EXISTING CODES TO BE CANCELLED: NIL

(1) MATERIAL

(a) **Quality.-** ~~(i) Bolts and nuts, except those specifically referred to below shall be made from material conforming to B.S.S. Report No. 24, Part 6, Specification No. 16-1942, and subsequent amendments.~~

[(i) Bolts and nuts, except those specifically referred to below shall be made from material conforming to the following specifications :-

Under ½" diam.	B.S. 24	Part 6	Section 1	Grade 613
½" – 1" incl.	B.S. 24	Part 6	Section 5	Grade 652
Over 1" diam.	B.S. 24	Part 6	Section 1	Grade 613]

[C.M.E.'s 24/563 of 13.2.61]

(ii) Side and Connecting rod Strap Bolts and Nuts: To be made from steel conforming to groups 7 (d) or (e) on drawing W. 16298 (Materials for Locomotive Work, &c.). Refer also to Code No. 54.

(iii) Guide Bar Bolts and Nuts: To be made from steel conforming to group 7 (d) on drawing W. 16298. Refer also to Code No. 56.

(iv) Bolts and Nuts for Bridges and General Building Construction for Maintenance Branch: B.S.S. No. 15-1936 (N.Z.S.S. 309) and subsequent amendments.

(v) Track and Crossing Bolts and Nuts: B.S.S. No. 64-1946 and subsequent amendments.

(b) **Marking.-** Bar material for the manufacture of bolts and nuts is to be colour marked in accordance with Code No.72.

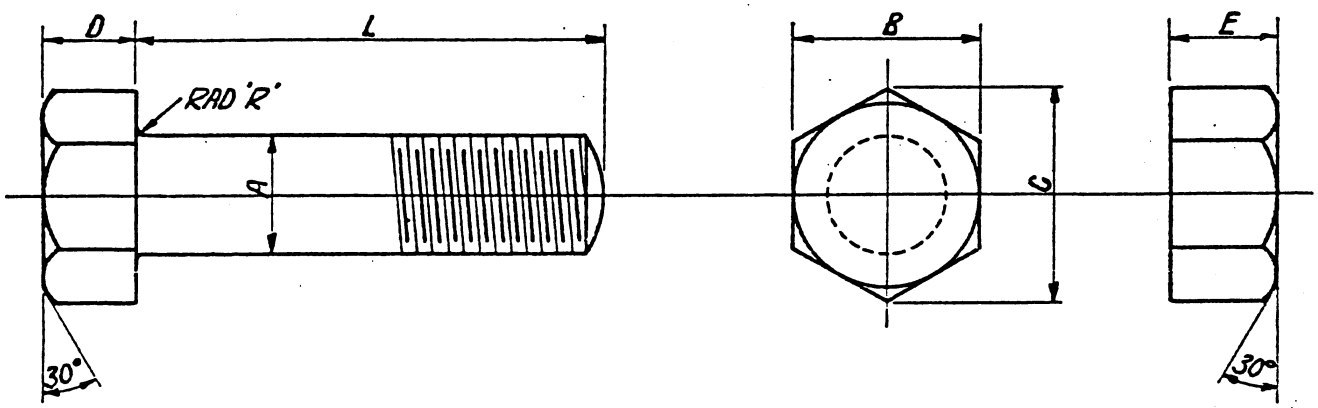
(2) MANUFACTURE

(a) **Quantlty.-**The manufacture of forged bolts and nuts is not to be put in hand for orders of less than 2 cwt. of the same diameter for bolts under ½ in. diameter, or less than 5 cwt. of the same diameter for bolts of ½ in. diameter and over. If unable to place orders for the minimum weight of one size, District Storekeepers may make up the required weight in smaller quantities of different lengths but the same diameter.

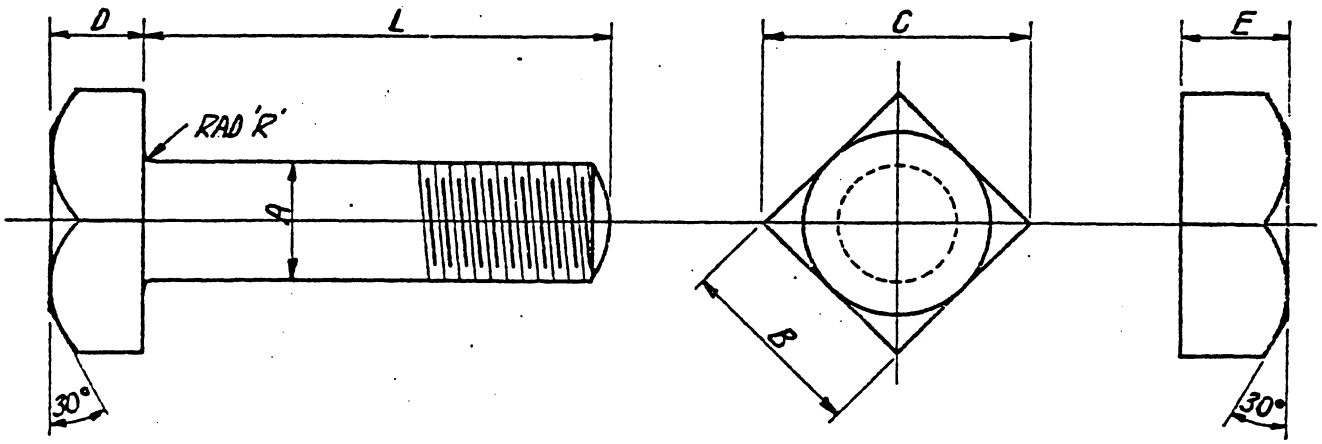
(b) **Storing.-** All bolts and nuts manufactured in the Workshops are to be received by Stores Branch and stored in bins suitably marked to indicate the diameter and length of each type of bolt and / or nut and marked with the colour specified for the material in Code No. 72.

(c) **Testing.-** When required by the Chief Mechanical Engineer, a sample of each batch of bar material ordered for the manufacture of bolts and nuts is to be tested by doubling over when cold, either by pressure or by blows, until both sides are parallel. There must be no signs of fracture on the outside of the bent bar.

(d) **Dimensions.-**The dimensions of standard hexagon and square black bolt heads and nuts manufactured in Workshops are to be as follows. These are as laid down in B.S.S. 916-1946, which has been adopted as standard.



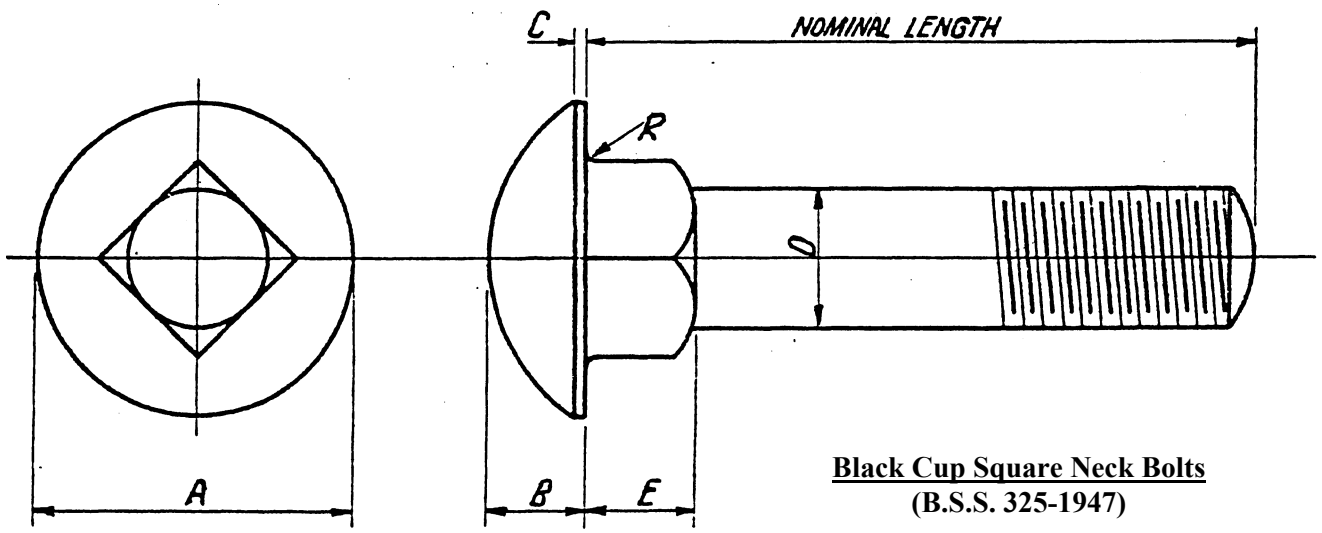
Hexagon Head Bolts and Nuts



Square Head Bolts and Nuts

(All dimensions in inches)

Nominal Size and Maximum Diameter of Bolt.	Dimension Across Flats of Bolt Head and Nuts (Hexagon and Square).		Approximate Maximum Dimension Across Corners.		Radius Under Bolt Heads.	Thickness of Bolt Heads (Hexagon and Square).		Thickness of Nuts (Hexagon and Square).	
A	B		C		R	D		E	
	Maximum.	Maximum.	Hexagon	Square	Maximum.	Maximum.	Minimum.	Maximum.	Minimum.
3/8	0.600	0.585	0.69	0.85	1/32	0.28	0.26	0.33	0.31
½	0.820	0.800	0.95	0.16	1/32	0.40	0.37	0.46	0.43
5/8	1.010	0.985	1.17	1.43	3/64	0.51	0.48	0.60	0.56
¾	1.200	1.175	1.39	1.70	3/64	0.62	0.59	0.72	0.68
7/8	1.300	1.270	1.50	1.84	1/16	0.69	0.65	0.81	0.75
1	1.480	1.450	1.71	2.09	1/16	0.80	0.76	0.93	0.87
1 1/8	1.670	1.640	1.93	2.36	1/8	0.91	0.87	1.06	1.00
1 ¼	1.860	1.815	2.15	2.63	1/8	1.02	0.96	1.20	1.12
1 ½	2.220	2.175	2.56	3.14	1/8	1.24	1.18	1.45	1.37
1 ¾	2.580	2.520	2.98	3.65	1/8	1.50	1.40	1.72	1.62
2	2.760	2.700	3.19	3.90	1/8	1.61	1.51	1.85	1.75
2 ¼	3.150	3.090	3.64	4.45	3/16	1.77	1.67	1.97	1.87
2 ½	3.550	3.490	4.10	5.02	3/16	1.99	1.89	2.22	2.12
2 ¾	3.890	3.830	4.49	5.50	3/16	2.16	2.08	2.47	2.37



Black Cup Square Neck Bolts
(B.S.S. 325-1947)

(All dimensions in inches)

Nominal Diameter of Bolt.	Diameter of Head.	Depth of Head.	Maximum Depth of Flash.	Depth of Square Neck.	Maximum Radius Under Head.
D	**A**	**B**	**C**	**E**	**F**
3/8	0.844	0.188	1/32	0.281	1/32
½	1.125	0.281	1/32	0.375	1/32
5/8	1.406	0.375	1/16	0.469	3/64
¾	1.688	0.438	1/16	0.562	3/64
7/8	1.969	0.500	3/32	0.656	1/16
1	2.250	0.562	3/32	0.750	1/16

Formulae:-

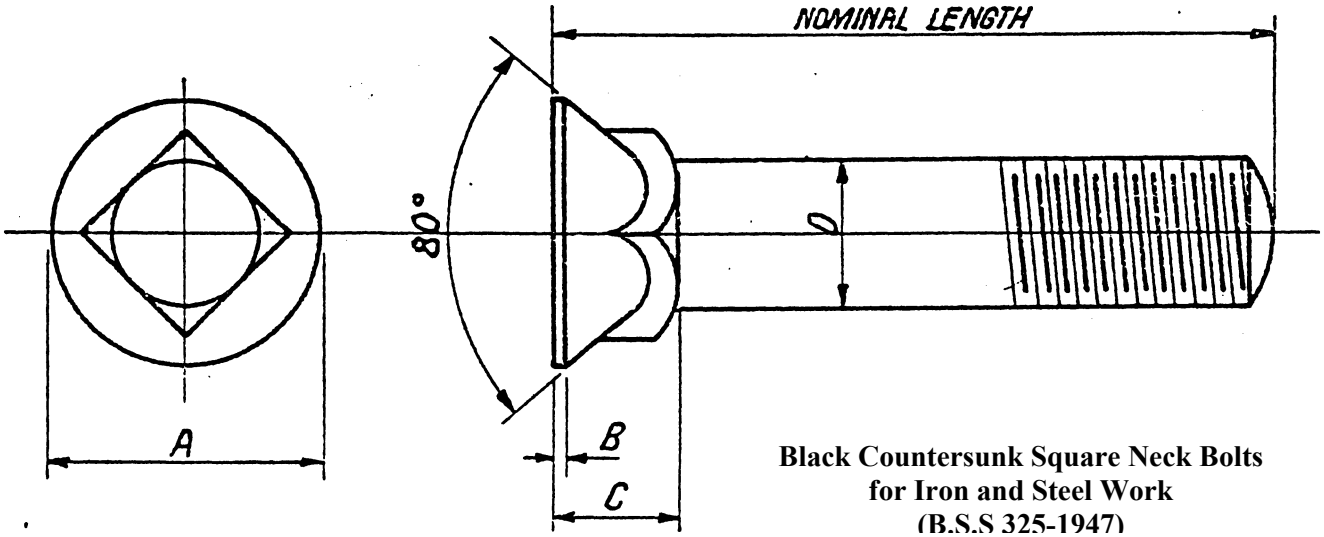
A = 2.25D.

B = 0.5D for 3/8 in.

= 0.5D + 1/32 in. for ½ in.

= 0.5D + 1/16 in. for 5/8 in. to 1 in. inclusive.

E = 0.75D.



Black Countersunk Square Neck Bolts for Iron and Steel Work (B.S.S 325-1947)

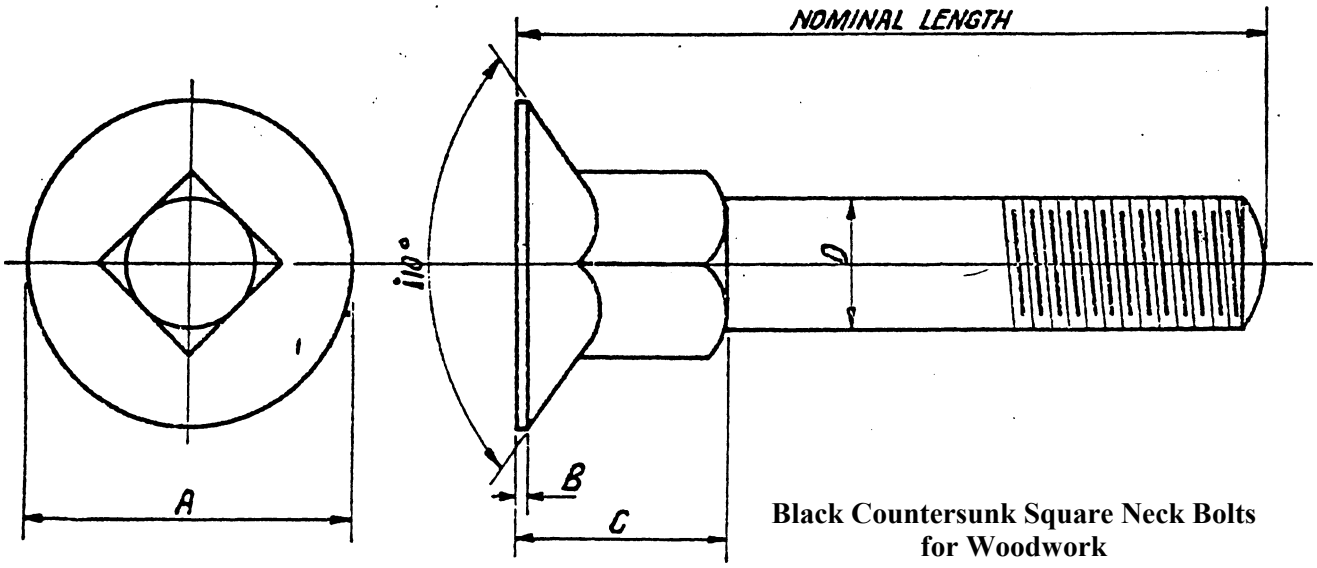
(All dimensions in inches)

Nominal Diameter of Bolts	Diameter Of Head.	Maximum Depth of Flash	Total Depth of Head and Square
D	**A**	**B**	**C**
3/8	0.690	1/32	0.313
½	0.920	3/64	0.422
5/8	1.149	3/64	0.515
¾	1.379	1/16	0.625
7/8	1.609	1/16	0.719
1	1.839	1/16	0.812

Formulae:-

A = 1.839D.

C = 0.75D + B.



Black Countersunk Square Neck Bolts for Woodwork (B.S.S. 325-1947)

(All dimensions in inches)

Nominal Diameter of Bolt.	Diameter of Head.	Maximum Depth of Flash.	Total Depth of Head and Square.
D	**A**	**B**	**C**
$^{3}/_{8}$	0.938	$^{1}/_{32}$	0.509
½	1.250	$^{1}/_{16}$	0.699
$^{5}/_{8}$	1.562	$^{1}/_{16}$	0.859
¾	1.875	$^{1}/_{16}$	1.018
$^{7}/_{8}$	2.188	$^{3}/_{32}$	1.209
1	2.500	$^{3}/_{32}$	1.369

Formulae:-

A = 2.5D.

C = 1.275 D + B.