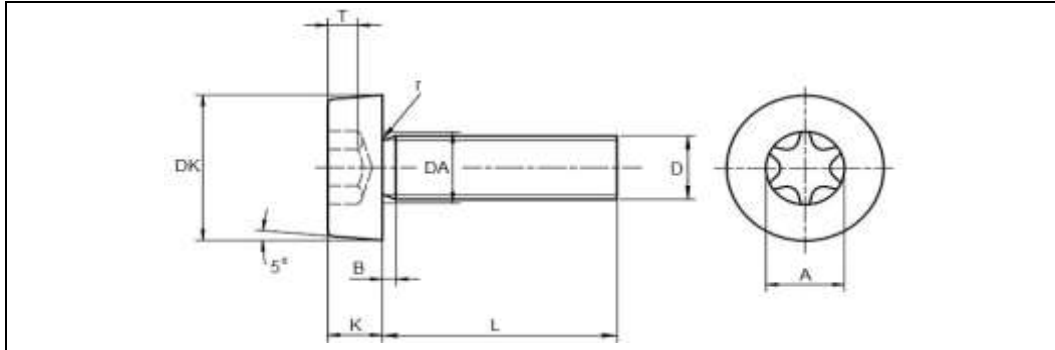


Metric ISO 14580 Low Profile Head 6-Lobe Socket Cap Screws

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Dimensions of Metric ISO 14580 Low Profile Head 6-Lobe Socket Cap Screws

thread D	M2	M2.5	M3	M4	M5	M6	M8	M10
B	0.8	0.9	1	1.4	1.6	2	2.5	3
min thread	25	25	25	38	38	38	38	38
DK	3.62	4.32	5.32	6.78	8.28	9.78	12.73	15.73
DA	2.6	3.1	3.6	4.7	5.7	6.8	9.2	11.2
K	1.55	1.85	2.4	3.1	3.65	4.4	5.8	6.9
drive size	6	8	10	20	25	30	45	50
A	1.75	2.4	2.8	3.95	4.5	5.6	7.95	8.95
T	0.84	0.91	1.27	1.66	1.91	2.29	3.05	3.43

Metric ISO 14580 Socket Cap Screws with a low profile head and are designed to be used where a reduced head height is of importance. Because of their reduced head height, the socket size is also reduced and as such cannot be preloaded to the same degree as a socket cap screw with a standard head size. Consequently a low head socket cap screw cannot be subjected to similar maximum loads as a standard head socket cap screw of similar dimension and material. For the low profile head the 6-lobe drive might be preferred as the geometry of this drive allows for greater applied torque than a internal hex socket drive. Aspen Fasteners offers over 500.000 unique fastener products from stock in inch and metric standard in a variety of materials and finishes. The following sizes metric ISO 14580 Low Profile Head 6-Lobe Socket Cap Screws are available for immediate shipping from stock: Diameters ranging from M2 to M8 up to 60mm long in stainless steel A2. View parts by clicking on the following link: [Metric ISO 14580 Low Profile Head 6-Lobe Socket Cap Screws](#)

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The International Organization for Standardization (ISO) issues dimensional standards for a variety of components including industrial fasteners as metric low head hexagon socket cap screws. While DIN standards remain common in Germany, Europe and globally a transition to ISO standards is taking place.

1) Mechanical properties of stainless steel for metric ISO 14580 Low Profile Head 6-Lobe Socket Cap Screws

Stainless steels can be divided into three groups of steel - austenitic, ferritic and martensitic. Austenitic steel is by far the most common type (>90% of commercial fasteners). The steel groups and strength classes are designated by a four-digit sequence of letters and numbers (eg A2-70) as shown in the following table. DIN EN ISO 3506 governs screws and nuts made from stainless steel.

Steel group	Steel grade	Strength class	Screws, Nuts and Bolts			
			Tensile strength N/mm ²	Tensile strength PSI	Dia range	Nut Load N/mm ²
Austenitic	A2 and A4	50	500	70.000	<=M39	500
		70	700	100.000	<=M20	700
		80	800	118.000	<=M20	800

The tensile stress is calculated with reference to the tensile stress area (see DIN EN ISO 3506-1979). Nuts to be paired with same grade of stainless steel screws

Steel group	Property Strength class	Made From	Characteristics
Austenitic	50	A1, A2	Soft; cold worked, turned and soft pressed fasteners
	70	A2, A4	Cold worked, normal strength formed fasteners
	80	A2, A4	Extreme cold worked, high strength, special applications

2) Chemical composition of stainless steel metric ISO 14580 Low Profile Head 6-Lobe Socket Cap Screws

Grade	USA Grade	Material designation	Material no.	C %	Si ≤ %	Mn ≤ %	Cr %	Mo %	Ni %
A 2	304	X 5Cr Ni 1810	1.4301	≤ 0.07	1.0	2.0	17.5 to 19.5	-	8.0 to 10.5
		X 2 Cr Ni 1811	1.4306	≤ 0.03	1.0	2.0	18.0 to 20.0	-	10 to 12.0
		X 8 Cr Ni 19/10	1.4303	≤ 0.07	1.0	2.0	17.0 to 19.0	-	11.0 to 13.0
A 4	316	X 5 Cr Ni Mo 1712	1.4401	≤ 0.07	1.0	2.0	16.5 to 18.5	2.0 to 2.5	10.0 to 13.0
		X 2 Cr Ni Mo 1712	1.4404	≤ 0.03	1.0	2.0	16.5 to 18.5	2.0 to 2.5	10 to 13

3) Chemical composition of steel metric ISO 14580 Low Profile Head 6-Lobe Socket Cap Screws

PROPERTY CLASS	MATERIAL AND TREATMENT	CHEMICAL COMPOSITION LIMITS %				TEMPERING TEMP °C MIN.
		C		P	S	
		min.	max.	max.	max.	
4.6. 4.8. 5.8. 6.8	Low or medium carbon steel	-	0.55	0.05	0.06	-
8.8	Medium carbon steel quenched. tempered	0.25	0.55	0.04	0.05	425
9.8	Medium carbon steel quenched. tempered	0.25	0.55	0.04	0.05	425
10.9	Medium carbon steel additives e.g. boron. Mn. Cr or Alloy steel - quenched. tempered	0.20	0.55	0.04	0.05	425
12.9	Alloy steel - quenched. tempered	0.20	0.50	0.035	0.035	380

4) Mechanical properties of steel for metric ISO 14580 Low Profile Head 6-Lobe Socket Cap Screws

MECHANICAL PROPERTY		PROPERTY CLASS								
		4.8	5.6	5.8	6.8	8.8		9.8	10.9	12.9
						Up to M 16	Over M 16			
Tensile Strength (Rm. N/mm ²)	nom.	400	500		600	800		900	1000	1200
	min.	420	500	520	600	800	830	900	1040	1220
Vickers Hardness	min.	130	155	160	190	250	255	290	320	385
	max.	250				320	336	360	380	435
Brinell Hardness	min.	124	147	152	181	319	242	266	295	353
	max.	238				385	319	342	363	412
Rockwell Hardness	min. HR	71	79	82	89	-				
	HRC	-	-	-	-	20	23	28	32	39
	HR	95			99	-				
	max. HRC	-	-	-	-	32	34	37	39	44
Yield Stress ReL. N/mm ²	nom.	320	300	400	480	-				
	min.	340	300	420	480	-				
Stress at permanent set limit N/mm ²	nom.	-				640		720	900	1080
	min.	-				640	660	720	940	1100

Disclaimer

Dimensional data and technical information for metric ISO 14580 Low Profile Head 6-Lobe Socket Cap Screws was obtained from publicly available sources and not acquired through standards agencies. It has been completed and compiled for reference purposes only; where discrepancies are found they are subject to change without notice. Aspen Fasteners makes no warranties or representations regarding the accuracy and validity of the compiled information and data. Contact the relevant standards authorities for accurate and detailed information.