

PennEngineering®

SNAP-TOP® STANDOFFS



BULLETIN

SSA

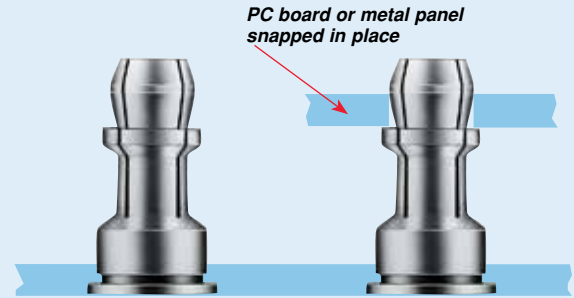


SNAP-TOP® STANDOFFS

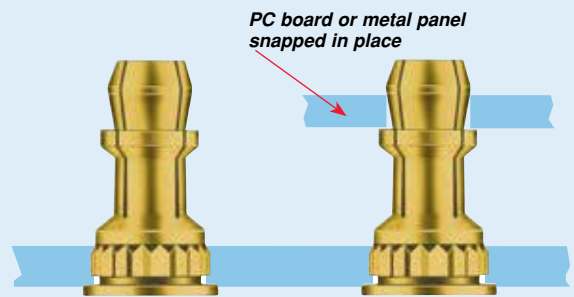
PEM SNAP-TOP® Standoffs (Types SSA, SSS, SSC, KSSB) are designed for permanent installation into metal panels or PC boards.

- Spring action to hold P.C. Boards and subassemblies securely.
- Allows for quick removal.
- Eliminates screws and other threaded hardware.
 - Less parts to handle during assembly.
 - Less risk of damaging delicate circuitry because of loose parts falling into your equipment.
- Permanently installed in the panel.

Installation forces, pushout and snap forces are listed on page 6.



Type SSA, SSS and SSC clinched into a metal panel



Type KSSB mounted into a PC board



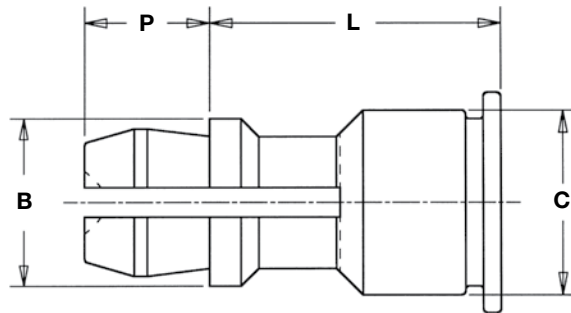
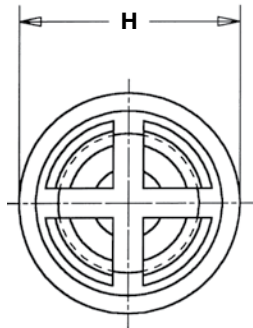
Fastener drawings
and models are
available at
www.pemnet.com



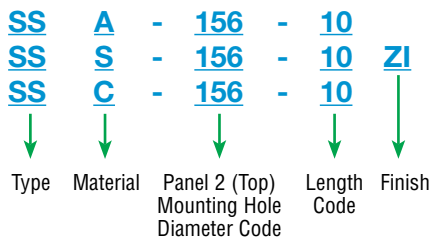
To be sure that you are getting genuine PEM® brand SNAP-TOP® standoffs, look for the "dimple" registered trademark.

SNAP-TOP® STANDOFFS

TYPES SSA™, SSS™, AND SSC™ FOR CLINCHING INTO METAL SHEETS



PART NUMBER DESIGNATION



FASTENER MATERIAL:

Type SSA: Aluminum
 Type SSS: Carbon Steel
 Type SSC: 400 Series Stainless Steel

FINISH:

Type SSA: Natural
 Type SSS: ZI - Zinc plated, 5µm, colorless, plus clear chromate (1)
 Type SSC: Passivated and/or tested per ASTM A380

DIMENSIONAL DATA

All dimensions are in inches.

UNIFIED	Type			Panel 2 (Top) Mounting Hole Diameter Code	Length Code "L" ±.005 (Length Code in 32nds of an inch)									B ±.005	C Max.	H ±.005	P ±.005	
	Fastener Material																	
	Aluminum	Carbon Steel	Stainless Steel															
	SSA	SSS	SSC	156	.250	.312	.375	.437	.500	.562	.625	.750	.875	1.00				

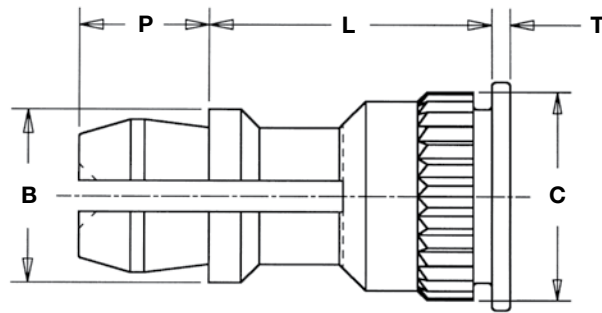
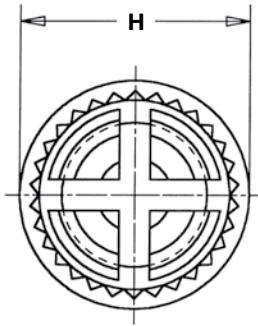
All dimensions are in millimeters.

METRIC	Type			Panel 2 (Top) Mounting Hole Diameter Code	Length Code "L" ±0.13 (Length Code in millimeters)									B ±0.13	C Max.	H ±0.13	P ±0.13
	Fastener Material																
	Aluminum	Carbon Steel	Stainless Steel														
	SSA	SSS	SSC	4MM	8	10	12	14	16	18	20	22	25	4.78	5.39	6.35	3.58

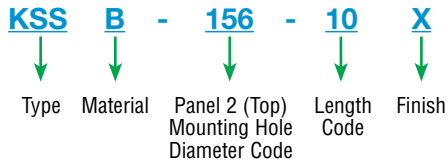
(1) See PEM Technical Support section of our web site for related plating standards and specifications.

SNAP-TOP® STANDOFFS

TYPE KSSB™ FOR BROACHING INTO PC BOARDS



PART NUMBER DESIGNATION



FASTENER MATERIAL:

Free Machining Brass

FINISH:

Standard: X - Plain

Optional*: ET - Electroplated Tin, ASTM B545 Class B (5µm) with preservative coating, annealed (1)

**Available on special order with additional charge.*

DIMENSIONAL DATA

All dimensions are in inches.

UNIFIED	Type	Panel 2 (Top) Mounting Hole Diameter Code	Length Code "L" ±.005 (Length Code in 32nds of an inch)										B ±.005	C ±.003	H ±.005	P ±.005	T ±.005
			.250	.312	.375	.437	.500	.562	.625	.750	.875	1.00					
KSSB		156	8	10	12	14	16	18	20	24	28	32	.188	.226	.250	.141	.020

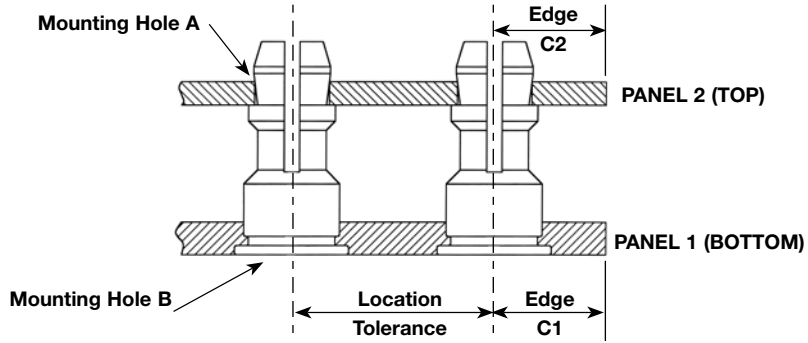
All dimensions are in millimeters.

METRIC	Type	Panel 2 (Top) Mounting Hole Diameter Code	Length Code "L" ±0.13 (Length Code in millimeters)										B ±0.13	C ±0.08	H ±0.13	P ±0.13	T ±0.13
			8	10	12	14	16	18	20	22	25						
KSSB		4MM	8	10	12	14	16	18	20	22	25	4.78	5.74	6.35	3.58	0.51	

(1) See PEM Technical Support section of our web site for related plating standards and specifications.

SNAP-TOP® STANDOFFS

APPLICATION DATA TYPES SSA, SSS, SSC



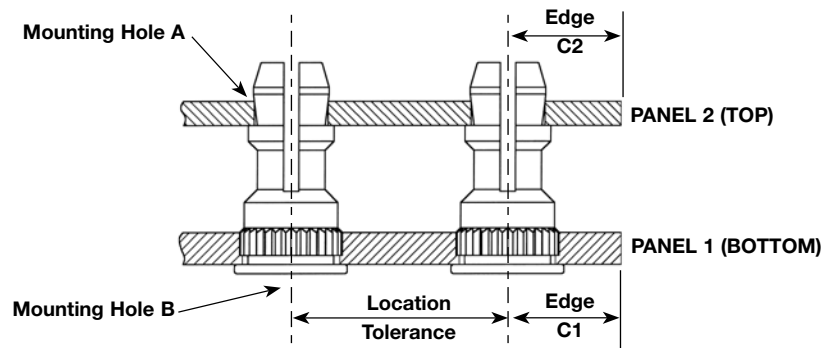
All dimensions are in inches.

UNIFIED	Panel 1							Panel 2				
	Type	Hardness Max. (1)	Bottom Mounting Hole B +.003 -.000	Panel Material	Thickness Min.	Edge Distance C ₁ Min.	Location Tolerance	Hardness Max.	Top Mounting Hole A +.003 -.000	Panel Material	Thickness Range (2)	Edge Distance C ₂ Min.
	SSA	HRB 50 / HB 82	.213	Metal	.040	.260	±.005	No Limit	.156	PC Board or Metal	.040 - .070	.100
	SSS	HRB 60 / HB 107										
	SSC	HRB 70 / HB 125										

All dimensions are in millimeters.

METRIC	Panel 1							Panel 2				
	Type	Hardness Max. (1)	Bottom Mounting Hole B +0.08	Panel Material	Thickness Min.	Edge Distance C ₁ Min.	Location Tolerance	Hardness Max.	Top Mounting Hole A +0.08	Panel Material	Thickness Range (2)	Edge Distance C ₂ Min.
	SSA	HRB 50 / HB 82	5.41	Metal	1	6.6	±0.13	No Limit	4	PC Board or Metal	1 - 1.8	2.54
	SSS	HRB 60 / HB 107										
	SSC	HRB 70 / HB 125										

APPLICATION DATA TYPE KSSB



All dimensions are in inches.

UNIFIED	Panel 1							Panel 2				
	Type	Hardness Max. (1)	Bottom Mounting Hole B +.003 -.000	Panel Material	Thickness Min.	Edge Distance C ₁ Min.	Location Tolerance	Hardness Max.	Top Mounting Hole A +.003 -.000	Panel Material	Thickness Range (2)	Edge Distance C ₂ Min.
	KSSB	HRB 65 / HB 116	.213	PC Board	.050	.220	±.005	No Limit	.156	PC Board or Metal	.040 - .070	.100

All dimensions are in millimeters.

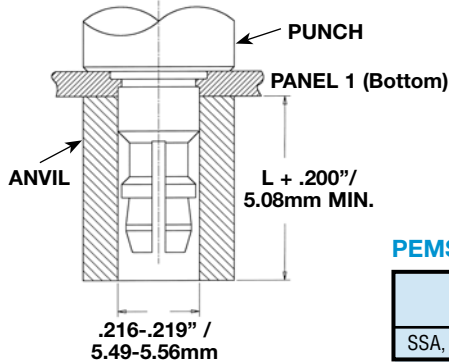
METRIC	Panel 1							Panel 2				
	Type	Hardness Max. (1)	Bottom Mounting Hole B +0.08	Panel Material	Thickness Min.	Edge Distance C ₁ Min.	Location Tolerance	Hardness Max.	Top Mounting Hole A +0.08	Panel Material	Thickness Range (2)	Edge Distance C ₂ Min.
	KSSB	HRB 65 / HB 116	5.41	PC Board	1.27	5.59	±0.13	No Limit	4	PC Board or Metal	1 - 1.8	2.54

(1) HRB - Hardness Rockwell "B" Scale. HB - Hardness Brinell.

(2) Available for thicker boards on special order.

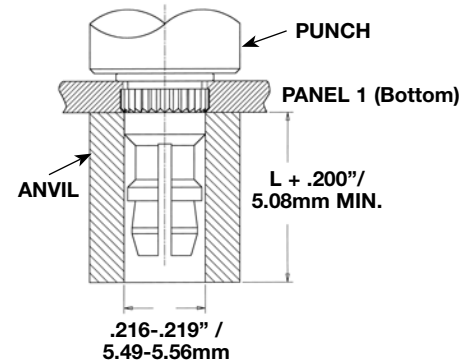
SNAP-TOP® STANDOFFS

INSTALLATION



PEMSERTER® Installation Tooling

Type	Anvil Part Number	Punch Part Number
SSA, SSS, SSC, KSSB	970200015300	975200048



Types SSA, SSS, SSC

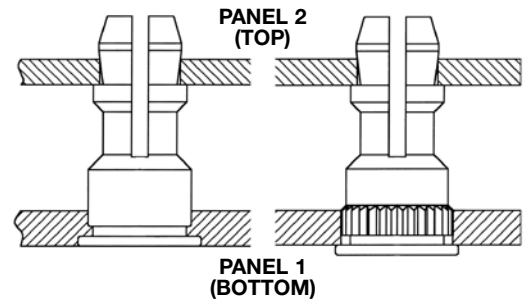
1. Prepare properly sized mounting hole in Panel 1 (Bottom).
2. Place the fastener through the mounting hole (preferably the punch side) of the panel and into the anvil as shown in the drawing.
3. With punch and anvil surfaces parallel, apply only enough squeezing force to embed the head flush with the panel.

Type KSSB

1. Prepare properly sized mounting hole in Panel 1 (Bottom).
2. Place the fastener through the mounting hole of the board and into the anvil as shown in the drawing.
3. With punch and anvil surfaces parallel, apply only enough squeezing force to bring the head into contact with the board.

PERFORMANCE DATA⁽¹⁾

UNIFIED	Type	Panel 1 (Bottom)			Panel 2 (Top) (Removable)		
		Test Sheet Material	Installation (lbs.)	Pushout (lbs.)	Max. First on Snap Force (lbs.)	Min. First off Snap Force (lbs.)	Min. 15th off Snap Force (lbs.)
	SSA	Aluminum	1500	200	13	3	1
	SSS	Aluminum	1500	200	20	6	2
	SSC	Aluminum	1500	200	20	6	2
	SSS	Cold-rolled Steel	3600	400	20	6	2
	SSC	Cold-rolled Steel	3600	400	20	6	2
	KSSB	FR-4 Fiberglass	500	110	13	3	1



METRIC	Type	Panel 1 (Bottom)			Panel 2 (Top) (Removable)		
		Test Sheet Material	Installation (kN)	Pushout (N)	Max. First on Snap Force (N)	Min. First off Snap Force (N)	Min. 15th off Snap Force (N)
	SSA	Aluminum	6.7	890	58	13	4
	SSS	Aluminum	6.7	890	89	27	9
	SSC	Aluminum	6.7	890	89	27	9
	SSS	Cold-rolled Steel	16	1780	89	27	9
	SSC	Cold-rolled Steel	16	1780	89	27	9
	KSSB	FR-4 Fiberglass	2.2	484	58	13	4

(1) Published installation forces are for general reference. Actual set-up and confirmation of complete installation should be made by observing proper seating of fastener as described in the installation steps. Other performance values reported are averages when all proper installation parameters and procedures are followed. Variations in mounting hole size, sheet material, and installation procedure may affect performance. Performance testing this product in your application is recommended. We will be happy to provide technical assistance and/or samples for this purpose.

Regulatory compliance information is available in Technical Support section of our website. © 2016 PennEngineering.

Specifications subject to change without notice. See our website for the most current version of this bulletin.

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