SLOVENSKI STANDARD
SIST EN 1662:2001

01-julij-2001

Vijaki s šestrobo glavo s poševnim krajcem - Lahka izvedba (ISO/DIS 15071:1996, dopolnjen)

Hexagon bolts with flange - Small series (ISO/DIS 15071:1996, modified)

Sechskantschrauben mit Flansch - Leichte Reihe (ISO/DIS 15071:1996, modifiziert)

Vis a tete hexagonale a embase cylindro-tronconique - Série étroite (ISO/DIS 15071:1996, modifiée)

Ta slovenski standard je istoveten z: **EN 1662:1997**

ICS:

21.060.10 Sorniki, vijaki, stebelni vijaki Bolts, screws, studs

SIST EN 1662:2001 **en**

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 1662

December 1997

ICS 21.060.10

Descriptors: fasteners, screws, hexagonal head screws, dimensions, dimensional tolerances, characteristics, verification, designation

English version

Hexagon bolts with flange - Small series (ISO/DIS 15071:1996, modified)

Vis à tête hexagonale à embase cylindro-tronconique - Série étroite (ISO/DIS 15071:1996, modifiée)

Sechskantschrauben mit Flansch - Leichte Reihe (ISO/DIS 15071:1996, modifiziert)

This European Standard was approved by CEN on 24 October 1997.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

Foreword

This European Standard has been prepared by Technical Committee CEN/TC 185 "Threaded and non-threaded mechanical fasteners and accessories", the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 1998, and conflicting national standards shall be withdrawn at the latest by June 1998.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of the International Standard ISO/DIS 15071:1996 was approved by CEN as a European Standard with agreed common modifications given as below.

Bolts according to this European Standard corresponds to those specified in the Draft International Standard ISO/DIS 15071 : 1996 with the exception that the width across flats for M12 is 16 mm (instead of 15 mm) and that the property class 9.8 was deleted.

1 Scope

This European Standard specifies the characteristics of hexagon flange bolts, small series, with threads from M5 up to and including M16 and with property classes 8.8, 10.9 and A2-70.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 26 157-3
Fasteners – Surface discontinuities – Part 3: Bolts, screws and studs for special requirements (ISO 6157-3 : 1988).

prEN ISO 898-1
Mechanical properties of fasteners – Part 1: Bolts, screws and studs (ISO/DIS 898-1 : 1996).

prEN ISO 3506-1
Mechanical properties of corrosion-resistant stainless-steel fasteners – Part 1: Bolts, screws and studs (ISO/DIS 3506-1 : 1995)

prEN ISO 4042
Fasteners – Electroplated coatings (ISO/DIS 4042 : 1996).

prEN ISO 4753
Fasteners – Ends of parts with external metric ISO thread (ISO/DIS 4753 : 1997).

prEN ISO 4759-1
Tolerances for fasteners – Part 1: Bolts, screws, studs and nuts – Product grades A, B and C (ISO/DIS 4759-1 : 1997).

ISO 724
ISO general purpose metric screw threads – Basic dimensions.

ISO 888
Bolts, screw and studs – Nominal lengths, and thread lengths for general purpose bolts.

ISO 965-2
ISO general purpose metric screw threads – Tolerances – Part 2: Limits of sizes for general purpose bolt and nut threads – Medium quality.

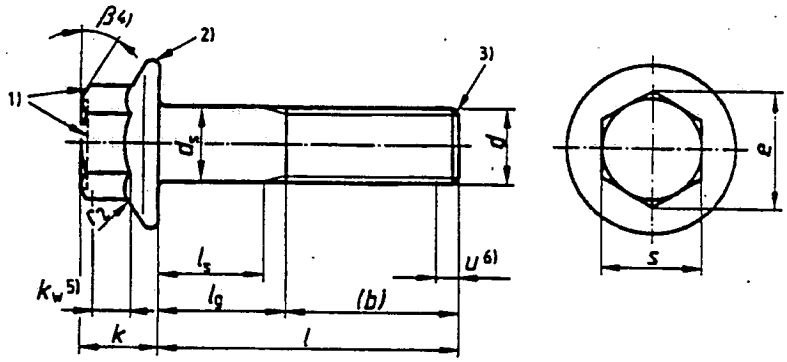
ISO 3269
Fasteners – Acceptance inspection.

ISO 8992
Fasteners – General requirements for bolts, screws, studs and nuts.

3 Dimensions

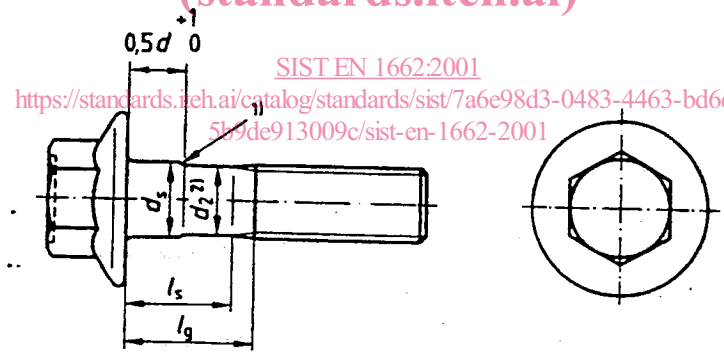
Dimensions shall be in accordance with figures 1 to 3 and table 1.

NOTE: Symbols and designation of dimensions are specified in EN 20225.



1) The top of the head shall be either full form or indented at the manufacturer's option and shall be either chamfered or rounded. The minimum diameter of the chamfer circle or start of rounding shall be the maximum width across flats minus 15 %. If the top of the head is indented, the periphery may be rounded.
2) Edge contour optional.
3) Chamfered end (see prEN ISO 4753).
4) β = 15° to 30°
5) k_w is the wrenching height; see the note to table 1.
6) Incomplete thread $u \leq 2P$.

Figure 1: Hexagon bolt with flange – Full shank (standard type)

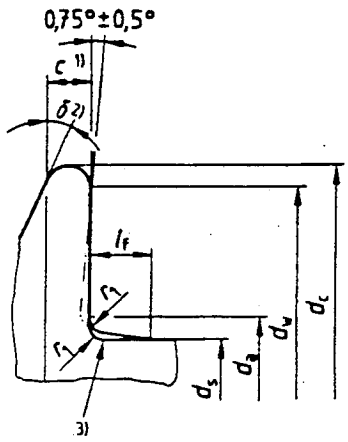


other dimensions, see figure 1

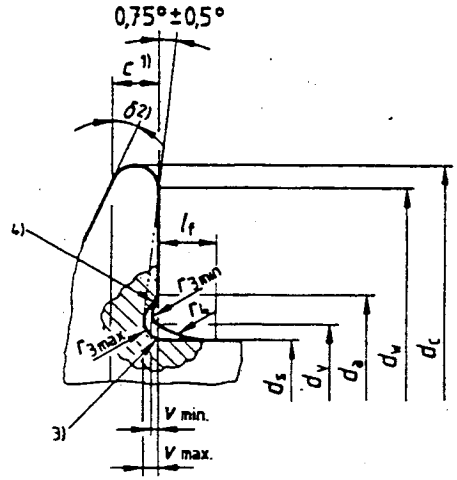
1) Rounded or chamfered or conical.

2) d_2 is approximately equal to the pitch diameter (rolling diameter).

Figure 2: Hexagon bolt with flange – Reduced shank, type R (upon request)



Type F without undercut (standard type)



Type U with undercut (upon request or optional)

1) c is measured at $d_{w\,min}$.
2) δ = 15° to 25°
3) Maximum and minimum underhead fillet.
4) Junction of fillet with bearing surface to be a smooth blend.

Figure 3: Hexagon bolt with flange – Underhead configuration (bearing area)

Table 1

Dimensions in millimetres

Thread (d)		M5	M6	M8	M10	M12	(M14)[1]	M16
P[2]		0,8	1	1,25	1,5	1,75	2	2
b ref.	[3]	16	18	22	26	30	34	38
	[4]	–	–	28	32	36	40	44
	[5]	–	–	–	–	–	–	57
c	min.	1	1,1	1,2	1,5	1,8	2,1	2,4
d_a Types F	max.	5,7	6,8	9,2	11,2	13,7	15,7	17,7
d_a Types U	max.	6,2	7,5	10,0	12,5	15,2	17,7	20,5
d_c	max.	11,4	13,6	17	20,8	24,7	28,6	32,8
d_s	max.	5,00	6,00	8,00	10,00	12,00	14,00	16,00
	min.	4,82	5,82	7,78	9,78	11,73	13,73	15,73
d_v	max.	5,5	6,6	8,8	10,8	12,8	14,8	17,2
d_w	min.	9,4	11,6	14,9	18,7	22,5	26,4	30,6
e	min.	7,59	8,71	10,95	14,26	17,62	19,86	23,15
k	max.	5,6	6,9	8,5	9,7	12,1	12,9	15,2
k_w	min.	2,3	2,9	3,8	4,3	5,4	5,6	6,8
l_f	max.	1,4	1,6	2,1	2,1	2,1	2,1	3,2
r_1	min.	0,2	0,25	0,4	0,4	0,6	0,6	0,6
r_2[6]	max.	0,3	0,4	0,5	0,6	0,7	0,9	1
r_3	max.	0,25	0,26	0,36	0,45	0,54	0,63	0,72
	min.	0,10	0,11	0,16	0,20	0,24	0,28	0,32
r_4	ref.	4	4,4	5,7	5,7	5,7	5,7	8,8
s	max.	7,00	8,00	10,00	13,00	16,00	18,00	21,00
	min.	6,78	7,78	9,78	12,73	15,73	17,73	20,67
v	max.	0,15	0,20	0,25	0,30	0,35	0,45	0,50
	min.	0,05	0,05	0,10	0,15	0,15	0,20	0,25

(continued)

Table 1 (concluded)

Dimensions in millimetres

Thread (d)			M5		M6		M8		M10		M12		(M14)[1]		M16	
l [7), 8)]			l_s and l_g [9)]													
nom.	min.	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.
10	9,71	10,29	–	–												
12	11,65	12,35	–	–	–	–										
16	15,65	16,35	–	–	–	–	–	–								
20	19,58	20,42	–	–	–	–	–	–	–	–						
25	24,58	25,42	5	9	–	–	–	–	–	–	–	–				
30	29,58	30,42	10	14	7	12	–	–	–	–	–	–	–	–		
35	34,5	35,5	15	19	12	17	6,75	13	–	–	–	–	–	–	–	–
40	39,5	40,5	20	24	17	22	11,75	18	6,5	14	–	–	–	–	–	–
45	44,5	45,5	25	29	22	27	16,75	23	11,5	19	6,25	15	–	–	–	–
50	49,5	50,5	30	34	27	32	21,75	28	16,5	24	11,25	20	6	16	–	–
55	54,4	55,6			32	37	26,75	33	21,5	29	16,25	25	11	21	7	17
60	59,4	60,6			37	42	31,75	38	26,5	34	21,25	30	16	26	12	22
65	64,4	65,6					36,75	43	31,5	39	26,25	35	21	31	17	27
70	69,4	70,6					41,75	48	36,5	44	31,25	40	26	36	22	32
80	79,4	80,6					51,75	58	46,5	54	41,25	50	36	46	32	42
90	89,3	90,7							56,5	64	51,25	60	46	56	42	52
100	99,3	100,7							66,5	74	61,25	70	56	66	52	62
110	109,3	110,7									71,25	80	66	76	62	72
120	119,3	120,7									81,25	90	76	86	72	82
130	129,2	130,8											80	90	76	86
140	139,2	140,8											90	100	86	96
150	149,2	150,8													96	106
160	159,2	160,8													106	116

[1]) The size in parentheses should be avoided if possible.

[2]) P is the pitch of the thread.

[3]) For lengths $l_{nom} \leq 125$ mm.

[4]) For lengths 125 mm $< l_{nom} \leq 200$ mm.

[5]) For lengths $l_{nom} > 200$ mm.

[6]) Radius r_2 applies both at the corners and at the flats of the hexagon.

[7]) Screws with lengths shown above the continous thick line are threaded to head.

[8]) Reduced shank type (type R) only below the dashed line.

[9]) l_g is the minimum grip length.

NOTE: If the product passes the gauging in annex A, the requirements for dimensions e and k_w are satisfied.