

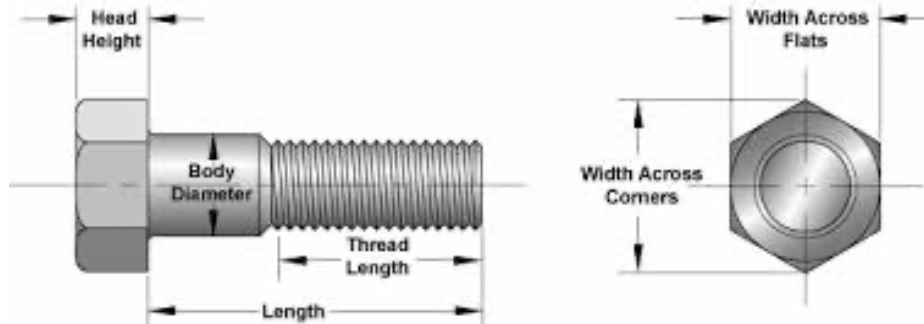


P R O D U C T D A T A S H E E T

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Hex Head Bolts - Inch Series

1.0 Dimensions: As per ASME B18.2.1.



Nominal Size or Basic Product Diameter									Thread Length	
	Body	Diameter	Width Across Flats		Width Across Corners		Head Height		Screw Lengths 6 Inches & Shorter	Screw Lengths Over 6 Inches
			Max	Min	Max	Min	Max	Min		
1/4	0.260	0.237	0.438	0.425	0.505	0.484	0.188	0.150	0.750	1.000
5/16	0.324	0.298	0.500	0.484	0.577	0.552	0.235	0.195	0.875	1.125
3/8	0.388	0.360	0.562	0.544	0.650	0.620	0.268	0.226	1.000	1.250
7/16	0.452	0.421	0.625	0.603	0.722	0.687	0.316	0.272	1.125	1.375
1/2	0.515	0.482	0.750	0.725	0.866	0.826	0.364	0.302	1.250	1.500
5/8	0.642	0.605	0.938	0.906	1.083	1.033	0.444	0.378	1.500	1.750
3/4	0.768	0.729	1.125	1.088	1.299	1.240	0.524	0.455	1.750	2.000
7/8	0.895	0.852	1.312	1.269	1.516	1.447	0.604	0.531	2.000	2.250
1	1.022	0.976	1.500	1.450	1.732	1.653	0.700	0.591	2.250	2.500
1-1/8	1.149	1.098	1.688	1.631	1.949	1.859	0.780	0.658	2.500	2.750
1-1/4	1.277	1.223	1.875	1.812	2.165	2.066	0.876	0.749	2.750	3.000
1-3/8	1.404	1.345	2.062	1.994	2.382	2.273	0.940	0.810	3.000	3.250
1-1/2	1.531	1.470	2.250	2.175	2.598	2.480	1.036	0.902	3.250	3.500
1-3/4	1.785	1.716	2.625	2.538	3.031	2.893	1.196	1.054	3.750	4.000
2	2.039	1.964	3.000	2.900	3.464	3.306	1.388	1.175	4.250	4.500
2-1/4	2.305	2.214	3.375	3.262	3.897	3.719	1.548	1.327	4.750	5.000
2-1/2	2.559	2.461	3.750	3.625	4.330	4.133	1.708	1.479	5.250	5.500

Notes: Thread Class of Fit: Plain Finish: 2A. Zinc Plated Finish: 2A before zinc plating and after zinc plating must meet 3A GO & 2A NO GO thread ring gage condition. Hot Dip Galvanized: 2A before coating.



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Hex Head Bolts - Inch Series

2.0 Difference Between Hex Head Bolts and Hex Head Cap Screws:

- a) Hex head bolts do not have washer face and need not be pointed (chamfered at the start of the thread).
- b) Tolerances are generally wider on certain dimensions like body diameter, width across flats, width across corners etc., when compared to hex head cap screws.
- c) Grip Length Maximum (L_G Max) and Body Length Minimum (L_B Min) are not specified for hex head bolts.

3.0 Mechanical Properties (For Full Size Bolt Testing):

3.1 Steel: ASTM A307

Grade	Length	Hardness	Tensile Strength Minimum	Grade Marking
A	Less than 3 times the diameter	69 to 100 HRB	60,000 Psi	307A
	3 times the diameter and longer	100 HRB Max		

Notes: The bolts will also have manufacturer's marking on the head in addition to the grade marking as mentioned in the table.

4.0 Surface Finish: Plain/Zinc/HDG. Zinc & HDG details given in table below.

Properties	Zinc Clear	Zinc Yellow	Hot Dip Galvanized (HDG)
Type	Trivalent (Cr+3)	Hexavalent (Cr+6)	RoHS Compliant
Color	Clear	Yellow	
Minimum Coating Thickness	0.0001" / 3 Microns or 0.0002" / 5 Microns	0.0001" / 3 Microns or 0.0002" / 5 Microns.	Coating thickness for sizes 3/8" & under : 0.0017" (43 microns) and for sizes over 3/8" : 0.0020" (50 microns)
Specification	ASTM F1941 / F1941M. Fe/Zn 3AN or Fe/Zn 5AN	ASTM F1941 / F1941M. Fe/Zn 3C or Fe/Zn 5C	ASTM F2329/F2329M or ASTM A153/A153M.

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