FINAL DRAFT International Standard

ISO/FDIS 7042

Fasteners — Prevailing torque hexagon nuts — High nuts (all metal)

Fixations — Écrous hexagonaux autofreinés — Écrous hauts (tout métal)

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Foreword

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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 document 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).

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For an explanation of 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 www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 2, *Fasteners*, Subcommittee SC 12, *Fasteners with metric internal thread*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 185, *Fasteners*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This fourth edition cancels and replaces the third edition (ISO 7042:2012) which has been technically revised.

The main changes are as follows:

— the design principles of these nuts have been clarified in Scope (see Note);

— style, relevant property classes and related quenching and tempering conditions for steel nuts have been specified in Clause 5 in accordance with ISO 898-2 (see Table 3);

— stainless steel nuts have been added in accordance with ISO 3506-2;

— M7, M18, M22, M27, M33 and M39 have been added;

— $d_{a,max}$ has been specified with two decimal places;

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

— h_{max} for M12 has been corrected to 12,30 mm (13,30 mm in the third edition came from a typing error); h_{max} for M24 has been increased to 24,00 mm in order to have $h_{max} \geq D$ for the whole diameter range;

— 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.

Fasteners — Prevailing torque hexagon nuts — High nuts (all metal)

1 Scope

This document specifies the characteristics of prevailing torque (all metal) hexagon high nuts, in steel and stainless steel, with metric coarse pitch thread M5 to M39, and with product grades A and B.

NOTE These nuts are designed with an overall heigth $h_{min} = m_{min}$ (as specified in ISO 898-2 and ISO 4033 for style 2) plus the prevailing torque feature. h_{max} has been established in function of h_{min}; therefore, the tolerance ($h_{max} - h_{min}$) does not follow the ISO code system for tolerances (IT system). The wrenching height $m_{w,min}$ corresponds to the values specified for style 1.

If in certain cases other specifications are requested, property classes and stainless steel grades can be selected from ISO 898-2 or ISO 3506-2.

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 225, *Fasteners — Bolts, screws, studs and nuts — Symbols and descriptions of dimensions*

ISO 898-2, *Fasteners — Mechanical properties of fasteners made of carbon steel and alloy steel — Part 2: Nuts with specified property classes*

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 2320, *Fasteners — Prevailing torque steel nuts — Functional properties*

ISO 3269, *Fasteners — Acceptance inspection*

ISO 3506-2, *Fasteners — Mechanical properties of corrosion-resistant stainless steel fasteners — Part 2: Nuts with specified grades and property classes*

ISO 4042, *Fasteners — Electroplated coating systems*

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

ISO 6157-2, *Fasteners — Surface discontinuities — Part 2: Nuts*

ISO 8991, *Designation system for fasteners*

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

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

3 Terms and definitions

No terms and definitions are listed in this document.

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

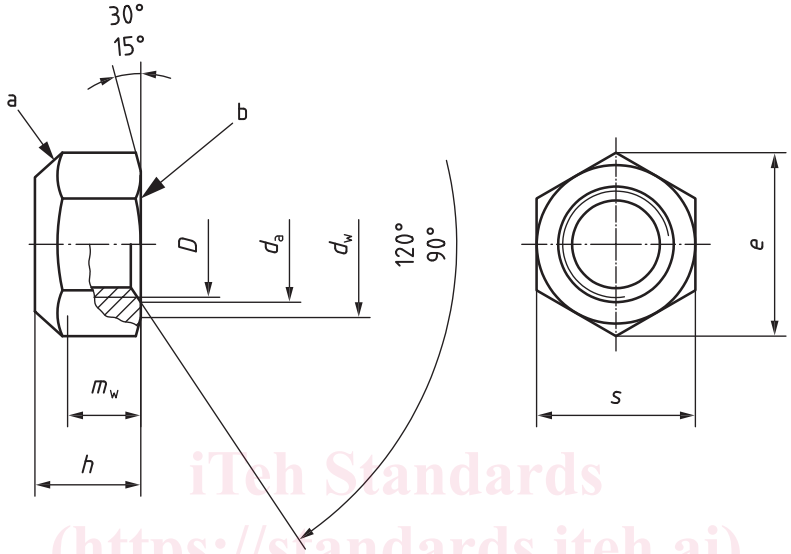
— ISO Online browsing platform: available at https://www.iso.org/obp

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

4 Dimensions

Dimensions shall be in accordance with Figure 1 and with Tables 1 and 2.

Symbols and descriptions of dimensions are specified in ISO 225.



a Prevailing torque feature: shape at the discretion of the manufacturer within the outside hexagonal shape of the nut.

b These nuts are manufactured without washer-face, unless specifically agreed at the time of the order.

Figure 1 — Prevailing torque (all metal) high nuts

Table 1 — Dimensions for nuts M5 to M16 (product grade A)

Dimensions in millimetres

Thread, *D*		**M5**	**M6**	(M7)	**M8**	**M10**	**M12**	(M14)	**M16**
P [a]		0,8	1	1	1,25	1,5	1,75	2	2
d_a	max.	5,75	6,75	7,75	8,75	10,80	12,96	15,12	17,28
	min.	5,00	6,00	7,00	8,00	10,00	12,00	14,00	16,00
d_w	min.	7,20	8,88	9,63	11,63	14,63	16,63	19,64	22,49
e	min.	8,79	11,05	12,12	14,38	17,77	20,03	23,36	26,75
h	max.	5,10	6,00	7,40	8,00	10,00	12,30	14,10	16,40
	min.	4,80	5,40	6,84	7,14	8,94	11,57	13,40	15,70
m_w	min.	3,52	3,92	4,91	5,15	6,43	8,30	9,68	11,28
s	nom. = max.	8,00	10,00	11,00	13,00	16,00	18,00	21,00	24,00
	min.	7,78	9,78	10,73	12,73	15,73	17,73	20,67	23,67

Sizes shown in brackets are non-preferred.

a *P* is the pitch of the thread.