

Thread lengths

Length l. < 125 mm
2. 125 < 200 mm
3. 200 -

Table 38 Metric hexagon head bolts M6S according to DIN 931

Thread d	M1,6	M2	M2,5	M3	(M3,5)	M4	M5	M6	(M7)	M8	M10	M12	(M14)	M16	(M18)
Length l	9	10	11	12	13	14	16	18	20	22	26	30	34	38	42
2	-	-	-	-	-	-	22	24	26	28	32	36	40	44	48
3	-	-	-	-	-	-	-	-	-	-	45	49	53	57	61

Thread d	M20	(M22)	M24	(M27)	M30	(M33)	M36	(M39)	M42	(M45)	M48	(M52)	M56	(M60)	M64
Length l	46	50	54	60	66	72	78	84	90	96	102	-	-	-	-
2	52	56	60	66	72	78	84	90	96	102	108	116	124	132	140
3	65	69	73	79	85	91	97	103	109	115	121	129	137	145	153

Table 39 Metric hexagon head bolts M6S according to ISO 4014

Thread d	M1,6	M2	M2,5	M3	M3,5	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20
Length l	9	10	11	12	13	14	16	18	22	26	30	34	38	42	46
2	-	-	-	-	-	-	-	-	-	-	-	40	44	48	52
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Thread d	M22	M24	M27	M30	M33	M36	M39	M42	M45	M48	M52	M56	M60	M64	
Length l	50	54	60	66	-	-	-	-	-	-	-	-	-	-	
2	56	60	66	72	78	84	90	96	102	108	116	-	-	-	
3	69	73	79	85	91	97	103	109	115	121	129	137	145	153	

Table 40 Metric hexagon socket head cap screws MC6S according to DIN 912

Thread d	M1,4	M1,6	M2	M2,5	M3	M4	M5	M6	M8	M10	M12	M14	M16
Length	14	15	16	17	18	20	22	24	28	32	36	40	44

Thread d	M18	M20	M22	M24	M27	M30	M33	M36	M42	M48	M56	M64	
Length	48	52	56	60	66	72	78	84	96	108	124	140	

Table 41 Metric hexagon socket countersunk head cap screws MF6S according to DIN 7991

Length l. < 130 mm
2. 130 < 200 mm
3. 200 -

Thread d	M3	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24
Length l	12	14	16	18	22	26	30	34	38	42	46	50	54
2	-	-	-	24	28	32	36	40	44	48	52	56	60
3	-	-	-	-	-	45	49	53	57	61	65	69	73

Table 42 Metric hexagon socket head cap screws with low head MC6LS according to DIN 7984

Length l. < 125 mm
2. 125 < 200 mm
3. 200 -

Thread d	M3	M4	M5	M6	M8	M10	M12	(M14)	M16	(M18)	M20	(M22)	M24
Length l	12	14	16	18	22	26	30	34	38	42	46	50	54
2	-	-	-	-	28	32	36	40	44	48	52	56	60
3	-	-	-	-	-	-	-	-	57	61	65	69	73

Table 42.1 Metric fine threaded hexagon head bolts M6S according to ISO 8765 (replaces DIN 960)

Length l. < 125 mm
2. 125 < 200 mm
3. 200 -

Thread d	M8x1	M10x1,25	M12x1,5	(M14x1,5)	M16x1,5	(M18x2)	M20x2	(M22x2)	M24x2
	-	M10x1	M12x1,25	-	-	(M18x1,5)	M20x1,5	(M22x1,5)	M24x1,5
Length l	22	26	30	34	38	42	46	50	54
2	28	32	36	40	44	48	52	56	60
3	41	45	49	53	57	61	65	69	73

Thread d	(M27x2)	(M30x2)	(M33x2)	M36x3	(M39x3)	M42x3	(M45x3)	M48x3	(M52x3)
	-	-	-	-	-	-	-	-	-
Length l	60	66	72	78	84	90	96	102	-
2	66	72	78	84	90	96	102	108	116
3	79	85	91	97	103	109	115	121	129

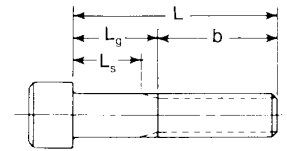
Thread d	M56x4	(M60x4)	M64x4	(M68x4)	M72x4	(M76x4)	M80x4	M90x4	M100x4
	-	-	-	-	-	-	-	-	-
Length l	-	-	-	-	-	-	-	-	-
2	124	132	140	148	156	164	172	192	-
3	137	145	153	161	169	177	185	205	225

Table 43 Metric hexagon socket cap screws with shallow head and pilot recess for wrench key MC6LS according to DIN 6912

Length l. < 125 mm
2. 125 < 200 mm
3. 200 -

Thread d	M4	M5	M6	M8	M10	M12	(M14)	M16	(M18)	M20	(M22)	M24	(M27)	M30	(M33)	M36
Length l	14	16	18	22	26	30	34	38	42	46	50	54	60	66	72	78
2	-	-	-	-	32	36	40	44	48	52	56	60	66	72	78	84
3	-	-	-	-	-	-	-	57	61	65	69	73	79	85	91	97

Thread lengths



**Table 45 Hexagon socket head cap screws acc. to 1960-year's series
UNC and UNF**

Ansi B 18.3 Thread length $b = L - L_g$

Thread size	No 0		No 1		No 2		No 3		No 4		No 5		No 6		No 8		No 10	
Nom. length	L _g	L _s	L _g	L _s	L _g	L _s	L _g	L _s	L _g	L _s	L _g	L _s	L _g	L _s	L _g	L _s	L _g	L _s
0.75	0.25	0.19																
0.88	0.25	0.19	0.25	0.17	0.25	0.16	0.25	0.15										
1.00	0.50	0.44	0.25	0.17	0.25	0.17	0.25	0.15	0.25	0.12	0.25	0.12						
1.25	0.75	0.69	0.62	0.55	0.62	0.54	0.62	0.52	0.25	0.12	0.25	0.12	0.50	0.34	0.38	0.22	0.38	0.17
1.50	...	...	0.88	0.80	0.88	0.79	0.88	0.77	0.75	0.62	0.75	0.62	0.50	0.34	0.38	0.22	0.38	0.17
1.75	...	...	...	...	1.12	1.04	1.12	1.02	0.75	0.62	0.75	0.62	1.00	0.84	0.88	0.72	0.88	0.67
2.00	...	...	...	...	...	...	1.38	1.27	1.25	1.12	1.25	1.12	1.00	0.84	0.88	0.72	0.88	0.67
2.25	...	...	...	...	...	...	...	...	1.25	1.12	1.25	1.12	1.50	1.34	1.38	1.22	1.38	1.17
2.50	...	...	...	...	...	...	...	...	...	...	1.75	1.62	1.50	1.34	1.38	1.22	1.38	1.17
2.75	...	...	...	...	...	...	...	...	...	...	...	...	2.00	1.84	1.88	1.72	1.88	1.67
3.00	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2.88	2.22	2.38	2.17
3.50	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2.38	2.17
3.75	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2.88	2.67
4.00	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2.88	2.67

Thread size	1/4		5/16		3/8		7/16		1/2		5/8		3/4		7/8		1	
Nom. length	L _g	L _s	L _g	L _s	L _g	L _s	L _g	L _s	L _g	L _s	L _g	L _s	L _g	L _s	L _g	L _s	L _g	L _s
1.50	0.50	0.25																
1.75	0.50	0.25	0.62	0.35	0.50	0.19												
2.00	1.00	0.75	0.62	0.35	0.50	0.19	0.62	0.27										
2.25	1.00	0.75	1.12	0.85	1.00	0.69	0.62	0.27	0.75	0.36								
2.50	1.50	1.25	1.12	0.85	1.00	0.69	1.12	0.77	0.75	0.36	0.75	0.30						
2.75	1.50	1.25	1.62	1.35	1.50	1.19	1.12	0.77	0.75	0.36	0.75	0.30						
3.00	2.00	1.75	1.62	1.35	1.50	1.19	1.62	1.27	1.50	1.12	0.75	0.30	1.00	0.50				
3.25	2.00	1.75	2.12	1.85	2.00	1.69	1.62	1.27	1.50	1.12	1.50	1.04	1.00	0.50	1.00	0.44		
3.50	2.50	2.25	2.12	1.85	2.00	1.69	2.12	1.77	1.50	1.12	1.50	1.04	1.00	0.50	1.00	0.44	1.00	0.38
3.75	2.50	2.25	2.62	2.35	2.50	2.19	2.12	1.77	2.25	1.86	1.50	1.04	1.00	0.50	1.00	0.44	1.00	0.38
4.00	3.00	2.75	2.62	2.35	2.50	2.19	2.62	2.27	2.25	1.86	2.25	1.80	2.00	1.50	1.00	0.44	1.00	0.38
4.25	3.00	2.75	3.12	2.85	3.00	2.69	2.62	2.27	2.25	1.86	2.25	1.80	2.00	1.50	2.00	1.44	1.00	0.38
4.50	3.50	3.25	3.12	2.85	3.00	2.69	3.12	2.77	3.00	2.62	2.25	1.80	2.00	1.50	2.00	1.44	2.00	1.38
4.75	3.50	3.25	3.62	3.35	3.50	3.19	3.12	2.77	3.00	2.62	3.00	2.54	2.00	1.50	2.00	1.44	2.00	1.38
5.00	4.00	3.75	3.62	3.35	3.50	3.19	3.62	3.27	3.00	2.62	3.00	2.54	3.00	2.50	2.00	1.44	2.00	1.38
5.25	...	...	4.12	3.85	4.00	3.69	3.62	3.27	3.75	3.36	3.00	2.54	3.00	2.50	3.00	2.44	2.00	1.38
5.50	...	...	4.12	3.85	4.00	3.69	4.12	3.77	3.75	3.36	3.75	3.30	3.00	2.50	3.00	2.44	3.00	2.38
5.75	...	...	4.62	4.35	4.50	4.19	4.12	3.77	3.75	3.36	3.75	3.30	3.00	2.50	3.00	2.44	3.00	2.38
6.00	...	...	4.62	4.35	4.50	4.19	4.62	4.27	4.50	4.12	3.75	3.30	4.00	3.50	3.00	2.44	3.00	2.38
6.25	...	...	5.12	4.85	5.00	4.69	4.62	4.27	4.50	4.12	4.50	4.04	4.00	3.50	4.00	3.44	3.00	2.38
6.50	...	...	...	...	5.00	4.69	5.12	4.77	4.50	4.12	4.50	4.04	4.00	3.50	4.00	3.44	4.00	3.38
6.75	...	...	...	...	5.50	5.19	5.12	4.77	5.25	4.86	4.50	4.04	4.00	3.50	4.00	3.44	4.00	3.38
7.00	...	...	...	...	5.50	5.19	5.62	5.27	5.25	4.86	5.25	4.80	5.00	4.50	4.00	3.44	4.00	3.38
7.25	...	...	...	...	6.00	5.69	5.62	5.27	5.25	4.86	5.25	4.80	5.00	4.50	5.00	4.44	4.00	3.38
7.50	...	...	...	...	6.00	5.69	6.12	5.77	6.00	5.62	5.25	4.80	5.00	4.50	5.00	4.44	5.00	4.38
7.75	...	...	...	...	...	...	6.12	5.77	6.00	5.62	6.00	5.54	5.00	4.50	5.00	4.44	5.00	4.38
8.00	...	...	...	...	...	...	6.62	6.27	6.00	5.62	6.00	5.54	6.00	5.50	5.00	4.44	5.00	4.38
8.50	...	...	...	...	...	...	7.12	6.77	7.00	6.62	6.75	6.30	6.00	5.50	6.00	5.44	6.00	5.38
9.00	...	...	...	...	...	...	7.62	7.27	7.00	6.62	6.75	6.30	7.00	6.50	6.00	5.44	6.00	5.38
9.50	...	...	...	...	...	...	...	...	8.00	7.62	7.75	7.30	7.00	6.50	7.00	6.44	7.00	6.38
10.00	...	...	...	...	...	...	...	...	8.00	7.62	7.75	7.30	8.00	7.50	7.00	6.44	7.00	6.38
11.00	...	...	...	...	...	...	...	...	...	...	9.25	8.80	9.00	8.50	8.00	7.44	8.00	7.38
12.00	...	...	...	...	...	...	...	...	...	...	10.25	9.80	10.00	9.50	9.00	8.44	9.00	8.38
13.00	...	...	...	...	...	...	...	...	...	...	...	...	11.00	10.50	10.00	9.44	10.00	9.38
14.00	...	...	...	...	...	...	...	...	...	...	...	...	12.00	11.50	11.00	10.44	11.00	10.38
15.00	...	...	...	...	...	...	...	...	...	...	...	...	13.00	12.50	12.00	11.44	12.00	11.38
16.00	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13.00	12.44	13.00	12.38
17.00	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14.00	13.44	14.00	13.38
18.00	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15.00	14.44	15.00	14.38
19.00	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	16.00	15.38
20.00	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	17.00	16.38

N.B! These measures are presented in inches, 1 inch = 25,4 mm.

L_g = Max. value.

L_s = Min. value.

Thread lengths

Table 46 Hexagon socket head cap screws acc. to 1960-year's series UNC and UNF with dimensions outside table 45

Thread size		Thread length b		Thread size		Thread length b	
		Min	Max			Min	Max
No 0	0.0600	0.50	0.62	7/8	0.8750	2.25	3.69
No 1	0.0730	0.62	0.77	1	1.0000	2.50	4.12
No 2	0.0860	0.62	0.80	1 1/8	1.1250	2.81	4.65
No 3	0.0990	0.62	0.83	1 1/4	1.2500	3.12	5.09
No 4	0.1120	0.75	0.99	1 3/8	1.3750	3.44	5.65
No 5	0.1250	0.75	1.00	1 1/2	1.5000	3.75	6.08
No 6	0.1380	0.75	1.05	1 3/4	1.7500	4.38	7.13
No 8	0.1640	0.88	1.19	2	2.0000	5.00	8.11
No 10	0.1900	0.88	1.27	2 1/4	2.2500	5.62	8.99
1/4	0.2500	1.00	1.50	2 1/2	2.5000	6.25	10.00
5/16	0.3125	1.12	1.71	2 3/4	2.7500	6.88	10.87
3/8	0.3750	1.25	1.94	3	3.0000	7.50	11.75
7/16	0.4375	1.38	2.17	3 1/4	3.2500	8.12	12.63
1/2	0.5000	1.50	2.38	3 1/2	3.5000	8.75	13.50
5/8	0.6250	1.75	2.82	3 3/4	3.7500	9.38	14.37
3/4	0.7500	2.00	3.25	4	4.0000	10.00	15.25

N.B.! These measures are presented in inches, 1 inch = 25,4 mm.

Table 47 Hexagon socket head cap screws UNC and UNF (UC6S/EC6S according to 1936 year's series BS 2470)

Thread d	No 0	No 1	No 2	No 3	No 4	No 5	No 6	No 8	No 10	1/4	5/16	3/8	7/16	1/2	3/8	3/4	7/8	1"
Length	13	16	16	16	19	19	19	22	22	25	28	32	35	38	45	51	57	64

Table 48 Hexagon head bolts UNC and UNF (U6S according to SMS 1943 and 1944)

Length 1. - 152
2. 152 -

Thread d	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4	7/8	1	1 1/8	1 1/4	1 1/2
Length 1	19	22	25	28	32	35	38	44	51	57	64	70	83
Length 2	25	28	32	35	38	41	44	51	57	64	70	76	89

Thread lengths

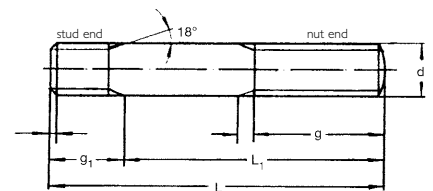


Table 49 Stud bolts according to SMS I460

Thread d	M4		M5		M6		M8		M10		M12		M16		M20		M24		M30	
g ₁	7		8		10		12		15		17		22		27		32		40	
Screw length L	Free length L ₁ and thread length g																			
	L ₁	g	L ₁	g	L ₁	g	L ₁	g	L ₁	g	L ₁	g	L ₁	g	L ₁	g	L ₁	g	L ₁	g
18	11	6																		
20	13	8	12	7																
22	15	10	14	9																
25	18	13	17	12	15	10														
28	21	16	20	15	18	13														
30	23	16	22	17	20	15	18	13												
32	25	16	24	19	22	17	20	15												
35	28	16	27	19	25	19	23	18	20	15										
38			30	19	28	19	26	21	23	18										
40			32	19	30	19	28	22	25	20	23	18								
45			37	19	35	19	33	22	30	25	28	23								
50			42	19	40	19	38	22	35	25	33	28	33	26						
55					45	19	43	22	40	25	38	30	38	31						
60					50	19	48	22	45	25	43	30	38							
65					55	19	53	22	50	25	48	30	43	35	38	30				
70					60	19	58	22	55	25	53	30	48	35	43	35				
75					65	19	63	22	60	25	58	30	53	35	48	40	43	33		
80							68	22	65	25	63	30	58	35	53	40	48	38		
85							73	30	70	35	68	40	63	45	58	50	53	43		
90							78	30	75	35	73	40	68	45	63	50	58	48		
95							83	30	80	35	78	40	73	45	68	50	63	53	55	45
100							88	30	85	35	83	40	78	45	73	50	68	58	60	50
105							93	30	90	35	88	40	83	45	78	50	73	60	65	55
110							98	30	95	35	93	40	88	45	83	50	78	60	70	60
115							103	30	100	35	98	40	93	45	88	50	83	60	75	65
120							108	30	105	35	103	40	98	45	93	50	88	60	80	70
125									110	35	108	40	103	45	98	50	93	60	85	70
130									115	35	113	40	108	45	103	50	98	60	90	70
140									125	35	123	40	118	45	113	50	108	60	100	70
150									135	35	133	40	128	45	123	50	118	60	110	70
160											143	40	138	45	133	50	128	60	120	70
170													148	65	143	70	138	80	130	90
180													158	65	153	70	148	80	140	90
190															163	70	158	80	150	90
200															173	70	168	80	160	90

Table 50 Stud bolts according to SMS I948

Thread d	1/4—20		5/16—18		3/8—16		1/2—13		5/8—11		3/4—10		7/8—9		1—8		1 1/4—7		1 1/2—6	
g ₁	10		12		14		18		22		26		30		34		42		50	
Screw length L	Free length L ₁ and thread length g																			
	L ₁	g	L ₁	g	L ₁	g	L ₁	g	L ₁	g	L ₁	g	L ₁	g	L ₁	g	L ₁	g	L ₁	g
25 28 30	15 18 20	10 13 15	16 18	11 13	16 18	11 13														
32 35 38	22 25 28	18 19	20 23 26	15 18 21	18 21 24	13 16 19														
40 45 50	30 35 40	19 19	28 33 38	22 22	26 31 36	21 25 25	22 27 32	15 20 25												
55 60 65	45 50 55	19 19	43 48 53	22 22	41 46 51	25 25 25	37 42 47	30 30 30	33 38 43	25 30 35		27 39								
70 75 80	60 65	19 19	58 63 68	22 22	56 61 66	25 25 25	52 57 62	30 30 30	48 53 58	35 35 35	44 49 54	36 40 40	40 45 50	30 35 40		46 36				
85 90 95			73 78 83	30 30 30	71 76 81	35 35 35	67 72 77	40 40 40	63 68 73	45 45 45	59 64 69	50 50 50	55 60 65	45 50 55	51 56 61	41 46 51				
100 105 110			88 93 98	30 30 30	86 91 96	35 35 35	82 87 92	40 40 40	78 83 88	45 45 45	74 79 84	50 50 50	70 75 80	55 55 55	66 71 76	56 60 60	58 63 68	48 53 58		
115 120 125			103 108	30 30	101 106 111	35 35 35	97 102 107	40 40 40	93 98 103	45 45 45	89 94 99	50 50 50	85 90 95	55 55 55	81 86 91	60 60 60	73 78 83	63 68 70	70 75	58 63 68