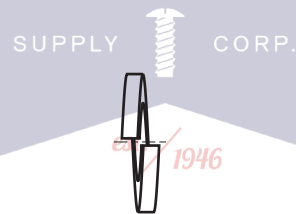
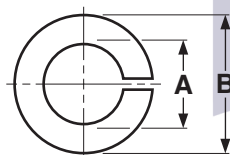
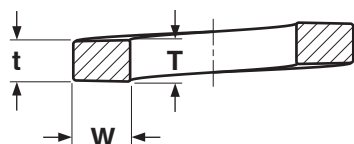


Steel & Stainless
Lockwashers

HIGH-COLLAR HELICAL SPRING



HIGH-COLLAR HELICAL SPRING LOCK WASHERS

ASME B18.21.1-2009

Nominal Washer Size		A		B	W	$\frac{T+t}{2}$
		Inside Diameter		Outside Diameter	Washer Section	
		Max	Min		Width	Thickness
				Max	Min	Min
#4	0.112	0.120	0.114	0.173	0.022	0.022
#6	0.138	0.148	0.141	0.216	0.030	0.030
#8	0.164	0.174	0.167	0.267	0.042	0.047
#10	0.190	0.200	0.193	0.294	0.042	0.047
1/4	0.250	0.260	0.252	0.363	0.047	0.078
5/16	0.312	0.322	0.314	0.457	0.062	0.093
3/8	0.375	0.385	0.377	0.550	0.076	0.125
7/16	0.4375	0.450	0.440	0.644	0.090	0.140
1/2	0.500	0.512	0.502	0.733	0.103	0.172
9/16	0.5625	0.574	0.564	0.819	0.116	0.187
5/8	0.625	0.641	0.628	0.917	0.125	0.203
3/4	0.750	0.766	0.753	1.105	0.154	0.218
7/8	0.875	0.894	0.878	1.291	0.182	0.234
1	1.000	1.024	1.003	1.478	0.208	0.250
1 1/8	1.125	1.153	1.129	1.663	0.236	0.313
1 1/4	1.250	1.280	1.254	1.790	0.236	0.313
1 1/2	1.500	1.534	1.504	2.159	0.292	0.375

Description	A Hi-Collar washer is thicker and has a smaller outside diameter than a regular split lock washer.
Applications/Advantages	Designed for use with smaller head screws, particularly sockets. Performs comparably to a regular split lock washer as a greater thickness compensates for smaller outside diameter.
Material	Carbon Steel: SAE J403 1055 - 1065 Stainless: SAE J405 302-305
Hardness	Carbon Steel: Rockwell C38 - 46 Stainless: Rockwell C35 - 43 (thru 5/8" diameter); Rockwell C32 - 43 (diameters over 5/8")
Twist Test	With the washer in a vice with the split ends free and straight above the vice jaws, a 90° segment of the free end is gripped with a wrench and bent. Steel washers are to withstand being twisted through a 90° angle without signs of fracture; Stainless washers are to withstand being twisted through a 45° angle without fracturing.
Plating	See Appendix-A for information about the plating of Hi-Collar split lock washers.