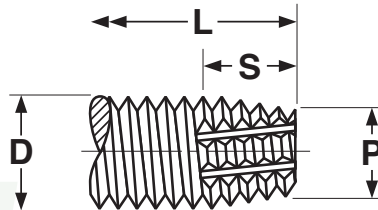


SELF-TAPPING SCREWS

THREAD CUTTING

Type F



THREADS AND POINTS FOR TYPE-F THREAD CUTTING SCREWS

ASME
B18.6.3-2013

Nominal Size or Basic Screw Diameter	Threads Per Inch	D		P	S				L				Minimum Torsional Strength, lb.-in. (STEEL SCREWS ONLY)	
		Major Diameter		Point Diameter	Point Taper Length				Determinant Length for Point Taper		Minimum Practical Screw Lengths			
		Max	Min	Ref	Short Screws		Long Screws		90° Heads	Csk Heads	90° Heads	Csk Heads		
					Max	Min	Max	Min						
2	.0860	56	.0860	.0813	.068	.062	.045	.080	.062	5/32	3/16	5/32	3/16	5
4	.1120	40	.1120	.1061	.087	.088	.062	.112	.088	7/32	1/4	3/16	1/4	13
5	.1250	40	.1250	.1191	.100	.088	.062	.112	.088	7/32	9/32	3/16	1/4	18
6	.1380	32	.1380	.1312	.107	.109	.078	.141	.109	1/4	5/16	1/4	5/16	23
8	.1640	32	.1640	.1571	.132	.109	.078	.141	.109	1/4	11/32	1/4	5/16	42
10	.1900	24	.1900	.1818	.148	.146	.104	.188	.146	11/32	7/16	5/16	13/32	56
10	.1900	32	.1900	.1831	.158	.109	.078	.141	.109	1/4	11/32	1/4	5/16	74
12	.2160	24	.2160	.2078	.174	.146	.104	.188	.146	11/32	7/16	5/16	13/32	93
1/4	.2500	20	.2500	.2408	.200	.175	.125	.225	.175	13/32	17/32	3/8	1/2	140
5/16	.3125	18	.3125	.3026	.257	.194	.139	.250	.194	15/32	19/32	7/16	9/16	306
3/8	.3750	16	.3750	.3643	.312	.219	.156	.281	.219	1/2	11/16	15/32	5/8	560
1/2	.5000	13	.5000	.4876	.423	.269	.192	.346	.269	5/8	25/32	19/32	3/4	1075
Tolerance on Length		Up to 3/4 in., incl.: -0.03				Over 3/4 to 1-1/2 in., incl.: -0.05				Over 1-1/2 in.: -0.06				

Description	A thread cutting screw with machine screw thread pitch, blunt point, tapered entering threads and multiple cutting edges.
Applications/ Advantages	Steel thread-cutters are used in heavy gauge sheet metal, aluminum, zinc and lead die castings, cast iron, brass and plastic. Stainless screws offer additional resistance to corrosion, 18-8 moreso than 410. When using any thread-cutting screw, the material in which the threads are cut should have a lower hardness by at least 10 to 20 Rockwell hardness points.
Material	Steel: AISI 1016 - 1024 or equivalent steel. Stainless: 410 martensitic stainless steel or 18-8 stainless steel.
Heat Treatment	Steel: Screws shall be quenched in liquid and then tempered by reheating to 650°F minimum. 410 SS: An ideal method of hardening 410 stainless screws is a bright hardening process, which typically involves a vacuum furnace. Another key factor affecting hardness is the chemistry of the fastener-most elements have maximum values but not minimums. This fact can contribute to hardness variance. 18-8 is only hardenable by cold-working.
Surface Hardness	Steel: Rockwell C45 minimum
Case Depth (steel)	No. 4 thru 6 diameter: .002 - .007 No. 8 thru 12 diameter: .004 - .009 1/4" diameter & larger: .005 - .011
Hardness	Steel (after tempering): Core: Rockwell C28 - 38 410: Rockwell C38 - 46 (approx.); 18-8 Stainless: Rockwell B90 - C20 (approx.)
Plating	See Appendix-A for information on plating of steel thread cutting screws.