Socket Head Cap Screws
Micro Series - M1.4 to M2.6

Suitable for all high tensile applications. Up to 1300 Mpa– highest of any socket cap screw.

Equivalent Standards

ISO 4762, DIN 912, ASME B18.3.1M
BS 4168-1

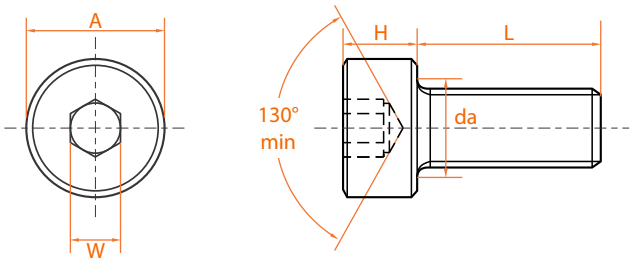
Mechanical Properties

Screw Size	≤M16	>M16
Heat Treatment	40-43 HRC	40-43 HRC
Tensile Strength	1300 N/mm^2	1250 N/mm^2
Yield Strength	1170 N/mm^2	1124 N/mm^2
Shear Strength	780 N/mm^2	750 N/mm^2
Min. Elongation	9%	9%

Notes:

1. Property Class : 12.9
2. Thread Class : 4g6g
3. Working Temperature : -50°C to +300°C

4. Torques calculated in accordance with VDI 2230 "Systematic calculation of high duty bolted joints" with σ 0.2 = 1080 N/mm^2 and μ = 0.125 for plain finish and μ = 0.094 for plated.



Product Dimensions (Micro Sizes)

Thread Size nom	Pitch	Head Diameter A max	Hex Socket Size W nom	Head Height H max	Transition Dia da nom	Length L min	Length L max
M1.4	0.30	2.6	1.27	1.4	1.8	3	6
M1.6	0.35	3.0	1.50	1.6	2.0	3	6
(M1.7)	0.35	3.0	1.50	1.7	2.1	3	6
M1.8	0.35	3.4	1.50	1.8	2.3	3	6
M2	0.40	3.8	1.50	2.0	2.6	3	12
(M2.3)	0.40	4.0	2.00	2.3	2.9	4	15
M2.5	0.45	4.5	2.00	2.5	3.1	4	15
(M2.6)	0.45	4.5	2.00	2.6	3.2	4	15

Thread Size	Recommended Torques Setting					
	Unplated		Plated		Induced Load	
nom	Nm	lbf.in	Nm	lbf.in	kN	lbf
M1.4	0.20	1.8	0.15	1.3	733	164
M1.6	0.29	2.6	0.22	2.0	930	208
(M1.7)	0.35	3.1	0.26	2.3	1,100	246
M1.8	0.44	3.9	0.33	2.9	1,300	291
M2	0.60	5.3	0.45	4.0	1,550	347
(M2.3)	0.95	8.4	0.71	6.3	2,230	500
M2.5	1.21	10.7	0.90	8.0	2,590	580
(M2.6)	1.37	12.1	1.03	9.1	2,860	640

Sizes in brackets are non-preferred standards

Suitable for all high tensile applications. Up to 1300 Mpa– highest of any socket cap screw. Use Stainless for corrosive, cryogenic or elevated temperature environments.

Equivalent Standards

ISO 4762, DIN 912, ASME B18.3.1M
BS 4168-1

Mechanical Properties

Screw Size	≤M16	>M16
Heat Treatment	40-43 HRC	40-43 HRC
Tensile Strength	1300 N/mm^2	1250 N/mm^2
Yield Strength	1170 N/mm^2	1124 N/mm^2
Shear Strength	780 N/mm^2	750 N/mm^2
Min. Elongation	9%	9%

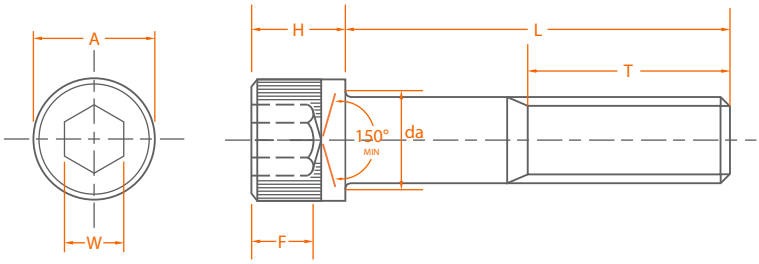
Notes:

1. Screws with lengths equal to or shorter than listed in column 'L' are threaded to head.
2. Property Class : 12.9
3. Thread Class : 4g6g
4. Working Temperature : -50°C to +300°C

5. Torques calculated in accordance with VDI 2230 "Systematic calculation of high duty bolted joints" with σ 0.2 = 1080 N/mm^2 and μ = 0.125 for plain finish and μ = 0.094 for plated.

Head Marking

- 'X' represents Lot Traceability E-CODE
- For Sizes M5 or Larger



Product Dimensions (Standard Sizes)

Thread Size nom.	Pitch	Head Diameter A max	Hex Socket Size W nom.	Head Height H max	Socket Depth F min.	Transition Dia da max	Length L Note 1	Thread Length T ref.
M3	0.50	5.5	2.5	3.0	1.3	3.60	20	18
M4	0.70	7.0	3.0	4.0	2.0	4.70	25	20
M5	0.80	8.5	4.0	5.0	2.5	5.70	25	22
M6	1.00	10.0	5.0	6.0	3.0	6.80	30	24
M8	1.25	13.0	6.0	8.0	4.0	9.20	35	28
M10	1.50	16.0	8.0	10.0	5.0	11.20	40	32
M12	1.75	18.0	10.0	12.0	6.0	13.70	50	36
(M14)	2.00	21.0	12.0	14.0	7.0	15.70	55	40
M16	2.00	24.0	14.0	16.0	8.0	17.70	60	44
(M18)	2.50	27.0	14.0	18.0	9.0	20.20	65	48
M20	2.50	30.0	17.0	20.0	10.0	22.40	70	52
(M22)	2.50	33.0	17.0	22.0	11.0	24.40	70	56
M24	3.00	36.0	19.0	24.0	12.0	26.40	80	60
M27	3.00	40.0	19.0	27.0	13.5	30.40	90	66
M30	3.50	45.0	22.0	30.0	15.5	33.40	100	72
M33	3.50	50.0	24.0	33.0	18.0	36.40	100	78
M36	4.00	54.0	27.0	36.0	19.0	39.40	110	84
M42	4.50	63.0	32.0	42.0	24.0	45.60	130	96

Thread Size nom.	Recommended Torques Setting				Induced Load	
	Unplated		Plated			
	N-m	in-lbs.	N-m	in-lbs.	kN	lbf
M3	2.1	18.6	1.6	14.2	3.99	890
M4	4.6	40.7	3.5	31.0	6.75	1,510
M5	9.5	84.1	7.1	62.8	11.10	2,480
M6	16.0	142.0	12.0	106.0	15.60	3,480
M8	39.0	345.0	29.0	257.0	28.70	6,400
M10	77.0	682.0	58.0	513.0	45.70	10,200
M12	135.0	1,200.0	101.0	894.0	66.70	14,900
(M14)	215.0	1,900.0	161.0	1,420.0	91.30	20,400
M16	330.0	2,920.0	248.0	2,190.0	126.00	28,100
(M18)	455.0	4,030.0	341.0	3,020.0	153.00	34,100
M20	650.0	5,750.0	488.0	4,320.0	197.00	44,000
(M22)	870.0	7,700.0	652.0	5,770.0	245.00	54,700
M24	1,100.0	9,740.0	825.0	7,300.0	284.00	63,400
M27	1,650.0	14,600.0	1,238.0	11,000.0	374.00	83,400
M30	2,250.0	19,900.0	1,688.0	15,000.0	454.00	101,000
M33	3,050.0	27,000.0	2,287.0	20,200.0	550.00	123,000
M36	3,850.0	34,100.0	2,888.0	25,000.0	664.00	148,000
M42	6,270.0	55,500.0	4,700.0	41,600.0	889.00	198,000

Sizes in brackets are non-preferred standards

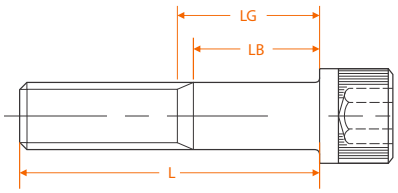
Body and Grip Length Dimensions

- LG is the maximum grip length and is the distance from the bearing surface to the first complete thread.
- LB is the minimum body length and is the length of the unthreaded cylindrical portion of the shank.
- Dimensions for LB and LG are calculated from the following formula:

  T Ref = (2x Nominal Dia) plus 12mm.

  LG max = Nominal length "L" minus "T"

  LB min = Nominal length "L" minus (T + 5 pitches)



Length	M3		M4		M5		M6		M8		M10		M12		M14		M16	
L Nom.	L_B (Min.)	L_G (Max.)	L_B (Min.)	L_G (Max.)	L_B (Min.)	L_G (Max.)	L_B (Min.)	L_G (Max.)	L_B (Min.)	L_G (Max.)	L_B (Min.)	L_G (Max.)	L_B (Min.)	L_G (Max.)	L_B (Min.)	L_G (Max.)	L_B (Min.)	L_G (Max.)
25	4.5	7																
30	9.5	12	6.5	10	4	8												
35			11.5	15	9	13	6	11										
40			16.5	20	14	18	11	16	5.75	12								
45					19	23	16	21	10.75	17	5.5	13						
50					24	28	21	26	15.75	22	10.5	18						
55							26	31	20.75	27	15.5	23	10.25	19				
60							31	36	25.75	32	20.5	28	15.25	24	10	20		
65									30.75	37	25.5	33	20.25	29	15	25	11	21
70									35.75	42	30.5	38	25.25	34	20	30	16	26
80									45.75	52	40.5	48	35.25	44	30	40	26	36
90											50.5	58	45.25	54	40	50	36	46
100											60.5	68	55.25	64	50	60	46	56
110													65.25	74	60	70	56	66
120													75.25	84	70	80	66	76
130															80	90	76	86
140															90	100	86	96
150																	96	106
160																	106	116
180																		

Length 'L' Tolerance (mm)

Screws Over	Up to and including	Tolerance
-	50	±0.25
50	80	±0.50
80	120	±0.71
120	250	±0.79
250	-	±1.02

Length	M18		M20		M22		M24		M27		M30		M33		M36		M42	
Nom.	L_B (Min.)	L_G (Max.)	L_B (Min.)	L_G (Max.)	L_B (Min.)	L_G (Max.)	L_B (Min.)	L_G (Max.)	L_B (Min.)	L_G (Max.)	L_B (Min.)	L_G (Max.)	L_B (Min.)	L_G (Max.)	L_B (Min.)	L_G (Max.)	L_B (Min.)	L_G (Max.)
70	9.5	22																
80	19.5	32	15.5	28	11.5	24												
90	29.5	42	25.5	38	21.5	34	15	30										
100	39.5	52	35.5	48	31.5	44	25	40	19	34								
110	49.5	62	45.5	58	41.5	54	35	50	29	44	20.5	38	14.5	32				
120	59.5	72	55.5	68	51.5	64	45	60	39	54	30.5	48	24.5	42	16	36		
130	69.5	82	65.5	78	61.5	74	55	70	49	64	40.5	58	34.5	52	26	46		
140	79.5	92	75.5	88	71.5	84	65	80	59	74	50.5	68	44.5	62	36	56	21.5	44
150	89.5	102	85.5	98	81.5	94	75	90	69	84	60.5	78	54.5	72	46	66	31.5	54
160	99.5	112	95.5	108	91.5	104	85	100	79	94	70.5	88	64.5	82	56	76	41.5	64
180	119.5	132	115.5	128	111.5	124	105	120	99	114	90.5	108	84.5	102	76	96	61.5	84
200			135.5	148	131.5	144	125	140	119	134	110.5	128	104.5	122	96	116	81.5	104
220					151.5	164	145	160	139	154	130.5	148	124.5	142	116	136	101.5	124
240							165	180	159	174	150.5	168	144.5	162	136	156	121.5	144
260									179	194	170.5	188	164.5	182	156	176	141.5	164
280											190.5	208	184.5	202	176	196	161.5	184

All dimensions are in mm.