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МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ

Hexagon nuts, style 1, with metric fine pitch thread — Product grades A and B

Écrous hexagonaux, style 1, à filetage métrique à pas fin — Grades A et B

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ISO 8673:1988

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Reference number
ISO 8673 : 1988 (E)

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 approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 8673 was prepared by Technical Committee ISO/TC 2, *Fasteners*.

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Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

Hexagon nuts, style 1, with metric fine pitch thread — Product grades A and B

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 flanged bolts (ISO 4162 and ISO 8102);
- e) hexagon flanged screws;¹⁾
- f) hexagon flanged 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, style 1, with metric fine pitch thread with nominal thread diameters d from 8 mm up to and including 64 mm, with product grade A for sizes d up to and including 16 mm and product grade B for sizes d over 16 mm.

If, in special cases, specifications other than those listed in this International Standard are required, they should be selected from existing International Standards, for example ISO 261, ISO 898-6, ISO 965-2, ISO 3506, ISO 4759-1.

Coarse thread hexagon nuts, style 1, according to ISO 4032 should be the first choice.

NOTE — For hexagon nuts, style 2, with fine pitch thread, see ISO 8674.

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 898-6, *Mechanical properties of fasteners — Part 6: Nuts with specified proof load values — Fine pitch thread.*
- 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 3506, *Corrosion-resistant stainless steel fasteners — Specifications.*
- ISO 4032, *Hexagon nuts, style 1 — Product grades A and B.*
- ISO 4042, *Threaded components — Electroplated coatings.*²⁾
- ISO 4759-1, *Tolerances for fasteners — Part 1: Bolts, screws and nuts with thread diameters $\geq 1,6$ and ≤ 150 mm and product grades A, B and C.*
- ISO 8674, *Hexagon nuts, style 2, with metric fine pitch thread — Product grades A and B.*
- ISO 8839, *Mechanical properties of fasteners — Bolts, screws, studs and nuts made of non-ferrous metals.*
- ISO 8992, *Fasteners — General requirements for bolts, screws and nuts.*

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

2) At present at the stage of draft.

3 Dimensions

NOTE — Symbols and designations of dimensions are specified in ISO 225.

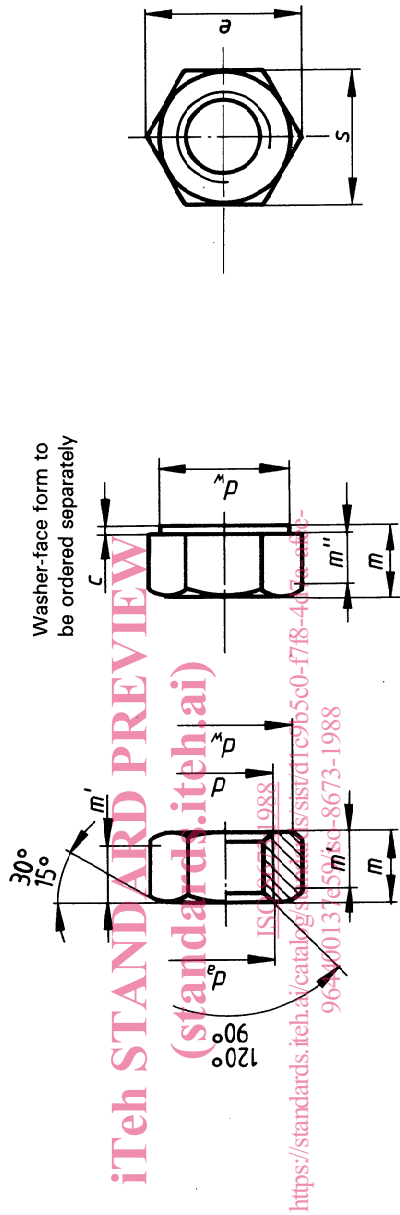


Table 1 — Preferred threads

| Thread, $d \times P$ | Dimensions in millimetres | | | | | | | | | | | | | | | |
|----------------------|---------------------------|---------|-----------|-----------|-----------|---------|---------|---------|---------|---------|---------|---------|--|--|--|--|
| | M8 x 1 | M10 x 1 | M12 x 1,5 | M16 x 1,5 | M20 x 1,5 | M24 x 2 | M30 x 2 | M36 x 3 | M42 x 3 | M48 x 3 | M56 x 4 | M64 x 4 | | | | |
| c | max. 0,6 | 0,6 | 0,6 | 0,8 | 0,8 | 0,8 | 0,8 | 0,8 | 1 | 1 | 1 | 1 | | | | |
| | min. 0,15 | 0,15 | 0,15 | 0,2 | 0,2 | 0,2 | 0,2 | 0,2 | 0,3 | 0,3 | 0,3 | 0,3 | | | | |
| d_a | min. 8 | 10 | 12 | 16 | 20 | 24 | 30 | 36 | 42 | 48 | 56 | 64 | | | | |
| | max. 8,75 | 10,8 | 13 | 17,3 | 21,6 | 25,9 | 32,4 | 38,9 | 45,4 | 51,8 | 60,5 | 69,1 | | | | |
| d_w | min. 11,63 | 14,63 | 16,63 | 22,49 | 27,7 | 33,25 | 42,75 | 51,11 | 59,95 | 69,45 | 78,66 | 88,16 | | | | |
| e | min. 14,38 | 17,77 | 20,03 | 26,75 | 32,95 | 39,55 | 50,85 | 60,79 | 71,3 | 82,6 | 93,56 | 104,86 | | | | |
| | max. 6,8 | 8,4 | 10,8 | 14,8 | 18 | 21,5 | 25,6 | 31 | 34 | 38 | 45 | 51 | | | | |
| m | min. 6,44 | 8,04 | 10,37 | 14,1 | 16,9 | 20,2 | 24,3 | 29,4 | 32,4 | 36,4 | 43,4 | 49,1 | | | | |
| m' | min. 5,15 | 6,43 | 8,3 | 11,28 | 13,52 | 16,16 | 19,44 | 23,52 | 25,92 | 29,12 | 34,72 | 39,28 | | | | |
| m'' | min. 4,51 | 5,63 | 7,26 | 9,87 | 11,83 | 14,14 | 17,01 | 20,58 | 22,68 | 25,48 | 30,38 | 34,37 | | | | |
| | nom. = max. 13 | 16 | 18 | 24 | 30 | 36 | 46 | 55 | 65 | 75 | 85 | 95 | | | | |
| s | min. 12,73 | 15,73 | 17,73 | 23,67 | 29,16 | 35 | 45 | 53,8 | 63,1 | 73,1 | 82,8 | 92,8 | | | | |

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Table 2 — Non-preferred threads

Dimensions in millimetres

| Thread, $d \times P$ | M10 × 1,25 | M12 × 1,25 | M14 × 1,5 | M18 × 1,5 | M20 × 2 | M22 × 1,5 | M27 × 2 | M33 × 2 | M39 × 3 | M45 × 3 | M52 × 4 | M60 × 4 |
|----------------------|-------------------------|----------------|----------------|----------------|----------------|----------------|--------------|----------------|----------------|----------------|----------------|----------------|
| c | max. 0,6 min. 0,15 | 0,6 0,15 | 0,6 0,15 | 0,8 0,2 | 0,8 0,2 | 0,8 0,2 | 0,8 0,2 | 0,8 0,2 | 1 0,3 | 1 0,3 | 1 0,3 | 1 0,3 |
| d_a | 10 max. 10,8 | 12 13 | 14 15,1 | 18 19,5 | 20 21,6 | 22 23,7 | 27 29,1 | 33 35,6 | 39 42,1 | 45 48,6 | 52 56,2 | 60 64,8 |
| d_w | 14,63 min. 17,77 | 16,63 20,03 | 19,64 23,36 | 24,85 29,56 | 27,7 32,95 | 31,35 37,29 | 38 45,2 | 46,55 55,37 | 55,86 66,44 | 64,7 76,95 | 74,2 88,25 | 83,41 99,21 |
| e | 8,4 max. 8,04 | 10,8 10,37 | 12,8 12,1 | 15,8 15,1 | 18 16,9 | 19,4 18,1 | 23,8 22,5 | 28,7 27,4 | 33,4 31,8 | 36 34,4 | 42 40,4 | 48 46,4 |
| m' | 6,43 min. 5,63 | 8,3 7,26 | 9,68 8,47 | 12,08 10,57 | 13,52 11,83 | 14,48 12,67 | 18 15,75 | 21,92 19,18 | 25,44 22,26 | 27,52 24,08 | 32,32 28,28 | 37,12 32,48 |
| m'' | 16 nom. = max. 15,73 | 18 17,73 | 21 20,67 | 27 26,16 | 30 29,16 | 34 33 | 41 40 | 50 49 | 60 58,8 | 70 68,1 | 80 78,1 | 90 87,8 |

4 Specifications and reference standards

Table 3 — Specifications and reference standards

| Material | | Steel | Stainless steel | Non-ferrous metal |
|-----------------------|-------------------------|---|--|-------------------|
| General requirements | International Standard | ISO 8992 | | |
| Thread | Tolerance | 6H | | |
| | International Standards | ISO 261, ISO 965-2 | | |
| Mechanical properties | Class ¹⁾ | $d < 39$ mm: 6, 8 $d < 16$ mm: 10 $d > 39$ mm: as agreed | $d < 20$ mm: A2-70 $20 \text{ mm} < d < 39$ mm: A2-50 $d > 39$ mm: as agreed | |
| | International Standards | $d < 39$ mm: ISO 898-6 $d > 39$ mm: as agreed | $d < 39$ mm: ISO 3506 $d > 39$ mm: as agreed | ISO 8839 |
| Tolerances | Product grade | $d < 16$ mm : A $d > 16$ mm : B | | |
| | International Standard | ISO 4759-1 | | |
| Finish | | as processed | plain | plain |
| | | 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. | | |

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5 Designation

Example for the designation of a hexagon nut, style 1, with thread M16 × 1,5 and property class 8:

Hexagon nut ISO 8673 - M16 × 1,5 - 8

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1) Nuts of higher property classes can be used for bolts with lower property classes, e.g. nut class 10 with bolt class 8.8.

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Descriptors : fasteners, nuts (fasteners), hexagonal nuts, specifications, dimensions, designation.

Price based on 4 pages
