IS 1363 (Part 3) : 1992
ISO 4034 : 1986

(Reaffirmed 1998)

भारतीय मानक

उत्पाद ग्रेड सी के लिए षटकोणीय शीर्ष वाले काबले, पेंच और ढिबरियाँ

भाग 3 षटकोणीय ढिबरियाँ

(साइज रेंज M5 से M64 तक)

(तीसरा पुनरीक्षण)

Indian Standard

HEXAGON HEAD BOLTS, SCREWS AND NUTS OF PRODUCT GRADE C

PART 3 HEXAGON NUTS

(SIZE RANGE M5 TO M64)

(Third Revision)

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BUREAU OF INDIAN STANDARDS
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NEW DELHI 110002

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NATIONAL FOREWORD

This Indian Standard (Part 3) which is identical with ISO 4034 : 1986 'Hexagon nuts — Product grade C' issued by the International Organization for Standardization (ISO) was adopted by the Bureau of Indian Standards on the recommendation of the Bolts, Nuts and Fastener Accessories Sectional Committee (LM 14) and approval of the Light Mechanical Engineering Division Council.

The standard was originally published in 1960 and revised in 1967. Subsequent to the publication of 1967 edition, many changes had been agreed upon at international level which have been reflected in IS 1367 series of standards covering 'Technical supply conditions for threaded steel fasteners'. Accordingly, IS 1963 was revised and published in 3 parts covering hexagon head bolts, hexagon head screws and hexagon nuts.

The second revision of the standard was based on ISO 4034 : 1979 'Hexagon nuts — Product grade C' issued by ISO. This third revision has been made by the adoption of latest version of ISO 4034 published in 1986 as Part 3. The remaining parts of the standard, that is, Parts 1 and Part 2, have also been revised by adoption of corresponding latest version of international standards (ISOs). The following major changes have been made in this revision:

a) The range of sizes has been enlarged to cover sizes from M5 to M64;

b) Non-preferred sizes have been included in separate table in line with ISO 4034;

In the 1967 version of this standard, the width across flats for M10 and M12 size fasteners was specified as 17 mm and 19 mm respectively. However, in the 1983 version this width across flats was brought in line with ISO 4034 : 1979 and specified as 16 mm and 18 mm respectively for M10 and M12 size fasteners. Recognizing the fact that the new width across flat dimensions may not be implementable immediately, the Explanatory Note to 1983 version of the standard made a reference to this aspect. However, in the absence of specific coverage in the standard, the new width across flat dimensions could not be implemented. Recognizing the difficulty of immediate changeover to new width across flats, the Committee felt that definite time frame may be given to the manufacturers for changeover and accordingly, it has been decided that width across flats as per 1967 version, that is, 17 mm and 19 mm for M10 and M12 size fasteners shall be permitted till 31 December 1994.

It is also understood that some manufacturers are already equipped and manufacturing as per new width across flat dimensions and supplies as per new specifications are encouraged. During this period, the manufacture of fasteners as per old version shall be phased out and by 1 January 1995, it is expected that the entire fastener industry would have switched over to new width across flat dimensions and with across flats as per old version shall not be permitted.

In the adopted standard, certain terminology and conventions are not identical with those used in Indian Standards; attention is specially drawn to the following:

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

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

(*Continued on third cover*)

Indian Standard

HEXAGON HEAD BOLTS, SCREWS AND NUTS OF PRODUCT GRADE C

PART 3 HEXAGON NUTS (SIZE RANGE M5 TO M64)

(Third Revision)

0 Introduction

This International Standard is part of the complete ISO product standard series on hexagon drive fasteners. The series comprises:

a) hexagon head bolts (ISO 4014, ISO 4015, ISO 4016 and ISO 8765);

b) hexagon head screws (ISO 4017, ISO 4018 and ISO 8676);

c) hexagon nuts (ISO 4032, ISO 4033, ISO 4034, ISO 4035, ISO 4036, ISO 8673, ISO 8674 and ISO 8675);

d) hexagon flange bolts (ISO 4162, ISO 8100, ISO 8102 and ISO 8104);

e) hexagon flange screws;[1)]

f) hexagon flange nuts (ISO 4161, ISO 7043 and ISO 7044);

g) structural bolting (ISO 4775 and ISO 7411 to ISO 7417).

1 Scope and field of application

This International Standard gives specifications for hexagon nuts with thread diameters from M5 to M64 inclusive and product grade C.

If, in special cases, specifications other than those listed in this International Standard are required, they should be selected from existing International Standards, e.g. ISO 261, ISO 898/2, ISO 965, ISO 4759/1.

2 References

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

ISO 261, *ISO general purpose metric screw threads — General plan.*

ISO 898/2, *Mechanical properties of fasteners — Part 2: Nuts with specified proof load values.*

ISO 965, *ISO general purpose metric screw threads — Tolerances.*

ISO 3269, *Fasteners — Acceptance inspection.*

ISO 4042, *Threaded components — Electroplated coatings.*[2)]

ISO 4759/1, *Tolerances for fasteners — Part 1: Bolts, screws and nuts with thread diameters* ≥ 1,6 *and* ≤ 150 mm *and product grades A, B and C.*

ISO 8839, *Mechanical properties of fasteners — Bolts, screws, studs and nuts made of non-ferrous metals.*

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

1) These will form the subjects of future International Standards.

2) At present at the stage of draft.

3 Dimensions

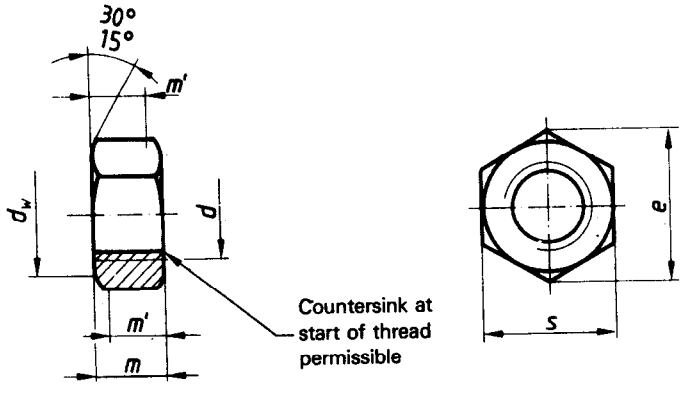

Table 1 — Preferred sizes

Thread size, d		M5	M6	M8	M10	M12	M16	M20
P[1]		0,8	1	1,25	1,5	1,75	2	2,5
d_w	min.	6,7	8,7	11,5	14,5	16,5	22	27,7
e	min.	8,63	10,89	14,20	17,59	19,85	26,17	32,95
m	max.	5,6	6,1	7,9	9,5	12,2	15,9	19
	min.	4,4	4,6	6,4	8	10,4	14,1	16,9
m'	min.	3,5	3,7	5,1	6,4	8,3	11,3	13,5
s	nom. = max.	8	10	13	16	18	24	30
	min.	7,64	9,64	12,57	15,57	17,57	23,16	29,16

Dimensions in millimetres

Thread size, d		M24	M30	M36	M42	M48	M56	M64
P[1]		3	3,5	4	4,5	5	5,5	6
d_w	min.	33,3	42,8	51,1	60	69,5	78,7	88,2
e	min.	39,55	50,85	60,79	72,02	82,6	93,56	104,86
m	max.	22,3	26,4	31,5	34,9	38,9	45,9	52,4
	min.	20,2	24,3	28 29	32,4	36,4	43,4	49,4
m'	min.	16,2	19,5	22,4	25,9	29,1	34,7	39,5
s	nom. = max.	36	46	55	65	75	85	95
	min.	35	45	53,8	63,1	73,1	82,8	92,8

1) P = pitch of the thread.

Table 2 — Non-preferred sizes

Dimensions in millimetres

Thread size, d		M14	M18	M22	M27	M33	M39	M45	M52	M60
P[1]		2	2,5	2,5	3	3,5	4	4,5	5	5,5
d_w	min.	19,2	24,9	31,4	38	46,6	55,9	64,7	74,2	83,4
e	min.	22,78	29,56	37,29	45,2	55,37	66,44	76,95	88,25	99,21
m	max.	13,9	16,9	20,2	24,7	29,5	34,3	36,9	42,9	48,9
	min.	12,1	15,1	18,1	22,6	27,4	31,8	34,4	40,4	46,4
m'	min.	9,7	12,1	14,5	18,1	21,9	25,4	27,5	32,3	37,1
s	nom. = max.	21	27	34	41	50	60	70	80	90
	min.	20,16	26,16	33	40	49	58,8	68,1	78,1	87,8

1) P = pitch of the thread.

4 Specifications and reference standards

Table 3 — Specifications and reference standards

Material		Steel
General requirements	International Standard	ISO 8992
Thread	Tolerance	7H
	International Standards	ISO 261, ISO 965
Mechanical properties	Class	d < M16: 5 M16 < d < M39: 4 , 5 d > M39: as agreed
	International Standards	d < M39: ISO 898/2 d > M39: as agreed
Tolerances	Product grade	C
	International Standard	ISO 4759/1
Finish		As processed Requirements for electroplating 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.
Acceptability		For acceptance procedure, see ISO 3269.

5 Designation

Example for the designation of a hexagon nut with thread size d = M12 and property class[1] 5:

Hexagon nut ISO 4034 - M12 - 5

1) The designation symbols for the property classes according to ISO 898/2 can also be used for thread sizes above M39 provided that the finished product has all the properties assigned to the designation symbols in ISO 898/2.

(*Continued from second cover*)

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 place are listed below along with their degree of equivalence for the editions indicated:

International Standard	*Corresponding Indian Standard*	*Degree of Equivalence*
ISO 225	IS 8535 : 1987 Bolts, screws, nuts and accessories — Terminology and nomenclature (*first revision*)	Identical
ISO 261	IS 4218 (Part 2) : 1976 ISO metric screw threads: Part 2 Diameter pitch combinations (*first revision*)	Technically equivalent
ISO 965*	ISO general purpose metric screw thread — Tolerances	
ISO 965/1	IS 4218 (Part 4) : 1976 ISO metric screw threads: Part 4 Tolerancing system (*first revision*)	Technically equivalent
ISO 965/2	IS 4218 (Part 6) : 1978 ISO metric screw threads: Part 6 Limits of sizes for commercial bolts and nuts (diameter range 1 to 52 mm) (*first revision*)	Technically equivalent
ISO 965/3	IS 4218 (Part 5) : 1979 ISO metric screw threads: Part 5 Tolerances (*first revision*)	Technically equivalent
ISO 3269	IS 1367 (Part 17) Technical supply conditions for threaded steel fasteners : Part 17 Acceptance criteria (*under preparation*)	Technically equivalent
ISO 4042	IS 1367 (Part 11) Technical supply conditions for threaded steel fasteners : Part 11 Electroplated coatings on threaded steel fasteners (*under preparation*)	Technically equivalent
ISO 4759-1	IS 1367 (Part 2) : 1979 Technical supply conditions for threaded steel fasteners : Part 2 Product grades and tolerances (*second revision*)	Technically equivalent
ISO 8839	IS Mechanical properties of fasteners — Bolts, screws, studs and nuts made of non-ferrous metals (*under preparation*)	Technically equivalent
ISO 8992	IS 1367 (Part 1) : 1980 Technical supply conditions for threaded steel fasteners : Part 1 Introduction and general information (*second revision*)	Equivalent

ALTERATION

In clause 5, the designation of hexagon nut may be read as 'Hexagon nut IS 1363 (Part 3) — ISO 4034 — M12 — 5' in place of 'Hexagon nut ISO 4034 — M12 — 5'.

* ISO 965 has since been revised into parts. However, relevant parts have been shown in the references.

Bureau of Indian Standards

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