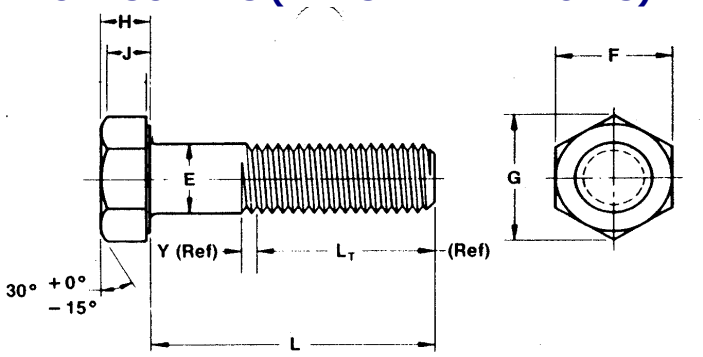
DESCRIPTION	PAGE

HEX CAP SCREWS (FINISHED HEX BOLTS)



Dimensions of Hex Head Screws

Nominal Size or Basic Product Diameter		E		F			G		H			J	L_T		Y	Runout of Bearing Surface FIM
		Body Diameter		Width Across Flats			Width Across Corners		Height			Wrenching Height	Thread Length for Screw Lengths		Transition Thread Length	
													6 in. & Shorter	Over 6 in.		
		Max	Min	Basic	Max	Min	Max	Min	Basic	Max	Min	Min	Basic	Basic	Max	Max
¼	0.2500	0.2500	0.2450	7/16	0.438	0.428	0.505	0.488	5/32	0.163	0.150	0.106	0.750	1.000	0.250	0.010
5/16	0.3125	0.3125	0.3065	1/2	0.500	0.489	0.577	0.557	13/64	0.211	0.195	0.140	0.875	1.125	0.278	0.011
3/8	0.3750	0.3750	0.3690	9/16	0.562	0.551	0.650	0.628	15/64	0.243	0.226	0.160	1.000	1.250	0.312	0.012
7/16	0.4375	0.4375	0.4305	5/8	0.625	0.612	0.722	0.698	9/32	0.291	0.272	0.195	1.125	1.375	0.357	0.013
½	0.5000	0.5000	0.4930	3/4	0.750	0.736	0.866	0.840	5/16	0.323	0.302	0.215	1.250	1.500	0.385	0.014
9/16	0.5625	0.5625	0.5545	13/16	0.812	0.798	0.938	0.910	23/64	0.371	0.348	0.250	1.375	1.625	0.417	0.015
5/8	0.6250	0.6250	0.6170	15/16	0.938	0.922	1.083	1.051	25/64	0.403	0.378	0.269	1.500	1.750	0.455	0.017
¾	0.7500	0.7500	0.7410	1-1/8	1.125	1.100	1.299	1.254	15/32	0.483	0.455	0.324	1.750	2.000	0.500	0.020
7/8	0.8750	0.8750	0.8660	1-5/16	1.312	1.285	1.516	1.465	35/64	0.563	0.531	0.378	2.000	2.250	0.556	0.023
1	1.0000	1.0000	0.9900	1-1/2	1.500	1.469	1.732	1.675	39/64	0.627	0.591	0.416	2.250	2.500	0.625	0.026
1-1/8	1.1250	1.1250	1.1140	1-11/16	1.688	1.631	1.949	1.859	11/16	0.718	0.658	0.461	2.500	2.750	0.714	0.029
1-1/4	1.2500	1.2500	1.2390	1-7/8	1.875	1.812	2.165	2.066	25/32	0.813	0.749	0.530	2.750	3.000	0.714	0.033
1-3/8	1.3750	1.3750	1.3630	2-1/16	2.062	1.994	2.382	2.273	27/32	0.878	0.810	0.569	3.000	3.250	0.833	0.036
1-1/2	1.5000	1.5000	1.4880	2-1/4	2.250	2.175	2.598	2.480	1-5/16	0.974	0.902	0.640	3.250	3.500	0.833	0.039
1-3/4	1.7500	1.7500	1.7380	2-5/8	2.625	2.538	3.031	2.890	1-3/32	1.134	1.054	0.748	3.750	4.000	1.000	0.046
2	2.0000	2.0000	1.9880	3	3.000	2.900	3.464	3.306	1-7/32	1.263	1.175	0.825	4.250	4.500	1.111	0.052
2-1/4	2.2500	2.2500	2.2380	3-3/8	3.375	3.262	3.897	3.719	1-3/8	1.423	1.327	0.933	4.750	5.000	1.111	0.059
2-1/2	2.5000	2.5000	2.4880	3-3/4	3.750	3.625	4.330	4.133	1-17/32	1.583	1.479	1.042	5.250	5.500	1.250	0.065
2-3/4	2.7500	2.7500	2.7380	4-1/8	4.125	3.988	4.763	4.546	1-11/16	1.744	1.632	1.151	5.750	6.000	1.250	0.072
3	3.00	3.0000	2.9880	4-1/2	4.500	4.350	5.196	4.959	1-7/8	1.935	1.815	1.290	6.250	6.500	1.250	0.079

WRENCH OPENINGS FOR SQUAREAND HEX BOLTS AND SCREWS

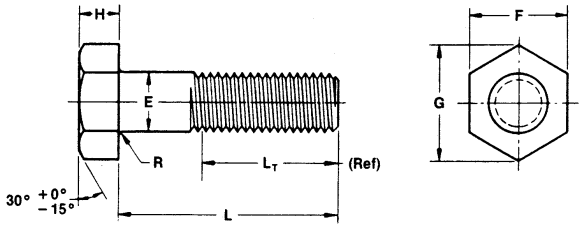
Nominal Size of Wrench (1) also Basic (Maximum) Width Across Flats of Bolt and Screw Heads		Allowance between Bolt or Screw Head and Jaws of Wrench (2)	Wrench Openings			Square Bolts Hex Bolts Hex Cap Screw (Finished Hex Bolt) Lag Screw	Heavy Hex Bolt Heavy Hex Screw Heavy Hex Structural Bolt
			Min	Tol (2)	Max	Nominal Product Sizes	
1/8	0.1250	0.002	0.127	0.005	0.132	...	...
5/32	0.1562	0.002	0.158	0.005	0.163	...	...
3/16	0.1875	0.002	0.190	0.005	0.195	...	...
7/32	0.2188	0.002	0.220	0.005	0.225	...	...
¼	0.2500	0.002	0.252	0.005	0.257	...	...
9/32	0.2812	0.002	0.283	0.005	0.288	No. 10	...
5/16	0.3125	0.003	0.316	0.006	0.322	...	...
11/32	0.3438	0.003	0.347	0.006	0.353	...	...
3/8	0.3750	0.003	0.378	0.006	0.384	1.4 (3)	...
7/16	0.4375	0.003	0.440	0.006	0.446	1/4	...
½	0.5000	0.004	0.504	0.006	0.510	5/16	...
9/16	0.5625	0.004	0.566	0.007	0.573	3/8	...
5/8	0.6250	0.004	0.629	0.007	0.636	7/16	...
11/16	0.6875	0.004	0.692	0.007	0.699	...	...
¾	0.7500	0.005	0.755	0.008	0.763	1/2	...
13/16	0.8125	0.005	0.818	0.008	0.826	9/16	...
7/8	0.8750	0.005	0.880	0.008	0.888	...	½
15/16	0.9375	0.006	0.944	0.009	0.953	5/8	...
1	1.0000	0.006	1.006	0.009	1.015	...	...
1-1/16	1.0625	0.006	1.068	0.009	1.077	...	5/8
1-1/8	1.1250	0.007	1.132	0.010	1.142	3/4	...
1-1/4	1.2500	0.007	1.257	0.010	1.267	...	¾
1-5/16	1.3125	0.008	1.320	0.011	1.331	7/8	...
1-3/8	1.3750	0.008	1.383	0.011	1.394	...	...
1-7/16	1.4375	0.008	1.446	0.011	1.457	...	7/8
1-1/2	1.5000	0.008	1.508	0.012	1.520	1	
1-5/8	1.6250	0.009	1.634	0.012	1.646	...	1
1-11/16	1.6875	0.009	1.696	0.012	1.708	1-1/8	
1-13/16	1.8125	0.010	1.822	0.013	1.835	...	1-1/8
1-7/8	1.8750	0.010	1.885	0.013	1.898	1-1/4	
2	2.0000	0.011	2.011	0.014	2.025	...	1-1/4
2-1/16	2.0625	0.011	2.074	0.014	2.088	1-3/8	
2-3/16	2.1875	0.012	2.200	0.015	2.215	...	1-3/8
2-1/4	2.2500	0.012	2.262	0.015	2.277	1-1/2	

WRENCH OPENINGS FOR SQUARE AND HEX BOLTS AND SCREWS

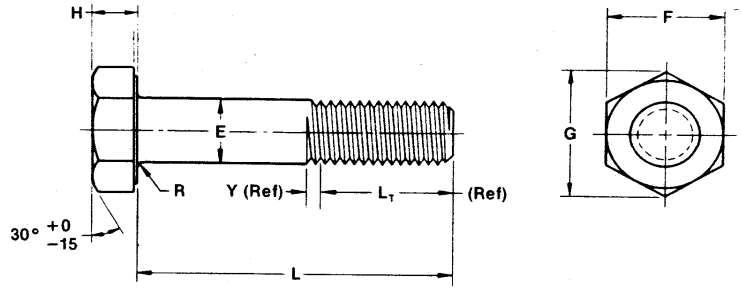
Nominal Size of Wrench (1) also Basic (Maximum) Width Across Flats of Bolt and Screw Heads		Allowance between Bolt or Screw Head and Jaws of Wrench (2)	Wrench Openings			Square Bolts	Heavy Hex Bolt
						Hex Bolts	Heavy Hex Screw
						Hex Cap Screw (Finished Hex Bolt)	Heavy Hex Structural Bolt
						Lag Screw	
			Min	Tol (2)	Max	Nominal Product Sizes	
2-3/8	2.3750	0.013	2.388	0.016	2.404	...	1-1/2
2-7/16	2.4375	0.013	2.450	0.016	2.466	1-5/8	...
2-9/16	2.5625	0.014	2.576	0.017	2.593	...	1-5/8
2-5/8	2.6250	0.014	2.639	0.017	2.656	1-3/4	...
2-3/4	2.7500	0.014	2.766	0.017	2.783	...	1-3/4
2-13/16	2.8125	0.015	2.827	0.018	2.845	1-7/8	...
2-15/16	2.9375	0.016	2.954	0.019	2.973	...	1-7/8
3	3.0000	0.016	3.016	0.019	3.035	2	...
3-1/8	3.1250	0.017	3.142	0.020	3.162	...	2
3-3/8	3.3750	0.018	3.393	0.021	3.414	2-1/4	...
3-1/2	3.5000	0.019	3.518	0.022	3.540	...	2-1/4
3-3/4	3.7500	0.020	3.770	0.023	3.793	2-1/2	...
3-7/8	3.8750	0.020	3.895	0.023	3.918	...	2-1/2
4-1/8	4.1250	0.022	4.147	0.025	4.172	2-3/4	...
4-1/4	4.2500	0.022	4.272	0.025	4.297	...	2-3/4
4-1/2	4.5000	0.024	4.524	0.026	4.550	3	...
4-5/8	4.6250	0.024	4.649	0.027	4.676	...	3
4-7/8	4.8750	0.025	4.900	0.028	4.928	3-1/4	...
5	5.0000	0.026	5.026	0.029	5.055	...	...
5-1/4	5.2500	0.027	5.277	0.030	5.307	3-1/2	...
5-3/8	5.3750	0.028	5.403	0.031	5.434	...	...
5-5/8	5.6250	0.029	5.654	0.032	5.686	3-3/4	...
5-3/4	5.7500	0.030	5.780	0.033	5.813	...	...
6	6.0000	0.031	6.031	0.034	6.065	4	...
6-1/8	6.1250	0.032	6.157	0.035	6.192	...	...

HEAVY HEX BOLTS

Dimensions of Heavy Hex Bolts



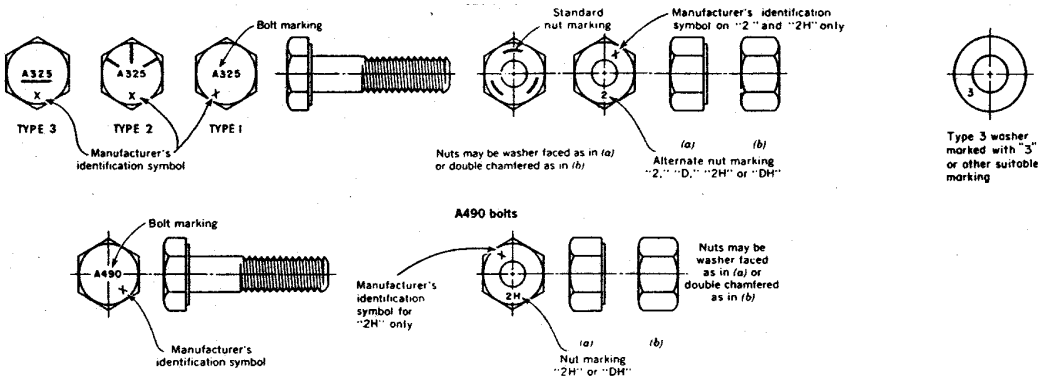
Nominal Size or Basic Product Diameter	E	F			G		H			R		L_T		
	Body Dia	Width Across Flats			Width Across Corners		Height			Radius of Fillet		Thread Length for Bolt Lengths		
												6 in. & Shorter		Over 6 in.
	Max	Basic	Max	Min	Max	Min	Basic	Max	Min	Max	Min	Basic		Basic
1/2	0.5000	0.515	7/8	0.875	0.850	1.010	0.969	11/32	0.364	0.302	0.03	0.01	1.250	1.500
5/8	0.6250	0.642	1-1/16	1.062	1.031	1.227	1.175	27/64	.0444	0.378	0.06	0.02	1.500	1.750
3/4	0.7500	0.768	1-1/4	1.250	1.212	1.443	1.383	1/2	0.524	0.455	0.06	0.02	1.750	2.000
7/8	0.8750	0.895	1-7/16	1.438	1.394	1.660	1.589	37/64	0.604	0.531	0.06	0.02	2.000	2.250
1	1.0000	1.022	1-5/8	1.625	1.575	1.876	1.796	43/64	0.700	0.591	0.09	0.03	2.250	2.500
1-1/8	1.1250	1.149	1-13/16	1.812	1.756	2.093	2.002	3/4	0.780	0.658	0.09	0.03	2.500	2.750
1-1/4	1.2500	1.277	2	2.000	1.938	2.309	2.209	27/32	0.876	0.749	0.09	0.03	2.750	3.000
1-3/8	1.3750	1.404	2-3/16	2.188	2.119	2.526	2.416	29/32	0.940	0.810	0.09	0.03	3.000	3.250
1-1/2	1.5000	1.531	2-3/8	2.375	2.300	2.742	2.622	1	1.036	0.902	0.09	0.03	3.250	3.500
1-3/4	1.7500	1.785	2-3/4	2.750	2.662	3.175	3.035	1-5/32	1.196	1.054	0.12	0.04	3.750	4.000
2	2.0000	2.039	3-1/8	3.125	3.025	3.608	3.449	1-11/32	1.388	1.175	0.12	0.04	4.250	4.500
2-1/4	2.2500	2.305	3-1/2	3.500	3.388	4.041	3.862	1-1/2	1.548	1.327	0.19	0.06	4.750	5.000
2-1/2	2.5000	2.559	3-7/8	3.875	3.750	4.474	4.275	1-21/32	1.708	1.479	0.19	0.06	5.250	5.500
2-3/4	2.7500	2.827	4-1/4	4.250	4.112	4.907	4.688	1-13/16	1.869	1.632	0.19	0.06	5.750	6.000
3	3.0000	3.081	4-5/8	4.625	4.475	5.340	5.102	2	2.060	1.815	0.19	0.06	6.250	6.500
3-1/4	3.2500	--	5	--	--	5-11/16	--	2-5/32	--	--	--	--	--	7.000
3-1/2	3.5000	--	5-3/8	--	--	6-1/8	--	2-5/16	--	--	--	--	--	7.500
3-3/4	3.7500	--	5-3/4	--	--	6-35/64	--	2-15/32	--	--	--	--	--	8.000
4	4.0000	--	6-1/8	--	--	6-63/64	--	2-11/16	--	--	--	--	--	8.500



HIGH STRENGTH STRUCTURAL BOLTS

Dimensions of Heavy Hex Structural Bolts

Nominal Size or Basic Product Diameter		E		F			G		H			R		L_T	Y	Runout of Bearing Surface FIM
		Body Diameter		Width Across Flats			Width Across Corners		Height			Radius of Fillet		Thread Length	Transi-tion Thread Length	
		Max	Min	Basic	Max	Min	Max	Min	Basic	Max	Min	Max	Min	Basic	Max	Max
1/2	0.5000	0.515	0.482	7/8	0.875	0.850	1.010	0.969	5/16	0.323	0.302	0.031	0.009	1.00	0.19	0.016
5/8	0.6250	0.642	0.605	1-1/16	1.062	1.031	1.227	1.175	25/64	0.403	0.378	0.062	0.021	1.25	0.22	0.019
3/4	0.7500	0.768	0.729	1-1/4	1.250	1.212	1.443	1.383	15/32	0.483	0.455	0.062	0.021	1.38	0.25	0.022
7/8	0.8750	0.895	0.852	1-7/16	1.438	1.394	1.660	1.589	35/64	0.563	0.531	0.062	0.031	1.50	0.28	0.025
1	1.0000	1.022	0.976	1-5/8	1.625	1.575	1.876	1.796	39/64	0.627	0.591	0.093	0.062	1.75	0.31	0.028
1-1/8	1.1250	1.149	1.098	1-13/16	1.812	1.756	2.093	2.002	11/16	0.718	0.658	0.093	0.062	2.00	0.34	0.032
1-1/4	1.2500	1.277	1.223	2	2.000	1.938	2.309	2.209	25/32	0.813	0.749	0.093	0.062	2.00	0.38	0.035
1-3/8	1.3750	1.404	1.345	2-3/16	2.188	2.119	2.526	2.416	27/32	0.878	0.810	0.093	0.062	2.25	0.44	0.038
1-1/2	1.5000	1.531	1.470	2-3/8	2.375	2.300	2.742	2.622	15/16	0.974	0.902	0.093	0.062	2.25	0.44	0.041



HIGH-STRENGTH STRUCTURAL BOLTING, Washer Dimensions and Bolt Strengths

Dimensions[1] of Washers for High Strength Bolts

Bolt Size D	Flat Circular Washers				Square or Rectangular Beveled Washers for American Standard Beams and Channels		
	Nominal Outside Diameter[2]	Nominal Diameter of Hole	Thickness		Minimum Side Dimension	Mean Thickness	Slope or Taper in Thickness
			Min	Max			
½	1-1/16	17/32	0.097	0.177	1-3/4	5/16	1:6
5/8	1-5/16	21/32	0.122	0.177	1-3/4	5/16	1:6
¾	1-15/32	13/16	0.122	0.177	1-3/4	5/16	1:6
7/8	1-3/4	15/16	0.136	0.177	1-3/4	5/16	1:6
1	2	1-1/16	0.136	0.177	1-3/4	5/16	1:6
1-1/8	2-1/4	1-1/4	0.136	0.177	2-1/4	5/16	1:6
1-1/4	2-1/2	1-3/8	0.136	0.177	2-1/4	5/16	1:6
1-3/8	2-3/4	1-1/2	0.136	0.177	2-1/4	5/16	1:6
1-1/2	3	1-5/8	0.136	0.177	2-1/4	5/16	1:6
1-3/4	3-3/8	1-7/8	0.178*	0.28*	--	--	--
2	3-3/4	2-1/8	0.178	0.28	--	--	--
Over 2 to 4 incl.	2D-1/2	D+1/8	0.24**	0.34**	--	--	--

NOTES:
1. All dimensions are in inches.
2. May be exceeded by 1/4 in.
3. *3/16 in. nominal
4. **1/4 in. nominal – Washers shall be flat within 0.030 in. There shall be no projection exceeding .030 inches above the flat of either face of the washer.

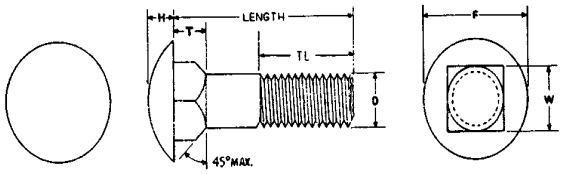
Strength Properties of High Strength Structural Bolts and Nuts

Nominal Bolt/Nut Size, Thrds per Inch and Thread Series		A325 Bolts		A490 Bolts		A325 Nuts	A194 Grade 2H Nuts
		Proof[1] Load lb	Tensile[2] Strength Min lb	Proof[1] Load Lb	Tensile[2] Strength Min lb	Proof[3] Load lb	Proof[3] Load Lb
½	13 UNC	12,050	17,050	17,050	21,300	20,450	24,850
5/8	11 UNC	19,200	27,100	27,100	33,900	32,550	39,550
¾	10 UNC	28,400	40,100	40,100	50,100	48,100	58,450
7/8	9 UNC	39,250	55,450	55,450	69,300	66,550	80,850
1	8 UNC	51,500	72,700	72,700	90,900	87,250	106,000
1-1/8	7 UNC	56,450	80,100	91,550	114,450	109,900	133,500
1-1/8	8 UN	58,450	82,950	94,800	118,500	113,800	138,200
1-1/4	7 UNC	71,700	101,700	116,300	145,350	139,500	169,600
1-1/4	8 UN	74,000	105,000	120,000	150,000	144,000	175,000
1-3/8	6 UNC	85,450	121,300	138,600	173,250	166,300	202,100
1-3/8	8 UN	91,250	129,500	148,000	185,000	177,600	215,800
1-1/2	6 UNC	104,000	147,500	168,600	210,750	202,300	245,900
1-1/2	8 UN	110,400	156,700	175,050	223,800	214,800	261,100

NOTES:
1. Proof load of bolt is the load the bolt must support in axial tension without permanent deformation.
2. Tensile strength of bolt is the minimum load the bolt must support in axial tension without failure of the bolt.
3. Proof load of nut is the load the nut must support axially without evidence of thread stripping or rupture.

DIMENSIONAL DATA

CARRIAGE BOLTS



BASIC SIZE	Threads per inch UNC	Body Dia (D)	Diameter of Head (F)		Height of Head (H)		Depth of Square (T)		Width of Square (W)	
		Max	Min	Max	Min	Max	Min	Max	Min	Max
#10	24	.199	.438	.469	.094	.114	.094	.125	.185	.199
¼"	20	.260	.563	.594	.125	.145	.125	.156	.245	.260
5/16"	18	.324	.688	.719	.156	.176	.156	.187	.307	.324
3/8"	16	.388	.782	.844	.188	.208	.188	.219	.368	.388
7/16"	14	.452	.907	.969	.219	.239	.219	.250	.431	.452
½"	13	.515	1.032	1.094	.250	.270	.250	.281	.492	.515
5/8"	11	.642	1.219	1.344	.313	.344	.313	.344	.616	.642
¾"	10	.768	1.469	1.594	.375	.406	.375	.406	.741	.768

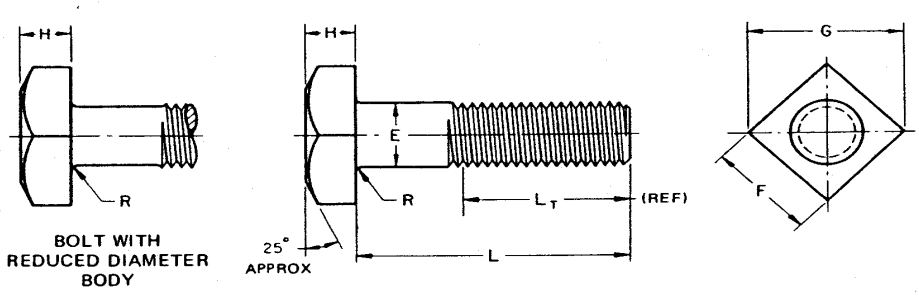
THREAD LENGTH (TL) = 2D+1/4" up to and including 6" in length. Carriage bolts too short for this formula shall be threaded as close to the head as practicable. For longer than 6", formula is TL = 2D+1/2". Threads to Class 2A Tolerance.

LAG BOLTS

Basic Size (D)	Threads per Inch	Thread Dimensions				Width Across Flats (F)		Height (H)	
		Pitch (P)	Flat at Root (B)	Depth of Thread (T)	Root Dia (R)	Min	Max	Min	Max
¼″	10	.100	.043	.039	.173	.362	.3750	.156	.188
5/16″	9	.111	.048	.043	.227	.484	.5000	.186	.220
3/8″	7	.143	.062	.055	.265	.544	.5625	.232	.268
7/16″	7	.143	.062	.055	.328	.603	.625	.278	.316
½″	6	.167	.072	.064	.371	.725	.7500	.308	.348
5/8″	5	.200	.086	.077	.471	.096	.9375	.400	.444
¾″	4-1/2	.222	.096	.085	.579	1.088	1.1250	.476	.524

THREAD LENGTH (TL) = 1/2 Length (L)+1/2". Lag screws too short for this formula shall be threaded as close to the head as practical.

SQUARE BOLTS

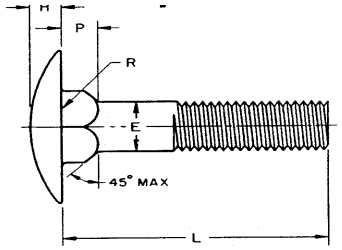


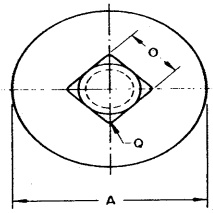
Dimensions of Square Bolts

Nominal Size or Basic Bolt Diameter		E	F			G		H			R		L_T (Ref)	
		Body Dia	Width Across Flats			Width Across Corners		Height			Radius of Fillet		Thread Length	
													For Bolt Lgths ≤ 6 in.	For Bolt Lgths ≥ 6 in.
		Max	Basic	Max	Min	Max	Min	Basic	Max	Min	Max	Min	Basic	Basic
1/4	0.2500	0.260	3/8	0.375	0.362	0.530	0.498	11/64	0.188	0.156	0.03	0.01	0.750	1.000
5/16	0.3125	0.324	1/2	0.500	0.484	0.707	0.665	13/64	0.220	0.186	0.03	0.01	0.875	1.125
3/8	0.3750	0.388	9/16	0.562	0.544	0.795	0.747	1/4	0.268	0.232	0.03	0.01	1.000	1.250
7/16	0.4375	0.452	5/8	0.625	0.603	0.884	0.828	19/64	0.316	0.278	0.03	0.01	1.125	1.375
1/2	0.5000	0.515	3/4	0.750	0.725	1.061	0.995	21/64	0.348	0.308	0.03	0.01	1.250	1.500
5/8	0.6250	0.642	15/16	0.938	0.906	1.326	1.244	27/64	0.444	0.400	0.06	0.02	1.500	1.750
3/4	0.7500	0.768	1-1/8	1.125	1.088	1.591	1.494	1/2	0.524	0.476	0.06	0.02	1.750	2.000
7/8	0.8750	0.895	1-5/16	1.312	1.269	1.856	1.742	19/32	0.620	0.568	0.06	0.02	2.000	2.250
1	1.0000	1.022	1-1/2	1.500	1.450	2.121	1.991	21/32	0.684	0.628	0.09	0.03	2.250	2.500
1-1/8	1.1250	1.149	1-11/16	1.688	1.631	2.386	2.239	3/4	0.780	0.720	0.09	0.03	2.500	2.750
1-1/4	1.2500	1.277	1-7/8	1.875	1.812	2.652	2.489	27/32	0.876	0.812	0.09	0.03	2.750	3.000
1-3/8	1.3750	1.404	2-1/16	2.062	1.994	2.917	2.738	29/32	0.940	0.872	0.09	0.03	3.000	3.250
1-1/2	1.5000	1.531	2-1/4	2.250	2.175	3.182	2.986	1	1.036	0.964	0.09	0.03	3.250	3.500

NOTE: Square bolts are not regularly available and have been replaced by Finished Hex Head bolts.

STEP BOLT AND FLAT COUNTERSUNK HEAD ELEVATOR BOLTS

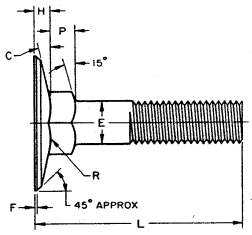


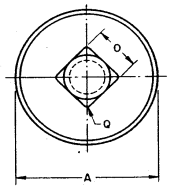


Step Bolts

Nominal Size[1] or Basic Bolt Diameter		E Body Diameter		A Head Diameter		H Head Height		O Square Width		P Square Depth		Q Corner Radius on Square	R Fillet Radius
		Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
#10	0.1900	0.199	0.182	0.656	0.625	0.114	0.094	0.199	0.185	0.125	0.094	0.031	0.031
¼	0.2500	0.260	0.237	0.844	0.813	0.145	0.125	0.260	0.245	0.156	0.125	0.031	0.031
5/16	0.3125	0.324	0.298	1.031	1.000	0.176	0.156	0.324	0.307	0.187	0.156	0.031	0.031
3/8	0.3750	0.388	0.360	1.219	1.188	0.208	0.188	0.388	0.368	0.219	0.188	0.047	0.031
7/16	0.4375	0.452	0.421	1.406	1.375	0.239	0.219	0.452	0.431	0.250	0.219	0.047	0.031
½	0.5000	0.515	0.483	1.594	1.563	0.270	0.250	0.515	0.492	0.281	0.250	0.047	0.031

Flat Countersunk Head Elevator Bolts





Nominal Size[1] or Basic Bolt Diameter		E Body Diameter		A Head Diameter			C Head Angle	F Flat on Min Dia Head	H Head Height		O Square Width		P Square Depth		Q Corner Radius on Square	R Fillet Radius
		Max	Min	Max Edge Sharp	Min Edge Sharp	Min Edge Flat	Ref	Max	Max	Min	Max	Min	Max	Min	Max	Min
#10	0.1900	0.199	0.182	0.790	0.750	0.740	9°	0.025	0.082	0.062	0.210	0.185	0.125	0.094	0.031	0.031
1/4	0.2500	0.260	0.237	1.008	0.969	0.938	9°	0.035	0.098	0.078	0.280	0.245	0.219	0.188	0.031	0.031
5/16	0.3125	0.324	0.298	1.227	1.188	1.157	9°	0.035	0.114	0.094	0.342	0.307	0.250	0.219	0.031	0.031
3/8	0.3750	0.388	0.360	1.352	1.312	1.272	11°	0.040	0.145	0.125	0.405	0.368	0.250	0.219	0.047	0.031
7/16	0.4375	0.452	0.421	1.477	1.438	1.397	13°	0.040	0.176	0.156	0.468	0.431	0.281	0.250	0.047	0.031
1/2	0.5000	0.515	0.483	1.607	1.562	1.522	12°	0.040	0.176	0.156	0.530	0.492	0.281	0.250	0.047	0.031

NOTES: 1. Where specifying nominal size in decimals, zeros preceding decimal and in the fourth decimal place shall be omitted.