इंटरनेट मानक

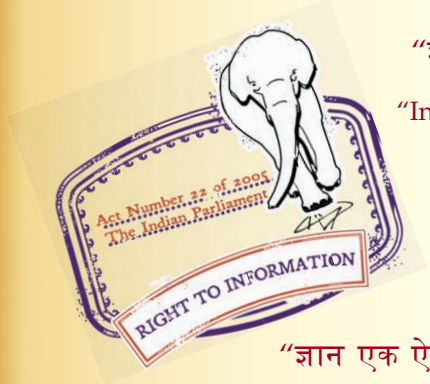
Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

"जानने का अधिकार, जीने का अधिकार"
Mazdoor Kisan Shakti Sangathan
"The Right to Information, The Right to Live"

"पुराने को छोड नये के तरफ"
Jawaharlal Nehru
"Step Out From the Old to the New"

IS 7002 (2005): Prevailing Torque Type Hexagon Nuts (With Non-Metallic Insert), Style 1 - Property Classes 5,8 and 10 [PGD 31: Bolts, Nuts and Fasteners Accessories]



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Satyanarayan Gangaram Pitroda
"Invent a New India Using Knowledge"

"ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है"
Bhartṛhari—Nītiśatakam
"Knowledge is such a treasure which cannot be stolen"

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IS 7002 : 2005
ISO 7040 : 1997

भारतीय मानक

प्रचालित बलाघुर्ण की षटकोणीय ढिबरियाँ (अधात्विक इंसर्ट सहित), स्टाइल 1 — प्रापर्टी क्लास 5, 8 और 10

(दूसरा पुनरीक्षण)

Indian Standard

PREVAILING TORQUE TYPE HEXAGON NUTS (WITH NON-METALLIC INSERT), STYLE 1 — PROPERTY CLASS 5, 8 AND 10

(Second Revision)

ICS 21.060.20

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

August 2005

Price Group 2

NATIONAL FOREWORD

This Indian Standard (Second Revision) which is identical with ISO 7040 : 1997 'Prevailing torque type hexagon nuts (with non-metallic insert), style 1 — Property class 5, 8 and 10' issued by the International Organization for Standardization (ISO) was adopted by the Bureau of Indian Standards on the recommendations of the Bolts, Nuts and Fasteners Accessories Sectional Committee and approval of the Medical Instruments, General and Production Engineering Division Council.

The original version of this standard was published in 1972 revised in 1991. The earlier edition was based on ISO 7040 : 1983. This second revision has been harmonized with ISO 7040 : 1997 by adoption to make pace with the latest developments taken place at international level.

The text of ISO Standard has been approved as suitable for publication as an Indian Standard without deviations. Certain terminology and conventions are, however, not identical to those used in Indian Standards. Attention is drawn especially to the following:

a) Wherever the words 'International Standard' appear, referring to this standard, they should be read as 'Indian Standard'.

b) Comma (,) has been used as a decimal marker while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

In this adopted standard, reference appears to certain International Standards for which Indian Standards also exist. The corresponding Indian Standards, which are to be substituted in their places, are listed below along with their degree of equivalence for the editions indicated:

International Standard	*Corresponding Indian Standard*	*Degree of Equivalence*
ISO 225 : 1983 Fasteners — Bolts, screws, studs and nuts — Symbols and designations of dimensions	IS 8536 : 1987 Fasteners — Bolts, screws, studs and nuts — Symbols and designation of dimensions (*first revision*)	Identical
ISO 261 : 1973[1)] ISO general purpose metric screw threads — General plan	IS 4218 (Part 2) : 2001 ISO general purposes metric screws threads : Part 2 General plan (*second revision*)	Technically equivalent
ISO 965-2 : 1980[1)] ISO general purpose metric screw threads — Tolerances — Part 2 : Limits of sizes for general purpose bolt and nut threads — Medium quality	IS 14962 (Part 2) : 2001 ISO general purpose metric screw threads — Tolerances: Part 2 Limits of sizes for general purpose external and internal screw threads — Medium quality	do

[1)] Since revised in 1998.

(*Continued on third cover*)

Indian Standard

PREVAILING TORQUE TYPE HEXAGON NUTS (WITH NON-METALLIC INSERT), STYLE 1 — PROPERTY CLASS 5, 8 AND 10

(Second Revision)

1 Scope

This International Standard specifies the characteristics of prevailing torque type hexagon nuts (with non-metallic insert), style 1, with threads from M3 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 classes 5, 8 and 10.

NOTE — The dimensions of the nuts correspond to those given in ISO 4032 plus prevailing torque feature.

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:–[1], *ISO general purpose metric screw threads – General plan.*

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

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

ISO 3269:1988, *Fasteners – Acceptance inspection.*

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

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

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

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

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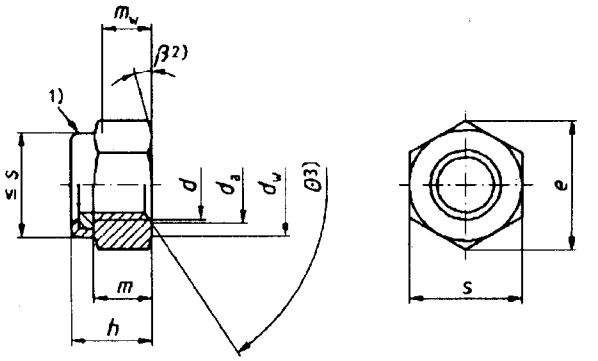
1) To be published. (Revision of ISO 261:1973)
2) To be published. (Revision of ISO 965-2:1980)
3) To be published. (Revision of ISO 4042:1989)
4) To be published. (Revision of ISO 4759-1:1978)

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)		M3	M4	M5	M6	M8	M10	M12	(M14)[1]	M16	M20	M24	M30	M36
P [2]		0,5	0,7	0,8	1	1,25	1,5	1,75	2	2	2,5	3	3,5	4
d_a	max.	3,45	4,6	5,75	6,75	8,75	10,8	13	15,1	17,3	21,6	25,9	32,4	38,9
	min.	3,00	4,0	5,00	6,00	8,00	10,0	12	14,0	16,0	20,0	24,0	30,0	36,0
d_w	min.	4,57	5,88	6,88	8,88	11,63	14,63	16,63	19,64	22,49	27,7	33,25	42,75	51,11
e	min.	6,01	7,66	8,79	11,05	14,38	17,77	20,03	23,36	26,75	32,95	39,55	50,85	60,79
h	max.	4,5	6,00	6,80	8,00	9,50	11,9	14,9	17,0	19,1	22,8	27,1	32,6	38,9
	min.	4,02	5,52	6,22	7,42	8,92	11,2	14,2	15,9	17,8	20,7	25,0	30,1	36,4
m [3]	min.	2,15	2,9	4,4	4,9	6,44	8,04	10,37	12,1	14,1	16,9	20,2	24,3	29,4
m_w [4]	min.	1,72	2,32	3,52	3,92	5,15	6,43	8,3	9,68	11,28	13,52	16,16	19,44	23,52
s	max.	5,50	7,00	8,00	10,00	13,00	16,00	18,00	21,00	24,00	30,00	36	46	55,0
	min.	5,32	6,78	7,78	9,78	12,73	15,73	17,73	20,67	23,67	29,16	35	45	53,8

1) The size in brackets should be avoided if possible.
2) P is the pitch of the thread.
3) Minimum thread height.
4) Minimum wrenching height.

4 Requirements and reference International Standards

See table 2.

Table 2 — Requirements and reference International Standards

Material	Nut body	Steel		
	Insert	For example, polyamid		
General requirements	International Standard	ISO 8992		
Thread	Tolerance	6H		
	International Standards	ISO 261, ISO 965-2		
Mechanical and performance properties	Property class	5	8	10
	Style decisive for mechanical properties	style 1	style 1	style 1
	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 hexagon nut, style 1, with non-metallic insert, thread M12 and property class 8 is designated as follows:

Prevailing torque type hexagon nut ISO 7040 – M12 – 8

NATIONAL ANNEX A
(National Foreword)

A-1 PACKAGING

The packaging of Prevailing torque type hexagon nuts shall be done in accordance with IS 1367 (Part 18) : 1996 'Industrial fasteners — Threaded steel fasteners — Technical supply conditions: Part 18 Packaging (*third revision*)'.

A-2 BIS CERTIFICATION MARKING

Details available with the Bureau of Indian Standards.

(*Continued from second cover*)

International Standard	*Corresponding Indian Standard*	*Degree of Equivalence*
ISO 2320 : 1997 Prevailing torque type steel hexagon nuts — Mechanical and performance properties	IS 1367 (Part 8) : 2002 Technical supply conditions for threaded steel fasteners: Part 8 Prevailing torque type steel hexagon nuts — Mechanical and performance properties (*third revision*)	Identical
ISO 3269 : 1988[1] Fasteners — Acceptance inspection	IS 1367 (Part 17) : 2005 Technical supply conditions for threaded steel fasteners : Part 17 Inspection, sampling and acceptance procedure (*fourth revision*)	Technically equivalent
ISO 4042 : 1989[2] Threaded components — Electroplated coatings	IS 1367 (Part 11) : 2002 Technical supply conditions for threaded steel fasteners: Part 11 Electroplated coatings (*third revision*)	do
ISO 4759-1 : 1978[1] Tolerances for fasteners — Part 1: Bolts, screws, studs and nuts — Product grades A, B and C	IS 1367 (Part 2) : 2002 Technical supply conditions for threaded steel fasteners: Part 2 Product grades and tolerances (*third revision*)	do
ISO 6157-2 : 1995 Fasteners — Surface discontinuities — Part 2 : Nuts	IS 1367 (Part 10) : 2002 Technical supply conditions for threaded steel fasteners: Part 10 Surface discontinuities — Nuts (*third revision*)	Identical
ISO 8992 : 1986 Fasteners — General requirements for bolts, screws, studs and nuts	IS 1367 (Part 1) : 2002 Technical supply conditions for threaded steel fasteners: Part 1 General requirement for bolts, screws and studs (*third revision*)	do

As decided by the Committee additional requirements of packaging and BIS Certification Marking are given in National Annex A. These additional requirements are part of this Standard.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

[1] Since revised in 2000.

[2] Since revised in 1999.

Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act,* 1986 to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

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Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Catalogue' and 'Standards : Monthly Additions'.

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