



**SLOVENSKI STANDARD**  
**SIST EN 1664:2001**

**01-julij-2001**

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**Šestrobe zaščitne matice z deformacijo s poševnim krajcem (ISO 7044:1997, dopolnjeno)**

Prevailing torque type all-metal hexagon nuts with flange (ISO 7044:1997, modified)

Sechskantmuttern mit Klemmteil und Flansch, Ganzmetallmuttern (ISO 7044:1997, modifiziert)

Ecrous hexagonaux a embase, autofreinés, tout métal (ISO 7044:1997, modifiée)

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**Ta slovenski standard je istoveten z: EN 1664:1997**

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**ICS:**

21.060.20      Matice                                      Nuts

**SIST EN 1664:2001**                                      **en**

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EUROPEAN STANDARD  
 NORME EUROPÉENNE  
 EUROPÄISCHE NORM

EN 1664

December 1997

ICS 21.060.20

Descriptors: fasteners, nuts: fasteners, hexagonal nuts, flanged nuts, self locking nuts, metals, dimensions, dimensional tolerances, characteristics, verification, designation

English version

## Prevailing torque type all-metal hexagon nuts with flange (ISO 7044:1997, modified)

Ecrous hexagonaux à embase, autofreinés, tout métal (ISO 7044:1997, modifiée)

Sechskantmuttern mit Klemmteil und Flansch, Ganzmetallmuttern (ISO 7044:1997, 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.

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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 7044:1997 was approved by CEN as a European Standard with agreed common modifications given as below.

The dimensions of nuts correspond to those given in EN 1661 plus prevailing torque feature.

Nuts according to this European Standard corresponds to those specified in the International Standard ISO 7044 with the exception that the width across flats for M10 is 16 mm (instead of 15 mm) and that the property class 9 was deleted.

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## 1 Scope

This European Standard specifies the characteristics of prevailing torque type all-metal hexagon nuts with flange and threads from M5 up to M20 inclusive, in product grade A for threads up to and including M16 and product grade B for threads above M16 and with property classes 8, 10 and 12.

## 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 493

Fasteners – Surface discontinuities – Nuts

prEN ISO 2320

Prevailing torque type steel hexagon nuts – Mechanical and performance properties (ISO/DIS 2320 : 1994)

prEN ISO 4042

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

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 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

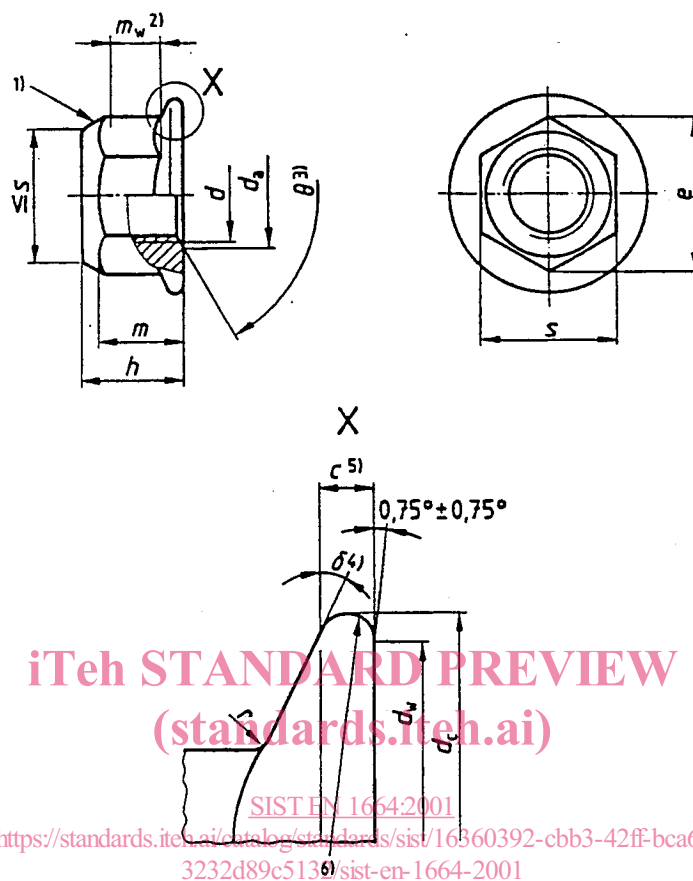
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### 3 Dimensions

Dimensions shall be in accordance with figure 1 and table 1.

NOTE 1: Symbols and designations of dimensions are specified in EN 20225.



- 1) Prevailing torque element, shape optional.
- 2)  $m_w$  is the wrenching height; see note to table 1.
- 3)  $\theta = 90^\circ$  to  $120^\circ$
- 4)  $\delta = 15^\circ$  to  $25^\circ$
- 5)  $c$  is measured at  $d_{w \min}$ .
- 6) Edge contour optional.

Figure 1

Table 1

Dimensions in millimetres

Thread ( <i>d</i> )	M5	M6	M8	M10	M12	(M14) <sup>1)</sup>	M16	M20	
<i>P</i> <sup>2)</sup>	0,8	1	1,25	1,5	1,75	2	2	2,5	
<i>c</i> min.	1	1,1	1,2	1,5	1,8	2,1	2,4	3	
<i>d<sub>a</sub></i>	min.	5,00	6,00	8,00	10,0	12	14,0	16,0	20,0
	max.	5,75	6,75	8,75	10,8	13	15,1	17,3	21,6
<i>d<sub>c</sub></i> max.	11,8	14,2	17,9	21,8	26	29,9	34,5	42,8	
<i>d<sub>w</sub></i> min.	9,8	12,2	15,8	19,6	23,8	27,6	31,9	39,9	
<i>e</i> min.	8,79	11,05	14,38	17,77	20,03	23,36	26,75	32,95	
<i>h</i>	max.	6,2	7,3	9,40	11,40	13,80	15,9	18,3	22,4
	min.	5,7	6,8	8,74	10,34	12,57	14,8	17,2	20,3
<i>m</i> min.	4,7	5,7	7,6	9,6	11,6	13,3	15,3	18,7	
<i>m<sub>w</sub></i> min.	2,5	3,1	4,6	5,9	6,8	7,7	8,9	10,7	
<i>s</i>	max.	8,00	10,00	13,00	16,00	18,00	21,00	24,00	30,00
	min.	7,78	9,78	12,73	15,73	17,73	20,67	23,67	29,16
<i>r</i> <sup>3)</sup> max.	0,3	0,36	0,48	0,6	0,72	0,88	0,96	1,2	

<sup>1)</sup> The size in brackets should be avoided if possible.

<sup>2)</sup> *P* is the pitch of the thread.

<sup>3)</sup> Radius *r* applies both at the corners and the flats of the hexagon.

NOTE: If the product passes the gauging given in annex A, the requirements for dimensions *e*, *c* and *m<sub>w</sub>* are satisfied.

#### 4 Requirements and reference European or International Standards

The requirements given in table 2 apply.

If, in special cases, specifications other than those listed in this European Standard are required, they shall be selected, from existing European or International Standards, for example ISO 724, ISO 965-2, prEN ISO 2320, prEN ISO 4759-1.

Table 2

Material		Steel			
General requirements	International Standard	ISO 8992			
	Tolerance	6H			
Thread	International Standards	ISO 724, ISO 965-2			
	Property class	8	10	12	
Mechanical and performance properties	Style decisive for mechanical properties <sup>1)</sup>	$d \leq M16$ style 1	$d > M16$ style 2	style 1	style 2
	European Standard	prEN ISO 2320			
	Product grade	For $d \leq M 16$ : A For $d > M 16$ : B			
Tolerances	European Standard	prEN ISO 4759-1			
	Finish	As processed			
Requirements for electroplated coatings are covered in prEN ISO 4042.					
If different electroplating requirements are desired or if requirements are needed for other finishes, they should be negotiated between customer and supplier.					
Limits for surface discontinuities are covered in EN 493.					
Acceptability	For acceptance inspection ISO 3269 applies.				
<sup>1)</sup> Based on the nut height (dimension $h_{min}$ ) nuts to this standard are of style 2. However, since for style 2 prEN ISO 2320 does not specify mechanical properties for all property classes and sizes as specified in this standard, in some cases nuts have to be tested according to style 1.					

#### 5 Designation

EXAMPLE:

Designation of a prevailing torque type hexagon all-metal nut with flange, thread M12 and property class 8:

Hexagon nut EN 1664 – M12 – 8