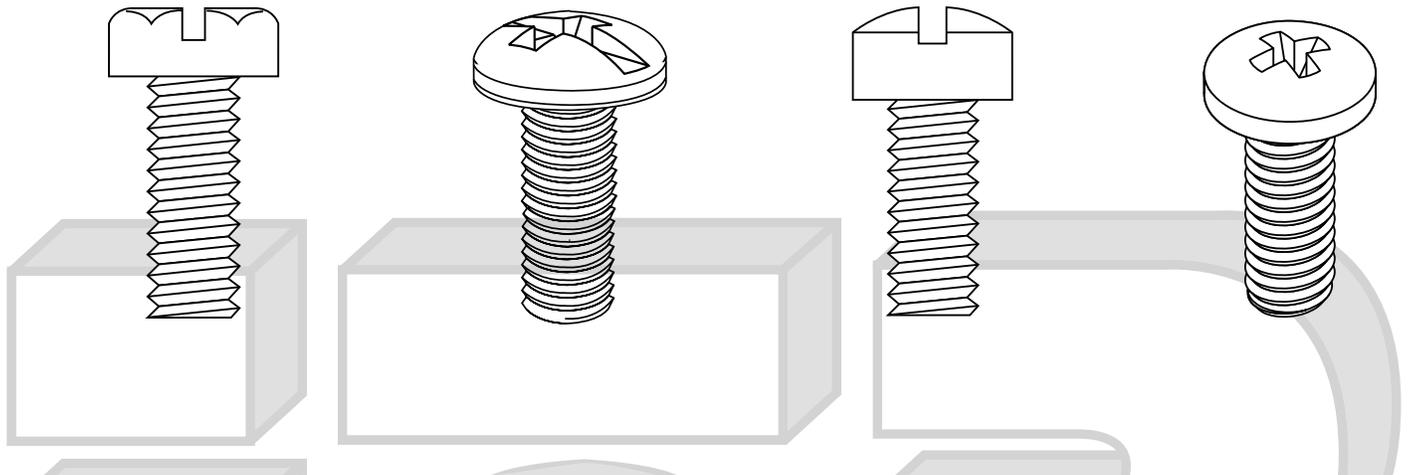


**EXTERNAL THREADS FOR MACHINE SCREWS AND SEMS** ASME B 1.1

Nominal Size & Threads per Inch	Series Designation	Allowance	Major Diameter		Pitch Diameter			Stress Area, in <sup>2</sup>	Tensile Strength, <sup>a</sup> lb., min.
			Max	Min	Max	Min	Tolerance		
0-80 0.060	UNF	.0005	.0595	.0563	.0514	.0496	.0018	-	-
1-64 0.073	UNC	.0006	.0724	.0686	.0623	.0603	.0020	-	-
2-56 0.086	UNC	.0006	.0854	.0813	.0738	.0717	.0021	-	-
3-48 0.099	UNC	.0007	.0983	.0938	.0848	.0825	.0023	-	-
4-40 0.112	UNC	.0008	.1112	.1061	.0950	.0925	.0025	0.00604	360
5-40 0.125	UNC	.0008	.1242	.1191	.1080	.1054	.0026	0.00796	470
6-32 0.138	UNC	.0008	.1372	.1312	.1169	.1141	.0028	0.00909	550
8-32 0.164	UNC	.0009	.1631	.1571	.1428	.1399	.0029	0.0140	850
10-24 0.190	UNC	.0010	.1890	.1818	.1619	.1586	.0033	0.0175	1050
10-32 0.190	UNF	.0009	.1891	.1831	.1688	.1658	.0030	0.0200	1200
12-24 0.216	UNC	.0010	.2150	.2078	.1879	.1845	.0034	0.0242	1450
1/4-20 0.250	UNC	.0011	.2489	.2408	.2164	.2127	.0037	0.0318	1900
1/4-28 0.250	UNF	.0010	.2490	.2425	.2258	.2225	.0033	0.0364	2200
5/16-18 0.312	UNC	.0012	.3113	.3026	.2752	.2712	.0040	0.0524	3150
3/8-16 0.375	UNC	.0013	.3737	.3643	.3331	.3287	.0044	0.0775	4650
1/2-13 0.500	UNC	.0015	.4985	.4876	.4485	.4435	.0050	0.1419	8500

Tolerance on Length  L	Nominal Screw Size	Nominal Screw Length			
		Up to 1/2 in., incl.	Over 1/2 to 1 in., incl.	Over 1 to 2 in., incl.	Over 2 in.
	0 thru 12		-0.02	-0.03	-0.06
1/4 thru 3/4		-0.03	-0.03	-0.06	-0.09

<sup>a</sup>Tensile strength values are based on 60,000 psi. and apply to carbon steel screws and SEMS only. Hex and Hex Washer head machine screws of sufficient length may be wedge tensile tested. Other head styles may be axial tensile tested.



<p><b>Description</b></p>	<p>A straight shank fastener with external threads designed to go through a hole or nut that is pre-tapped to form a mating thread for the screw.</p>
<p><b>Applications/ Advantages</b></p>	<p>Machine screws form a fastening superior in strength to spaced thread screws.  <i>Zinc yellow</i> screws are popular in electronics applications.  <i>Stainless steel</i> machine screws are used in applications which require general atmospheric corrosion resistance, in food processing machinery and refrigeration equipment. Stainless is also superior to steel in withstanding some elevation in application operating temperature while maintaining its strength.</p>
<p><b>Material</b></p>	<p><i>Steel</i>: AISI 1006 - 1022 or equivalent steel.  <i>Stainless</i>: SAE 18-8 stainless steel, passivated.</p>
<p><b>Hardness</b></p>	<p><i>Steel</i>: Rockwell B70 - B100.  <i>Stainless</i>: Rockwell B85 - B95 (approximate)*</p>
<p><b>Tensile Strength</b></p>	<p><i>Steel</i>: 60,000 psi. minimum.  <i>Stainless</i>: 80,000 psi. minimum (100,000 psi after cold working)*  Machine screws which have a nominal diameter smaller than #4 are not subject to tensile testing. No. 4 and No. 5 machine screws which are shorter than 1/2" are not subject to tensile testing. Machine screws of diameters No. 6 to 1/2" inclusive, which are shorter than either 1/2" or 3D (where D is the nominal screw size in inches) are not subject to tensile testing. Such machine screws of a size to be tested shall meet the tensile load requirements given on page 54.</p>
<p><b>Plating</b></p>	<p>See Appendix-A for information on the plating of steel machine screws</p>
<p><small>*Hardness and tensile strength standards are offered as guides only for stainless machine screws. There is currently no national standard for these performance requirements for stainless machine screws.</small></p>	