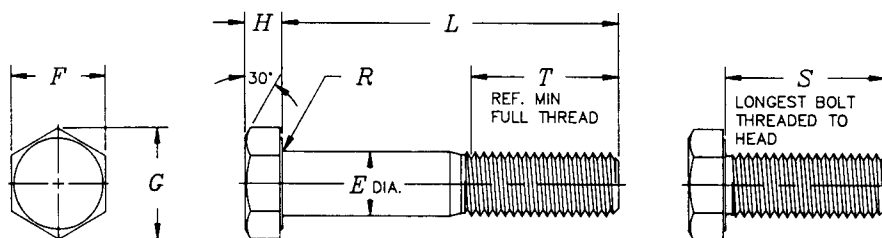


STRUCTURAL BOLTS, NUTS, WASHERS SPECIFICATIONS

Heavy Hex Structural Bolts

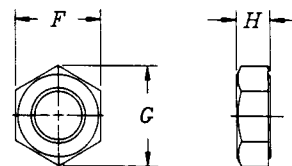
BOLT DIA.	<i>E</i> BODY DIA.		<i>F</i> FLATS		<i>G</i> CORNERS		<i>H</i> HEAD HGT.		<i>R</i> RADIUS		<i>T</i>	<i>S</i>
	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MIN.	
1/2	.515	.482	.875	.850	1.010	.969	.323	.302	.031	.009	1.000	1-1/4
5/8	.642	.605	1.062	1.031	1.227	1.175	.403	.378	.062	.021	1.250	1-1/2
3/4	.768	.729	1.250	1.212	1.443	1.383	.483	.455	.062	.021	1.380	1-3/4
7/8	.895	.852	1.438	1.394	1.660	1.589	.563	.531	.062	.031	1.500	2
1	1.022	.976	1.625	1.575	1.876	1.796	.627	.591	.093	.062	1.750	2-1/4
1-1/8	1.149	1.098	1.812	1.756	2.093	2.002	.718	.658	.093	.062	2.000	2-3/4
1-1/4	1.277	1.223	2.000	1.938	2.309	2.209	.813	.749	.093	.062	2.000	2-3/4



- ALL DIMENSIONS ARE IN INCHES
- DIMENSIONS TO ANSI/ASME B18.2.1
- THREADS ARE UNRC 2A TO ANSI/ASME B1.1
- MATERIAL AND MECHANICAL PROPERTIES TO ASTM A325 AND ASTM A490.

Heavy Hex Structural Nuts

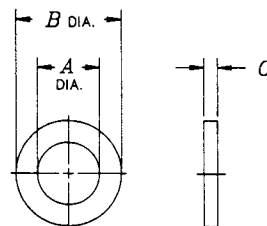
BOLT DIA.	<i>F</i> FLATS		<i>G</i> CORNERS		<i>H</i> THICKNESS	
	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.
1/2	.875	.850	1.010	.969	.504	.464
5/8	1.062	1.031	1.227	1.175	.631	.587
3/4	1.250	1.212	1.443	1.382	.758	.710
7/8	1.438	1.394	1.660	1.589	.885	.833
1	1.625	1.575	1.876	1.796	1.012	.956
1-1/8	1.812	1.756	2.093	2.002	1.139	1.079
1-1/4	2.000	1.938	2.309	2.209	1.251	1.187



- ALL DIMENSIONS ARE IN INCHES
- DIMENSIONS TO ANSI/ASME B18.2.2
- THREADS TO ANSI/ASME B1.1
- MATERIAL AND MECHANICAL PROPERTIES TO ASTM A563 AND ASTM A194

Structural Washers

BOLT DIA.	<i>A</i> DIA.		<i>B</i> DIA.		<i>C</i> THICKNESS		WT. IN LBS/100
	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	
1/2	.562	.531	1.093	1.031	.177	.097	2.57
5/8	.719	.688	1.343	1.281	.177	.122	3.62
3/4	.843	.812	1.500	1.438	.177	.122	4.45
7/8	.969	.938	1.781	1.719	.177	.136	6.68
1	1.156	1.125	2.031	1.969	.177	.136	8.94
1-1/8	1.281	1.250	2.281	2.219	.177	.136	11.10
1-1/4	1.406	1.375	2.531	2.469	.177	.136	13.80



- ALL DIMENSIONS ARE IN INCHES
- DIMENSIONS, MATERIAL AND MECHANICAL PROPERTIES TO ASTM F436

Surface condition of the assembly mating parts may have a significant effect on establishing the correct torque-tension relationship. Please refer to the American Institute of Steel Construction (AISC) publication "Specification for Structural Joints Using ASTM A325 or A490 Bolts" for assembly technique.