

MATERIAL & FINISH SPECIFICATIONS

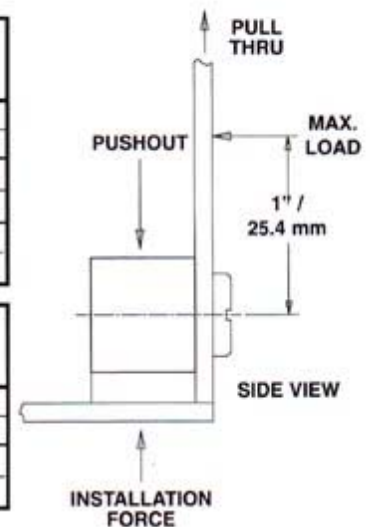
	Threads	Fastener Materials		Standard Finishes		For Use In Sheet Hardness:	
Type	Internal, ANSI B1.1, 2B ANS/ASME B1.13M, 6H	6061-T6 Aluminum	Sintered Steel	Zinc Per ASTM B 633 SC1 (5µm), Type III, Colorless	Natural	45 or Less on the Rockwell "B" scale	60 or Less on the Rockwell "B" scale
RAA		*			*	*	
RAS	*		*	*			*
Part Number Codes for Finishes				Z1	None		

PERFORMANCE DATA⁽¹⁾

Type RAA

UNIFIED	Screw Size Code	Height Code	Length Code	Thread Forming Torque (in. lbs.)	Max. Rec. Tightening Torque (in. lbs.)	Test Sheet Material	Installation (lbs.)	Pushout (lbs.)	Max. Load (lbs.) (2)	Pull Thru (lbs.)
	4	9	6	3	6	5052-H34 Aluminum	1800	140	8	80
			8	4	10	Aluminum	1800	180	13	80
	6	10	8	5.5	11	5052-H34 Aluminum	2500	175	12	85
			10	5.5	17	Aluminum	2500	235	16	85
	8	12	9	6.5	18	5052-H34 Aluminum	3100	205	13	105
			12	8.0	20	Aluminum	3100	255	21	105

METRIC	Screw Size Code	Height Code	Length Code	Thread Forming Torque (N•m)	Max. Rec. Tightening Torque (N•m)	Test Sheet Material	Installation (kN)	Pushout (N)	Max. Load (N) (2)	Pull Thru (N)
	M3	7	4	.17	.56	5052-H34 Aluminum	7.1	556	27	356
			6	.23	1.02	Aluminum	7.1	756	44	356
	M4	9	7	.56	2.26	5052-H34 Aluminum	13.3	890	76	423
			9	.56	2.83	Aluminum	13.3	1045	107	423



Type RAS

UNIFIED	Thread Code	Height Code	Length Code	Test Sheet Material									
				5052-H34 Aluminum					Cold-rolled Steel				
				Max. Rec. Tightening Torque (in. lbs.)	Installation (lbs.)	Pushout (lbs.)	Max. Load (lbs.) (2)	Pull Thru (lbs.)	Max. Rec. Tightening Torque (in. lbs.)	Installation (lbs.)	Pushout (lbs.)	Max. Load (lbs.) (2)	Pull Thru (lbs.)
440	9		4	13	1800	100	7	80	16	2400	180	9	80
			6	17	1800	145	8	80	17	2400	260	9	80
			8	17	2100	180	13	80	17	3000	315	15	80
632	10		4	20	2000	100	7	85	20	2500	190	9	85
			8	21	2500	190	12	85	26	3200	335	16	85
			10	21	2800	230	16	85	26	4000	385	20	85
832	12		6	20	2400	140	15	100	27	3200	260	11	100
			9	23	3300	195	16	100	29	4200	345	20	100
			12	30	3500	260	20	100	35	4700	420	27	100

METRIC	Thread Code	Height Code	Length Code	Test Sheet Material									
				5052-H34 Aluminum					Cold-rolled Steel				
				Max. Rec. Tightening Torque (N•m)	Installation (kN)	Pushout (N)	Max. Load (N) (2)	Pull Thru (N)	Max. Rec. Tightening Torque (N•m)	Installation (kN)	Pushout (N)	Max. Load (N) (2)	Pull Thru (N)
M3	7		3	1.47	8	423	36	356	2.26	10.7	778	40	356
			4	1.92	8	534	36	356	2.71	10.7	1001	40	356
			6	2.15	9.3	756	58	356	2.71	13.3	1312	67	356
M4	9		4	2.15	8.9	556	53	423	3.28	11.6	956	44	423
			7	2.6	13.3	890	76	423	4.07	16	1512	80	423
			9	2.83	13.3	1112	93	423	4.52	18.7	1846	116	423

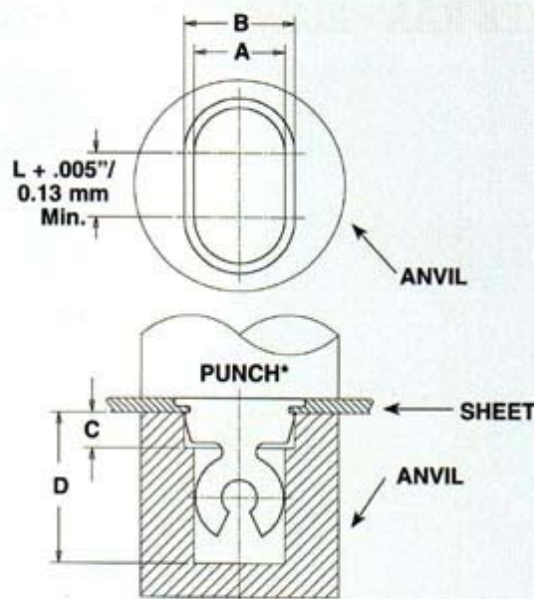
(1) The installation, pushout, and side-load values reported are averages when all installation specifications and procedures are followed. Variations in mounting hole size, sheet material and installation procedure will affect this data. Performance testing of this product in your application is recommended.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

(2) 1" / 25.4 mm from screw centerline.

INSTALLATION

1. Punch a properly sized rectangular mounting hole in the sheet. Do not perform any secondary operations such as deburring.
2. Place the fastener through the mounting hole and into the anvil as shown in the drawing to the right.
3. With the punch and anvil surfaces parallel, apply a squeezing force until the bottom of the fastener becomes flush with the sheet.

* NOTE: The punch must be large enough to cover the entire base of the fastener to ensure proper installation.

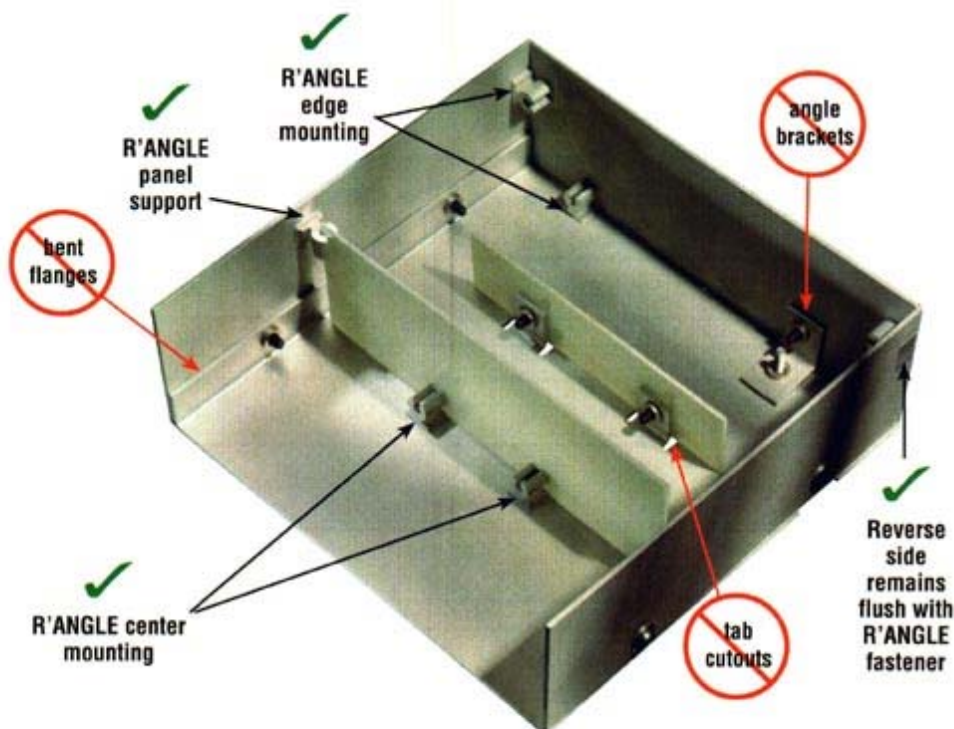


Installation tooling is available from Penn Engineering.

Anvil Dimensions

UNIFIED	Screw or Thread Size Code	Anvil Dimensions (in.)				Anvil Part Number
		A ±.001	B ±.001	C ±.005	D Min.	
	4 / 440	.257	.313	.100	.425	8002711
	6 / 632	.307	.376	.100	.500	8002712
	8 / 832	.357	.407	.100	.575	8003642

METRIC	Screw or Thread Size Code	Anvil Dimensions (mm)				Anvil Part Number
		A ±0.03	B ±0.03	C ±0.1	D Min.	
	M3	6.53	8.02	2.54	10.8	8002713
	M4	9.07	10.03	2.54	12.7	8002714



For mounting to P.C. Boards, ask about ReelFast™ SMT R'ANGLE fasteners which are attached using conventional surface mount techniques.



RoHS compliance information can be found on our web site.

Specifications subject to change without notice.

PennEngineering®



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