

	Standard Part Hexagon Flange Head Bolts – Inch Grade 5 – Non-Preferred	STPB280
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1. GENERAL

This standard conforms essentially to Hex Flange Screws described in IFI 111. All dimensions in this standard are in inches. For dimensions not shown in this specification, refer to IFI 111.

2. RELATED DOCUMENTS

2.1 REFERENCE STANDARDS

IFI 111—Hex Flange Screws

MAT0310—Zinc Plating

STPA020—Fastener Finishes and Material Specifications

Case MS-61—Fluorocarbon Coating

Case MS-91—Zinc Phosphate Coating

SAE J429—Mechanical and Material Requirements for Externally Threaded Fasteners

2.2 REPLACED STANDARDS

Case B-041—Hex Head Flange Bolts (General Specifications)

Case B-042—Hex Head Flange Bolts Grade 5 UNC ZND & Grade 8 UNC PHC - Preferred

Case B-043—Hex Head Flange Bolts - Non-Preferred

FNHA 1-B-060.00—Screw, Cap, Hex Head, Flange, G5, ZnCr, Inch

3. PREFERRED PARTS POLICY

All standard parts measured in inches are considered non-preferred. See STPB820 for preferred parts (metric).

4. CROSS REFERENCE

For cross reference listing of company part numbers, go to [CNH Catalogue](#).

5. MATERIAL

Bolts shall conform to the chemical composition, mechanical properties, and heat treatment requirements for Grade 5 per SAE J429.

6. FINISH

Bolts shall be furnished plain (PLN), plated, or coated as designated by part number in accordance with CNH or former company Material Specifications.

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7. HEAD MARKING

7.1 Bolts shall have legible, raised radial head markings to indicate bolt grade and a manufacturer's identification symbol recognized in the trade to indicate source. Refer to SAE J429 for standard grade marking symbols.

7.2 Marking symbols on the heads for bolt sizes 5/8 inch and smaller shall project not less than .005 inch above surface nor more than .015 inch over the specified maximum head height.

7.3 Markings for bolt sizes larger than 5/8 inch shall project not less than the equivalent in inches of .0075 times the basic bolt diameter above the surface or more than .030 inch over the specified maximum head height.

8. THREAD LENGTH

8.1 Minimum thread length shall be equal to twice the basic bolt diameter plus .25 inch for nominal lengths of 6 inches or shorter, and twice the basic bolt diameter plus .50 inch for nominal lengths longer than 6 inches.

8.2 Bolts of nominal length too short to accommodate the minimum thread lengths shall be fully threaded to within 1-1/2 threads of the fillet length limits as given in IFI 111.



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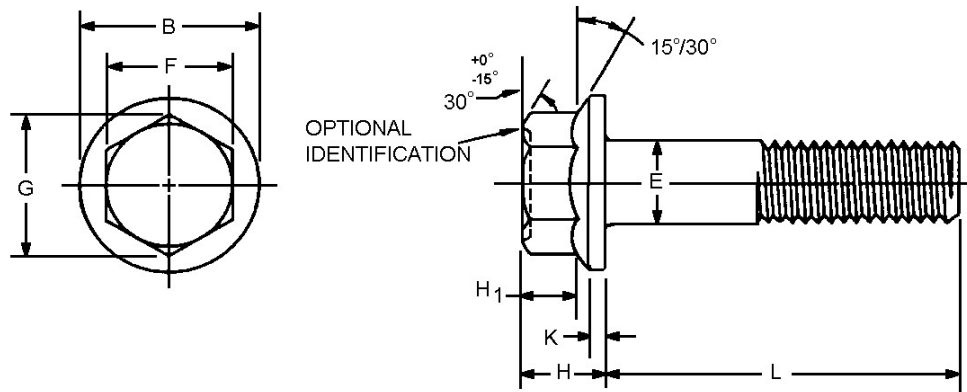


FIGURE 1: Hex Flange Head Bolt

TABLE 1: Basic Dimensions in Inches

Nominal Size	Threads per Inch		B	F		G	
			Flange Diameter	Width Across Flats		Width Across Corners	
	UNC Series	UNF Series	Maximum	Maximum	Minimum	Maximum	Minimum
1/4	20	28	0.56	0.375	0.367	0.433	0.409
5/16	18	24	0.68	0.500	0.489	0.577	0.548
3/8	16	24	0.81	0.562	0.551	0.650	0.618
7/16	14	20	0.93	0.625	0.612	0.722	0.685
1/2	13	20	1.07	0.750	0.736	0.866	0.825
9/16	12	18	1.19	0.812	0.798	0.938	0.895
5/8	11	18	1.33	0.938	0.922	1.083	1.034
3/4	10	16	1.59	1.125	1.100	1.299	1.234

TABLE 2: Additional Dimensions in Inches

Nominal Size	E		K	H	H ₁
	Body Diameter		Flange Thickness	Head Height	Hexagon Height
	Maximum	Minimum	Minimum	Maximum	Minimum
1/4	0.2500	0.2450	0.04	0.28	0.17
5/16	0.3125	0.3065	0.05	0.32	0.21
3/8	0.3750	0.3690	0.06	0.39	0.25
7/16	0.4375	0.4305	0.07	0.46	0.30
1/2	0.5000	0.4930	0.08	0.51	0.34
9/16	0.5625	0.5545	0.09	0.57	0.38
5/8	0.6250	0.6170	0.10	0.62	0.42
3/4	0.7500	0.7410	0.11	0.73	0.51



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TABLE 3: Inch Hex Flange Bolts, Grade 5, UNC, ZND

Length L	Nominal Bolt Diameter					
	1/4	5/16	3/8	1/2	5/8	3/4
0.5	86521549	86521551				
0.75	86521550	86521552	9628510	86544354		
1	86544366	86521553	86521613	86533474		
1.25		86521612	280523	86521614		
1.375*		86500673				
1.5	84545653	84529662	86523775	86521615	86521619	47589658
1.75			86562215	86521616	86521620	
2	87610715		86533830	86521617	86521621	
2.25		84569161				
2.5	87023128	87622775	84522369	86521618	86521622	
2.75		87610716	84553347			
3			84553071		86837896	
3.5			48057131			
4		84569162				
	1/4	5/16	3/8	1/2	5/8	3/4
Coarse Thread Pitch	20	18	16	13	11	10

* Do not use these sizes in new designs

TABLE 4: Inch Hex Flange Bolts, Grade 5, Miscellaneous

Nominal Diameter (E)	Threads Per Inch	Length (L)	Basic Thread Length (L _T)	Finish	Part Number
0.250	20	1.25	FULL	ZND	84543948
0.375	16	1	FULL	DOR	87343114
0.375	16	4.5	1	ZND	84559736
0.375	24	11.22	2.2	ZND	86510249
0.50	13	0.75	FULL	ZND	^51500637
0.625	11	1.75	FULL	ZND	^51448276
0.625	18	1.25	FULL	ZND	47604973
0.625	18	2.5	FULL	ZND	84490432

^Chemical lock per IFI 125; ND Microspheres 593S (Blue) or Precote 85; Minimum of 5 threads, entire circumference starting 2 threads from end.