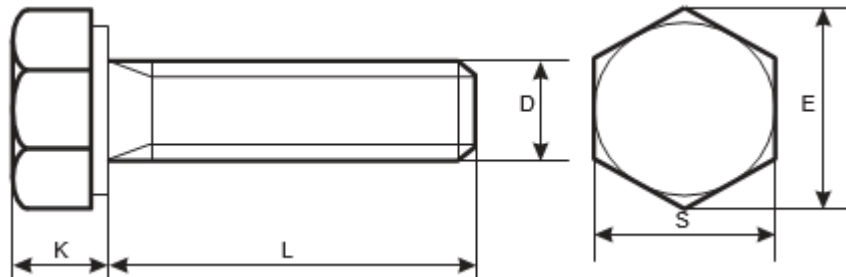


Metric DIN 961 Hex Head Cap Screws / Bolts Full Thread, Fine Thread

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Dimensions of Metric DIN 961 Hex Head Cap Screws / Bolts Full Thread, Fine Thread

Thread D	M8	M10	M12	M14	M16	M18	M20
PITCH	X 1.00	X 1.25	X 1.25	X 1.50	X 1.50	X 1.50	X 1.50
S	13	17	19	22	24	27	30
E	14.38	18.9	21.1	24.49	26.75	30.14	33.53
K	5.5	7	8	9	10	12	13

Weights of Metric DIN 961 Hex Head Cap Screws / Bolts Full Thread, Fine Thread

Thread D	M8	M10	M12	M14	M16	M18	M20
L (mm)	Weight in Kg(s)/1000pcs						
16	11.1	21.3					
20	12.4	23.5	32.9	48.7	64.5		
25	14.1	26.2	36.6	54	71.5		
30	15.7	28.9	40.3	59.1	78.5	107	
35		31.6	44	64.4	85.3	116	
40		34.3	47.7	69.6	92.3	124	162
50		39.6	55	80.2	106	142	184
60							207

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Metric DIN 961 Hexagon Head Cap Screws / Bolts are externally threaded fasteners with a hexagonal washer faced head and a chamfered tip to facilitate mating with an internally threaded component. DIN 961 hex screws have a fully threaded, fine threaded shank and are manufactured to very strict tolerances. Aspen Fasteners offers one of the most complete ranges of metric screws, bolts and other inch and metric industrial fasteners for immediate delivery from stock. The following sizes of metric DIN 961 Hexagon Head Cap Screws / Bolts are available for immediate shipping from stock: Diameters ranging from M8 to M24 and lengths up to 100mm in plain and zinc plated steel. View parts by clicking on the following link: [DIN 961 Full Thread Fine Thread Hex Head Cap Screws/Bolts](#)

DIN (Deutsches Institut für Normung - German Institute for Standardization) standards are issued for a variety of components including industrial fasteners as Metric DIN 961 Hexagon Head Cap Screws / Bolts. The DIN standards remain common in Germany, Europe and globally even though the transition to ISO standards is taking place. DIN standards continue to be used for parts which do not have ISO equivalents or for which there is no need for standardization. IN this case the ISO equivalent for DIN 961 is ISO 8676.

1) Mechanical properties of stainless steel for metric DIN 961 Hex Head Cap Screws / Bolts Full Thread, Fine Thread

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

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2) Chemical composition of stainless steel metric DIN 961 Hex Head Cap Screws / Bolts Full Thread, Fine Thread

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	-	8.0 to
		X 2 Cr Ni 1811	1.4306	≤ 0.03	1.0	2.0	18.0 to	-	1.0 to
		X 8 Cr Ni 19/10	1.4303	≤ 0.07	1.0	2.0	17.0 to	-	11.0 to
A 4	316	X 5 Cr Ni Mo 1712	1.4401	≤ 0.07	1.0	2.0	16.5 to	2.0	10.0 to
		X 2 Cr Ni Mo 1712	1.4404	≤ 0.03	1.0	2.0	16.5 to	2.0	1.0 to

3) Chemical composition of steel metric DIN 961 Hex Head Cap Screws / Bolts Full Thread, Fine Thread

PROPERTY CLASSES	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

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4) Mechanical properties of steel for metric DIN 961 Hex Head Cap Screws / Bolts Full Thread, Fine Thread

MECHANICAL PROPERTY		PROPERTY CLASS									
		4.8	5.6	5.8	6.8	8.8		9.8	10.9	12.9	
						Up to	Over				
Tensile Strength	nom.	400	500		600	800		900	100	120	
	min.	420	500	520	600	800	830	900	104	122	
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.	71	79	82	89	-					
	HRC	-	-	-	-	20	23	28	32	39	
	HR	95				99	-				
	max.	-	-	-	-	32	34	37	39	44	
Yield Stress Rel.	nom.	320	300	400	480	-					
	min.	340	300	420	480	-					
Stress at permanent set	nom.	-				640		720	900	108	
	min.	-				640	660	720	940	110	

Disclaimer

Dimensional data and technical information for Metric DIN 961 Hexagon Head Cap Screws / Bolts Full thread Fine Thread 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.

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