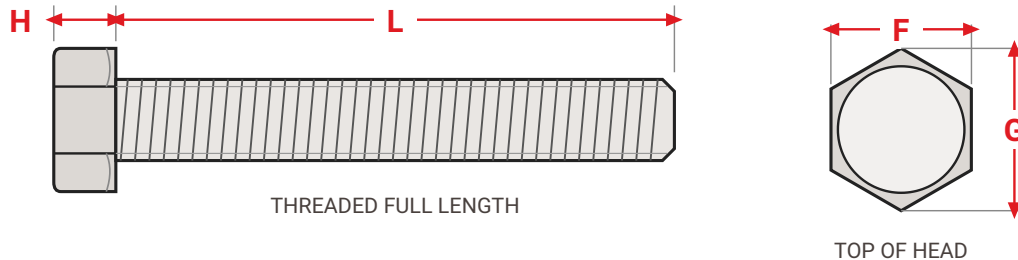




PRODUCT DATA SHEET

Hex Tap Bolts (Full Thread) – Inch Series

1.0 Dimensions As per ASME B18.2.1 (inches)



- Hex tap bolts are hex head cap screws **threaded the full length** of the shank.
- F = width across flats • G = width across corners • H = head height • L = length
- Threads: ASME B1.1 Unified UNC (coarse) & UNF (fine), Class 2A.
- Grades: SAE J429 Grade 2, 5 & 8; 18-8 (304) & 316 stainless (see 2.0).

Nominal Size	Threads per Inch		F Width Across Flats			G Width Across Corners		H Head Height			Lengths Stocked (inches)		
	UNC	UNF	Basic	Max	Min	Max	Min	Basic	Max	Min	Grade 2 Zinc	Grade 8	18-8 SS
1/4	20	28	7/16	0.438	0.428	0.505	0.488	5/32	0.163	0.150	1-1/2" – 6"	–	1-1/2" – 6"
5/16	18	24	1/2	0.500	0.489	0.577	0.557	13/64	0.211	0.195	1-1/2" – 6"	–	1-1/2" – 6"
3/8	16	24	9/16	0.562	0.551	0.650	0.628	15/64	0.243	0.226	1-1/2" – 6"	2" – 6"	1-1/2" – 6"
1/2	13	20	3/4	0.750	0.736	0.866	0.840	5/16	0.323	0.302	2" – 6"	2" – 10" Fine: 3" – 6"	2" – 6"
5/8	11	18	15/16	0.938	0.922	1.083	1.051	25/64	0.403	0.378	2" – 6"	2-1/2" – 10" Fine: 3" – 5"	–
3/4	10	16	1-1/8	1.125	1.100	1.299	1.254	15/32	0.483	0.455	2" – 6"	3" – 10" Fine: 4"	–
7/8	9	14	1-5/16	1.312	1.285	1.516	1.465	35/64	0.563	0.531	–	–	–
1	8	12	1-1/2	1.500	1.469	1.732	1.675	39/64	0.627	0.591	–	6"	–

Notes:

- Length (L) is measured from the underside of the head to the end of the bolt. Threads extend to within approximately 2-1/2 thread pitches of the underside of the head.
- Thread class of fit – Plain: 2A. Zinc plated: 2A before zinc plating; after zinc plating, threads must meet the 3A GO and 2A NO GO thread ring gage condition.
- Lengths stocked: Grade 2 zinc plated & 18-8 stainless in UNC; Grade 8 in UNC and UNF (fine). Other sizes, lengths and grades available on request.

2.0 Mechanical Properties For full size bolt testing

2.1 STEEL – SAE J429

Grade	Nominal Size	Rockwell Hardness	Proof Load Strength	Tensile Strength Min.	Grade Marking
2	1/4 thru 3/4 (6" & shorter)	B80 to B100	55,000 psi	74,000 psi	 No marking
	1/4 thru 3/4 (longer than 6")	B70 to B100	33,000 psi	60,000 psi	
	Over 3/4 thru 1-1/2	B70 to B100	33,000 psi	60,000 psi	
5	1/4 thru 1	C25 to C34	85,000 psi	120,000 psi	 3 radial lines 120° apart
	Over 1 thru 1-1/2	C19 to C30	74,000 psi	105,000 psi	
8	1/4 thru 1-1/2	C33 to C39	120,000 psi	150,000 psi	 6 radial lines 60° apart

For sizes larger than 1-1/2", mechanical properties are based on the applicable grades specified in SAE J429 or ASTM A354. The bolts will also have the manufacturer's marking on the head in addition to the grade marking shown in the table.

2.2 STAINLESS STEEL – ASTM F593

Type	Nominal Size	Condition	Tensile Strength (ksi)	Yield Strength (ksi)	Rockwell Hardness	Grade Marking
304 (18-8)	1/4 to 5/8 incl.	CW1	100 to 150	65	B95 to C32	F593C
	3/4 to 1-1/2 incl.	CW2	85 to 140	45	B80 to C32	F593D
316	1/4 to 5/8 incl.	CW1	100 to 150	65	B95 to C32	F593G
	3/4 to 1-1/2 incl.	CW2	85 to 140	45	B80 to C32	F593H

1 ksi = 1,000 psi. The bolts will also have the manufacturer's marking on the head in addition to the grade marking shown in the table. Bolts are passivated.

3.0 Surface Finish Plain / Zinc – zinc plating details below

Properties	Zinc	Zinc Yellow	Zinc Yellow
Type	Trivalent (Cr+3)	Hexavalent (Cr+6)	Trivalent (Cr+3)
Color	Clear	Yellow	Yellow
Minimum Coating Thickness	0.0001" / 3 microns or 0.0002" / 5 microns	0.0001" / 3 microns or 0.0002" / 5 microns	0.0001" / 3 microns or 0.0002" / 5 microns
Specification	ASTM F1941/F1941M Fe/Zn 3AN or Fe/Zn 5AN ASTM B633 SC1 (0.0002" / 5 microns) Type III	ASTM F1941/F1941M Fe/Zn 3C or Fe/Zn 5C	ASTM F1941/F1941M Fe/Zn 3CN or Fe/Zn 5CN

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