UDC 621.882.211 : 621.88.082.15

January 1990

M8 × 1 to M100 × 4 hexagon head bolts with fine pitch thread

Product grades A and B

DIN 960

Sechskantschrauben mit Schaft; Feingewinde M8 × 1 bis M100 × 4; Produktklassen A und B

Supersedes December 1983 edition.

In keeping with current practice in standards published by the International Organization for Standardization (ISO), a comma has been used throughout as the decimal marker.

This standard should be used together with ISO 8765. For details, see Explanatory notes. It is intended to withdraw the present standard by 1 July 1992 at the latest.

Dimensions in mm

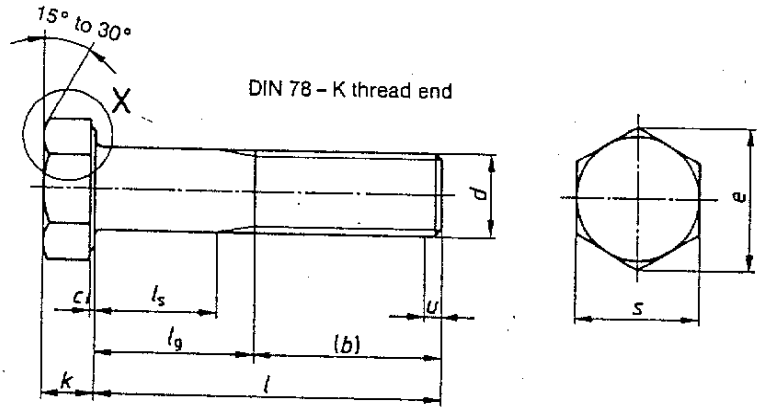
1 Field of application

This standard specifies requirements for M8 to M100 hexagon head bolts with metric fine pitch thread, assigned to product grade A for sizes up to M24 and lengths not exceeding 10 d or 150 mm, whichever is shorter, and product grade B for sizes larger than M24 or lengths exceeding 10 d or 150 mm, whichever is shorter. The bolts are identical in design with those specified in DIN 931 Parts 1 and 2, except that they have a fine pitch thread.

For special bolt types or designs, see DIN 962.

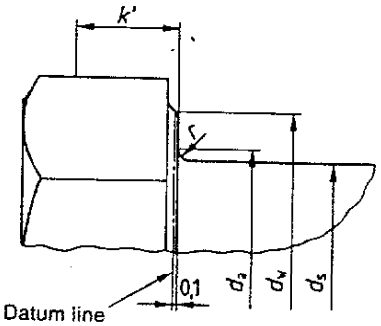
If, in special cases, bolts are to comply with specifications other than those given in this standard, e.g. regarding materials or property classes, these shall be selected in accordance with the appropriate standards.

2 Dimensions



u = maximum of 2 P (incomplete thread).

Detail X



Datum line for d_w

k' = minimum wrenching height (0,7 k_{min}).

Continued on pages 2 to 8

Table.

Thread size (d)			M8 × 1	M10 × 1	M12 × 1,5	(M14 × 1,5)	M16 × 1,5	(M18 × 2)	M20 × 1,5	(M22 × 2)	M24 × 2
			–	M10 × 1,25	M12 × 1,25	–	–	(M18 × 1,5)	M20 × 2	(M22 × 1,5)	M24 × 1,5
b Auxiliary dimension		1)	22	26	30	34	38	42	46	50	54
		2)	28	32	36	40	44	48	52	56	60
		3)	41	45	49	53	57	61	65	69	73
c		min.	0,15	0,15	0,15	0,15	0,2	0,2	0,2	0,2	0,2
		max.	0,6	0,6	0,6	0,6	0,8	0,8	0,8	0,8	0,8
d_a		max.	9,2	11,2	13,7	15,7	17,7	20,2	22,4	24,4	26,4
d_s		max.	8	10	12	14	16	18	20	22	24
d_s min.	Product grade	A	7,78	9,78	11,73	13,73	15,73	17,73	19,67	21,67	23,67
		B	7,64	9,64	11,57	13,57	15,57	17,57	19,48	21,48	23,48
d_w min.	Product grade	A	11,6	15,6	17,4	20,5	22,5	25,3	28,2	30	33,6
		B	11,4	15,4	17,2	20,1	22	24,8	27,7	29,5	33,2
e min.	Product grade	A	14,38	18,9	21,1	24,49	26,75	30,14	33,53	35,72	39,98
		B	14,2	18,72	20,88	23,91	26,17	29,56	32,95	35,03	39,55
k Product grade	Nominal size		5,3	6,4	7,5	8,8	10	11,5	12,5	14	15
	A	min.	5,15	6,22	7,32	8,62	9,82	11,28	12,28	13,78	14,78
		max.	5,45	6,58	7,68	8,98	10,18	11,72	12,72	14,22	15,22
	B	min.	5,06	6,11	7,21	8,51	9,71	11,15	12,15	13,65	14,65
		max.	5,54	6,69	7,79	9,09	10,29	11,85	12,85	14,35	15,35
k'		min.	3,54	4,28	5,05	5,96	6,8	7,8	8,5	9,6	10,3
r		min.	0,4	0,4	0,6	0,6	0,6	0,6	0,8	0,8	0,8
s	max. = nominal size		13	17	19	22	24	27	30	32	36
s min.	Product grade	A	12,73	16,73	18,67	21,67	23,67	26,67	29,67	31,61	35,38
		B	12,57	16,57	18,48	21,16	23,16	26,16	29,16	31	35

Nominal size	l Product grade A min.	A max.	B min.	B max.	Lengths l_s and l_g 4) l_s min.	l_g max.	l_s min.	l_g max.	l_s min.	l_g max.	l_s min.	l_g max.	l_s min.	l_g max.	l_s min.	l_g max.	l_s min.	l_g max.	l_s min.	l_g max.	l_s min.	l_g max.
35	34,5	35,5	–	–	8	13																
40	39,5	40,5	–	–	13	18	7,75	14														
45	44,5	45,5	–	–	18	23	12,75	19	7,5	15												
50	49,5	50,5	–	–	23	28	17,75	24	12,5	20	8,5	16										
55	54,4	55,6	–	–	28	33	22,75	29	17,5	25	13,5	21	9,5	17								
60	59,4	60,6	–	–	33	38	27,75	34	22,5	30	18,5	26	14,5	22								
65	64,4	65,6	–	–	38	43	32,75	39	27,5	35	23,5	31	19,5	27	13	23	9	19				
70	69,4	70,6	–	–	43	48	37,75	44	32,5	40	28,5	36	24,5	32	18	28	14	24	10	20		
(75)	74,4	75,6	–	–	48	53	42,75	49	37,5	45	33,5	41	29,5	37	23	33	19	29	15	25		
80	79,4	80,6	–	–	53	58	47,75	54	42,5	50	38,5	46	34,5	42	28	38	24	34	20	30	16	26
(85)	84,3	85,7	83,25	86,75	58	63	52,75	59	47,5	55	43,5	51	39,5	47	33	43	29	39	25	35	21	31
90	89,3	90,7	88,25	91,75	63	68	57,75	64	52,5	60	48,5	56	44,5	52	38	48	34	44	30	40	26	36
(95)	94,3	95,7	93,25	93,75	68	73	62,75	69	57,5	65	53,5	61	49,5	57	43	53	39	49	35	45	31	41
100	99,3	100,7	98,25	101,75	73	78	67,75	74	62,5	70	58,5	66	54,5	62	48	58	44	54	40	50	36	46
110	109,3	110,7	108,25	111,75			77,75	84	72,5	80	68,5	76	64,5	72	58	68	54	64	50	60	46	56
120	119,3	120,7	118,25	121,75			87,75	94	82,5	90	78,5	86	74,5	82	68	78	64	74	60	70	56	66
130	129,2	130,8	128	132			91,75	98	86,5	94	82,5	90	78,5	86	72	82	68	78	64	74	60	70
140	139,2	140,8	138	142			101,75	108	96,5	104	92,5	100	88,5	96	82	92	78	88	74	84	70	80
150	149,2	150,8	148	152			111,75	118	106,5	114	102,5	110	98,5	106	92	102	88	98	84	94	80	90
160	159,2	160,8	158	162					116,5	124	112,5	120	108,5	116	102	112	98	108	94	104	90	100
(170)	169,2	170,8	168	172					126,5	134	122,5	130	118,5	126	112	122	108	118	104	114	100	110
180	179,2	180,8	178	182					136,5	144	132,5	140	128,5	136	122	132	118	128	114	124	110	120
(190)	189,08	190,92	187,7	192,3							142,5	150	138,5	146	132	142	128	138	124	134	120	130
200	199,08	200,92	197,7	202,3							152,5	160	148,5	156	142	152	138	148	134	144	130	140

The commercial lengths are defined in terms of lengths l_s and l_g. Use of sizes given in brackets should be avoided where possible. Product grade A has been given above, product grade B below the stepped line. For 1) to 4), see page 5.

Table (continued).

Thread size (d)		(M27 × 2)	M30 × 2	(M33 × 2)	M36 × 3	(M39 × 3)	M42 × 3	(M45 × 3)	M48 × 3	(M52 × 3)
b Auxiliary dimension	1)	60	66	72	78	84	90	96	102	–
	2)	66	72	78	84	90	96	102	108	116
	3)	79	85	91	97	103	109	115	121	129
c	min.	0,2	0,2	0,2	0,2	0,3	0,3	0,3	0,3	0,3
	max.	0,8	0,8	0,8	0,8	1	1	1	1	1
d_a	max.	30,4	33,4	36,4	39,4	42,4	45,6	48,6	52,6	56,6
d_s	max.	27	30	33	36	39	42	45	48	52
	min.	26,48	29,48	32,38	35,38	38,38	41,38	44,38	47,38	51,26
d_w	min.	38	42,7	46,6	51,1	55,9	59,9	64,7	69,4	74,2
e	min.	45,2	50,85	55,37	60,79	66,44	71,3	76,95	82,6	88,25
k	Nominal size	17	18,7	21	22,5	25	26	28	30	33
	min.	16,65	18,28	20,58	22,08	24,58	25,58	27,58	29,58	32,5
	max.	17,35	19,12	21,42	22,92	25,42	26,42	28,42	30,42	33,5
k'	min.	11,7	12,8	14,4	15,5	17,2	17,9	19,3	20,9	22,8
r	min.	1	1	1	1	1	1,2	1,2	1,6	1,6
s	max. = nominal size	41	46	50	55	60	65	70	75	80
	min.	40	45	49	53,8	58,8	63,1	68,1	73,1	78,1

Nominal size	l min.	l max.	Lengths l_s and l_g 4)																	
			l_s min.	l_g max.	l_s min.	l_g max.	l_s min.	l_g max.	l_s min.	l_g max.	l_s min.	l_g max.	l_s min.	l_g max.	l_s min.	l_g max.	l_s min.	l_g max.	l_s min.	l_g' max.
90	88,25	91,75	20	30	14	24														
(95)	93,25	96,75	25	35	19	29														
100	98,25	101,75	30	40	24	34	18	28												
110	108,25	111,75	40	50	34	44	28	38	17	32										
120	118,25	121,75	50	60	44	54	38	48	27	42	21	36								
130	128	132	54	64	48	58	42	52	31	46	25	40	19	34	13	28				
140	138	142	64	74	58	68	52	62	41	56	35	50	29	44	23	38	17	32		
150	148	152	74	84	68	78	62	72	51	66	45	60	39	54	33	48	27	42	19	34
160	158	162	84	94	78	88	72	82	61	76	55	70	49	64	43	58	37	52	29	44
(170)	168	172	94	104	88	98	82	92	71	86	65	80	59	74	53	68	47	62	39	54
180	178	182	104	114	98	108	92	102	81	96	75	90	69	84	63	78	57	72	49	64
(190)	187,7	192,3	114	124	108	118	102	112	91	106	85	100	79	94	73	88	67	82	59	74
200	197,7	202,3	124	134	118	128	112	122	101	116	95	110	89	104	83	98	77	92	69	84
220	217,7	222,3			125	135	119	129	108	123	102	117	96	111	90	105	84	99	76	91
240	237,7	242,3			145	155	139	149	128	143	122	137	116	131	110	125	104	119	96	111
260	257,4	262,6			165	175	159	169	148	163	142	157	136	151	130	145	124	139	116	131
280	277,4	282,6					179	189	168	183	162	177	156	171	150	165	144	159	136	151
300	297,4	302,6					199	209	188	203	182	197	176	191	170	185	164	179	156	171

For 1) to 4), see page 5.

Table (concluded).

Thread size d			M56×4	(M60×4)	M64×4	(M68×4)	M72×4	(M76×4)	M80×4	M90×4	M100×4
b Auxiliary dimension		[2]	124	132	140	148	156	164	172	192	–
		[3]	137	145	153	161	169	177	185	205	225
c		min.	–	–	–	–	–	–	–	–	–
		max.	1	1	1	1	1	1	2	2	2
d_a		max.	63	67	71	75	79	83	87	97	108
d_s		max.	56	60	64	68	72	76	80	90	100
		min.	55,26	59,26	63,26	67,26	71,26	75,26	79,26	89,13	99,13
d_w		min.	78,7	83,4	88,2	92,9	97,7	102,4	107,2	121,1	135,4
e		min.	93,56	99,21	104,86	110,51	116,16	121,81	127,46	144,08	161,03
k		Nominal size	35	38	40	43	45	48	50	57	63
		min.	34,5	37,5	39,5	42,5	44,5	47,5	49,5	56,4	62,4
		max.	35,5	38,5	40,5	43,5	45,5	48,5	50,5	57,6	63,6
k'		min.	24,2	26,2	27,6	29,8	31,2	33,2	34,6	39,5	43,7
r		min.	2	2	2	2	2	2	2	2,5	2,5
s		max. = nominal size	85	90	95	100	105	110	115	130	145
		min.	82,8	87,8	92,8	97,8	102,8	107,8	112,8	127,5	142,5

Nominal size	l min.	l max.	Lengths l_s and l_g [4]																	
			l_s min.	l_g max.	l_s min.	l_g max.	l_s min.	l_g max.	l_s min.	l_g max.	l_s min.	l_g max.	l_s min.	l_g max.	l_s min.	l_g max.	l_s min.	l_g max.	l_s min.	l_g max.
160	158	162	16	36																
(170)	168	172	26	46	18	38														
180	178	182	36	56	28	48	20	40												
(190)	187,7	192,3	46	66	38	58	30	50	22	42										
200	197,7	202,3	56	76	48	68	40	60	32	52	24	44								
220	217,7	222,3	63	83	55	75	47	67	39	59	31	51	23	43	15	35				
240	237,7	242,3	83	103	75	95	67	87	59	79	51	71	43	63	35	55	15	35		
260	257,4	262,6	103	123	95	115	87	107	79	99	71	91	63	83	55	75	35	55	15	35
280	277,4	282,6	123	143	115	135	107	127	99	119	91	111	83	103	75	95	55	75	35	55
300	297,4	302,6	143	163	135	155	127	147	119	139	111	131	103	123	95	115	75	95	55	75
320	317,15	322,85	163	183	155	175	147	167	139	159	131	151	123	143	115	135	95	115	75	95
340	337,15	342,85	183	203	175	195	167	187	159	179	151	171	143	163	135	155	115	135	95	115
360	357,15	362,85	203	223	195	215	187	207	179	199	171	191	163	183	155	175	135	155	115	135
380	377,15	382,85	223	243	215	235	207	227	199	219	191	211	183	203	175	195	155	175	135	155
400	397,15	402,85	243	263	235	255	227	247	219	239	211	231	203	223	195	215	175	195	155	175
420	416,85	423,15			255	275	247	267	239	259	231	251	223	243	215	235	195	215	175	195
440	436,85	443,15			275	295	267	287	259	279	251	271	243	263	235	255	215	235	195	215
460	456,85	463,15					287	307	279	299	271	291	263	283	255	275	235	255	215	235
480	476,85	483,15							299	319	291	311	283	303	275	295	255	275	235	255
500	496,85	503,15							319	339	319	331	303	323	295	315	275	295	255	275

Lengths exceeding 500 mm shall be graded in 20 mm steps.
For [2] to [4], see page 5.

3 Technical delivery conditions

Material		Steel	Stainless steel	Non-ferrous metal
General requirements		As specified in DIN 267 Part 1.		
Thread	Tolerance	6 g [3]		
	Standard	DIN 13 Parts 12 and 15		
Mechanical properties	Property class (material)	For sizes up to M39: 5.6, 8.8 or 10.9. For larger sizes: subject to agreement.[2]	For sizes up to M20: A2-70 or A4-70. For sizes larger than M20 up to M39: A2-50 or A4-50. For sizes larger than M39: subject to agreement.[2]	Subject to agreement.
	Standard	ISO 898 Part 1	DIN 267 Part 11	DIN 267 Part 18
Limit deviations, geometrical tolerances	Product grade	A, up to size M24 and l up to 10 d or 150 mm.[1] B, for sizes above M24 or l exceeding 10 d or 150 mm.[1]		
	Standard	ISO 4759 Part 1		
Surface finish		As processed.	Bright.	Bright.
		Property class 8.8 and above: (thermally or chemically) blackened. DIN 267 Part 2 shall apply with regard to surface roughness. DIN 267 Part 19 shall apply with regard to permissible surface discontinuities. DIN 267 Part 9 shall apply with regard to electroplating.		
Acceptance inspection		DIN 267 Part 5 shall apply with regard to acceptance inspection.		

[1] Whichever is shorter (see stepped line in the dimension table).

[2] The symbols used to denote the property class as specified in ISO 898 Part 1 and DIN 267 Part 11 may also be used for sizes above M39 provided that the finished product has all the properties assigned to the particular symbol.

[3] Only for screws without surface protection. 6g makes it possible for normal coating thicknesses to be applied in accordance with DIN 267 Part 9, the reference line not being exceeded. Depending on the coating thickness required, a larger fundamental deviation shall be selected than that for the g position. This might, however, impair the resistance to stripping of the bolt/nut assembly.

4 Designation

Designation of an M8 × 1 hexagon head bolt of nominal length, $l = 50$ mm, with the material assigned to property class 8.8:

Hexagon head bolt DIN 960 – M8 × 1 × 50 – 8.8

If product grade A is required for sizes up to M24 with lengths over 150 mm or with l greater than 10 d, or for sizes above M24, this shall be indicated in the designation by adding 'A', e.g.

Hexagon head bolt DIN 960 – M30 × 2 × 100 – 8.8 – A

DIN 962 shall apply with regard to the designation of designs and types, with additional details to be given when ordering.

The DIN 4000 – 2 – 1 tabular layout of article characteristics shall apply to bolts covered in this standard.

Footnotes to tables (pages 2 to 4):

[1] For l exceeding 125 mm.

[2] For l above 125 mm up to 200 mm.

[3] For l exceeding 200 mm.

[4] The lengths given in the table on pages 2 to 4 shall only apply for the coarser pitch.

$l_{g\,max.} = l_{nom} - b$.

$l_{s\,min.} = lg_{max.} - 5\,P$.

5 Mass

The values of mass specified are for guidance only.

d	M8 × 1	M10 × 1	M12 × 1,5	(M14 × 1,5)	M16 × 1,5	(M18 × 2)	M20 × 1,5	(M22 × 2)	M24 × 2	(M27 × 2)	M30 × 2	(M33 × 2)	M36 × 3
	–	M10 × 1,25	M12 × 1,25	–	–	(M18 × 1,5)	M20 × 2	(M22 × 1,5)	M24 × 1,5	–	–	–	–
l	Mass (7,85 kg/dm³) per 1000 units, in kg, approximately												
35	18,4												
40	20,4	35,0											
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	76,0	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	570	733		
(95)	42,1	68,9	98,1	138	181	234	299	362	446	592	761		
100	44,0	72,0	102,6	144	189	244	311	376	464	615	788	986	
110		78,2	111,5	156	205	264	336	406	499	660	843	1053	1268
120		84,3	120,3	168	221	284	360	436	535	705	899	1120	1348
130		90,0	128,0	179	235	302	384	464	568	747	952	1184	1422
140		96,2	136,9	191	251	322	409	494	603	792	1007	1251	1502
150		102,3	145,7	203	267	342	433	524	639	837	1063	1318	1582
160			154,6	215	282	362	458	553	674	882	1118	1385	1662
(170)			163,5	227	298	382	483	583	710	927	1174	1452	1741
180			172,4	239	314	402	507	613	745	972	1229	1520	1821
(190)				251	330	422	532	643	781	1017	1285	1587	1901
200				264	345	442	556	673	816	1061	1340	1654	1981
220											1445	1781	2130
240											1556	1915	2290
260											1667	2049	2450
280												2063	2610
300												2317	2770

Bolts above the stepped line are threaded up to the head; they are covered in DIN 961.

d	(M39 × 3)	M42 × 3	(M45 × 3)	M48 × 3	(M52 × 3)	M56 × 4	(M60 × 4)	M64 × 4	(M68 × 4)	M72 × 4	(M76 × 4)	M80 × 4	M90 × 4	M100 × 4
l	Mass (7,85 kg/dm³) per 1000 units, in kg, approximately													
110														
120	1650													
130	1739	2054	2434											
140	1833	2162	2559	2998										
150	1926	2271	2684	3140	3775									
160	2020	2380	2808	3282	3942	4567								
(170)	2113	2489	2933	3424	4108	4760	5 585							
180	2207	2598	3058	3566	4275	4953	5 807	6 681						
(190)	2301	2706	3183	3708	4442	5147	6 029	6 934	7 982					
200	2395	2815	3307	3850	4608	5340	6 250	7 186	8 267	9 363				
220	2570	3020	3544	4119	4926	5704	6 670	7 665	8 809	9 974	11 305	12 650		
240	2757	3237	3794	4403	5259	6090	7 114	8 170	9 379	10 613	12 017	13 439	17 875	
260	2945	3455	4043	4687	5593	6477	7 557	8 675	9 949	11 252	12 729	14 228	18 874	24 228
280	3132	3672	4293	4971	5926	6863	8 001	9 179	10 519	11 891	13 441	15 016	19 873	25 461
300	3320	3890	4542	5255	6259	7250	8 445	9 684	11 089	12 530	14 152	15 805	20 872	26 694
320						7636	8 888	10 189	11 658	13 169	14 864	16 594	21 871	27 927
340						8023	9 332	10 694	12 228	13 807	15 576	17 383	22 870	29 160
360						8409	9 776	11 199	12 798	14 446	16 288	18 171	23 869	30 393
380						8796	10 219	11 703	13 368	15 085	17 000	18 960	24 868	31 626
400						9182	10 663	12 208	13 938	15 724	17 712	19 749	25 867	32 859
420							11 107	12 713	14 508	16 363	18 424	20 538	26 866	34 092
440							11 551	13 218	15 078	17 002	19 135	21 326	27 865	35 325
460								13 723	15 648	17 641	19 847	22 115	28 864	36 558
480									16 218	18 280	20 559	22 903	29 863	37 791
500									16 787	18 919	21 271	23 693	30 862	39 024

Standards referred to

DIN 13 Part 12	ISO metric screw threads; coarse and fine pitch threads with diameters from 1 to 300 mm; selected for diameters and pitches
DIN 13 Part 15	ISO metric screw threads; fundamental deviations and tolerances for screw threads of 1 mm diameter and larger
DIN 78	Thread ends for ISO metric screw threads in accordance with DIN 13
DIN 267 Part 1	Fasteners; technical delivery conditions; general requirements
DIN 267 Part 2	Fasteners; technical delivery conditions; finish and dimensional accuracy
DIN 267 Part 5	Fasteners; technical delivery conditions; acceptance inspection (modified version of ISO 3269, 1984 edition)
DIN 267 Part 9	Fasteners; technical delivery conditions; electroplated components
DIN 267 Part 11	Fasteners; technical delivery conditions, with addenda to ISO 3506; corrosion-resistant stainless steel components
DIN 267 Part 18	Fasteners; technical delivery conditions; non-ferrous metal components
DIN 267 Part 19	Fasteners; technical delivery conditions; surface discontinuities on bolts
DIN 931 Part 1	M1,6 to M39 hexagon head bolts; product grades A and B
DIN 931 Part 2	M42 to M160 × 6 hexagon head bolts; product grade B
DIN 961	M8 × 1 to M52 × 3 hexagon head bolts with fine pitch thread; product grades A and B
DIN 962	Bolts, screws, studs and nuts; designations, types and finishes
DIN 4000 Part 2	Tabular layout of article characteristics for bolts, screws and nuts
ISO 898 Part 1	Mechanical properties of fasteners; bolts, screws and studs
ISO 4759 Part 1	Tolerances for fasteners; bolts, screws, and nuts with thread diameters between 1,6 (inclusive) and 150 mm and product grades A, B and C

Previous editions

DIN Kr 551: 09.35, 11.36; DIN 960: 04.42, 02.53, 03.63, 11.67, 11.70, 12.83.

Amendments

The following amendments have been made to the December 1983 edition.

a) A note on the period of validity of this standard has been included.

b) The tapered underhead fillet is no longer specified.

c) For sizes M10, M12, M14 and M22, the ISO 272 widths across flats are no longer specified.

d) A datum line for determination of the bearing face diameter, d_w, has been included.

e) The standard has been editorially revised.

Explanatory notes

For more than 20 years efforts have been directed towards the achievement of the international interchangeability of fasteners by preparing international standards for the product concerned. ISO Standards have now been published for the most important types of fasteners (see ISO Standards Handbook 18).

However, international efforts only serve a useful purpose if national standards are adapted as far as possible to international standards, or, ideally, replaced by them. Current DIN Standards already agree in substance with the relevant ISO Standards, but still differ in some respects, as for instance in the widths across flats for hexagon products.

The Federal Republic of Germany adopted International Standard ISO 272 on widths across flats as national standard DIN ISO 272 in October 1979. Nevertheless, widths across flats deviating from DIN ISO 272 are still being used in Germany for thread sizes M10, M12, M14 and M22. The table below compares the previous widths across flats with the new ones specified for the four thread sizes referred to.

Thread size	M 10	M 12	M 14	M 22
Previous width across flats, in mm	17	19	22	32
New width across flats as in ISO 272, in mm	16	18	21	34

The manufacturers and users of hexagon products participating in the work of the *Normenausschuß Mechanische Verbindungselemente* (Fasteners Standards Committee), together with representatives of the dealers in fasteners, have decided to introduce the new widths across flats in all relevant product standards. Since experience has shown that the introduction of the new widths across flats has not been advanced by their inclusion in DIN Standards merely as preferred alternatives to the previous widths across flats, the following decisions have been reached to accelerate the changeover procedure.

Supplementary to current DIN Standards specifying the previous widths across flats, DIN ISO Standards dealing with the same products will, wherever ISO Standards are available, be published which, besides introducing a number of other minor amendments, will specify the new widths across flats conforming to ISO 272. In both DIN and DIN ISO Standards attention will be drawn to the fact that the relevant ISO Standards are to be preferred and that the DIN Standard is to be replaced after a transition period of 3 to 4 years. If no relevant ISO Standard is available, the DIN Standard will contain a foreword stating that the previous width across flats specifications are to be withdrawn after a transition period and replaced by those specified in ISO 272.

This sets a time limit for both manufacturer and user of hexagon products by which the changeover to the new widths across flats must be effected. The responsible committee is of the opinion that it will still be possible after this period to obtain fasteners complying with the superseded specifications as spare parts.

When using products having the new widths across flats, attention shall be paid to the fact that not only the overall dimensions have changed but also the surface pressure for the underhead bearing area (cf. ISO 272).

In some cases, the replacement of previous DIN Standards by relevant ISO Standards may involve that some nominal sizes or particular technical delivery conditions are no longer specified, the reason being that either ISO standardization has not yet reached a certain level of completeness or no standardization has as yet been intended by ISO.

Finally, it should be noted that the date for withdrawal given on page 1 may be irrelevant as this standard will be superseded upon the publication of an EN Standard.

International Patent Classification

F 16 B 35/00