
International Standard



4017

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Hexagon head screws — Product grades A and B

Vis à tête hexagonale — Classes de produit A et B

First edition — 1979-07-01

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Descriptors : fasteners, screws, hexagonal head screws, specifications, dimensions, dimensional tolerances, designation.

Price based on 6 pages

FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

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.

International Standard ISO 4017 was developed by Technical Committee ISO/TC 2, *Fasteners*, and was circulated to the member bodies in December 1977.

It has been approved by the member bodies of the following countries :

| | | |
|---------------------|----------------|-----------------------|
| Australia | India | Romania |
| Belgium | Ireland | South Africa, Rep. of |
| Canada | Israel | Spain |
| Chile | Italy | Sweden |
| Czechoslovakia | Korea, Rep. of | Switzerland |
| Denmark | Mexico | United Kingdom |
| Egypt, Arab Rep. of | Netherlands | USA |
| Finland | New Zealand | Yugoslavia |
| Germany, F.R. | Norway | |
| Hungary | Poland | |

The member bodies of the following countries expressed disapproval of the document on technical grounds :

France
USSR

Hexagon head screws — Product grades A and B

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0 INTRODUCTION

This International Standard is part of the complete ISO 1979 product standards series on hexagon drive fasteners. The series comprises :

- a) Hexagon head bolts (ISO 4014, ISO 4015 and ISO 4016)
- b) Hexagon head screws (ISO 4017 and ISO 4018)
- c) Hexagon nuts (ISO 4032, ISO 4033, ISO 4034, ISO 4035, and ISO 4036)
- d) Hexagon flanged bolts
- e) Hexagon flanged screws
- f) Hexagon flanged nuts
- g) Structural bolting

(in preparation)

1 SCOPE AND FIELD OF APPLICATION

This International Standard gives specifications for hexagon head screws with metric dimensions and thread diameters from 3 up to and including 36 mm, with product grade A for sizes M3 to M24 and lengths $\leq 10 d$ or 150 mm, whichever is shorter, and with product grade B for sizes with $d > M24$ or lengths $> 10 d$ or 150 mm, whichever is shorter.

This type of product is the same as that covered by ISO 4014 with the exception of threading up to the head and lengths ≤ 100 mm as popular lengths.

If, in special cases, specifications other than those listed in this International Standard are required, it is recommended that they should be selected from existing International Standards, for example ISO 261, ISO 888, ISO 898, ISO 965, ISO 3506, ISO 4759/1.

2 REFERENCES

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

ISO 888, *Bolts, screws and studs — Nominal lengths, and thread lengths for general purpose bolts.*

ISO 898, *Mechanical properties of fasteners.*

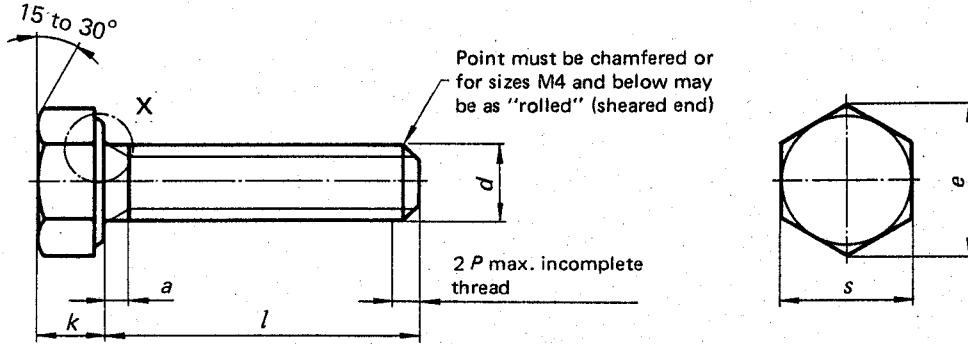
ISO 965, *ISO general purpose metric screw threads — Tolerances.*

ISO 3506, *Corrosion-resistant stainless steel fasteners — Specifications.*¹⁾

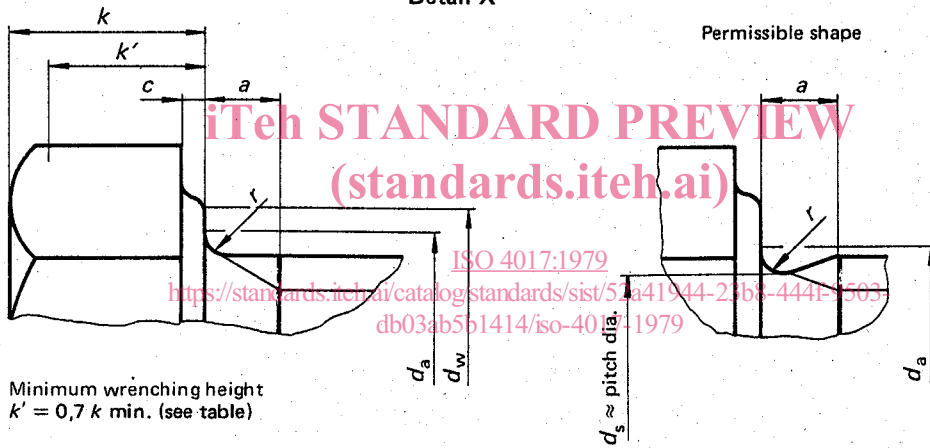
ISO 4759/1, *Tolerances for fasteners — Part 1 : Bolts, screws and nuts with thread diameters $\geq 1,6 \leq 150$ mm and product grades A, B and C.*

1) At present at the stage of draft.

3 DIMENSIONS



Detail X



| Thread size d | | M3 | M4 | M5 | M6 |
|---|-------------------------|-------|-------|--------|------|
| P | 1) | 0,5 | 0,7 | 0,8 | 1,0 |
| $a^{2)}$ | max. | 1,5 | 2,1 | 2,4 | 3,0 |
| c | min. | 0,15 | 0,15 | 0,15 | 0,20 |
| | max. | 0,4 | 0,4 | 0,5 | 0,6 |
| d_a | max. | 3,6 | 4,7 | 5,7 | 6,8 |
| d_w | $l \leq 10 d$ or 150 mm | 4,6 | 5,9 | 6,9 | 8,1 |
| | $l > 10 d$ or 150 mm | — | — | 6,7 | 8,0 |
| e | $l \leq 10 d$ or 150 mm | 6,01 | 7,66 | 8,79 | 10,4 |
| | $l > 10 d$ or 150 mm | — | — | 8,63 | 10,3 |
| k | nom. | 2 | 2,8 | 3,5 | 4,3 |
| | $l \leq 10 d$ or 150 mm | min. | 1,88 | 2,68 | 3,35 |
| | max. | 2,12 | 2,92 | 3,65 | 4,4 |
| | $l > 10 d$ or 150 mm | min. | — | — | 3,26 |
| | max. | — | — | 3,74 | 4,5 |
| k' | min. | 1,3 | 1,9 | 2,28 | 2,8 |
| s | min. | 0,4 | 0,2 | 0,2 | 0,3 |
| | max. | 5,5 | 7 | 8 | 10 |
| | $l \leq 10 d$ or 150 mm | 5,32 | 6,78 | 7,78 | 9,3 |
| | $l > 10 d$ or 150 mm | — | — | 7,64 | 9,2 |
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| nom. $\leq 10 d$ or 150 mm $> 10 d$ or 150 mm | | | | | |
| | min. | max. | min. | max. | |
| 6 | 5,76 | 6,24 | — | — | |
| 8 | 7,71 | 8,29 | — | — | |
| 10 | 9,71 | 10,29 | — | — | |
| 12 | 11,65 | 12,35 | — | — | |
| 16 | 15,65 | 16,35 | — | — | |
| 20 | 19,58 | 20,42 | — | — | |
| 25 | 24,58 | 25,42 | — | — | |
| 30 | 29,58 | 30,42 | — | — | |
| 35 | 34,5 | 35,5 | 33,75 | 36,25 | |
| 40 | 39,5 | 40,5 | 38,75 | 41,25 | |
| 45 | 44,5 | 45,5 | 43,75 | 46,25 | |
| 50 | 49,5 | 50,5 | 48,75 | 51,25 | |
| 55 | 54,4 | 55,6 | 53,5 | 56,5 | |
| 60 | 59,4 | 60,6 | 58,5 | 61,5 | |
| 65 | 64,4 | 65,6 | 63,5 | 66,5 | |
| 70 | 69,4 | 70,6 | 68,5 | 71,5 | |
| 80 | 79,4 | 80,6 | 78,5 | 81,5 | |
| 90 | 89,3 | 90,7 | 88,25 | 91,75 | |
| 100 | 99,3 | 100,7 | 98,25 | 101,75 | |

The popular lengths are between the stepped lines. The size M14 should be avoided if possible.

- 1) P = pitch of the thread.
- 2) a min. not less than $1P$.

3-4a

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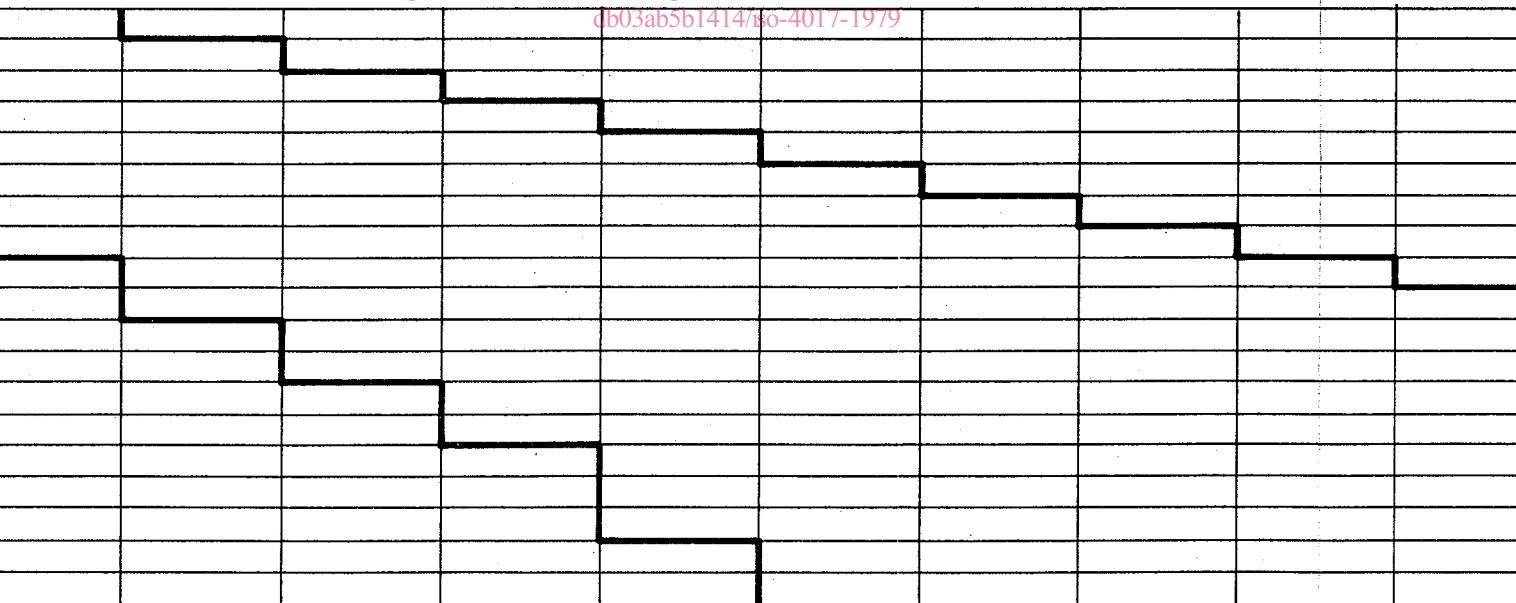
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db03ab5b1414/iso-4017-1979](https://standards.iteh.ai/catalog/standards/sist/52a41944-23b8-444f-9503-db03ab5b1414/iso-4017-1979)

| M3 | M4 | M5 | M6 | M8 | M10 | M12 | (M14) | M16 | M20 |
|------|------|------|-------|-------|-------|-------|-------|-------|-------|
| 0,5 | 0,7 | 0,8 | 1 | 1,25 | 1,5 | 1,75 | 2 | 2 | 2,5 |
| 1,5 | 2,1 | 2,4 | 3 | 3,75 | 4,5 | 5,25 | 6 | 6 | 7,5 |
| 0,15 | 0,15 | 0,15 | 0,15 | 0,15 | 0,15 | 0,15 | 0,15 | 0,2 | 0,2 |
| 0,4 | 0,4 | 0,5 | 0,5 | 0,6 | 0,6 | 0,6 | 0,6 | 0,8 | 0,8 |
| 3,6 | 4,7 | 5,7 | 6,8 | 9,2 | 11,2 | 13,7 | 15,7 | 17,7 | 22,4 |
| 4,6 | 5,9 | 6,9 | 8,9 | 11,6 | 14,6 | 16,6 | 19,6 | 22,5 | 28,2 |
| — | — | 6,7 | 8,7 | 11,4 | 14,4 | 16,4 | 19,2 | 22 | 27,7 |
| 6,01 | 7,66 | 8,79 | 11,05 | 14,38 | 17,77 | 20,03 | 23,35 | 26,75 | 33,53 |
| — | — | 8,63 | 10,89 | 14,20 | 17,59 | 19,85 | 22,78 | 26,17 | 32,95 |
| 2 | 2,8 | 3,5 | 4 | 5,3 | 6,4 | 7,5 | 8,8 | 10 | 12,5 |
| 1,88 | 2,68 | 3,35 | 3,85 | 5,15 | 6,22 | 7,32 | 8,62 | 9,82 | 12,28 |
| 2,12 | 2,92 | 3,65 | 4,15 | 5,45 | 6,58 | 7,68 | 8,98 | 10,18 | 12,72 |
| — | — | 3,26 | 3,76 | 5,06 | 6,11 | 7,21 | 8,51 | 9,71 | 12,15 |
| — | — | 3,74 | 4,24 | 5,54 | 6,69 | 7,79 | 9,09 | 10,29 | 12,85 |
| 1,3 | 1,9 | 2,28 | 2,63 | 3,54 | 4,28 | 5,05 | 5,96 | 6,8 | 8,5 |
| 0,1 | 0,2 | 0,2 | 0,25 | 0,4 | 0,4 | 0,6 | 0,6 | 0,6 | 0,8 |
| 5,5 | 7 | 8 | 10 | 13 | 16 | 18 | 21 | 24 | 30 |
| 5,32 | 6,78 | 7,78 | 9,78 | 12,73 | 15,73 | 17,73 | 20,67 | 23,67 | 29,67 |
| — | — | 7,64 | 9,64 | 12,57 | 15,57 | 17,57 | 20,16 | 23,16 | 29,16 |

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should be avoided if possible.

3-4 b

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Dimensions in millimetres

| M8 | M10 | M12 | (M14) | M16 | M20 | M24 | M30 | M36 |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1,25 | 1,5 | 1,75 | 2 | 2 | 2,5 | 3 | 3,5 | 4 |
| 3,75 | 4,5 | 5,25 | 6 | 6 | 7,5 | 9 | 10,5 | 12 |
| 0,15 | 0,15 | 0,15 | 0,15 | 0,2 | 0,2 | 0,2 | 0,2 | 0,2 |
| 0,6 | 0,6 | 0,6 | 0,6 | 0,8 | 0,8 | 0,8 | 0,8 | 0,8 |
| 9,2 | 11,2 | 13,7 | 15,7 | 17,7 | 22,4 | 26,4 | 33,4 | 39,4 |
| 11,6 | 14,6 | 16,6 | 19,6 | 22,5 | 28,2 | 33,6 | 42,7 | 51,1 |
| 11,4 | 14,4 | 16,4 | 19,2 | 22 | 27,7 | 33,2 | | |
| 14,38 | 17,77 | 20,03 | 23,35 | 26,75 | 33,53 | 39,98 | 50,85 | 60,79 |
| 14,20 | 17,59 | 19,85 | 22,78 | 26,17 | 32,95 | 39,55 | | |
| 5,3 | 6,4 | 7,5 | 8,8 | 10 | 12,5 | 15 | 18,7 | 22,5 |
| 5,15 | 6,22 | 7,32 | 8,62 | 9,82 | 12,28 | 14,78 | - | - |
| 5,45 | 6,58 | 7,68 | 8,98 | 10,18 | 12,72 | 15,22 | - | - |
| 5,06 | 6,11 | 7,21 | 8,51 | 9,71 | 12,15 | 14,65 | 18,28 | 22,08 |
| 5,54 | 6,69 | 7,79 | 9,09 | 10,29 | 12,85 | 15,35 | 19,12 | 22,92 |
| 3,54 | 4,28 | 5,05 | 5,96 | 6,8 | 8,5 | 10,3 | 12,8 | 15,5 |
| 0,4 | 0,4 | 0,6 | 0,6 | 0,6 | 0,8 | 0,8 | 1 | 1 |
| 13 | 16 | 18 | 21 | 24 | 30 | 36 | 46 | 55 |
| 12,73 | 15,73 | 17,73 | 20,67 | 23,67 | 29,67 | 35,38 | 45 | 53,8 |
| 12,57 | 15,57 | 17,57 | 20,16 | 23,16 | 29,16 | 35 | | |

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