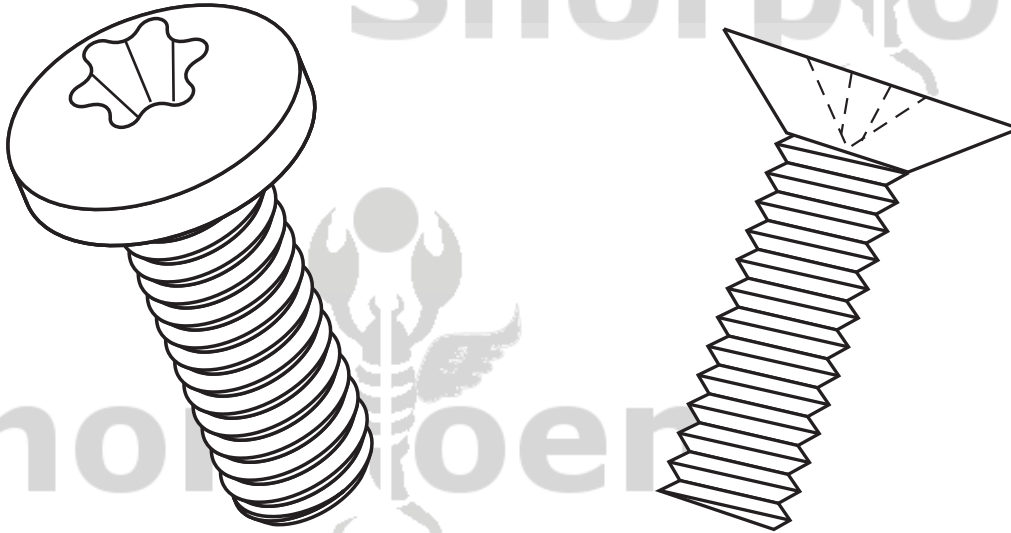
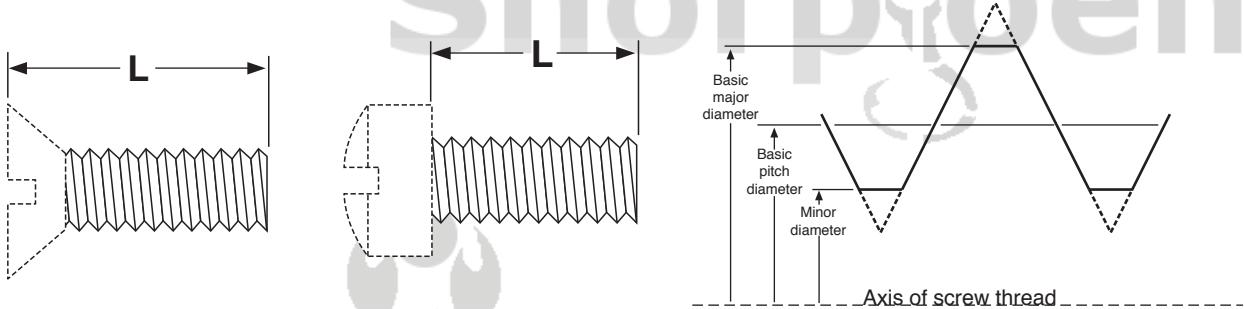


**MACHINE SCREWS** Mechanical & Performance Requirements



<b>Description</b>	A metric machine screw is a straight shank fastener with a metric thread pitch designed to go through a hole or nut that is pre-tapped to form a mating thread for the screw.	
<b>Applications/Advantages</b>	Machine screws form a fastening superior in strength to spaced thread screws. Metric screws are the type almost exclusively used in items manufactured in Europe.	
<b>Material</b>	<i>Steel</i>	<i>Stainless</i>
	Class 4.8 machine screws shall be made from a carbon steel, partially or fully annealed as required, which conforms to the following chemical composition-- <b>Carbon:</b> 0.55% maximum; <b>Phosphorus:</b> 0.05% maximum; <b>Sulfur:</b> 0.06% maximum.	A2 - A4 Stainless
<b>Hardness</b>	Rockwell B 71 - 99.5	-
<b>Tensile Strength</b>	60,900 psi. minimum	72,500 - 101,500 psi.
<b>Plating</b>	See Appendix-A for plating information	

**Thread Dimensions** **MACHINE SCREWS**



**METRIC - EXTERNAL THREADS FOR MACHINE SCREWS & CAP SCREWS, CLASS 6g**

DIN 13;  
ISO 898-1 &  
965

Nominal Size	Major Diameter		Pitch Diameter		Minor Diameter		Stress Area, mm <sup>2</sup>	Tensile Strength N, min.		
	Max	Min	Max	Min	Max	Min		Class 4.8	Class 8.8	Class 10.9
M1.6	1.581	1.496	1.354	1.291	1.151	1.075	-	-		
M2	1.981	1.886	1.721	1.654	1.490	1.407	-	-		
M2.5	2.480	2.380	2.188	2.117	1.928	1.840	-	-		
M3	2.980	2.874	2.655	2.580	2.367	2.273	5.03	2110	4020	5230
M4	3.978	3.838	3.523	3.433	3.119	3.002	8.78	3690	7020	9130
M5	4.976	4.826	4.456	4.361	3.995	3.869	14.2	5960	11,350	14,800
M6	5.974	5.794	5.324	5.212	4.747	4.596	20.1	8440	16,100	20,900
M8	7.972	7.760	7.160	7.042	6.438	6.272	36.6	15,400	29,200	38,100
M10	9.968	9.732	8.994	8.862	8.128	7.938	58	24,400	46,400	60,300
M12	11.966	11.701	10.829	10.679	9.819	9.602	84.3	35,400	67,400	87,700
M14	13.962	13.682	12.663	12.503	11.508	11.271	115	48,300	92,000	120,000
M16	15.962	15.682	14.663	14.503	13.508	13.271	157	65,900	125,000	163,000
M20	19.958	19.623	18.334	18.164	16.891	16.625	245	103,000	203,000	255,000
M24	23.952	23.577	22.003	21.803	20.271	19.955	353	148,000	293,000	367,000
M30	29.947	29.522	27.674	27.462	25.653	25.306	561	236,000	466,000	583,000
M36	35.940	35.465	33.342	33.118	31.033	30.655	817	343,000	678,000	850,000
Tolerance on Length		3mm: ±0.2		4-6mm: ±0.24		8-10mm: ±0.29		12-16mm: ±0.35		
		20-30mm: ±0.42		35-50mm: ±0.5		55-60mm: ±0.95				

THREAD PITCH COMPARISON	
Millimeters	Threads per Inch
0.25	101.5
0.3	84.75
0.35	72.5
0.4	63.5
0.45	56.5
0.5	50.75
0.6	42.5
0.7	36.5
0.75	33.75
0.8	31.75
0.9	28.5
1	25.5
1.25	20.25
1.5	17
1.75	14.5
2	12.75
2.5	10.25
3	8.5
3.5	7.25
4	6.25
4.5	5.5
5	5.25
5.5	4.5
6	4.25