BRITISH STANDARD

BS ISO
7720:1997

Prevailing torque type all-metal hexagon nuts, style 2 — Property class 9

ICS 21.060.20

National foreword

This British Standard reproduces verbatim ISO 7720:1997 and implements it as the UK national standard.

The UK participation in its preparation was entrusted by Technical Committee FME/9, Bolts, nuts and accessories, to Subcommittee FME/9/10, Male and female prevailing torque fasteners, which has the responsibility to:

— aid enquirers to understand the text;

— present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;

— monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled "International Standards Correspondence Index", or by using the "Find" facility of the BSI Standards Electronic Catalogue.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the ISO title page, pages ii to iv, pages 1 to 4 and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

Amendments issued since publication

Amd. No.	Date	Comments

This British Standard, having been prepared under the direction of the Engineering Sector Board, was published under the authority of the Standards Board and comes into effect on
15 March 1998

ISBN 0 580 29448 X

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INTERNATIONAL STANDARD

ISO 7720

Second edition
1997-11-01

Prevailing torque type all-metal hexagon nuts, style 2 — Property class 9

Écrous hexagonaux autofreinés tout métal, style 2 — Classe de qualité 9

Reference number
ISO 7720:1997(E)

Contents

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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 7720 was prepared by Technical Committee ISO/TC 2, *Fasteners*, Subcommittee SC 1, *Mechanical properties of fasteners*.

This second edition cancels and replaces the first edition (ISO 7720:1983), which has been technically revised.

Annex A of this International Standard is for information only.

Descriptors: Fasteners, nuts (fasteners), self-locking nuts, hexagonal nuts, specifications, dimensions, designation.

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1 Scope

This International Standard specifies the characteristics of prevailing torque type all-metal hexagon nuts, of style 2, with threads from M5 up to and including M36, in product grade A for threads up to and including M16 and product grade B for threads above M16, and with property class **9**.

NOTE 1 The dimensions of the nuts with the exception of the dimensions m_w and h_{max} correspond to those given in ISO 4033.

NOTE 2 Nuts of property classes 5, 8, 10 and 12, are dealt with in ISO 7042.

If other specifications are required, they should be selected from existing International Standards, for example ISO 261, ISO 965-2, ISO 2320 and ISO 4759-1.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 225:1983, *Fasteners— Bolts, screws, studs and nuts— Symbols and designations of dimensions.*

ISO 261:—, *ISO general purpose metric screw threads— General plan*[1)].

ISO 965-2:—, *ISO general purpose metric screw threads — Tolerances — Part 2: Limits of sizes for general purpose bolt and nut threads— Medium quality*[2)].

ISO 2320:1997, *Prevailing torque type steel hexagon nuts— Mechanical and performance properties.*

ISO 3269:1988, Fasteners— Acceptance inspection.

ISO 4042:—, *Fasteners— Electroplated coatings*[3)].

ISO 4759-1:—, *Tolerances for fasteners — Part 1: Bolts, screws, studs and nuts — Product grades A, B and C*[4)].

ISO 6157-2:1995, *Fasteners— Surface discontinuities — Part 2: Nuts.*

ISO 8992:1986, *Fasteners— General requirements for bolts, screws, studs and nuts.*

[1)] To be published. (Revision of ISO 261:1973)

[2)] To be published. (Revision of ISO 965-2:1980)

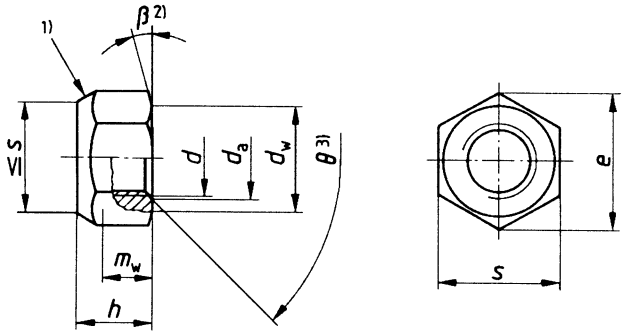
[3)] To be published. (Revision of ISO 4042:1989)

[4)] To be published. (Revision of ISO 4759-1:1978)

3 Dimensions

See Figure 1 and Table 1.

Symbols and designations of dimensions are specified in ISO 225.



1) Prevailing torque element, shape optional

2) β = 15° to 30°

3) Θ = 90° to 120°

Figure 1

Table 1 — Dimensions

Dimensions in millimetres

Thread (d)		M5	M6	M8	M10	M12	(M14)[a]	M16	M20	M24	M30	M36
P[2)]		0,8	1	1,25	1,5	1,75	2	2	2,5	3	3,5	4
d_a	max.	5,75	6,75	8,75	10,8	13	15,1	17,3	21,6	25,9	32,4	38,9
	min.	5,00	6,00	8,00	10,0	12	14,0	16,0	20,0	24,0	30,0	36,0
d_w	min.	6,88	8,88	11,63	14,63	16,63	19,64	22,49	27,7	33,25	42,75	51,11
e	min.	8,79	11,05	14,38	17,77	20,03	23,36	26,75	32,95	39,55	50,85	60,79
h	max.	5,3	6,7	8,00	10,50	13,30	15,4	17,9	21,8	26,4	31,8	38,5
	min.	4,8	5,4	7,14	8,94	11,57	13,4	15,7	19,0	22,6	27,3	33,1
m_w[c]	min.	3,84	4,32	5,71	7,15	9,26	10,7	12,6	15,2	18,1	21,8	26,5
s	max.	8,00	10,00	13,00	16,00	18,00	21,00	24,00	30,00	36	46	55,0
	min.	7,78	9,78	12,73	15,73	17,73	20,67	23,67	29,16	35	45	53,8

[a] The size in brackets should be avoided if possible.

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

[c] Minimum wrenching height.

4 Requirements and reference International Standards

See Table 2.

Table 2 — Requirements and reference International Standards

Material		Steel
General requirements	International Standard	ISO 8992
Thread	Tolerance	6H
	International Standards	ISO 261, ISO 965-2
Mechanical and performance properties	Property class	9
	Style decisive for mechanical properties	style 2
	International Standard	ISO 2320
Tolerances	Product grade	For $d \leq$ M16 : A For $d >$M16 : B
	International Standard	ISO 4759-1
Finish		As processed Requirements for electroplated coatings are covered in 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 ISO 6157-2.
Acceptability		For acceptance procedure, see ISO 3269.

5 Designation

EXAMPLE

A prevailing torque type all-metal hexagon nut, style 2, with thread M12 and property class 9 is designated as follows:

Prevailing torque type hexagon nut ISO 7720 – M12 – 9

Annex A (informative)
Bibliography

[1] ISO 4033:1979, *Hexagon nuts, style 2 — Product grades A and B.*

[2] ISO 7042:1997, *Prevailing torque type all-metal hexagon nuts, style 2 — Property classes 5, 8, 10 and 12.*

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