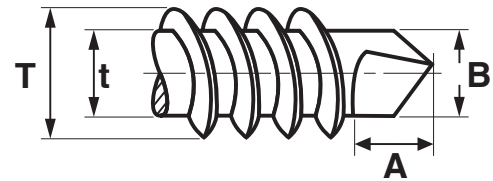
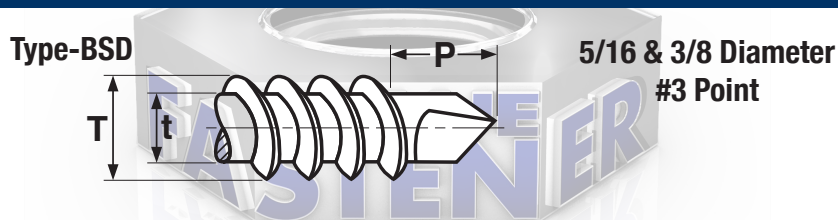


SELF- TAPPING SCREWS

SELF-DRILLING

Type-BSD
Type-CSD



SELF-DRILLING SCREWS, TYPE BSD (SPACED THREAD)

*SAE J78-2013

Nominal Size or Basic Screw Diameter		Threads Per Inch	T		t		P		Minimum Practical Nominal Screw Lengths, Formed Points				Minimum Tor- sional Strength, lb.- in. (STEEL SCREWS ONLY)
			Major Diameter		Minor Diameter		Protrusion Allowance						
			Max	Min	Max	Min	#2 Pt.	#3 Pt.	90° Head, #2 Pt	Csk Head, #2 Pt	90° Head, #3 Pt	Csk Head, #3 Pt	
4	.1120	24	.114	.110	.086	.082	.163	-	5/16	3/8	-	-	14
6	.1380	20	.139	.135	.104	.099	.190	.220	5/16	3/8	3/8	7/16	24
7*	.1510	19	.153	.146	.113	.109	.137	.157	5/16	3/8	3/8	7/16	-
8	.1640	18	.166	.161	.122	.116	.211	.251	3/8	7/16	7/16	1/2	42
10	.1900	16	.189	.183	.141	.135	.235	.300	7/16	1/2	1/2	9/16	61
12	.2160	14	.215	.209	.164	.157	.283	.353	1/2	5/8	1/2	5/8	92
1/4	.2500	14	.246	.240	.192	.185	.318	.393	1/2	5/8	1/2	5/8	150

*SAE J78 does not include Specifications for #7 diameter drill screws.

SPACED THREAD SELF DRILLING SCREWS - 5/16 & 3/8 DIAMETERS, #3 POINT

Nominal Size or Basic Screw Diameter		Threads Per Inch	T		t		A		B	
			Major Diameter		Minor Diameter		Drill Point Length		Drill Point Diameter	
			Max	Min	Max	Min	Max	Min	Max	Min
5/16	.3125	12	.315	.307	.272	.263	.421	.361	.270	.265
3/8	.3750	12	.380	.370	.308	.298	.354	.314	.338	.330

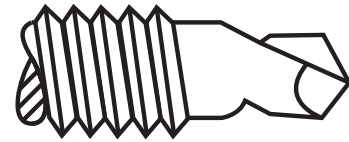
	Steel	Stainless
Description	Type BSD: A tapping screw with spaced threads and a drill point which drills its own hole. Type CSD: A thread forming screw with machine screw thread pitch and a drill point which drills its own hole. Both types allow the screw to form mating threads and produce a complete fastening system in a single operation.	
Applications/ Advantages	Type BSD: May be used to attach plywood, soft woods or composition board to metal, or attach metal to metal. Type CSD: The finer thread pitch reduces friction and driving torques. Type-CSD screws are normally used with thicker materials. All self-drilling screws offer economical benefits: reduces labor and tooling costs; reduces or eliminates drill bits and taps.	The 18-8 stainless drill screw offers superior corrosion resistance while the 410 stainless screw will drill through harder material than the 18-8. The hardness of the material to be drilled should be a minimum of 10-20 Rockwell hardness points less than the screw's hardness. Minimum torques are the same for stainless and steel self-drill screws. Drill time is 2.5 seconds for a 1mm thick plate.
Material	AISI 1016 - 1024 or equivalent steel	410, 18-8 or 316 stainless steel
Heat Treatment	Screws shall be quenched in liquid and then tempered by reheating to 625°F minimum.	410 stainless screws shall be hardened and tempered by heating to 1800°-1900°F sufficient for austenitization, held for at least 1/2 hour and rapid air or oil-quenched then reheating to 500°-600°F for at least 1 hour and air cooled to provide the specified hardness. 18-8 & 316 are only hardenable by cold-working.
Case Hardness	Rockwell C52 -58	410 SS: Rockwell C55 minimum
Case Depth	No. 4 and 6 diameter: .002 - .007 No. 8 thru 12 diameter: .004 - .009 1/4" diameter and larger: .005 - .011	
Core Hardness	Rockwell C32 - 40 (after tempering)	410 SS: Rockwell C38 - 42 (after tempering) 18-8 & 316 SS: Rockwell B100 (approx.)
Plating	See Appendix-A for plating information.	Stainless drill screws are usually supplied plain.

Type-BSD
Type-CSD

SELF-DRILLING

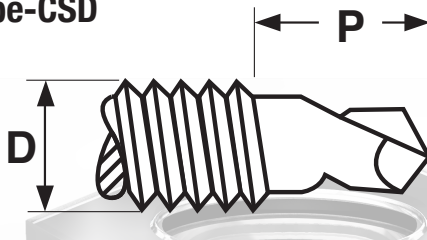


TYPE BSD SELF-DRILLING SCREW SELECTION CHART			
Nominal Screw Size	Point Number	Recommended Panel Thickness, in.	
		Min.	Max.
4	2	.035	.080
6	2	.035	.090
8	2	.035	.100
10	2	.035	.110
10	3	.110	.175
12	3	.110	.210
1/4	3	.110	.220
This table is only a guide and does not constitute a warranty of any type.			

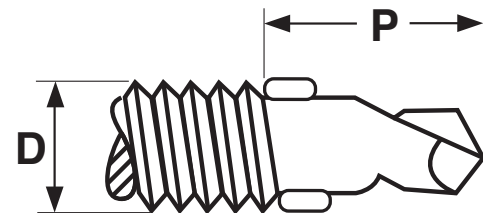


TYPE CSD SELF DRILLING SCREW SELECTION CHART	
Screw Size	Maximum Drilling Capacity*
10-24 x 3/4"	1/4" Plywood to .175 Metal
10-24 x 1"	3/8" Plywood to .175 Metal
10-24 x 1-1/4"	1/2" Plywood to .175 Metal
10-24 x 1-1/2"	1/2" Plywood to .175 Metal
10-24 x 1-7/16"	5/8 & 3/4" Wood to .175 Metal
*Drilling capacity may vary with type of material & hardness.	

Type-CSD



Reamer with Wings (Type-CSD)



STEEL SELF-DRILLING SCREWS, TYPE CSD (UNIFIED THREAD)										SAE J78-2013	
Nominal Size or Basic Screw Diameter		Threads Per Inch	D		P		Minimum Practical Nominal Screw Lengths, Countersunk Heads, Formed Points				Minimum Torsional Strength, lb.- in. (STEEL SCREWS ONLY)
			Major Diameter		Protrusion Allowance						
			Max	Min	#2 Pt	#3 Pt	90° Head, #2 Pt	90° Head, #3 Pt	Csk Head, #2 Pt	Csk Head, #3 Pt	
4	.1120	40	.1120	.1072	.130	-	5/16	-	3/8	-	14
6	.1380	32	.1380	.1326	.152	.172	5/16	3/8	3/8	7/16	24
8	.1640	32	.1640	.1586	.162	.202	7/16	1/2	7/16	1/2	48
10	.1900	24	.1900	.1834	.193	.258	1/2	9/16	1/2	9/16	65
12	.2160	24	.2160	.2094	.223	.293	5/8	5/8	5/8	5/8	100
1/4	.2500	20	.2500	.2428	.275	.350	5/8	5/8	5/8	5/8	156

Description	<i>Reamer with Wings:</i> A Type CSD self-drilling screw with reaming wings located at opposite sides of the shank, below the threads and above the drill point.
Applications/ Advantages	May be used for drilling through wood over 1/2" thick and the metal surface behind it. The wings drill out a clearance hole in wood or other soft materials, then snap off when in contact with the metal surface to be drilled.
Mechanical & Performance Requirements	Same as other Type CSD self-drilling screws (see previous page).