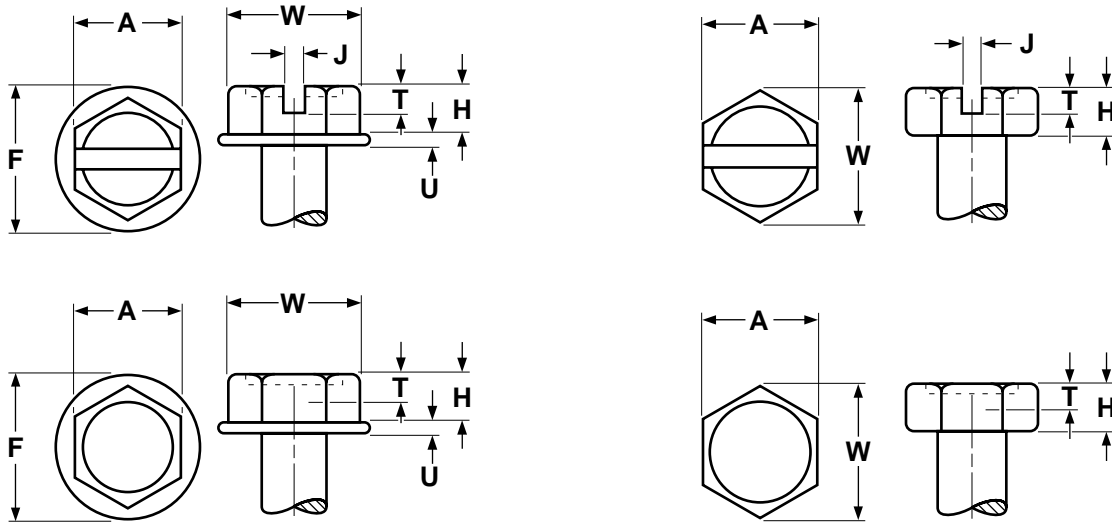


# Hex and Hex Washer Heads

# Head Dimensions

# Self-Tapping Screws

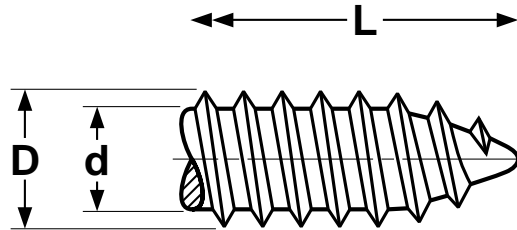


HEX & HEX WASHER HEADS FOR SELF-TAPPING & SELF-DRILLING SCREWS												ASME B18.6.4-1998*	
Nominal Size	A		W	H		F		U		J		T	
	Width Across Flats		Width Across Corners	Height of Head		Diameter of Washer		Thickness of Washer		Width of Slot		Depth of Slot	
	Max	Min	Min	Max	Min	Max	Min	Max	Min	Max	Min	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
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 B18.6.4.

# Self-Tapping Screws *Thread Forming*

## Type-AB



### THREADS FOR SELF-TAPPING SCREWS TYPE AB

ASME  
B18.6.4-1998

Nominal Size or Basic Screw Diameter		Threads Per Inch	D		d		L		Minimum Torsional Strength, lb.- in. (STEEL SCREWS ONLY)
			Major Diameter		Minor Diameter		Minimum Practical Screw Length		
			Max	Min	Max	Min	90° Heads	Csk Heads	
2	.0860	32	.088	.082	.064	.060	3/16	7/32	4
3	.0990	28	.101	.095	.075	.071	3/16	1/4	9
4	.1120	24	.114	.108	.086	.082	7/32	9/32	13
5	.1250	20	.130	.123	.094	.090	1/4	5/16	18
6	.1380	20	.139	.132	.104	.099	9/32	11/32	24
7	.1510	19	.154	.147	.115	.109	5/16	3/8	30
8	.1640	18	.166	.159	.122	.116	5/16	3/8	39
10	.1900	16	.189	.182	.141	.135	3/8	7/16	56
12	.2160	14	.215	.208	.164	.157	7/16	21/32	88
1/4	.2500	14	.246	.237	.192	.185	1/2	19/32	142
5/16	.3125	12	.315	.306	.244	.236	5/8	3/4	290
3/8	.3750	12	.380	.371	.309	.299	3/4	29/32	590
<b>Tolerance on Length</b>			Up to 1" Incl.: ±0.03				Over 1": ±0.05		

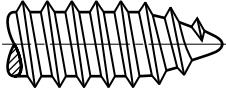
<b>Description</b>	A thread forming tapping screw with spaced threads and a gimlet point
<b>Applications/ Advantages</b>	For self starting in thin metal or resin-filled plywood. Recommended over a Type-A, particularly in brittle materials.
<b>Material</b>	<b>Steel:</b> AISI 1016 - 1024 or equivalent steel. <b>Stainless:</b> 18-8 stainless steel.
<b>Heat Treatment (Steel only)</b>	Screws shall be quenched in liquid and then tempered by reheating to 650°F minimum.
<b>Surface Hardness</b>	<b>Steel:</b> Rockwell C45 minimum
<b>Case Depth (Steel only)</b>	No. 4 thru 6 diameter: .002 - .007 No. 8 thru 12 diameter: .004 - .009 1/4" and larger: .005 - .011
<b>Core Hardness (after tempering)</b>	<b>Steel:</b> Rockwell C28 - 38
<b>Plating</b>	See Appendix-A for plating information.

# Self-Tapping Screws

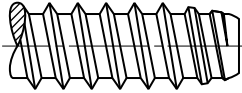
## Hole Size Data

Types A,  
AB, B, 25

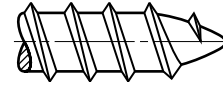
AB



B



A



25



SUGGESTED TEST PLATE THICKNESSES & HOLE SIZES FOR TYPES AB - B - 25					
Nominal Screw Size & No. of Threads per Inch	Thickness			Hole Size	
	Gage	Max	Min	Drill Size	Hole Diam.
2-32	18	.0500	.0460	48	.0760
3-28	18	.0500	.0460	46	.0810
4-24	18	.0500	.0460	44	.0860
5-20	18	.0500	.0460	36	.1065
6-20	14	.0770	.0730	32	.1160
7-19	14	.0770	.0730	30	.1285
8-18	14	.1270	.1230	29	.1360
10-16	1/8	.1270	.1230	21	.1590
12-14	1/8	.1270	.1230	3/16	.1875
1/4-14	3/16	.1905	.1845	5.5 mm	.2165
5/16-12	3/16	.1905	.1845	I	.2720
3/8-12	3/16	.1905	.1845	21/64	.3281

SUGGESTED HOLE SIZES FOR TYPE A		
Nominal Screw Size	Closest Drill Size to Mean Hole Diameter	
	Drill Size	Hole Diam.
6-18	#32	0.1160
7-16	#30	0.1285
8-15	#29	0.1360
10-12	#21	0.1590
12-11	3/16	0.1875
14-10	5.5mm	0.2165
20-9	L	0.2900
24-9	11/32	0.3438

### Notes Regarding Hole Preparation:

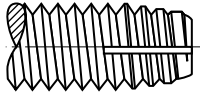
- Preformed holes can be drilled, cored, punched, pierced or extruded. If edge burrs can cause assembly difficulty, they should be removed. Wall ovality and/or taper can affect load carrying ability.
- "Minimum torsional strength" is the torque that free standing screws must accept without evidence of damage or failure.

# Types 1, 23, F, U & High-Low

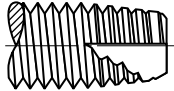
# Hole Size Data

# Self-Tapping Screws

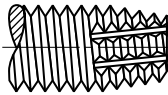
Type 1



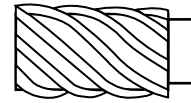
Type 23



Type F



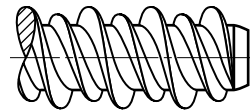
Type U  
Drive Screw



Suggested Test Plate Thicknesses & Hole Sizes for Types 1, 23 & F Thread Cutting Screws					
Nominal Screw Size & Thread Pitch	Thickness			Hole Size	
	Gage	Max	Min	Drill Size	Hole Diam.
2-56	18	.0800	.0760	49	0.0730
4-40	18	.1110	.1070	41	0.0960
5-40	18	.1110	.1070	37	0.1010
6-32	14	.1425	.1385	31	0.1200
8-32	14	.1905	.1845	26	0.1470
10-24	1/8	.1905	.1845	17	0.1730
10-32	1/8	.1905	.1845	16	0.1770
12-24	1/8	.1905	.1845	8	0.1990
1/4-20	3/16	.2530	.2470	1	0.2280
5/16-18	3/16	.3155	.3095	L	0.2900
3/8-16	3/16	.3780	.3720	T	0.3580

RECOMMENDED HOLE SIZES--TYPE-U DRIVE SCREWS		
Screw Size	Drill Size No.	Hole Diameter
00	55	.052
0	51	.067
2	44	.086
4	37	.104
6	31	.120
7	29	.136
8	27	.144
10	20	.161
12	11	.191
14	2	.221

High-  
Low



SUGGESTED HOLE SIZES -- HIGH-LOW SCREWS		
Nominal Screw Size & Number of Threads per Inch	Pilot Hole Diameter Flexural Modulus of Plastic	
	Up to 200,000 P.S.I.	200,000-400,000 P.S.I.
2-32	.0670	.0700
4-24	.0810	.0860
5-20	.0935	.0995
6-19	.1015	.1100
8-18	.1200	.1285
10-16	.1360	.1440
12-16	.1570	.1660
1/4-15	.1890	.2010