

CARRIAGE BOLT UNC SAE 5
LONG SQUARE NECK FULL BODY
ISO 8.8 BS S

364958X1 ZINC PLATE

P NMINAL SIZE. R (DIA X PITCH) E UPCF CODE F		1/4 -20 (6.3X1.27) 40300	5/16-18 (7.9X1.41) 40301	3/8 -16 (9.5X1.58) 40302	7/16-14 (11.1X1.81) 40303	1/2 -13 (12.7X1.95) 40304	5/8 -11 (15.8X2.30) 40305	3/4 -10 (19.0X2.54) 40306
LENGTH FINISH								
F 0.50(12.7)	ZN	* 364 941 X1	369 774 X1					
S 0.62(15.7)	ZN	* 364 942 X1	* 365 415 X1					
F 0.75(19.0)	ZN	* 364 943 X1	* 364 352 X1	372 746 X1	369 759 X1			
S 0.88(22.3)	ZN	* 364 944 X1	* 364 954 X1	* 365 417 X1	369 761 X1			
F 1.00(25.4)	ZN	* 364 945 X1	* 364 534 X1	* 364 944 X1	* 363 486 X1	* 365 777 X1		
F 1.25(31.7)	ZN	* 364 946 X1	* 364 533 X1	* 363 905 X1	* 361 325 X1	* 364 224 X1	369 771 X1	
F 1.50(38.1)	ZN	* 364 947 X1	* 364 955 X1	* 364 945 X1	* 361 326 X1	* 364 246 X1	* 363 503 X1	
F 1.75(44.4)	ZN	* 364 948 X1	* 364 956 X1	* 363 770 X1	* 364 046 X1	* 364 975 X1	* 364 089 X1	369 773 X1
F 2.00(50.8)	ZN	* 364 949 X1	* 364 957 X1	* 363 906 X1	* 364 091 X1	* 364 978 X1	* 363 464 X1	363 569 X1
F 2.25(57.1)	ZN	* 364 950 X1	* 364 958 X1	* 364 966 X1	* 363 378 X1	* 364 535 X1	* 363 423 X1	356 905 X1
F 2.50(63.5)	ZN	* 364 951 X1	* 364 959 X1	* 363 958 X1	* 362 053 X1	* 364 977 X1	* 364 986 X1	* 364 322 X1
F 2.75(69.8)	ZN	* 364 952 X1	* 364 960 X1	* 364 967 X1	* 363 504 X1	* 364 978 X1	* 363 376 X1	* 361 369 X1
F 3.00(76.2)	ZN	* 364 953 X1	* 364 961 X1	* 364 968 X1	* 364 971 X1	364 979 X1	* 363 771 X1	* 364 997 X1
F 3.25(82.5)	ZN	* 364 954 X1	* 364 962 X1	* 364 969 X1	364 972 X1	364 980 X1	* 363 987 X1	* 364 423 X1
F 3.50(88.9)	ZN	* 364 955 X1	* 364 963 X1	* 364 970 X1	364 973 X1	* 364 981 X1	* 364 988 X1	* 363 852 X1
S 3.75(95.2)	ZN	* 364 956 X1	369 748 X1	* 365 883 X1	364 974 X1	* 364 982 X1	* 364 989 X1	* 364 424 X1
F 4.00(101.6)	ZN	* 364 957 X1	* 367 083 X1	* 365 814 X1	365 070 X1	364 983 X1	* 364 990 X1	* 364 012 X1
S 4.25(107.9)	ZN	* 364 958 X1	* 369 749 X1	* 369 751 X1	365 071 X1	364 984 X1	* 364 991 X1	364 998 X1
F 4.50(114.3)	ZN	* 364 959 X1	* 369 750 X1	* 369 752 X1	363 300 X1	364 985 X1	* 364 992 X1	364 999 X1
B 4.75(120.6)	ZN			372 654 X1	366 249 X1	365 734 X1	* 364 993 X1	363 296 X1
F 5.00(127.0)	ZN							365 002 X1
S 5.25(133.3)	ZN							
F 5.50(139.7)	ZN							
S 5.75(146.0)	ZN							
F 6.00(152.4)	ZN							
F 6.50(165.1)	ZN							
F 7.00(177.8)	ZN							
S 7.50(190.5)	ZN							
F 8.00(203.2)	ZN							

NOTE: SEE PAGE CSP-IB 3.23 FOR GENERAL NOTES

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

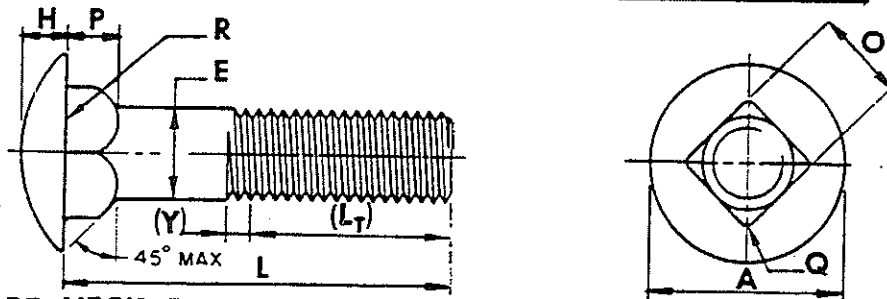
See Section 4. of CSP-IB 1.

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
$L \leq 1$ (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) $< L \leq 2.5$ (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) $< L \leq 4$ (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) -0.14 (3.6)
4 (102) $< L \leq 6$ (152)	+0.06 (1.5) -0.10 (2.5)	+0.08 (2.0) -0.10 (2.5)	+0.10 (2.5) -0.10 (2.5)	+0.12 (3.0) -0.16 (4.1)
$L > 6$ (152)	+0.10 (2.5) -0.13 (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)

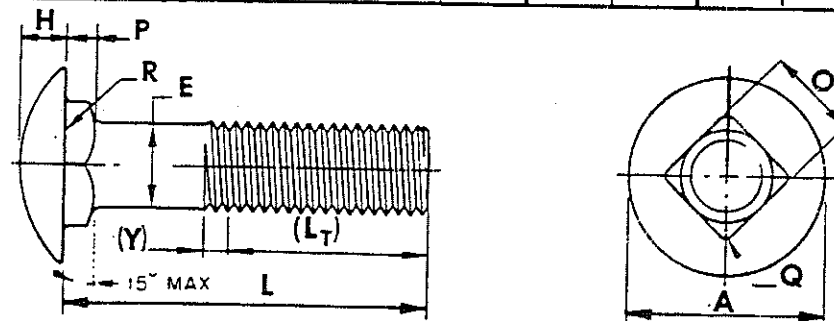
CARRIAGE BOLT

1. DIMENSIONS



LONG SQUARE NECK FULL BODY

Nominal Size or Basic Bolt Diameter	E		A		H		O		P		Q	R	
	Body Diameter		Head Diameter		Head Height		Square Width		Square Depth		Corner Radius on Square	Fillet Radius	
	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Max	
No. 10	0.1900	0.199	0.182	0.469	0.438	0.114	0.094	0.199	0.185	0.125	0.094	0.031	0.031
1/4	0.2500	0.260	0.237	0.594	0.563	0.145	0.125	0.260	0.245	0.156	0.125	0.031	0.031
5/16	0.3125	0.324	0.298	0.719	0.688	0.176	0.156	0.324	0.307	0.187	0.156	0.031	0.031
3/8	0.3750	0.388	0.360	0.844	0.782	0.208	0.188	0.388	0.366	0.219	0.188	0.047	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
1/2	0.5000	0.515	0.483	1.094	1.032	0.270	0.250	0.515	0.492	0.281	0.250	0.047	0.031
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
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
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
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



SHORT SQUARE NECK FULL OR REDUCED BODY

Nominal Size or Basic Bolt Diameter		E		A		H		O		P		Q	R
		Body Diameter		Head Diameter		Head Height		Square Width		Square Depth		Corner Radius on Square	Fillet Radius
		Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Max
1/4	0.2500	0.260	0.213	0.594	0.563	0.145	0.125	0.260	0.245	0.124	0.093	0.031	0.031
5/16	0.3125	0.324	0.272	0.719	0.688	0.176	0.156	0.324	0.307	0.124	0.093	0.031	0.031
3/8	0.3750	0.388	0.329	0.844	0.782	0.208	0.188	0.388	0.368	0.156	0.125	0.047	0.031
7/16	0.4375	0.452	0.385	0.969	0.907	0.239	0.219	0.452	0.431	0.156	0.125	0.047	0.031
1/2	0.5000	0.515	0.444	1.094	1.032	0.270	0.250	0.515	0.492	0.156	0.125	0.047	0.031
5/8	0.6250	0.642	0.559	1.344	1.219	0.344	0.313	0.642	0.616	0.218	0.187	0.078	0.062
3/4	0.7500	0.768	0.678	1.594	1.469	0.406	0.375	0.768	0.741	0.218	0.187	0.078	0.062