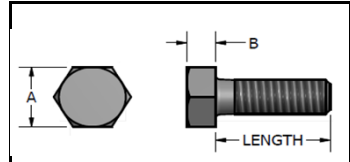


# Hardware Reference

American National Standard-INCH

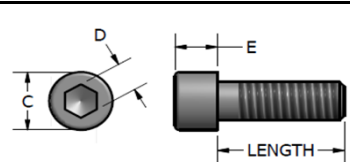
MACHINE DESIGN REFERENCE .COM



**Hex Head Bolts/Screws**

A	B
Hex Size	Head Depth
-	-
1/8	0.05
1/8	0.05
3/16	0.055
3/16	0.06
3/16	0.07
1/4	0.093
1/4	0.11
5/16	0.12
7/16	11/64
1/2	7/32
9/16	1/4
5/8	19/64
3/4	11/32
15/16	27/64
1 1/8	1/2
1 5/16	37/64
1 1/2	43/64

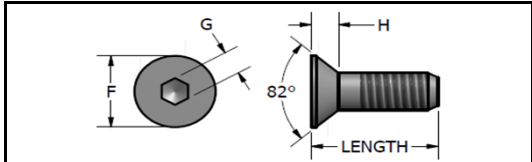
ANSI B18.6.3-1972, R1991 & ANSI B18.2.1-1981, R1992



**Socket Head Cap Screw**

C	D	E
Head Dia.	Hex Size	Head Depth
0.096	0.05	0.06
0.118	1/16	0.073
0.14	5/64	0.086
0.161	5/64	0.099
0.183	3/32	0.112
0.205	3/32	0.125
0.226	7/64	0.138
0.27	9/64	0.164
5/16	5/32	0.19
3/8	3/16	0.25
15/32	1/4	0.3125
9/16	5/16	0.375
21/32	3/8	0.4375
3/4	3/8	0.5
15/16	1/2	0.625
1 1/8	5/8	0.75
1 5/16	3/4	0.875
1 1/2	3/4	1

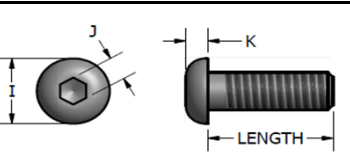
ASME/ANSI B18.3 1986- 1960 SERIES



**Flat Head Cap Screw**

F	G	H	
Head Dia.	Min.	Hex Size	Head Depth
0.138	0.117	0.035	0.044
0.168	0.143	0.05	0.054
0.197	0.168	0.05	0.064
0.226	0.193	1/16	0.073
0.255	0.218	1/16	0.083
0.281	0.24	5/64	0.09
0.307	0.263	5/64	0.097
0.359	0.311	3/32	0.112
0.411	0.359	1/8	0.127
0.531	0.48	5/32	0.161
0.656	0.6	3/16	0.198
0.781	0.72	7/32	0.234
0.844	0.781	1/4	0.234
0.938	0.872	5/16	0.251
1.188	1.112	3/8	0.324
1.4378	1.355	1/2	0.396
1.688	1.604	9/16	0.468
1.938	1.841	5/8	0.54

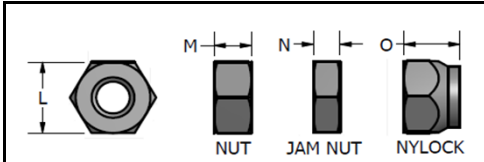
ASME/ANSI B18.3 1986



**Button Head Cap Screw**

I	J	K
Head Dia.	Head Depth	Hex Size
0.114	0.032	0.035
0.139	0.039	0.05
0.164	0.046	0.05
0.188	0.052	1/16
0.213	0.059	1/16
0.238	0.066	5/64
0.262	0.073	5/64
0.3125	0.087	3/32
0.361	0.101	1/8
0.4375	0.132	5/32
0.547	0.166	3/16
0.656	0.199	7/32
-	-	-
0.875	0.265	5/16
1	0.331	3/8
-	-	-
-	-	-
-	-	-

ASME/ANSI B18.3 1986



**Hex Nuts**

L	M	N	O
Nut Hex	Thk.	Thk.	Thk.
5/32	3/64	-	-
5/32	3/64	-	-
3/16	1/16	-	9/64
3/16	1/16	-	9/64
1/4	3/32	-	9/64
5/16	7/64	-	-
5/16	7/64	-	11/64
11/32	1/8	-	15/64
3/8	1/8	-	15/64
7/16	7/32	5/32	5/16
1/2	17/64	3/16	11/32
9/16	21/64	7/32	29/64
11/16	3/8	1/4	29/64
3/4	7/16	5/16	19/32
15/16	35/64	3/8	3/4
1 1/8	41/64	27/64	7/8
1 5/16	3/4	31/64	63/64
1 1/2	55/64	35/64	1 3/64

ANSI B18.6.3-1972, R1991 & ANSI/ASME B18.2.2-1987

Major Dia.	UNC		UNF		Clearance Dia.*	Size
	TPI	Tap Drill	TPI	Tap Drill		
0.06	-	-	80	3/64	50	#0
0.073	64	#53	72	#53	46	#1
0.086	56	#51	64	#50	41	#2
0.099	40	#56	56	#46	35	#3
0.112	40	#43	48	#42	1/8	#4
0.125	40	#39	44	#37	29	#5
0.138	32	#36	40	#33	5/32	#6
0.164	32	#29	36	#29	11/64	#8
0.19	24	#25	32	#21	13/64	#10
0.25	20	#7	28	#3	17/64	1/4
0.313	18	F	24	I	21/64	5/16
0.375	16	5/16	24	Q	25/64	3/8
0.438	14	U	20	W	29/64	7/16
0.5	13	27/64	20	29/64	33/64	1/2
0.625	11	17/32	18	37/64	21/32	5/8
0.75	10	21/32	16	11/16	25/32	3/4
0.875	9	49/64	14	13/16	29/32	7/8
1	8	7/8	14/12	15/16	1 1/16	1

\*Suggested-not based on any standard. Refer to standards shown for more specific limits and tolerances.