

2 Grooves from No.10 up to 5/16" Diameter.
3 Grooves for 3/8" Diameter and Over.

Applicable Specifications:
BS 2470

Dimensions and Tightening Torques - UNC and UNF Threads

Thread Size	Threads Per Inch							Maximum Tightening Torques lbf. in.				Induced Load lb.f.	
	UNC	UNF	A Max.	B Max.	da Max.	H Max.	W	Unplated		Plated		UNC	UNF
								UNC	UNF	UNC	UNF		
No. 4	40	48	0.183	0.1120	0.1300	0.112	5/64	13.2	14.5	9.9	10.9	640	720
No. 5	40	44	0.205	0.1250	0.1450	0.125	3/32	19.6	20.5	14.7	15.4	860	920
No. 6	32	40	0.226	0.1380	0.1580	0.138	3/32	24.5	27.6	18.4	20.7	960	1120
No. 8	32	36	0.270	0.1640	0.1880	0.164	1/8	45.5	48.0	34.1	36.0	1540	1640
No. 10	24	32	0.312	0.1900	0.2180	0.190	5/32	65.4	75.5	49.1	56.6	1880	2240
No. 12	24	28	0.343	0.2160	0.2440	0.216	5/32	102.0	109.0	76.5	81.8	2650	2890
1/4	20	28	0.375	0.2500	0.2780	0.250	3/16	153	176.0	115.0	132.0	3470	4150
lbf. ft.													
5/16	18	24	0.437	0.3125	0.3465	0.312	7/32	26.3	29.3	19.7	22.0	5830	6680
3/8	16	24	0.562	0.3750	0.4150	0.375	5/16	46.8	53.2	35.1	39.9	8700	10300
7/16	14	20	0.625	0.4375	0.4835	0.437	5/16	75.0	84.0	56.3	63.0	12000	13900
1/2	13	20	0.750	0.5000	0.5520	0.500	3/8	115.0	129.0	86.3	96.8	16100	18800
9/16	12	18	0.812	0.5625	0.6225	0.562	3/8	165.0	185.0	124.0	139.0	20800	23900
5/8	11	18	0.875	0.6250	0.6890	0.625	1/2	228.0	258.0	171.0	194.0	25800	30400
3/4	10	16	1.000	0.7500	0.8280	0.750	9/16	363.0	405.0	273.0	304.0	34600	39900
7/8	9	14	1.125	0.8750	0.9630	0.875	9/16	575.0	575.0	440.0	485.0	47100	48600
1	8	12	1.312	1.0000	1.1100	1.000	5/8	788.0	788.0	660.0	722.0	56600	58200
1 1/8	7	12	1.500	1.1250	1.2350	1.125	3/4	1250.0	1300.0	938.0	1050.0	79500	85900
1 1/4	7	12	1.750	1.2500	1.3700	1.250	3/4	1300.0	1300.0	1300.0	1300.0	75200	77600
1 3/8	6	12	1.875	1.3750	1.5050	1.375	3/4	1300.0	1300.0	1300.0	1300.0	68000	70900
1 1/2	6	12	2.000	1.5000	1.6400	1.500	1	2730.0	2730.0	2300.0	2580.0	132000	137000
1 3/4	5	12	2.500	1.7500	1.9100	1.750	1 1/4	4490.0	4490.0	3630.0	4155.0	186000	194000
2	4 1/2	12	2.750	2.0000	2.1800	2.000	1 3/8	5970.0	5970.0	5450.0	5970.0	216500	227000

ALL DIMENSIONS IN INCHES

MECHANICAL PROPERTIES

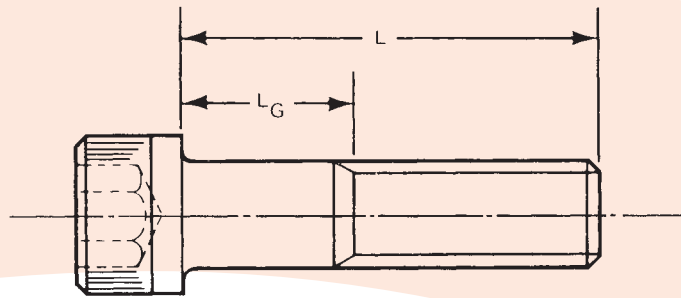
Material	Unbrako High Grade Alloy Steel	
Heat Treatment	Rc 38-43	
Screw Size	≤ 0.625	> 0.625
Tensile Strength	190,000 lbf/in ²	180,000 lbf/in ²
Yield Strength	170,000 lbf/in ²	162,000 lbf/in ²
Shear Strength	114,000 lbf/in ²	108,000 lbf/in ²
Min. Elongation	9%	9%

NOTES:

1. Thread Class — #0 through 1" dia. — 3A over 1" dia. — 2A.
2. da — Transition diameter.
3. Working Temperature — -50°C. +300°C.
4. Torques calculated in accordance with VDI 2230 "Systematic calculation of high duty bolted joints" with $\sigma 0.2 = 155$ K.S.I. and $\mu = 0.125$ for plain finish and $\mu = 0.094$ for plated. Above 0.625" dia. $\sigma 0.2 = 140$ K.S.I.



Socket Head Cap Screws - 1936 Series BA,



Grip Length - BA, BSW and BSF Threads

Thread Size	Basic Thread Length See Note 2 (Page 15)	LENGTH 'L'																					
		3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	2 3/4	3	3 1/4	3 1/2	3 3/4	4	4 1/4	4 1/2	4 3/4	5	5 1/4	5 1/2	5 3/4
		GRIP LENGTH 'L _G '																					
8BA	625		250	250	625	875	1 125																
7BA	625		250	250	625	875	1 125	1 375															
6BA	750			250	250	750	750	1 250	1 250														
5BA	750			250	250	750	750	1 250	1 250	1 750													
4BA	750				500	500	1 000	1 000	1 500	1 500	2 000												
3BA	875				375	375	875	875	1 375	1 375	1 875	1 875	2 375										
2BA	875				375	375	875	875	1 375	1 375	1 875	1 875	2 375	2 375	2 875	2 875							
1BA	1 000					500	500	1 000	1 000	1 500	1 500	2 000	2 000	2 500	2 500	3 000	3 000	3 500	4 000				
0BA	1 000					500	500	1 000	1 000	1 500	1 500	2 000	2 000	2 500	2 500	3 000	3 000	3 500	4 000				
1/8	750		250	250	750	750	1 250	1 250	1 750														
3/16	875			375	375	875	875	1 375	1 375	1 875	1 875	2 375	2 375	2 875	2 875								
1/4	1 000				500	500	1 000	1 000	1 500	1 500	2 000	2 000	2 500	2 500	3 000	3 000	3 500	4 000					
5/16	1 125					625	625	1 125	1 125	1 625	1 625	2 125	2 125	2 625	2 625	3 125	3 125	3 625	4 125	4 125	4 625		
3/8	1 250					500	500	1 000	1 000	1 500	1 500	2 000	2 000	2 500	2 500	3 000	3 000	3 500	4 000	4 000	4 500		
7/16	1 375						625	625	1 125	1 125	1 625	1 625	2 125	2 125	2 625	2 625	3 125	3 125	3 625	4 125	4 125		
1/2	1 500							750	750	1 250	1 250	1 750	1 750	2 250	2 250	2 750	2 750	3 250	3 750	3 750	3 750		
9/16	1 625								875	875	1 375	1 375	1 875	1 875	2 375	2 375	2 875	3 375	3 375	3 875	3 875		
5/8	1 750								750	750	1 250	1 250	1 750	1 750	2 250	2 250	2 750	3 250	3 250	3 750	3 750		
3/4	2 000									1 000	1 000	1 500	1 500	2 000	2 000	2 500	3 000	3 000	3 000	3 000	3 000		
7/8	2 250										1 000	1 000	1 500	1 500	2 000	2 000	2 500	3 000	3 000	3 000	3 000		
1	2 500											1 000	1 000	1 500	1 500	2 000	2 000	2 500	3 000	3 000	3 000	3 000	

ALL DIMENSIONS IN INCHES

BSF and BSW Thread Lengths of Large Diameter Screws

Thread Size	Length 'L'							6 1/2 and over
	3	3 1/2	4	4 1/2	5	5 1/2	6	
		Thread Length						
1 1/8			2 812					
1 1/4			3 125					
1 3/8				3 437				
1 1/2					3 750			
1 5/8						4 062		
1 3/4						4 375		
2							5 000	

Sizes to the left of the heavy lines will be threaded to head.