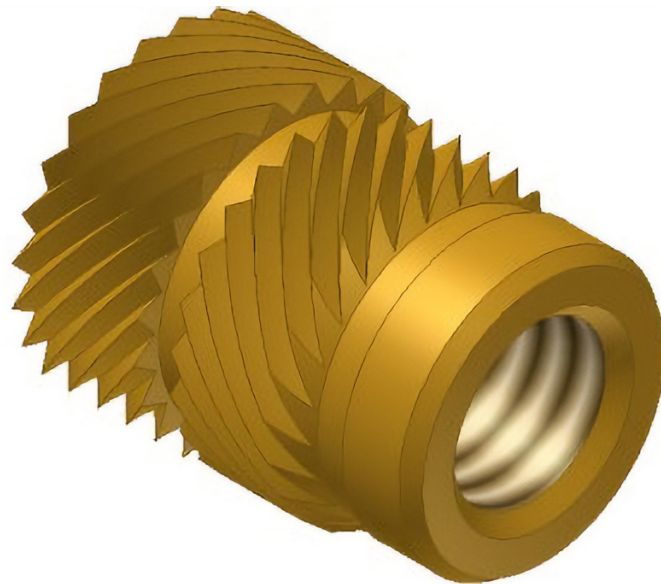


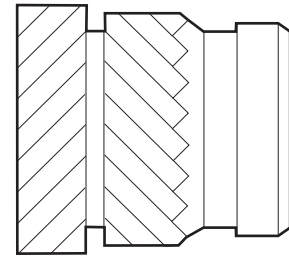
SONIC-LOK[®] INSERTS & STUDS

DESIGNED FOR RAPID INSTALLATION INTO
THERMOPLASTICS USING HEAT OR ULTRASONIC.



SONIC-LOK® INSERTS & STUDS

Designed for rapid installation into thermoplastics using heat or ultrasonic. It features opposed helical knurl bands to provide a combination of high torque and pull-out resistance.



ADVANTAGES

- Permits thin boss walls allowing compact boss design
- Provides high torque and pull-out performance
- Rapid installation using heat or ultrasonic
- Choice of lengths available
- Self-aligning-assists installation

DESIGN GUIDE

HOLE PREPARATION

Molded holes are recommended wherever possible. The taper on a molded hole should be 1° inclusive and the hole diameter recommended should apply at the point reached by the bottom of the insert. Drilled holes may be used but performance may be reduced when compared with a molded hole. The top of the hole should not be chamfered or counterbored and care must be taken to avoid bell mouching. Hole diameter tolerance: -0.00 + 0.10mm.

WALL THICKNESS

A general guide to minimum wall thickness is given in the technical data table but this will vary dependant upon the nature of the plastic. Where thinner walls are required these can often be accommodated, but consultation with Bulten and pre-production testing is strongly advised.

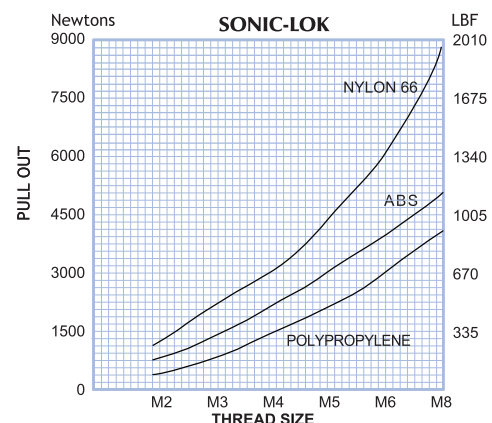
INSTALLATION

The fastener may be installed using either a pre-heating process or using heat generated by ultrasonic vibrations. Where pre-heating is used, care must be exercised to ensure that the fastener softens but does not melt the plastic. This will avoid any tendency to generate unsightly flash around the top

of the insert. Ultrasonic installation is best carried out using low amplitude vibration and the minimum power consistent with satisfactory softening of the plastic material. In either case excessive pressure should be avoided, since this may result in the insert being forced into the hole without allowing the plastic to soften and flow around the surface profile.

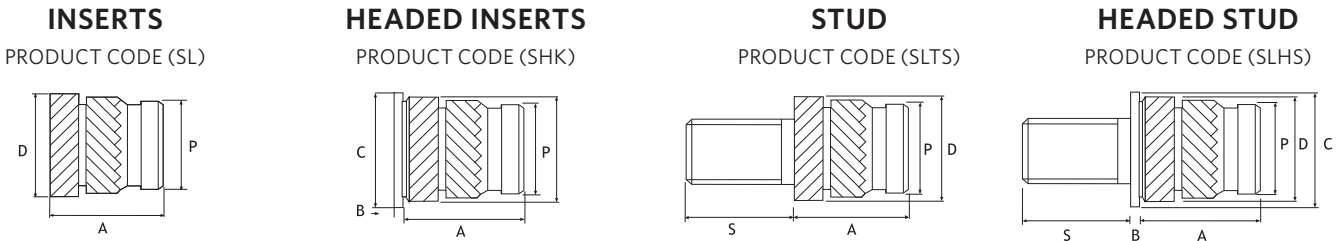
PERFORMANCE DATA

The complexity of materials and variations in service conditions make it impossible to detail fastener performance for specific applications. The chart gives a general guide and shows the relative performance of the insert in the range.



SONIC-LOK® INSERTS & STUDS

TECHNICAL DATA



STANDARD MATERIAL: BRASS (B)
Other materials possible on quotation.

DIMENSIONS

ISO METRIC

Unit: Millimetres

Thread Size	Insert Length A	Preferred Other Length A*				Stud Lengths (For SLTS & SLHS only)										Head Height B	Head Ø C	Insert Ø D	Pilot End Ø p	Rec.Hole size -0.00 +0.10	Min. Wall Thickness
						S															
						5	6	8	10	12	14	16	18	20	25						
M2	4.0	2.5	3.0	-	5	6	8	10	12	14	16	18	20	25	0.53	4.8	3.6	3.1	3.2	1.3	
M2.5	5.7	4.0	-	-	5	6	8	10	12	14	16	18	20	25	0.61	5.5	4.6	3.9	4.0	1.6	
M3	5.7	4.0	4.8	-	5	6	8	10	12	14	16	18	20	25	0.61	5.5	4.6	3.9	4.0	1.6	
M3.5	7.1	5.0	-	-	5	6	8	10	12	14	16	18	20	25	0.76	6.4	5.4	4.7	4.8	1.8	
M4	8.1	4.0	4.8	5.8	5	6	8	10	12	14	16	18	20	25	0.91	7.1	6.3	5.5	5.6	2.1	
M5	9.5	5.8	-	-	5	6	8	10	12	14	16	18	20	25	1.09	7.9	7.1	6.3	6.4	2.6	
M6	12.7	6.8	9.5	-	5	6	8	10	12	14	16	18	20	25	1.35	9.5	8.7	7.9	8.0	3.3	
M8	12.7	-	-	-	5	6	8	10	12	14	16	18	20	25	1.35	11.1	10.2	9.5	9.6	4.5	
M10	12.7	-	-	-	5	6	8	10	12	14	16	18	20	25	1.60	14.0	12.6	11.8	11.9	6.0	
M12	15.9	-	-	-	5	6	8	10	12	14	16	18	20	25	2.00	19.0	16.7	15.8	16.0	8.0	

Other lengths possible on quotation.

UNIFIED

Unit: Inches

Thread Size	Insert Length A	Preferred Other Length A*				Stud Lengths (For SLTS & SLHS only)										Head Height B	Head Ø C	Insert Ø D	Pilot End Ø p	Rec.Hole size -0.000 +0.004	Min. Wall Thickness
						S															
						3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1						
0-80	.125	-	-	-	-	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1	-	-	.116	.095	.100	.051
2-56	.157	.100	.125	-	-	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1	.021	.187	.141	.123	.126	.051
4-40	.226	.096	.140	.170	.250	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1	.024	.218	.181	.154	.157	.063
6-32	.281	.150	.226	.250	-	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1	.030	.250	.214	.185	.189	.071
8-32	.321	.185	.250	-	-	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1	.036	.281	.248	.218	.220	.083
10-24	.375	.250	-	-	-	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1	.043	.312	.278	.249	.252	.102
10-32	.375	.226	.250	-	-	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1	.043	.312	.278	.249	.252	.102
1/4-20	.500	.250	-	-	-	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1	.053	.375	.341	.312	.315	.130
1/4-28	.500	-	-	-	-	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1	.053	.375	.341	.312	.315	.130
5/16-18	.500	-	-	-	-	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1	.053	.437	.403	.374	.378	.177
5/16-24	.500	-	-	-	-	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1	.053	.437	.403	.374	.378	.177
3/8-16	.500	-	-	-	-	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1	.063	.551	.494	.465	.469	.236
3/8-24	.500	-	-	-	-	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1	.063	.551	.494	.465	.469	.236
1/8-NPT	.625	-	-	-	-	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1	-	-	.479	.450	.453	.236
1/2	.625	-	-	-	-	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1	.079	.748	.657	.622	.630	.315

Other lengths possible on quotation.

SONIC-LOK® INSERTS & STUDS

HOW TO SPECIFY

	SL	SHK	SLHS	SLTS
Product Code	SL -B-M4	SHK -B-M4	SLHS -B-M4-15.00	SLTS -B-M4-15.00
Material Code	SL- B -M4	SHK- B -M4	SLHS- B -M4-15.00	SLTS- B -M4-15.00
Thread Size	SL-B- M4	SHK-B- M4	SLHS-B- M4 -15.00	SLTS-B- M4 -15.00
Preferred Other Length	SL-B-M4- 4.8	SHK-B-M4- 4.8	SLHS-B-M4- 4.8 -15.00	SLTS-B-M4- 4.8 -15.00
Stud Length			SLHS-B-M4- 15.00	SLTS-B-M4- 15.00