

PEM® Type SCBR™ Spinning Clinch Bolts with self-retracting feature



PEM Type SCBR™ Spinning Clinch Bolt installs by simply pressing it into a properly sized hole. The controlled clinching action permanently captivates the screw and spring in the panel and allows the screw to spin freely in the sheet.



Features and Benefits

- Permanently captivates into sheets as thin as .040" / 1.02 mm.
- Spring keeps screw retracted when disengaged.
- Provides economical self-retracting captive screw.
- Replaces loose hardware.
- Allows for close centerline-to-edge distance.
- RoHS compliant.

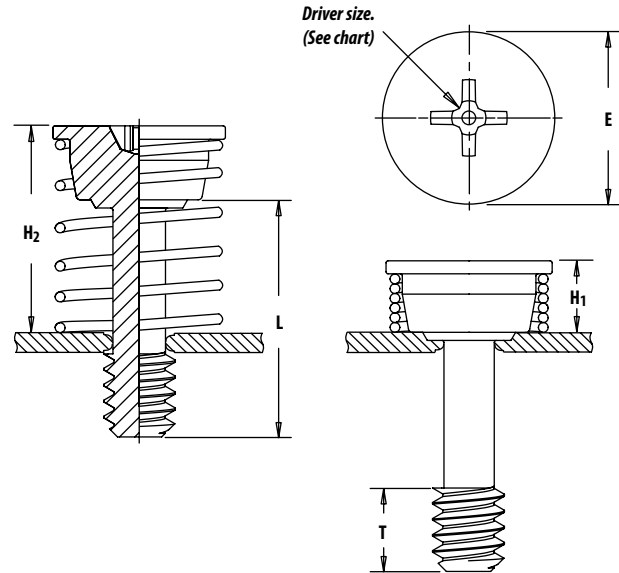
Type SCBR retracted



Type SCBR engaged



Patented



All dimensions are in inches.

UNIFIED	Thread Size	Type	Thread Code	Length Code "L" ±.015 (Length Code in 16ths of an inch)	Min. Sheet Thickness	Hole Size in Sheet +.003 - .000	E +.005 -.010	H ₁ ±.005	H ₂ Ref.	T Nom.	Driver Size	Min. Dist Hole Φ To Edge
				.500								
	.112-40 (#4-40)	SCBR	440	8	.040	.112	.348	.165	.495	.130	#1	.175
	.138-32 (#6-32)	SCBR	632	8	.040	.138	.381	.170	.500	.130	#2	.190
	.164-32 (#8-32)	SCBR	832	8	.040	.164	.410	.175	.505	.130	#2	.205

All dimensions are in millimeters.

METRIC	Thread Size x Pitch	Type	Thread Code	Length Code "L" ±0.4 (Length Code in millimeters)	Min. Sheet Thickness	Hole Size in Sheet +0.08	E +0.13 -0.25	H ₁ ±0.13	H ₂ Ref.	T Nom.	Driver Size	Min. Dist Hole Φ To Edge
	M3 x 0.5	SCBR	M3	12	1.02	3	9.1	4.2	11.8	3.3	#1	4.5
	M4 x 0.7	SCBR	M4	12	1.02	4	10.7	4.5	12.1	3.3	#2	5.4

NOTE: Type SCBR screws are shipped with mating springs.

For designs requiring a specific spring rate, contact our PEM Technical Support group at techsupport@pemnet.com.

Material and Finish Specifications

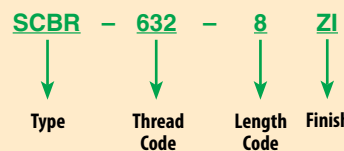
Fastener Material: Screw - Heat-treated carbon steel
Spring - 300 series stainless steel

Finish: Standard: Screw - ZI - Zinc plated, 5 μ m, colorless (1)

For use in sheet hardness:

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

Part Number Designation



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

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Performance Data

UNIFIED	Type	Thread Code	Rec. Tightening Torque (in. lbs.) (1)	Test Sheet Material					
				5052-H34 Aluminum			Cold-rolled Steel		
				Installation (2) (lbs.)	Pushout (2) (lbs.)	Min. Screw Tensile (lbs.)	Installation (2) (lbs.)	Pushout (2) (lbs.)	Min. Screw Tensile (lbs.)
SCBR	440	5	1900	130	590	2600	145	590	
SCBR	632	9	2000	175	990	3500	200	990	
SCBR	832	17	2250	225	1460	3825	260	1460	

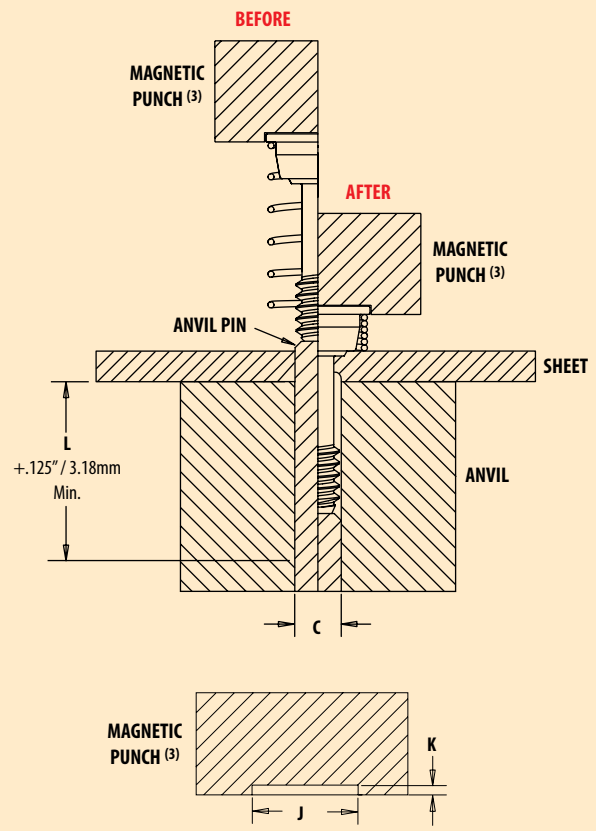
METRIC	Type	Thread Code	Rec. Tightening Torque (N · m) (1)	Test Sheet Material					
				5052-H34 Aluminum			Cold-rolled Steel		
				Installation (2) (kN)	Pushout (2) (N)	Min. Screw Tensile (N)	Installation (2) (kN)	Pushout (2) (N)	Min. Screw Tensile (N)
SCBR	M3	0.74	8	580	3615	12	650	3615	
SCBR	M4	1.7	10	1000	6290	17	1150	6290	

(1) Torque values shown will produce a preload of 70% minimum tensile (125 ksi / 935 MPa) with nut factor "k" equal to .1

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

Installation

1. Prepare properly sized mounting hole in sheet. Do not perform any secondary operations such as deburring. If the hole is punched, be sure to install fastener into punched side of hole.
2. Assemble spring on screw by rotating spring counter clockwise and position assembly into recessed magnetic punch.
3. Position hole in workpiece over retractable anvil pin.
4. With punch and anvil surfaces parallel, apply squeezing force on top of the screw head and the underside of the sheet material. The squeezing action forces the displacer of the screw into the sheet, causing it to reduce the mounting hole diameter and captivate the screw.



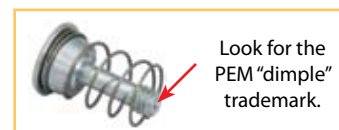
UNIFIED	Thread Code	Installation Tooling Dimensions (inches)			Anvil Part Number	Magnetic Punch Part Number (3)
		C	J	K		
	440	.113 - .116	.354 - .357	.035	97020006300	8016210
	632	.139 - .142	.387 - .390	.035	97020007300	8016211
	832	.165 - .168	.416 - .419	.035	97020008300	8016212

METRIC	Thread Code	Installation Tooling Dimensions (millimeters)			Anvil Part Number	Magnetic Punch Part Number (3)
		C	J	K		
	M3	3.03 - 3.11	9.25 - 9.32	0.89	970200229300	8016213
	M4	4.03 - 4.11	10.8 - 10.9	0.89	970200019300	8016214

(3) Pneumatic punch may also be used. Please contact our PEMSEERTER tooling division for punch part numbers.

RoHS compliance information can be found on our website.
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Specifications subject to change without notice.
Check our website for the most current version of this bulletin.
Technical support e-mail: techsupport@pemnet.com



Look for the PEM "dimple" trademark.

PennEngineering[®]



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