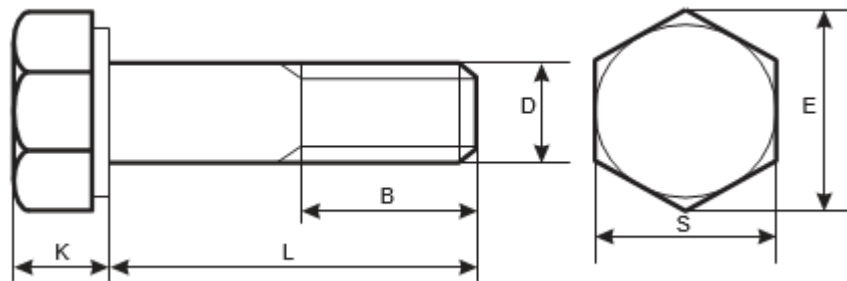


Metric DIN 960 Hex Head Cap Screws / Bolts Part Thread, Fine Thread

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Dimensions of Metric DIN 960 Hex Head Cap Screws / Bolts Part Thread, Fine Thread

Thread D	M8	M10	M12	M14	M16	M18	M20	M22	M24
S	13	17	19	22	24	27	30	32	36
E	14.38	18.9	21.1	24.49	26.75	30.14	33.14	35.72	39.98
K	5.5	7	8	9	10	12	13	14	15
B L ≤ 125	22	26	30	34	38	42	46	50	54
B 25 < L ≤ 200	28	32	36	40	44	48	52	56	60
B L > 200	41	45	49	53	57	61	65	69	73

Thread D	M27	M30	M33	M36	M39	M42	M45	M48
S	41	46	50	55	60	65	70	75
E	45.63	51.28	55.8	61.31	66.96	72.61	78.26	83.91
K	17	19	21	23	25	26	28	30
B L ≤ 125	60	66	72	78	84	90	96	102
B 125 < L ≤ 200	66	72	78	84	90	96	102	108
B L > 200	79	85	91	97	103	109	115	121

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Weights of Metric DIN 960 Hex Head Cap Screws / Bolts Part Thread, Fine Thread

L	M8	M10	M12	M14	M16	M18	M20	M22	M24
	WEIGHT IN KG/1000 PCS								
40	20.4	35							
45	22.3	38.1	53.8						
50	24.3	41.2	58.2	83.3					
55	26.3	44.2	62.7	89.3	118				
60	28.3	47.3	67.1	95.4	126				
65	30.2	50.4	71.5	101	134	174	225		
70	32.2	53.5	76	107	142	184	237	287	
75	34.2	56.6	80.4	113	150	194	250	302	
80	36.1	59.6	84.9	120	157	204	262	317	393
85	38.1	62.7	89.3	126	165	214	274	332	410
90	40.1	65.8	93.7	132	173	224	287	347	428
95	42.1	68.9	98.1	138	181	234	299	362	446
100	44	72	102.6	144	189	244	311	376	464
110		78.2	111.5	156	205	264	336	406	499
120		84.3	120.3	168	221	284	360	436	535
130		90	128	179	235	302	384	464	568
140		96.2	136.9	191	251	322	409	494	603
150		102.3	145.7	203	267	342	433	524	639
160			154.6	215	282	362	458	553	674
170			163.5	227	298	382	483	583	710
180			172.4	239	314	402	507	613	745
190				251	330	422	532	643	781
200				264	345	442	556	673	816

Metric DIN 960 Hex Head Cap Screws / Bolts Part Thread, Fine Thread are externally threaded fasteners with a hexagonal washer faced head and a chamfered tip to facilitate mating with an internally threaded component. DIN 960 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 960 Hex Head Cap Screws / Bolts Part Thread, Fine Thread are available for immediate shipping from stock: Diameters ranging from M8 to M24 and lengths up to 150mm in plain and zinc plated steel. View parts by clicking on the following link: [DIN 960 Hex Head Cap Screws / Bolts Part Thread, Fine Thread](#)

DIN (Deutsches Institut für Normung - German Institute for Standardization) standards are issued for a variety of components including industrial fasteners as Metric DIN 960 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.

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1) Mechanical properties of stainless steel for metric DIN 960 Hex Head Cap Screws / Bolts Part 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 960 Hex Head Cap Screws / Bolts Part 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 960 Hex Head Cap Screws / Bolts Part 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 960 Hex Head Cap Screws / Bolts Part 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 960 Hex Head Cap Screws / Bolts Part 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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