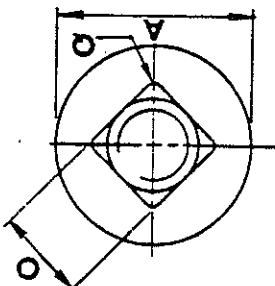
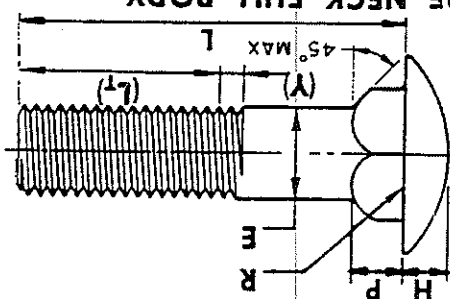


CARRIAGE BOLT

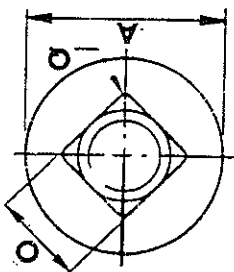
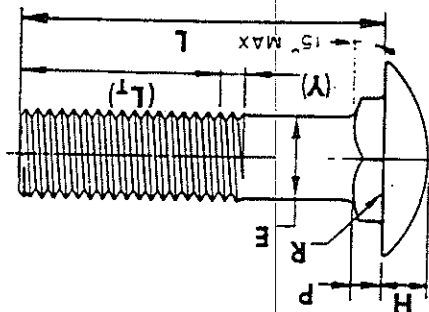
1. DIMENSIONS



LONG SQUARE NECK FULL BODY

Nominal Size or Basic Bolt Diameter	E	Body Diameter		Head Diameter		Head Height		Square Width		Square Depth		Corner Radius on Square		R
		Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	
No. 10	1/4 0.2500	0.260	0.237	0.594	0.438	0.114	0.094	0.125	0.185	0.307	0.187	0.094	0.031	0.031
	5/16 0.3125	0.324	0.298	0.719	0.688	0.176	0.156	0.260	0.245	0.156	0.125	0.031	0.031	0.031
	3/8 0.3750	0.388	0.360	0.844	0.782	0.208	0.188	0.388	0.363	0.219	0.188	0.047	0.031	0.031
	7/16 0.4375	0.452	0.421	0.969	0.907	0.239	0.219	0.452	0.431	0.250	0.219	0.047	0.031	0.031
	1/2 0.5000	0.515	0.483	1.094	1.032	0.270	0.250	0.515	0.492	0.281	0.250	0.078	0.062	0.062
	5/8 0.6250	0.642	0.605	1.344	1.219	0.344	0.313	0.642	0.616	0.344	0.313	0.078	0.062	0.062
	3/4 0.7500	0.768	0.729	1.594	1.469	0.406	0.375	0.768	0.741	0.406	0.375	0.078	0.062	0.062
	7/8 0.8750	0.895	0.852	1.844	1.719	0.469	0.438	0.895	0.865	0.469	0.438	0.094	0.062	0.062
1	1.0000	1.022	0.976	2.094	1.969	0.531	0.500	1.022	0.990	0.531	0.500	0.094	0.062	0.062

SHORT SQUARE NECK FULL OR REDUCED BODY



2. GENERAL SPECIFICATIONS

2.1 Scope. This standard covers finished round head, square neck bolts conforming to ANSI B18.5, unless otherwise specified. (Other National standards shown on page CSP-IB 0.01 may be applied in lieu of ANSI B18.5, where appropriate.)

Screw threads shall be tolerance Class 2A per Unified Screw Thread standards, as specified in Table 8 of CSP-IB 1. Unless otherwise indicated all values are expressed in inches. Metric data are shown in parentheses.

2.2 Material. See Section 2.2 of CSP-IB 1.

2.3 Strength Class. This standard covers SAE 5 (ISO 8.8) bolts (Reference Section 2.3 of CSP-IB 1.

2.4 Finish. See Section 2.4 of CSP-IB 1.

2.5 Physical Requirements. The general dimensions of parts covered by this specification are tabulated in Section 1 of this standard. The following additional or special requirements also apply.

Other dimensions or special requirements shall comply with the appropriate ISO standards or with National standards which apply in the area of purchase. The following requirements, while desirable in all instances, are mandatory in North America.

2.5.1 Body Diameter

Full Diameter Body. Bolts covered by this standard, except as noted below, will be furnished with full diameter body limits given in the dimensional tables (shown on page CSP-IB 3.01).

Reduced Diameter Body. Short square neck carriage bolts may be furnished with full diameter body or with reduced diameter body having a minimum limit equal to the minimum pitch diameter of the thread.

2.5.2 Bolt Head

Height of Head. The height of head shall be measured, parallel to the axis of bolt, from the top of head to the bearing surface. Head Periphery. Because the heads on these products normally are not machined or trimmed, the circumference may be somewhat irregular and the edge may be rounded or flat.

Underhead Fillets. All bolts having flat bearing surface type heads shall have a definite fillet at the junction of head and shank. The radius of fillet shall not exceed the values specified in the respective dimensional tables.

2.5.3 Square Neck

Depth of Square. The depth of square shall be measured, parallel to the axis of bolt at the midpoint of the flats of square, from the bottom of square to the bearing surface.

Corners of Square. The corners of square neck may be rounded to the extent specified in the respective dimensional tables and need not be filled out for the total depth of square.

2.5.4 Thread Length. See Section 2.5 of CSP-IB 1.

2.5.5 Point. See Section 2.5 of CSP-IB 1.

2.5.6 Bolt Length. The tolerance on bolt length is plus or minus in accordance with Table 1.

2.5.7 Straightness. See Section 2.5 of CSP-IB 1.

2.5.8 Head Marking. See Section 2.5 of CSP-IB 1.

2.5.9 Surface Discontinuities. See Section 3.6 of CSP-IB 1.

3. SCREW THREADS

See Section 4. of CSP-IB 1.

TABLE 1 - TOLERANCE ON BOLT LENGTH

Specified Length L	NOMINAL SIZE			
	#10 thru 3/8	7/16 & 1/2	5/8 & 3/4	7/8 & 1
L ≤ 1 (25.4)	+0.02 (0.5) -0.03 (0.8)	+0.02 (0.5) -0.03 (0.8)	+0.02 (0.5) -0.03 (0.8)	--
1 (25.4) < L ≤ 2.5 (63.5)	+0.02 (0.5) -0.04 (1.0)	+0.04 (1.0) -0.06 (1.5)	+0.06 (1.5) -0.08 (2.0)	+0.08 (2.0) -0.10 (2.5)
2.5 (63.5) < L ≤ 4 (102)	+0.04 (1.0) -0.06 (1.5)	+0.06 (1.5) -0.08 (2.0)	+0.08 (2.0) -0.10 (2.5)	+0.10 (2.5) -0.12 (3.0)
4 (102) < L ≤ 6 (152)	+0.06 (1.5) -0.10 (2.5)	+0.08 (2.0) -0.12 (3.0)	+0.10 (2.5) -0.14 (3.6)	+0.12 (3.0) -0.16 (4.1)
L > 6 (152)	+0.10 (2.5) -0.18 (4.6)	+0.12 (3.0) -0.18 (4.6)	+0.14 (3.6) -0.18 (4.6)	+0.16 (4.1) -0.20 (5.1)