

Hexagon Cap Screw – ANSI B18.2.1

Table 12 Maximum Grip Gaging Lengths, *L_G*, and Minimum Body Lengths, *L_B*, for Screws

		Nominal Length														
Nom. Size		1.1/4	1.3/8	1.1/2	1.5/8	1.3/4	1.7/8	2	2.1/8	2.1/4	2.3/8	2.1/2	2.5/8	2.3/4	2.7/8	3
1/4	L _G , max/L _B , min	0.50/0.25	0.63/0.38	0.75/0.50	0.88/0.62	1.00/0.75	1.12/0.88	1.25/1.00	1.38/1.12	1.50/1.25	1.62/1.38	1.75/1.50	1.88/1.62	2.00/1.75	2.12/1.88	2.52/2.00
5/16	L _G , max/L _B , min	Full thread	0.50/0.22	0.62/0.35	0.75/0.47	0.88/0.60	1.00/0.72	1.12/0.85	1.25/0.97	1.38/1.10	1.50/1.22	1.62/1.35	1.75/1.47	1.88/1.60	2.00/1.72	2.12/1.85
3/8	L _G , max/L _B , min	Full thread	Full thread	0.50/0.19	0.62/0.31	0.75/0.44	0.88/0.56	1.00/0.69	1.12/0.81	1.25/0.94	1.38/1.06	1.50/1.19	1.62/1.31	1.75/1.44	1.88/1.56	2.00/1.69
7/16	L _G , max/L _B , min	Full thread	Full thread	Full thread	Full thread	0.63/0.27	0.75/0.39	0.88/0.52	1.00/0.64	1.12/0.77	1.25/0.89	1.38/1.02	1.50/1.14	1.62/1.27	1.75/1.39	1.88/1.52
1/2	L _G , max/L _B , min	Full thread	Full thread	Full thread	Full thread	Full thread	0.63/0.24	0.75/0.38	0.88/0.49	1.00/0.62	1.12/0.74	1.25/0.86	1.38/0.99	1.50/1.12	1.62/1.24	1.75/1.36
9/16	L _G , max/L _B , min	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	0.75/0.33	0.88/0.45	1.00/0.58	1.12/0.75	1.25/0.83	1.38/0.96	1.50/1.08	1.62/1.21
5/8	L _G , max/L _B , min	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	0.75/0.30	0.88/0.42	1.00/0.55	1.12/0.67	1.25/0.80	1.38/0.92	1.50/1.05
3/4	L _G , max/L _B , min	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	0.88/0.38	1.00/0.50	1.12/0.62	1.25/0.75
7/8	L _G , max/L _B , min	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	0.88/0.32	1.00/0.44
1	L _G , max/L _B , min	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread
1 1/8	L _G , max/L _B , min	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread
1 1/4	L _G , max/L _B , min	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread
1 3/8	L _G , max/L _B , min	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread
1 1/2	L _G , max/L _B , min	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread

		Nominal Length														
Nom. Size		3.1/4	3.1/2	3.3/4	4	4.1/8	4.1/2	4.3/4	5	5.1/4	5.1/2	5.3/4	6	6.1/4	6.1/2	6.3/4
1/4	L _G , max/L _B , min	2.50/2.25	2.75/2.50	3.00/2.75	3.25/3.00	3.50/3.25	3.75/3.50	4.00/3.75	4.25/4.00	4.50/4.25	4.75/4.50	5.00/4.75	5.25/5.00	5.25/5.00	5.50/5.25	5.75/5.50
5/16	L _G , max/L _B , min	2.38/2.10	2.62/2.35	2.88/2.60	3.12/2.85	3.38/3.10	3.62/3.35	3.88/3.60	4.12/3.85	4.38/4.10	4.62/4.35	4.88/4.60	5.12/4.85	5.12/4.85	5.38/5.10	5.62/5.35
3/8	L _G , max/L _B , min	2.25/1.94	2.50/2.19	2.75/2.44	3.00/2.69	3.25/2.94	3.50/3.19	3.75/3.44	4.00/3.69	4.25/3.94	4.50/4.19	4.75/4.44	5.00/4.69	5.00/4.69	5.25/4.94	5.50/5.19
7/16	L _G , max/L _B , min	2.12/1.77	2.38/2.02	2.62/2.27	2.88/2.52	3.12/2.77	3.38/3.02	3.62/3.27	3.88/3.52	4.12/3.77	4.38/4.02	4.63/4.27	4.88/4.52	4.88/4.52	5.12/4.77	5.38/5.02
1/2	L _G , max/L _B , min	2.00/1.62	2.25/1.86	2.50/2.12	2.75/2.36	3.00/2.62	3.25/2.86	3.50/3.12	3.75/3.36	4.00/3.62	4.25/3.87	4.50/4.12	4.75/4.36	4.75/4.36	5.00/4.62	5.25/4.86
9/16	L _G , max/L _B , min	1.88/1.46	2.12/1.71	2.38/1.96	2.62/2.21	2.88/2.46	3.12/2.71	3.38/2.96	3.62/3.21	3.88/3.46	4.12/3.71	4.38/3.96	4.62/4.21	4.62/4.21	4.88/4.45	5.12/4.71
5/8	L _G , max/L _B , min	1.75/1.30	2.00/1.55	2.25/1.80	2.50/2.05	2.75/2.30	3.00/2.55	3.25/2.80	3.50/3.05	3.75/3.30	4.00/3.55	4.25/3.80	4.50/4.05	4.50/4.05	4.75/4.30	5.00/4.55
3/4	L _G , max/L _B , min	1.50/1.00	1.75/1.25	2.00/1.50	2.25/1.75	2.50/2.00	2.75/2.25	3.00/2.50	3.25/2.75	3.50/3.00	3.75/3.25	4.00/3.50	4.25/3.75	4.25/3.75	4.50/4.00	4.75/4.25
7/8	L _G , max/L _B , min	1.25/0.69	1.50/0.94	1.75/1.19	2.00/1.44	2.25/1.69	2.50/1.94	2.75/2.19	3.00/2.44	3.25/2.69	3.50/2.94	3.75/3.19	4.00/3.44	4.00/3.44	4.25/3.69	4.50/3.94
1	L _G , max/L _B , min	1.00/0.38	1.25/0.62	1.50/0.88	1.75/1.12	2.00/1.38	2.25/1.62	2.50/1.88	2.75/2.12	3.00/2.38	3.25/2.62	3.50/2.88	3.75/3.12	3.75/3.12	4.00/3.38	4.25/3.63
1 1/8	L _G , max/L _B , min	Full thread	Full thread	1.25/0.54	1.50/0.79	1.75/1.04	2.00/1.29	2.25/1.54	2.50/1.79	2.75/2.04	3.00/2.29	3.25/2.54	3.50/2.79	3.50/2.79	3.75/3.04	4.00/3.29
1 1/4	L _G , max/L _B , min	Full thread	Full thread	Full thread	1.25/0.54	1.50/0.79	1.75/1.04	2.00/1.29	2.25/1.54	2.50/1.79	2.75/2.04	3.00/2.29	3.25/2.54	3.25/2.54	3.50/2.79	3.75/3.04
1 3/8	L _G , max/L _B , min	Full thread	Full thread	Full thread	Full thread	Full thread	1.50/0.79	1.75/1.04	2.00/1.29	2.25/1.54	2.50/1.79	2.75/2.04	3.00/2.29	3.25/2.54	3.25/2.54	3.50/2.79
1 1/2	L _G , max/L _B , min	Full thread	Full thread	Full thread	Full thread	Full thread	Full thread	1.50/0.67	1.75/0.92	2.00/1.17	2.25/1.42	2.50/1.67	2.75/1.92	2.75/1.92	3.00/2.17	3.25/2.42

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Table 12 Maximum Grip Gaging Lengths, L_G , and Minimum Body Lengths, L_B , for Screws

		Nominal Length														
Nom. Size		7	7.1/4	7.1/2	7.3/4	8	8.1/4	8.1/2	8.3/4	9	9.1/4	9.1/2	9.3/4	10	11	12
1/4	LG, max/LB, min	6.00/5.75	6.25/6.00	6.50/6.25	6.75/6.50	7.00/6.75	7.25/7.00	7.50/7.25	7.75/7.50	8.00/7.75	8.25/8.00	8.50/8.25	8.75/8.50	9.00/8.75	10.00/9.75	11.00/10.75
5/16	LG, max/LB, min	5.88/5.60	6.12/5.85	6.38/6.10	6.62/6.35	6.88/6.60	7.12/6.85	7.38/7.10	7.62/7.35	7.88/7.60	8.12/7.85	8.38/8.10	8.62/8.35	8.88/8.60	9.88/9.60	10.88/9.60
3/8	LG, max/LB, min	5.75/5.44	6.00/5.69	6.25/5.94	6.50/6.19	6.75/6.44	7.00/6.69	7.25/6.94	7.50/7.19	7.75/7.44	8.00/7.69	8.25/7.94	8.50/8.19	8.75/8.44	9.75/9.44	10.75/10.44
7/16	LG, max/LB, min	5.62/5.27	5.88/5.52	6.12/5.77	6.38/6.02	6.62/6.27	6.88/6.52	7.12/6.77	7.38/7.02	7.62/7.27	7.88/7.52	8.12/7.77	8.38/8.02	8.62/8.27	9.62/9.27	10.62/10.27
1/2	LG, max/LB, min	5.50/5.12	5.75/5.36	6.00/5.62	6.25/5.87	6.50/6.12	6.75/6.36	7.00/6.62	7.25/6.86	7.50/7.12	7.75/7.36	8.00/7.62	8.25/7.86	8.50/8.12	9.50/8.12	10.50/9.12
9/16	LG, max/LB, min	5.38/4.96	5.62/5.20	5.88/5.46	6.12/5.71	6.38/5.96	6.62/6.21	6.88/6.46	7.12/6.71	7.38/6.96	7.62/7.21	7.88/7.46	8.12/7.71	8.38/7.96	9.38/8.96	10.38/9.96
5/8	LG, max/LB, min	5.25/4.80	5.50/5.05	5.75/5.30	6.00/5.55	6.25/5.80	6.50/6.05	6.75/6.30	7.00/6.55	7.25/6.80	7.50/7.05	7.75/7.30	8.00/7.55	8.25/7.80	9.25/8.80	10.25/9.80
3/4	LG, max/LB, min	5.00/4.50	5.25/4.75	5.50/5.00	5.75/5.25	6.00/5.50	6.25/5.75	6.50/6.00	6.75/6.25	7.00/6.50	7.25/6.75	7.50/7.00	7.75/7.25	8.00/7.50	9.00/8.50	10.00/9.50
7/8	LG, max/LB, min	4.75/4.19	5.00/4.44	5.25/4.69	5.50/4.94	5.75/5.19	6.00/5.44	6.25/5.69	6.50/5.94	6.75/6.19	7.00/6.44	7.25/6.89	7.50/6.94	7.75/7.19	8.75/8.19	9.75/9.19
1	LG, max/LB, min	4.50/3.88	4.75/4.12	5.00/4.38	5.25/4.52	5.50/4.88	5.75/5.12	6.00/5.38	6.25/5.62	6.50/5.88	6.75/6.12	7.00/6.38	7.25/6.62	7.50/6.88	8.50/7.88	9.50/8.88
1 1/8	LG, max/LB, min	4.25/3.54	4.50/3.79	4.75/4.04	5.00/4.29	5.25/4.54	5.50/4.79	5.75/5.04	6.00/5.29	6.25/5.54	6.50/5.79	6.75/6.04	7.00/6.29	7.25/6.54	8.25/7.54	9.25/8.54
1 1/4	LG, max/LB, min	4.00/3.29	4.25/3.54	4.50/3.79	4.75/4.04	5.00/4.29	5.25/4.54	5.50/4.79	5.75/5.04	6.00/5.29	6.25/5.54	6.50/5.79	6.75/6.04	7.00/6.29	8.00/6.29	9.00/7.29
1 3/8	LG, max/LB, min	3.75/3.04	4.00/3.29	4.25/3.54	4.50/3.79	4.75/4.04	5.00/4.29	5.25/4.54	5.50/4.79	5.75/5.04	6.00/5.29	6.25/5.54	6.50/5.79	6.75/6.04	7.75/7.04	8.75/8.04
1 1/2	LG, max/LB, min	3.50/2.67	3.75/2.92	4.00/3.17	4.25/3.42	4.50/3.67	4.75/3.92	5.00/4.17	5.25/4.42	5.50/4.67	5.75/4.92	6.00/5.17	6.25/5.42	6.50/5.67	7.50/6.67	8.50/7.67

Table 13 Length Tolerances for Screws

		Nominal Length					
Nominal Length		1/4 to 3/8	7/16 and 1/2	9/16 to 3/4	7/8 and 1	1 1/8 to 1 1/2	Over 1 1/2
Up to 1 in., incl.		-0.03	-0.03	-0.03
Over 1 in. to 2 1/2 in., incl.		-0.04	-0.06	-0.08	-0.1	-0.12	-0.18
Over 2 1/2 in. to 4 in., incl.		-0.06	-0.08	-0.1	-0.14	-0.16	-0.2
Over 4 in. to 6 in., incl.		-0.1	-0.1	-0.1	-0.16	-0.18	-0.22
Longer than 6 in.		-0.18	-0.18	-0.18	-0.2	-0.22	-0.24