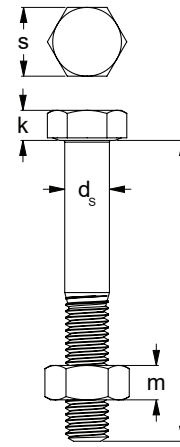


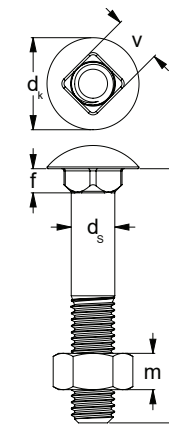
METRIC PRECISION HEX BOLTS, SCREWS AND NUTS AS/NZS 1110.1 [BOLTS]; AS/NZS 1110.2 [SCREWS]; AS/NZS 1112.1 [NUTS]

Diameter	Thread Pitch		Shank Diameter		Head Thickness		Width Across Flats		Nut Thickness	
	(mm)		d_s (mm)		k (mm)		s (mm)		m (mm)	
	Coarse	Fine	Max	Min	Max	Min	Max	Min	Max	Min
M06	1.00	-	6.00	5.82	4.150	3.850	10.00	9.78	5.20	4.90
M08	1.25	1.00	8.00	7.78	5.450	5.150	13.00	12.73	6.80	6.44
M12	1.75	1.50	12.00	11.73	7.680	7.320	18.00	17.73	10.80	10.37
M14	2.00	1.50	14.00	13.73	8.980	8.620	21.00	20.67	12.80	12.10
M16	2.00	1.50	16.00	15.73	10.180	9.820	24.00	23.67	14.80	14.10
M20	2.50	1.50	20.00	19.67	12.715	12.285	30.00	29.67	18.00	16.90
M24	3.00	2.00	24.00	23.67	15.215	14.785	36.00	35.38	21.50	20.20
M30	3.50	2.00	30.00	29.48	19.120	18.280	46.00	45.00	25.60	24.30
M36	4.00	3.00	36.00	35.38	22.920	22.080	55.00	53.80	31.00	29.40



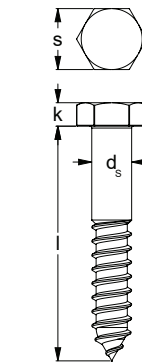
METRIC CUP HEAD BOLTS AS/NZS 1390 [BOLTS]; AS/NZS 1112.1 [NUTS]

Diameter	Thread Pitch (mm)	Shank Diameter d_s (mm)	Head Diameter		Length of Neck		Square Neck Across Flats		Nut Thickness	
			d_k (mm)		f (mm)		s (mm)		m (mm)	
			Max	Min	Max	Min	Max	Min	Max	Min
M05	0.80	5.48	11.25	11.14	3.1	2.5	5.48	4.52	4.70	4.40
M06	1.00	6.48	13.50	12.40	3.6	3.0	6.48	5.52	5.20	4.90
M08	1.25	8.58	18.00	16.90	4.8	4.0	8.58	7.42	6.80	6.44
M10	1.50	10.58	22.50	21.20	5.8	5.0	10.58	9.42	8.40	8.04
M12	1.75	12.70	27.00	25.70	6.8	6.0	12.70	11.30	10.80	10.37
M16	2.00	16.70	36.00	34.40	8.9	8.0	16.70	15.30	14.80	14.10
M20	2.50	20.84	45.00	43.40	10.9	10.0	20.84	19.16	18.00	16.90
M24	3.00	24.84	54.00	52.10	13.1	12.0	24.84	23.16	21.50	20.20



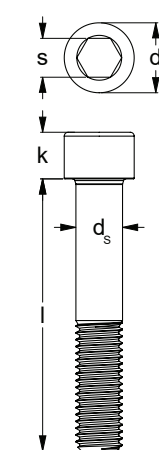
METRIC COACH SCREW AS/NZS 1393 [SCREWS]

Diameter	Thread Pitch (mm)	Shank Diameter		Head Height		Across Flats	
		d_s (mm)		k (mm)		s (mm)	
		Max	Min	Max	Min	Max	Min
M06	1.00	6.48	5.52	4.38	3.62	10.00	9.64
M08	1.25	8.58	7.42	5.68	4.92	13.00	12.57
M10	1.50	10.58	9.42	6.85	5.95	16.00	15.57
M12	1.75	12.70	11.30	7.95	7.05	18.00	17.57
M16	2.00	16.70	15.30	10.75	9.25	24.00	23.16
M20	2.50	20.84	19.16	13.40	11.60	30.00	29.16



METRIC SOCKET HEAD CAP SCREWS DIN 912 [CAP SCREWS]

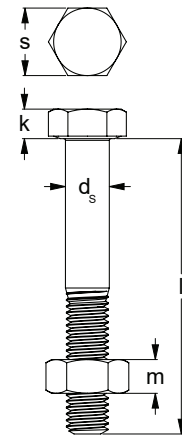
Diameter	Thread Pitch		Shank Diameter		Head Height		Head Diameter		Across Flats	
	(mm)		d_s (mm)		k (mm)		d_k (mm)		s (mm)	
	Coarse	Fine	Max	Min	Max	Min	Max	Min	Max	Min
M06	1.00	-	6.00	5.82	6.00	5.70	10.22	9.78	5.140	5.020
M08	1.25	1.00	8.00	7.78	8.00	7.64	13.27	12.73	6.140	6.020
M12	1.75	1.50	12.00	11.73	12.00	11.57	18.27	17.73	8.025	8.175
M14	2.00	1.50	14.00	13.73	14.00	13.57	21.33	20.67	12.212	12.032
M16	2.00	1.50	16.00	15.73	16.00	15.57	24.33	23.67	14.212	14.032
M20	2.50	1.50	20.00	19.67	20.00	19.48	30.33	29.67	17.230	17.050
M24	3.00	2.00	24.00	23.67	24.00	23.48	36.39	35.61	19.275	19.065
M30	3.50	2.00	30.00	29.67	30.00	29.48	45.39	44.61	22.275	22.065
M36	4.00	3.00	36.00	35.61	36.00	35.38	54.46	53.54	27.275	27.065





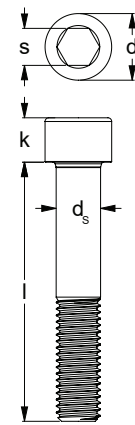
IMPERIAL HEX BOLTS, SCREWS AND NUTS AS 2465 [BOLTS, NUTS AND SET SCREWS]

Diameter	Thread Pitch		Shank Diameter		Head Height		Width Across Flats		Nut Thickness	
	Threads Per Inch (TPI)		d _s (inches)		k (inches)		s (inches)		m (inches)	
	UNC	UNF	Max	Min	Max	Min	Max	Min	Max	Min
1/4"	20	28	0.2500	0.2450	0.163	0.150	0.438	0.428	0.226	0.212
5/16"	18	24	0.3125	0.3065	0.211	0.195	0.500	0.489	0.273	0.258
1/2"	13	20	0.5000	0.4930	0.323	0.302	0.750	0.736	0.448	0.427
9/16"	12	18	0.5625	0.5545	0.371	0.348	0.812	0.798	0.496	0.473
5/8"	11	18	0.6250	0.6170	0.403	0.378	0.938	0.922	0.559	0.535
3/4"	10	16	0.7500	0.7410	0.483	0.455	1.125	1.100	0.665	0.617
1"	8	12	1.0000	0.9900	0.627	0.591	1.500	1.469	0.887	0.831
1-1/4"	7	12	1.2500	1.2390	0.813	0.749	1.875	1.812	1.094	1.030
1-1/2"	6	12	1.5000	1.4880	0.974	0.902	2.250	2.175	1.317	1.245



IMPERIAL SOCKET HEAD CAP SCREWS ASME B18.3 [CAP SCREWS]

Diameter	Thread Pitch		Shank Diameter		Head Height		Head Diameter		Across Flats	
	Threads Per Inch (TPI)		d _s (inches)		k (inches)		d _h (inches)		s (inches)	
	UNC	UNF	Max	Min	Max	Min	Max	Min	Max	Min
1/4"	20	28	0.2500	0.2435	0.250	0.244	0.375	0.365	0.1900	0.1875
5/16"	18	24	0.3125	0.3053	0.312	0.306	0.469	0.457	0.2530	0.2500
1/2"	13	20	0.5000	0.4919	0.500	0.492	0.750	0.735	0.3790	0.3750
5/8"	11	18	0.6250	0.6163	0.625	0.616	0.938	0.921	0.5050	0.5000
3/4"	10	16	0.7500	0.7406	0.750	0.740	1.125	1.107	0.6310	0.6250
1"	8	12	1.0000	0.9886	1.000	0.988	1.500	1.479	0.7570	0.7500
1-1/4"	7	12	1.2500	1.2336	1.250	1.236	1.875	1.852	0.8850	0.8750
1-1/2"	6	12	1.5000	1.4818	1.500	1.485	2.250	2.224	1.0200	1.0000



Mechanical Properties

METRIC MECHANICAL PROPERTIES

Standard	Carbon Steel Bolts and Screws				Austenitic Stainless Steel 304 (A2) and 316 (A4)		
	AS/NZS 4291.1				ISO 3506		
	4.6	8.8	10.9	12.9	50	70	80
Property Class	4.6	8.8	10.9	12.9	50	70	80
Proof Strength (MPa)	225	580	830	970	-	-	-
Yield Strength (MPa)	240	640	900	1080	210	450	600
Ultimate Strength (MPa)	400	800	1000	1200	500	700	800

Note: All values are nominal unless otherwise stated

IMPERIAL MECHANICAL PROPERTIES

Standard	Carbon Steel Hex Bolts and Screws					Carbon Steel Socket Screws			Austenitic Stainless Steel 304 (A2) and 316 (A4)		
	SAE J429					ASTM A574			ASTM F837		
	2		5		8	-			AF	CW	CW1
Grade	1/4" - 3/4"	3/4" - 1-1/2"	1/4" - 3/4"	3/4" - 1-1/2"	1/4" - 1-1/2"	≤1/2"	>1/2" < 1"	≥1"	-	-	-
Proof Strength (ksi)	55	33	85	74	120	140	135	135	-	-	-
Yield Strength (ksi)	57	36	92	81	130	-	-	153	55 Max	40 Min	65 Min
Ultimate Strength (ksi)	74	60	120	105	150	180	170	170	85 Max	80 Min	102 Min

Note: All values are nominal unless otherwise stated