SLOVENSKI STANDARD
oSIST prEN ISO 4017:2020

01-september-2020

Vijaki s šestrobo glavo z navojem do glave - Razreda izdelave A in B (ISO/DIS 4017:2020)

Hexagon head screws - Product grades A and B (ISO/DIS 4017:2020)

Sechskantschrauben mit Gewinde bis Kopf - Produktklassen A und B (ISO/DIS 4017:2020)

Vis à tête hexagonale entièrement filetées - Grades A et B (ISO/DIS 4017:2020)

Ta slovenski standard je istoveten z: **prEN ISO 4017**

ICS:

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

oSIST prEN ISO 4017:2020 **en,fr,de**

DRAFT INTERNATIONAL STANDARD

ISO/DIS 4017

ISO/TC **2**/SC **11** Secretariat: **DIN**

Voting begins on: **2020-06-24**

Voting terminates on: **2020-09-16**

Hexagon head screws — Product grades A and B

ICS: 21.060.10

IMPORTANT — Please use this updated version dated 2020-05-04, and discard any previous versions of this DIS.

This document is circulated as received from the committee secretariat.

ISO/CEN PARALLEL PROCESSING

Reference number
ISO/DIS 4017:2020(E)

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 2, *Fasteners*, Subcommittee SC 11, *Fasteners with metric external thread*.

This sixth edition cancels and replaces the fifth edition (ISO 4017:2014), which has been technically revised.

The main changes compared to the previous edition are as follows:

— M7 has been added;

— tables for dimensions heve been entirely restructured, so that the user can find his way around on a reliable manner (no risk of picking the wrong dimension);

— $d_{w,min}$ has been changed for sizes $d \leq$ M5 from s_{min} – IT16 to s_{min} – IT15, in order to have a larger bearing surface area (and less contact pressure);

— standard smallest lengths have been corrected: deletion of l_{nom} = 2 mm for M1,6 and 120 mm for M64;

— standard greatest lengths (accidentally removed in the fifth edition) have been restored (greatest lengths $l_{nom} = 10d$ or 200 mm whichever is the shorter);

— property class 9.8 and non-ferrous metal screws have been deleted;

— property class 4.8 has been added for steel screws, and property class 80 was added for stainless steel screws;

— specifications for marking and labelling have been added as Clause 6.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Hexagon head screws — Product grades A and B

1 Scope

This document specifies the characteristics of hexagon head screws, in steel and stainless steel, with metric coarse pitch threads M1,6 to M64, and with product grades A and B.

NOTE If in certain cases other specifications are requested, property classes and stainless steel grades can be selected from ISO 898-1 or ISO 3506-1, and dimensional options from ISO 888 or ISO 4753.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 898-1, *Mechanical properties of fasteners made of carbon steel and alloy steel — Part 1: Bolts, screws and studs with specified property classes — Coarse thread and fine pitch thread*

ISO 965-1, *ISO general-purpose metric screw threads — Tolerances — Part 1: Principles and basic data*

ISO 1891-4, *Fasteners — Vocabulary — Part 4: Control, inspection, delivery, acceptance and quality*

ISO 3269, *Fasteners — Acceptance inspection*

ISO 3506-1, *Fasteners — Mechanical properties of corrosion-resistant stainless steel fasteners — Part 1: Bolts, screws and studs with specified property classes*

ISO 4042, *Fasteners — Electroplated coating systems*

ISO 4753, *Fasteners — Ends of parts with external ISO metric thread*

ISO 4759-1, *Tolerances for fasteners — Part 1: Bolts, screws, studs and nuts — Product grades A, B and C*

ISO 6157-1, *Fasteners — Surface discontinuities — Part 1: Bolts, screws and studs for general requirements*

ISO 8992, *Fasteners — General requirements for bolts, screws, studs and nuts*

ISO 10683, *Fasteners — Non-electrolytically applied zinc flake coating systems*

ISO 10684, *Fasteners — Hot dip galvanised coatings*

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

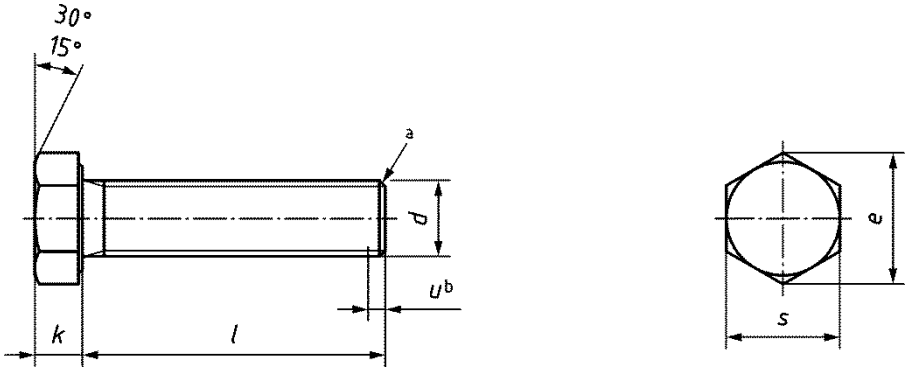
— ISO Online browsing platform: available at http://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

4 Dimensions

Dimensions shall be in accordance with Figures 1 and 2 and with Tables 1 to 4.

Symbols and descriptions of dimensions are defined in ISO 225.

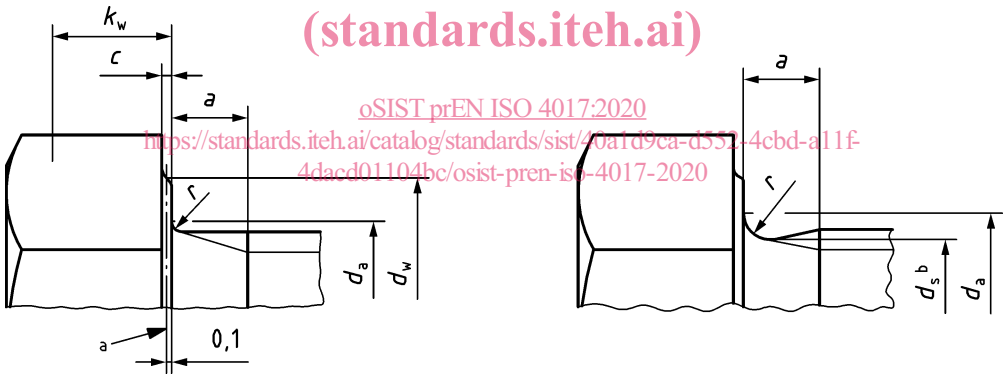


Key

a In accordance with ISO 4753: chamfered end (CH), but for sizes ≤ M4 as rolled end (RL) is also allowed.
b Incomplete thread $u \leq 2P$.

Figure 1 — Hexagon head screw

Dimensions in millimetres



Key

a Reference datum for d_w.
b $d_s \approx$ pitch diameter.

Figure 2 — Head details and permissible shapes

Table 1 — Dimensions for product grade A – M1,6 to M7

Dimensions in millimetres

Thread, d			M1,6	M2	M2,5	M3	(M3,5)	M4	M5	M6	(M7)
P [a]			0,35	0,4	0,45	0,5	0,6	0,7	0,8	1	1
a [b]		max.	1,05	1,20	1,35	1,50	1,80	2,10	2,40	3,00	3,00
		min.	0,35	0,40	0,45	0,50	0,60	0,70	0,80	1,00	1,00
c		max.	0,25	0,25	0,25	0,40	0,40	0,40	0,50	0,50	0,60
		min.	0,10	0,10	0,10	0,15	0,15	0,15	0,15	0,15	0,15
d_a		max.	2,0	2,6	3,1	3,6	4,1	4,7	5,7	6,8	7,8
d_w		min.	2,54	3,34	4,34	4,84	5,34	6,20	7,20	8,88	9,63
e		min.	3,41	4,32	5,45	6,01	6,58	7,66	8,79	11,05	12,12
k		nom.	1,1	1,4	1,7	2	2,4	2,8	3,5	4	4,8
		max.	1,225	1,525	1,825	2,125	2,525	2,925	3,65	4,15	4,95
		min.	0,975	1,275	1,575	1,875	2,275	2,675	3,35	3,85	4,65
k_w		min.	0,68	0,89	1,10	1,31	1,59	1,87	2,35	2,70	3,26
r		min.	0,10	0,10	0,10	0,10	0,10	0,20	0,20	0,25	0,25
s	nom. =	max.	3,20	4,00	5,00	5,50	6,00	7,00	8,00	10,00	11,00
		min.	3,02	3,82	4,82	5,32	5,82	6,78	7,78	9,78	10,73

l			Range of standardized lengths between the stepped discontinuous lines
nom.	min.	max.	
3	2,80	3,20	
4	3,76	4,24	
5	4,76	5,24	
6	5,76	6,24	
8	7,71	8,29	
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	
30	29,58	30,42	
35	34,5	35,5	
40	39,5	40,5	
45	44,5	45,5	
50	49,5	50,5	
55	54,4	55,6	
60	59,4	60,6	
65	64,4	65,6	
70	69,4	70,6	

Screws with too short lengths

Lengths to be agreed between the purchaser and the manufacturer

NOTE Sizes shown in brackets are non-preferred diameters.

[a] P is the pitch of the thread.

[b] Normal series in accordance with ISO 3508 ($a_{max} = 3P$).

Table 2 — Dimensions for product grade A – M8 to M24

Dimensions in millimetres

Thread, d			M8	M10	M12	(M14)	M16	(M18)	M20	(M22)	M24
P [a]			1,25	1,5	1,75	2	2	2,5	2,5	2,5	3
a [b]		max.	3,75	4,50	5,25	6,0	6,0	7,5	7,5	7,5	9,0
		min.	1,25	1,50	1,75	2,0	2,0	2,5	2,5	2,5	3,0
c		max.	0,60	0,60	0,60	0,60	0,8	0,8	0,8	0,8	0,8
		min.	0,15	0,15	0,15	0,15	0,2	0,2	0,2	0,2	0,2
d_a		max.	9,2	11,2	13,7	15,7	17,7	20,2	22,4	24,4	26,4
d_w		min.	11,63	14,63	16,63	19,64	22,49	25,34	28,19	31,71	33,61
e		min.	14,38	17,77	20,03	23,36	26,75	30,14	33,53	37,72	39,98
k		nom.	5,3	6,4	7,5	8,8	10	11,5	12,5	14	15
		max.	5,45	6,58	7,68	8,98	10,18	11,715	12,715	14,215	15,215
		min.	5,15	6,22	7,32	8,62	9,82	11,285	12,285	13,785	14,785
k_w		min.	3,61	4,35	5,12	6,03	6,87	7,90	8,60	9,65	10,35
r		min.	0,4	0,4	0,6	0,6	0,6	0,6	0,8	0,8	0,8
s	nom. =	max.	13,00	16,00	18,00	21,00	24,00	27,00	30,00	34,00	36,00
		min.	12,73	15,73	17,73	20,67	23,67	26,67	29,67	33,38	35,38

l			Range of standardized lengths between the stepped discontinuous lines
nom.	min.	max.	
16	15,65	16,35	
20	19,58	20,42	
25	24,58	25,42	
30	29,58	30,42	
35	34,5	35,5	
40	39,5	40,5	
45	44,5	45,5	
50	49,5	50,5	
55	54,4	55,6	
60	59,4	60,6	
65	64,4	65,6	
70	69,4	70,6	
80	79,4	80,6	
90	89,3	90,7	
100	99,3	100,7	
110	109,3	110,7	
120	119,3	120,7	
130	129,2	130,8	
140	139,2	140,8	
150	149,2	150,8	
—	—	—	

Screws with too short lengths

Lengths to be agreed between the purchaser and the manufacturer

Product grade B: see Table 3

NOTE Sizes shown in brackets are non-preferred diameters.

[a] P is the pitch of the thread.

[b] Normal series in accordance with ISO 3508 ($a_{max} = 3P$) but not rounded.