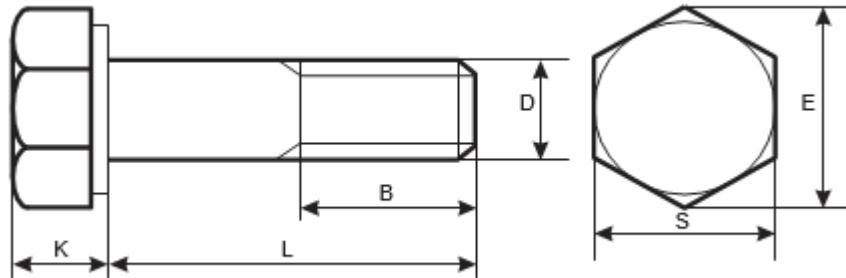


Metric DIN 931 Hexagon Head Cap Screws/Bolts Part Thread

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Dimensions of Metric DIN 931 Hexagon Head Cap Screws/Bolts Part Thread

Thread D	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24
S	7	8	10	13	17	19	22	24	27	30	32	36
E	7.74	8.87	11.05	14.38	18.9	21.1	24.49	26.75	30.14	33.14	35.72	39.98
K	2.8	3.5	4	5.5	7	8	9	10	12	13	14	15
L ≤ 125	14	16	18	22	26	30	34	38	42	46	50	54
B 25 < L ≤ 200	20	22	24	28	32	36	40	44	48	52	56	60
L > 200					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
L ≤ 125	60	66	72	78	84	90	96	102
B 125 < L ≤ 200	66	72	78	84	90	96	102	108
L > 200	79	85	91	97	103	109	115	121

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Weights of Metric DIN 931 Hexagon Head Cap Screws/Bolts Part Thread

L (mm)	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24
	Weight in Kg(s)/1000pcs											
25	3.12											
30		5.64	8.06									
35		6.42	9.13	18.2								
40		7.2	10.2	20.7	35							
45		7.98	11.3	22.2	38	53.6						
50		8.76	12.3	24.2	41.1	58.1	82.2					
55		9.54	13.4	25.8	43.8	62.6	88.3	115				
60		10.3	14.4	29.8	46.9	67	94.3	123	161			
65		11.1	15.5	29.8	50	70.3	100	131	171	219		
70		11.9	16.5	31.8	53.1	74.7	106	139	181	231	281	
75		12.7	17.6	33.7	56.2	79.1	112	147	191	243	296	264
80		13.5	18.6	35.7	62.3	83.6	118	155	201	255	311	382
90			20.8	39.6	68.5	92.4	128	171	220	279	341	428
100				43.6	77.7	100	140	186	240	303	370	464
110				47.5	83.9	109	152	202	260	327	400	500
120					90	118	165	218	280	351	430	535
130					96.2	127	175	230	295	365	450	560
140					102	136	187	246	315	389	480	595
150					108	145	199	262	335	423	510	630

Thread D	M27	M30	M33	M36	M39	M42	M45	M48
	Weight in Kg(s)/1000pcs							
80	511							
90	557	712						
100	603	767	951					
110	650	823	1020	1250	1510			
120	695	880	1090	1330	1590	1900	2260	
130	720	920	1150	1400	1650	1980	2350	2780
140	765	975	1220	1480	1740	2090	2480	2920
150	810	1030	1290	1560	1830	2200	2600	3010
160	855	1090	1350	1640	1930	2310	2730	3160
180	945	1200	1480	1900	2120	2520	2980	3440
200	1030	1310	1610	2060	2310	2740	3220	3720
220	1130	1420	1750	2220	2500	2960	3470	4010
240		1530	1880	2380	2700	3180	3720	4290
260		1640	2020	2540	2900	3400	3970	4570
280		1750	2160	2700	2700	3620	4220	1850
300		1860	2300	2860	2860	3840	4470	5130

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Weights of Metric DIN 931 Hexagon Head Cap Screws/Bolts Part Thread

Thread D	M12	M14	M16	M18	M20	M22	M24
L (mm)	Weight in Kg(s)/1000pcs						
160	153	211	278	355	447	540	665
170	162	223	294	375	470	570	700
180	171	235	310	395	495	600	735
190	180	247	326	415	520	630	770
200	189	260	342	435	545	660	805
210	198	273	358	455	570	690	
220	207	286	374	475	590	720	870
230			390	495	615	750	905
240			406	515	640	780	940
250			422	535	665	810	975
260			438	555	690	840	1010
280						900	1080
300						960	1150
320						1020	1270
340						1080	1340
350						1110	1375
360						1140	1410

Metric DIN 931 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 931 hex screws have a partially 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 931 Hexagon Head Cap Screws/Bolts are available for immediate shipping from stock: Diameters ranging from M5 to M52 in A2 and marine grade A4 stainless steel as well as aluminum, brass nylon and steel. View parts by clicking on the following link: [DIN 931 Part 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 931 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 931 is ISO 4014.

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1) Mechanical properties of stainless steel for metric DIN 931 Hexagon Head Cap Screws/Bolts Part 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 931 Hexagon Head Cap Screws/Bolts Part 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 931 Hexagon Head Cap Screws/Bolts Part 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 931 Hexagon Head Cap Screws/Bolts Part 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 931 Hexagon Head Cap Screws/Bolts 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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