

Socket Head Cap Screws M3 to M48

Metric



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

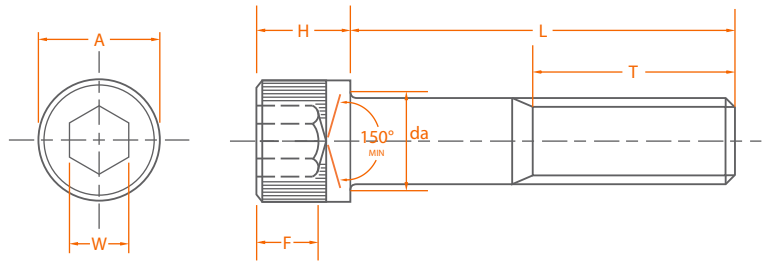
5. Torques calculated in accordance with VDI 2230 "Systematic calculation of high duty bolted joints" with $\sigma 0.2 = 1080 \text{ N/mm}^2$ and $\mu = 0.125$ for plain finish and $\mu = 0.094$ for plated.

Head Marking



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

Unbrako



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		kN	lbf
	N-m	in-lbs.	N-m	in-lbs.		
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