300 series stainless steel
- **4 - 440** — Thread Size Code
- **1** — Shank Code
- **ZI** — Finish Code



THREADS:

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

MATERIAL:

Retainer: FL – Heat-treated Carbon Steel
FLS – 300 Series Stainless Steel
Nut: FL – Carbon Steel
FLS - 300 Series Stainless

FINISH:

FL – Zinc Plated, 5 µm, Colorless
FLS – Passivated and/or Tested per ASTM A380

All measurements in inches.

	Type		Thread Size	Thread Code	Shank Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size in Sheet +0.03 -.000	C Max.	D Max.	E ± 0.15	T_1 Max.	T_2 Max.	Min. Dist. Hole C/L to Edge
	Non-Locking	Self-Locking												
UNIFIED	FL4	FLL4	.112-40 (#4-40)	440	1	.038	.038	.290	.289	.290	.360	.130	.190	.30
	FL4	FLL4	.138-32 (#6-32)	632	1	.038	.038	.328	.327	.335	.390	.130	.200	.32
	FL4	FLL4	.164-32 (#8-32)	832	1	.038	.038	.368	.367	.365	.440	.130	.210	.34
	FL4	FLL4	.190-32 (#10-32)	032	1	.038	.038	.406	.405	.405	.470	.170	.270	.36

All measurements in millimeters.

	Type		Thread Size x Pitch	Thread Code	Shank Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size in Sheet +0.08	C Max.	D Max.	E ± 0.38	T_1 Max.	T_2 Max.	Min. Dist. Hole C/L to Edge
	Non-Locking	Self-Locking												
METRIC	FL4	FLL4	M3 x 0.5	M3	1	0.97	0.97	7.37	7.35	7.37	9.14	3.31	4.83	7.62
	FL4	FLL4	M4 x 0.7	M4	1	0.97	0.97	9.35	9.33	9.28	11.18	3.31	5.34	8.64
	FL4	FLL4	M5 x 0.8	M5	1	0.97	0.97	10.31	10.29	10.29	11.94	4.32	6.86	9.14

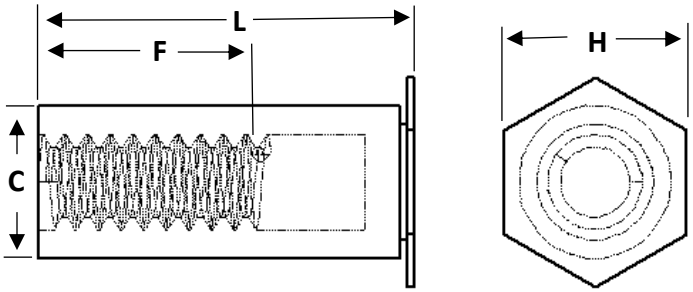
– The increased hardness of stainless-steel panels requires careful consideration when installing self-clinching fasteners.

CLINCH ENGINEERING

PART NUMBER DESIGNATION

STB4 - 440 - 10

- STB4 — Type: Blind Standoff
- 440 — Thread Size Code
- 10 — Length 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 88 / HB 183 or less

GENERAL DIMENSION DATA

All measurements in inches.

	Thread Code	Min. Sheet Thickness	Hole Size in Sheet +0.03 -.000	C +.000 - .005	H Nom.	Min. Dist. Hole C/L to Edge
UNIFIED	440	.040	.116	.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

All measurements in millimeters.

	Thread Code	Min. Sheet Thickness	Hole Size in Sheet +0.08 -.000	C - 0.13	H Nom.	Min. Dist. Hole C/L to Edge
METRIC	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.

	Type	Thread Size	Thread Code	Length "L" +.002 -.005 (Length Code in 32nds of an inch)												
				.312	.375	.437	.500	.562	.625	.687	.750	.812	.875	.937	.100	1.062
UNIFIED	STB4	.112-40 (#4-40)	440	10	12	14	16	18	20	22	24	26	28	30	32	34
			6440													
	STB4	.138-32 (#6-32)	632	10	12	14	16	18	20	22	24	26	28	30	32	34
			8632													
	STB4	.164-32 (#8-32)	832	10	12	14	16	18	20	22	24	26	28	30	32	34
		.190-32 (#10-32)	032													
	F Dimension Min.			.156		.187	.250			.375						

All measurements in millimeters.

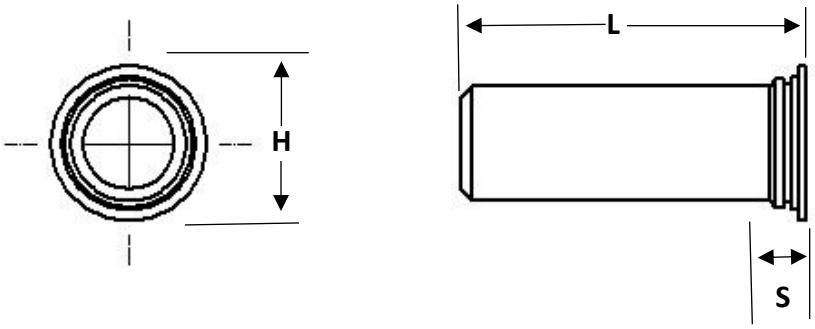
	Type	Thread Size	Thread Code	Length "L" + .05 -.13 (Length Code in millimeters)									
METRIC	STB4	M3 x 0.5	M3	6	8	10	12	14	16	18	20	22	25
			3.5M3										
	STB4	M3.5 x 0.6	M3.5	6	8	10	12	14	16	18	20	22	25
	STB4	M4 x 0.7	M4	6	8	10	12	14	16	18	20	22	25
	STB4	M5 x 0.8	M5	6	8	10	12	14	16	18	20	22	25
	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.

PART NUMBER DESIGNATION

PIN4 - 125 - 10

- PIN4 - Type: High strength studs for thin sheets
- 125 - Pin Diameter Code
- 10 - Length Code



MATERIAL:
400 Series Stainless steel

FINISH:
Passivated and/or Tested Per ASTM A380

All measurements in inches.

	Type 400 Series Stainless Steel	Pin Diameter Code	Pin Diameter P ±.002	Min. Sheet Thickness	Hole Size in Sheet +.003 -.000	D ±.006	H ±.015	S Max.	Min. Dist. Hole C/L to Edge	Length Code "L" ±.015 (Length Code in 16ths of an inch)				
										.375	.500	.625	.750	1.00
UNIFIED	PIN4	125	.125	.040	.144	.090	.205	.090	.250	6	8	10	12	
	PIN4	187	.187	.040	.205	.132	.270	.090	.280	6	8	10	12	16
	PIN4	250	.250	.040	.272	.177	.335	.090	.310		8	10	12	16

All measurements in millimeters.

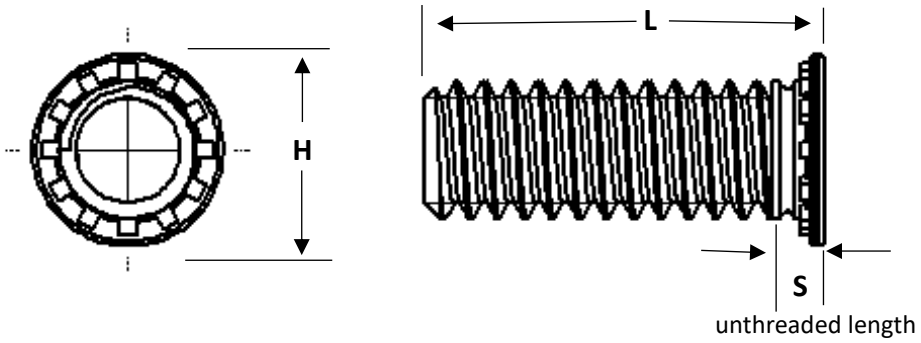
	Type 400 Series Stainless Steel	Pin Diameter Code	Pin Diameter P ±.05	Min. Sheet Thickness	Hole Size in Sheet +.08	D ±.15	H ±.4	S Max.	Min. Dist. Hole C/L to Edge	Length Code "L" ±.4 (Length Code in millimeters)					
METRIC	PIN4	3MM	3	1	3.5	2.11	5.2	2.29	6.4	6	8	10	12	16	
	PIN4	4MM	4	1	4.5	2.82	6.12	2.29	7.1	6	8	10	12	16	
	PIN4	5MM	5	1	5.5	3.53	7.19	2.29	7.6			10	12	16	20
	PIN4	6MM	6	1	6.5	4.24	8.13	2.29	7.9				12	16	20

CLINCH ENGINEERING

PART NUMBER DESIGNATION

FS4 - 632 - 10

- FS4 — Type: Flush-head stud
- 632 — Thread Size Code
- 10 — Length Code



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

MATERIAL:
400 Series Stainless Steel

FINISH:
Passivated and/or Tested per ASTM A380

All measurements in inches.

	Type			Sheet Thickness	Hole Size +.003 -.000	Max Hole in Attach. Parts	H ±.015	S Max	Min. Dist. Hole C/L Steel to Edge	Length "L" ± .015 (Length Code in 16ths of an inch)						
	Stainless Steel	Thread Code	Thread Size							.250	.312	.375	.500	.625	.750	.875
UNIFIED	FS4	440	.112-40 (#4-40)	.040-.095	.111	.131	.176	.085	.219	4	5	6	8	10	12	14
	FS4	632	.138-32 (#6-32)	.040-.095	.137	.157	.206	.090	.250	4	5	6	8	10	12	14
	FS4	832	.164-32 (#8-32)	.040-.095	.163	.183	.237	.090	.281	4	5	6	8	10	12	14
	FS4	032	.190-32 (#10-32)	.040-.095	.189	.209	.256	.100	.281		5	6	8	10	12	14
	FS4	0420	.250-20 (#1/4-20)	.062-.117	.249	.269	.337	.135	.312			6	8	10	12	14

All measurements in millimeters.

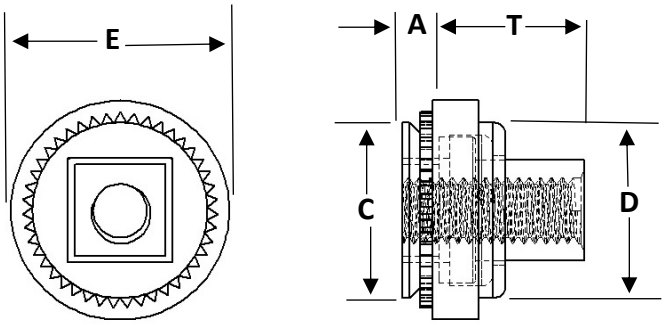
	Type			Sheet Thickness	Hole Size ± .08	Max Hole in Attach. Parts	H ±.4	S Max	Min. Dist. Hole C/L Steel to Edge	Length "L" ± .4 (Length Code in millimeters)								
	Stainless Steel	Thread Code	Thread Size x Pitch															
METRIC	FS4	M3	M3 x 0.5	1-2.4	3	3.3	4.6	2.1	5.6	6	8	10	12	15	18	20	25	
	FS4	M4	M4 x 0.7	1-2.4	4	4.7	5.9	2.4	7.2	6	8	10	12	15	18	20	25	30
	FS4	M5	M5 x 0.8	1-2.4	5	5.3	6.5	2.7	7.2		8	10	12	15	18	20	25	30
	FS4	M6	M6 x 1	1.6-3	6	6.8	8.2	3	7.9			10	12	15	18	20	25	30

CLINCH ENGINEERING

PART NUMBER DESIGNATION

FLL4 - 440 - 1 CN

- FLL4 — Type Locking Floater
- 440 — Thread Size Code
- 1 — Shank Code
- CN — Finish Code



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

MATERIAL:
Retainer: 400 Series Stainless Steel
Nut: 400 Series Stainless

FINISH:
Passivated and/or Tested per ASTM A380

All measurements in inches.

	Type / Locking / Fastener Material / 400 Series Stainless Steel	Thread Size	Thread Code	Shank Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size in Sheet +0.03 -.000	C Max.	D Max.	E ± 0.15	T Max.	Min. Dist. Hole C/L to Edge
UNIFIED	FLLS	.112-40 (#4-40)	440	1	.038	.038	.290	.289	.290	.360	.190	.30
				2	.054	.054						
	FLLS	.138-32 (#6-32)	632	1	.038	.038	.328	.327	.335	.390	.200	.32
				2	.054	.054						
	FLLS	.164-32 (#8-32)	832	1	.038	.038	.368	.367	.365	.440	.210	.34
				2	.054	.054						
	FLLS	.190-24 (#10-24)	024	1	.038	.038	.406	.405	.405	.470	.270	.36
				2	.054	.054						
	FLLS	.190-32 (#10-32)	032	1	.038	.038	.406	.405	.405	.470	.270	.36
				2	.054	.054						

All measurements in millimeters.

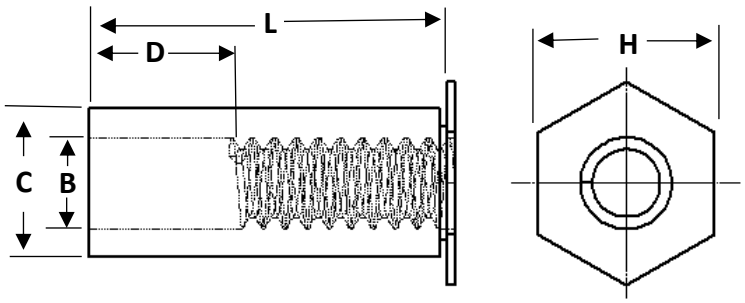
	Type / Non-Locking / Fastener Material / 400 Series Stainless Steel	Thread Size x Pitch	Thread Code	Shank Code	A (Shank) Max.	Min. Sheet Thickness	Hole Size in Sheet +0.08	C Max.	D Max.	E ± 0.38	T Max.	Min. Dist. Hole C/L to Edge
METRIC	FLLS	M3 x 0.5	M3	1	0.97	0.97	7.37	7.35	7.37	9.14	4.83	7.62
				2	1.38	1.38						
	FLLS	M4 x 0.7	M4	1	0.97	0.97	9.35	9.33	9.28	11.18	5.34	8.64
				2	1.38	1.38						
	FLLS	M5 x 0.8	M5	1	0.97	0.97	10.31	10.29	10.29	11.94	6.86	9.14
				2	1.38	1.38						

CLINCH ENGINEERING

PART NUMBER DESIGNATION

ST4 - 440 - 10

- ST4 — Type Thru-hole standoff
- 440 — Thread Size Code
- 10 — Length Code



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

MATERIAL:
400 Series Stainless

FINISH:
Passivated and/or Tested per ASTM A380

SHEET HARDNESS:
HRB 88 / HB 183 or less

GENERAL DIMENSION DATA

	Thread Code	Min. Sheet Thickness	Hole Size in Sheet +0.03 -.000	C +.000 - .005	H Nom.	Min. Dist. Hole C/L to Edge
UNIFIED	440	.040	.116	.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

	Thread Code	Min. Sheet Thickness	Hole Size in Sheet +0.08 -.000	C - 0.13	H Nom.	B ± 0.13	Min. Dist. Hole C/L to Edge
METRIC	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.

	Type			Length "L" +.002 -.005 (Length Code in 32nds of an inch)													
	Stainless Steel	Thread Size	Thread Code	.125	.187	.250	.312	.375	.437	.500	.562	.625	.687	.750	.812	.875	.937
UNIFIED	ST4	.112-40 (#4-40)	440	4	6	8	10	12	14	16	18	20	22	24			
			6440														
	ST4	.138-32 (#6-32)	632	4	6	8	10	12	14	16	18	20	22	24	26	28	30
			8632														
	ST4	.164-32 (#8-32)	832	4	6	8	10	12	14	16	18	20	22	24	26	28	30
		.190-32 (#10-32)	032														
	D Dimension Min. ± 0.010			None				.187				.312				.437	

All measurements in millimeters.

	Type			Length "L" + .05 -.13 (Length Code in millimeters)												
	Stainless Steel	Thread Size	Thread Code													
METRIC	ST4	M3 x 0.5	M3	3	4	6	8	10	12	14	16	18				
			3.5M3													
	ST4	M3.5 x 0.6	M3.5	3	4	6	8	10	12	14	16	18	20	22	25	
	ST4	M4 x 0.7	M4	3	4	6	8	10	12	14	16	18	20	22	25	
	ST4	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		

DECIMAL EQUIVALENTS & DRILL SIZE CHART

DRILL SIZE	UNIFIED (Inches)	METRIC (mm)	DRILL SIZE	UNIFIED (Inches)	METRIC (mm)	DRILL SIZE	UNIFIED (Inches)	METRIC (mm)	DRILL SIZE	UNIFIED (Inches)	METRIC (mm)	DRILL SIZE	UNIFIED (Inches)	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	.619	**43**	.0890	2.261	**15**	.1800	4.572	**M**	.2950	7.493	**39/64**	.6094	45.479
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**	.6462	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	21034
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
¼-20	2000	96	75
¼-28	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

LEANER	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 2.24	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

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