

Earnest Machine Products line of SAE Carbon Steel are made from carbon steel meeting ASTM F844 material requirements. Typical hardness is Rb 70/85.

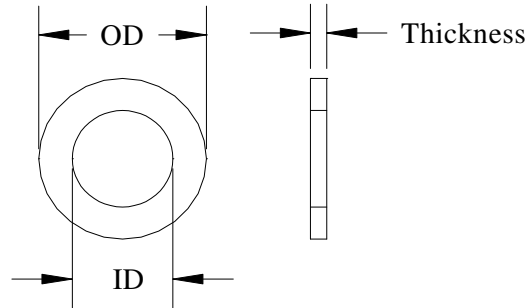
SAE Washers are made to the requirements of ASME B18.21.1 Type A Narrow Series

Earnest recommends the use of standard carbon steel washers on low strength assemblies (grade 2 or 5) where a flat smooth surface is required that will distribute the load over a wide area. For high strength (grade 8 and higher) and critical assemblies Earnest recommends the use of a hardened washer.

Washers are available with a plain finish or zinc plated with a clear chromate (silver color) or with a yellow chromate (bronze to gold color) for superior corrosion protection.

Washers are designed to provide a smooth bearing surface for the bolt and nut to clamp down onto and to distribute the load evenly over larger areas under the head and nut

The use of the largest OD washer that will fit in the application will help ensure that the clamp load is spread over the largest bearing area, which results in an assembly that resist loosening and prevent failures from occurring.



**SAE Flat Washers**

Size (Bolt Dia)	Inside Diameter			Outside Diameter			Thickness		
	Nom	max	min	Nom	max	min	Nom	max	min
#2	3/32	.094	.089	1/4	.250	.245	.020	.025	.016
#4	1/8	.133	.120	5/16	.320	.307	.020	.025	.016
#5	9/64	.148	.135	5/16	.320	.307	.032	.040	.025
#6	5/32	.164	.151	3/8	.390	.370	.049	.065	.036
#8	3/16	.196	.183	7/16	.453	.433	.049	.065	.036
#10	7/32	.227	.214	1/2	.515	.495	.049	.065	.036
#12	1/4	.265	.245	9/16	.577	.557	.065	.080	.051
1/4	9/32	.296	.276	5/8	.640	.620	.065"	.080	.051
5/16	11/32	.359	.339	11/16	.703	.681	.065"	.080	.051
3/8	13/32	.421	.401	13/16	.827	.805	.065"	.080	.051
7/16	15/32	.484	.464	59/64	.937	.915	.065"	.080	.051
1/2	17/32	.546	.526	1 1/16	1.092	1.055	.095"	.121	.074
9/16	19/32	.609	.589	1 5/32	1.186	1.149	.095"	.121	.074
5/8	21/32	.686	.649	1 5/16	1.342	1.305	.095"	.121	.074
3/4	13/16	.842	.805	1 15/32	1.499	1.462	.134"	.160	.108
7/8	15/16	.968	.931	1 3/4	1.780	1.743	.134"	.160	.108
1	1 1/16	1.092	1.055	2	2.030	1.993	.134"	.160	.108
1 1/8	1 1/4	1.280	1.243	2 1/4	2.280	2.243	.134"	.160	.108
1 1/4	1 3/8	1.405	1.368	2 1/2	2.530	2.493	.165"	.192	.136
1 3/8	1 5/8	1.530	1.493	2 3/4	2.780	2.743	.165"	.192	.136
1 1/2	1 5/8	1.655	1.618	3	3.030	2.993	.165"	.192	.136