

DIN 960

Hex Head Bolt - Fine Pitch



Standard	DIN 960		
Product Type	Hex Head Bolt - Fine Pitch		
Material	Stainless Steel, Carbon Steel, Alloy Steel		
Property Class	A2-70, A4-80 (ISO 3506-1) · 4.8, 8.8, 10.9 (ISO 898-1)		
Surface Finish	Passivated, Plain, Zinc Plated, Hot Dip Galvanized, Dacromet, Phosphate, Blackened		
Size Range	M8 - M100	Length Range	6-300 mm
Thread	ISO metric fine pitch		

BASIS OF SPECIFICATION

WHICH STANDARD GOVERNS WHAT

Dimensions to	DIN 960:1970-11
Carbon steel / Alloy steel mechanical properties to	ISO 898-1:2013
Stainless steel mechanical properties to	ISO 3506-1:2020
Length tolerance	to be agreed
Thread length	to be agreed
Minimum usable thread length	to be agreed
Product grade	to be agreed

MECHANICAL PROPERTIES

REQUIRED VALUES PER ISO 3506-1

Class	Rm min.	Yield requirement	Elongation requirement	Hardness	Source
A2-70	700 MPa	Rp0.2 min. 450 MPa	0,4d mm	-	ISO 3506-1
A4-80	800 MPa	Rp0.2 min. 600 MPa	0,3d mm	-	ISO 3506-1

MECHANICAL PROPERTIES

REQUIRED VALUES PER ISO 898-1

Class	Rm min.	Yield requirement	Elongation requirement	Hardness	Source
4.8	420 MPa	Rpf min. 340 MPa (not a test value)	Af min. 0.24	130 - 220 HV	ISO 898-1
8.8	800 MPa	Rp0.2 min. 640 MPa	A min. 12 %	250 - 320 HV	ISO 898-1 (d ≤ M16)
8.8	830 MPa	Rp0.2 min. 660 MPa	A min. 12 %	255 - 335 HV	ISO 898-1 (d > M16)
10.9	1040 MPa	Rp0.2 min. 940 MPa	A min. 9 %	320 - 380 HV	ISO 898-1

DIMENSIONAL DATA - SIZES WE SUPPLY

ALL DIMENSIONS PER THE STANDARD

d Diameter - mm	Thread Pitch - mm	s (max) Width Across Flats - mm	e (min) Width Across Corners - mm	k Nominal Head Height - mm	b (l ≤ 125) Thread Length - mm	b (125 < l ≤ 200) Thread Length - mm	b (l > 200) Thread Length - mm
M8	1	13	14.38	5.5	22	28	-
M10	1.25	17	18.9	7	26	32	45
M12	1.5	19	21.1	8	30	36	49
M16	1.5	24	26.75	10	38	44	57
M20	2	30	33.53	13	46	52	65
M24	2	36	39.98	15	54	60	73

FURTHER SIZES IN THIS STANDARD

ALL DIMENSIONS PER THE STANDARD

Not held in stock. Available to order; minimum order quantity applies.

d Diameter - mm	Thread Pitch - mm	s (max) Width Across Flats - mm	e (min) Width Across Corners - mm	k Nominal Head Height - mm	b (l ≤ 125) Thread Length - mm	b (125 < l ≤ 200) Thread Length - mm	b (l > 200) Thread Length - mm
M14	1.5	22	24.49	9	34	40	53
M18	2	27	30.14	12	42	48	61
M22	2	32	35.72	14	50	56	69
M27	2	41	45.63	17	60	66	79
M30	2	46	51.28	19	66	72	85
M33	2	50	55.8	21	72	78	91
M36	3	55	61.31	23	78	84	97
M39	3	60	66.96	25	84	90	103
M42	3	65	72.61	26	90	96	109
M45	3	70	78.26	28	96	102	115
M48	3	75	83.91	30	102	108	121
M52	3	-	89.56	33	-	116	129
M56	4	85	95.07	35	-	124	137
M60	4	90	100.72	38	-	132	145
M64	4	95	106.37	40	-	140	153
M68	4	100	112.02	43	-	-	161
M72	4	105	117.67	45	-	156	169
M76	4	110	123.32	48	-	164	177
M80	4	115	128.97	50	-	172	185
M90	4	130	145.77	57	-	-	205
M100	4	145	162.72	63	-	-	225

MARKING
Steel — Required

What	Manufacturer identification mark and the property class symbol (Table 19), for example 8.8
Where	Preferably on the top of the head, embossed or indented; alternatively indented on the side of the head. On flanged products, on the flange
Sizes	d ≥ 5 mm
Clause	ISO 898-1:2013, 10.3.3.1 Hexagon and hexalobular head bolts and screws

DIN 960:1970-11 sets no marking symbol of its own; the property class is written into the designation: Sechskantschraube M 8 x 1 x 50 DIN 960 - 5.6. Where surface protection is required the designation is supplemented to DIN 267 Blatt 9.

Classes in this edition are 5.6, with 8.8 and 10.9 only up to M 39 x 3; other classes or materials are by agreement. This edition carries no stainless column.

The standard also names the nut to pair with: bolt class 5.6 with nut class 5, 8.8 with 8, and 10.9 with 10, noting that a higher nut class may replace a lower one to DIN 267 Blatt 4.

Screws above the stepped line in the length table have thread almost to the head and are to be ordered to DIN 961 instead.

Confirm the ordered property class before production.

INSPECTION DOCUMENTS WE CAN ISSUE

EN 10204 3.1 material certificate	Can be included when agreed in the order.
Dimensional inspection report	Can be provided for the agreed inspection scope.
Certificate of conformity	Can be issued against the confirmed order requirements.
Mechanical test report	Available when the required tests are agreed before production.
Chemical analysis report	Available when the material verification scope is agreed.
Coating inspection report	Can record the coating checks agreed for the order.

REFERENCES & NOTES

Note: DIN 960 is a withdrawn legacy standard; the current standard for this product is ISO 8765. This sheet is built to DIN 960. Dimensions can differ between the two - check the recorded correspondence on our website before substituting one for the other.