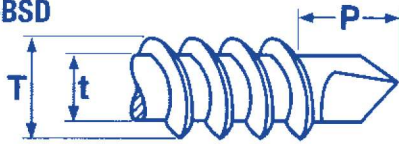


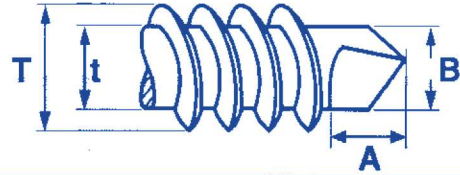


SELF-DRILLING Type-BSD Type-CSD

Type-BSD



5/16 & 3/8 Diameter
#3 Point



SELF-DRILLING SCREWS, TYPE BSD														*SAE J78-1998
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		Protusion Allowance		90° Head, #2 Pt	Csk Head, #2 Pt	90° Head, #3 Pt	Csk Head, #3 Pt			
		Max	Min	Max	Min	#2 Pt.	#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.

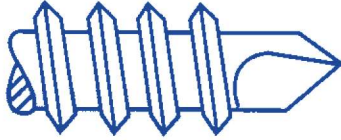
COARSE THREAD SELF DRILLING SCREWS - 5/16 & 3/8 DIAMETERS, #3 POINT											
Nominal Size or Basic Screw Diameter	Threads Per Inch	T		t		A		B			
		Major Diameter		Minor Diameter		Drill Point Length		Drill Point Diameter			
		Max	Min	Max	Min	Max	Min	Max	Min		
5/16	.3125	12	.315	.307	.272	.263	.421	.361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

	Steel	Stainless
Description	<p>Type BSD: A tapping screw with spaced threads and a drill point which drills its own hole. Type CSD: A wafer head 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.</p>	
Applications/ Advantages	<p>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. The wafer head design allows the screw to set flush in wood and softer materials and provides a clean, finished appearance. All self-drilling screws offer economical benefits: reduces labor and tooling costs; reduces or eliminates drill bits and taps.</p>	<p>Type BSD: 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.</p>
Material	AISI 1016 - 1024 or equivalent steel	410 or 18-8 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.
Case Hardness	Rockwell C52 -58	410 SS: Rockwell C55 minimum
Case Depth	<p>No. 4 and 6 diameter: .002 - .007 No. 8 thru 12 diameter: .004 - .009 1/4" diameter and larger: .005 - .011</p>	
Core Hardness	Rockwell C32 - 40 (after tempering)	<p>410 SS: Rockwell C38 - 42 (after tempering) 18-8 SS: Rockwell B90 - C25 (approx.)</p>
Plating	See Appendix-A for plating information.	Stainless drill screws are usually supplied plain.



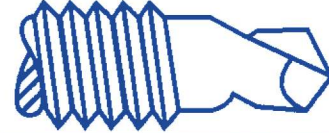
Type-BSD
Type-CSD

SELF-DRILLING



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

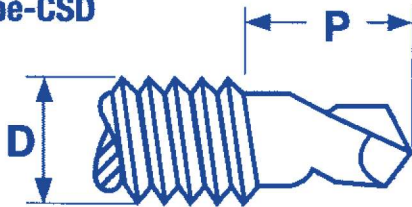
This table is only a guide and does not constitute a warranty of any type.



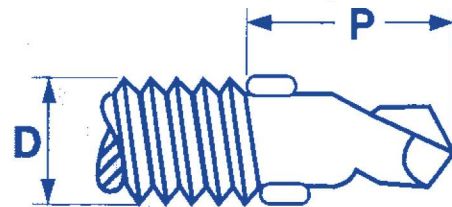
Screw Size	Maximum Drilling Capacity*
10-24 x 3/4"	1/4" Plywood to .175 Metal
10-24 x 1"	3/8" Plywood to .175 Metal
10-24 x 1-1/4"	1/2" Plywood to .175 Metal
10-24 x 1-1/2"	1/2" Plywood to .175 Metal
10-24 x 1-7/16"	5/8 & 3/4" Wood to .175 Metal

*Drilling capacity may vary with type of material & hardness.

Type-CSD



Reamer with Wings (Type-CSD)



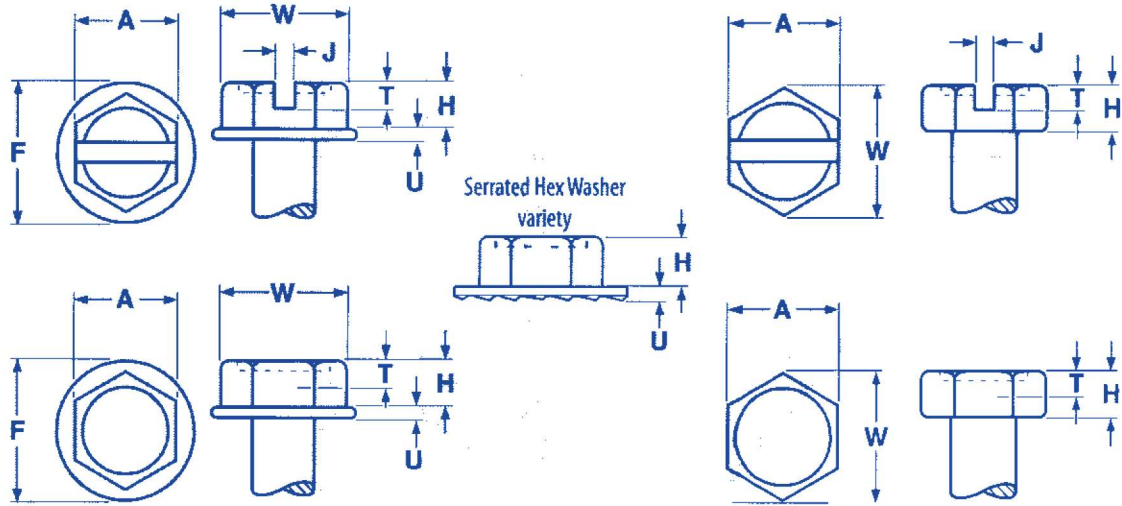
Nominal Size or Basic Screw Diameter	Threads Per Inch	D		P		Minimum Practical Nominal Screw Lengths, Countersunk Heads, Formed Points				Minimum Torsional Strength, lb.- in. (STEEL SCREWS ONLY)	
		Major Diameter		Protrusion Allowance							
		Max	Min	#2 Pt	#3 Pt	90° Head, #2 Pt	90° Head, #3 Pt	Csk Head, #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).



Hex & Hex Washer Heads

HEAD DIMENSIONS



HEX & HEX WASHER HEADS FOR SELF-TAPPING & SELF-DRILLING SCREWS												ASME B18.6.3-2010*		
Nominal Size	A		W		H		F		U		J		T	
	Width Across Flats		Width Across Corners		Height of Head		Diameter of Washer		Thickness of Washer		Width of Slot		Depth of Slot	
	Max	Min	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	
4	.188	.181	.202	.060	.049	.243	.225	.019	.011	.039	.031	.036	.025	
6	.250	.244	.272	.093	.080	.328	.302	.025	.015	.048	.039	.046	.033	
7	.250	.244	.272	.093	.080	.328	.302	.029	.017	.048	.039	.054	.040	
8	.250	.244	.272	.110	.096	.348	.322	.031	.019	.054	.045	.066	.052	
10	.312	.305	.340	.120	.105	.414	.384	.031	.019	.060	.050	.072	.057	
12	.312	.305	.340	.155	.139	.432	.398	.039	.022	.067	.056	.093	.077	
14	.375	.367	.409	.190	.172	.520	.480	.050	.030	.075	.064	.101	.083	
1/4	.375	.367	.409	.190	.172	.520	.480	.050	.030	.075	.064	.101	.083	
1/4**	.438	.428	.481	.190	.172	.590	.551	.050	.029	.084	.064	.122	.083	
5/16**	.438	.428	.481	.230	.208	.590	.551	.050	.029	.084	.064	.122	.083	
5/16	.500	.489	.545	.230	.208	.676	.624	.055	.035	.084	.072	.122	.100	
3/8	.562	.551	.614	.295	.270	.780	.720	.063	.037	.094	.081	.156	.131	
1/2*	.750	.735	.820	.400	.367	1.040	.960	.085	.050	.106	.091	.190	.165	

* Slot dimensions for 1/2-inch diameter hex washer head tapping screws are independent of ASME B18.6.3

**Alternative dimensions can be supplied for certain self-tapping and self-drilling screws to minimize tool changes by end-user. This page prints with a watermark