
International Standard



4759/II

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

Tolerances for fasteners — Part II : Bolts, screws and nuts with thread diameters from 1 up to 3 mm and product grade F, for fine mechanics

Tolérances pour éléments de fixation — Partie II : Boulons, vis et écrous de diamètre de filetage 1 à 3 mm inclus et classe de produit F, pour mécanique fine

First edition — 1979-06-01

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[ISO 4759-2:1979](https://standards.iteh.ai/catalog/standards/sist/d279355d-586a-4fac-b26f-39238d30e1a9/iso-4759-2-1979)

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UDC 621.882.14 : 621.753.1

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Descriptors : fasteners, screws, bolts, nuts, dimensions, dimensional tolerances, form tolerances, tolerances of position, screw threads, surface properties.

Price based on 4 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 4759/II 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 :

Belgium	Ireland	South Africa, Rep. of
Bulgaria	Italy	Spain
Denmark	Japan	Switzerland
Finland	Korea, Rep. of	Turkey
France	New Zealand	United Kingdom
Germany, F.R.	Norway	USA
Hungary	Poland	Yugoslavia
India	Romania	

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

Canada
Netherlands
Sweden
USSR



INTERNATIONAL STANDARD ISO 4759/2-1979 (E)

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AMENDMENT SLIP

Published 1980-03-15

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Tolerances for fasteners — Part 2 : Bolts, screws and nuts with thread diameters from 1 up to 3 mm and product grade F, for fine mechanics

AMENDMENT

MODIFICATION TO FOREWORD *(Inside front cover)*

The ISO member body for Czechoslovakia has now approved this International Standard. Czechoslovakia should therefore be included in the list of countries whose member bodies have approved the document.

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Tolerances for fasteners — Part II : Bolts, screws and nuts with thread diameters from 1 up to 3 mm and product grade F, for fine mechanics

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies the selection of tolerances for use in the preparation of ISO product standards for bolts, screws and nuts with thread diameters from 1 up to and including 3 mm and product grade F.

It is recommended that these tolerances should also be used for non-standardized fasteners.

NOTE — The product grade F generally refers to the quality of products for which high requirements are made with respect to tolerances, for example in fine mechanical engineering.

2 SURFACE

Surface roughness of bearing faces and of heads (except edges, slots and cross recesses) shall be approximately $R_a = 1 \mu\text{m}$ determined by visual comparison.

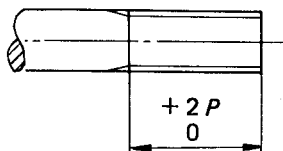
3 THREAD

TABLE 1

Thread diameter mm	Tolerance ¹⁾	
	Internal thread (nuts)	External thread (bolts and screws)
$\geq 1 \leq 1,4$	5H	4h
$> 1,4 \leq 3$	6H	6g

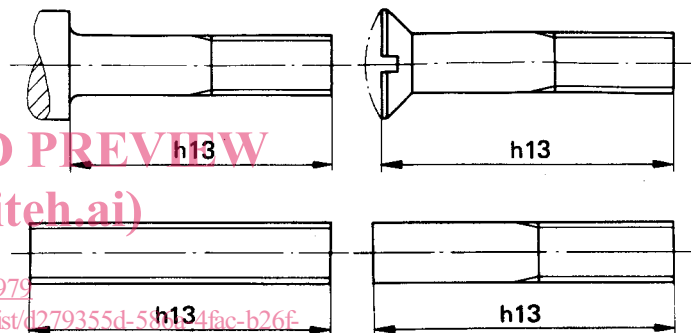
1) Plated threads shall not infringe the maximum material limit with zero fundamental deviation.

4 THREAD LENGTH



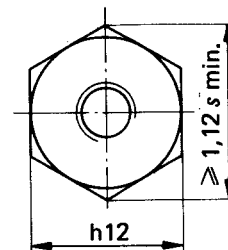
P = pitch of the thread

5 NOMINAL LENGTH



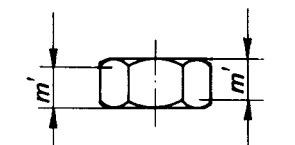
6 DRIVING GEOMETRY

6.1 Widths across flats and widths across corners



6.2 Effective gauging position

The specified tolerances for widths across flats and the minimum widths across corners apply to the following height of hexagons :



$m' \geq 0,8 m \text{ min.}$
 m = nominal height of the nut

6.3 Slots

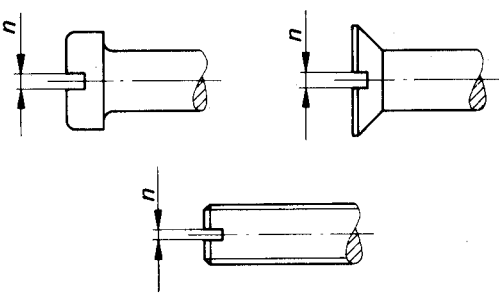


TABLE 2

Nominal value	<i>n</i>	Tolerance
< 0,3		C11
≥ 0,3 < 0,4		C12
≥ 0,4		C13

7.2 Head heights

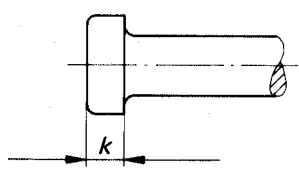


TABLE 5

Nominal value mm	<i>k</i> Tolerance	
	Slotted cheese head	Cross-recessed pan head
≤ 0,8	h11	h12
> 0,8 < 1,2	h12	h13
≥ 1,2	h13	

7 HEADS

7.1 Head diameters

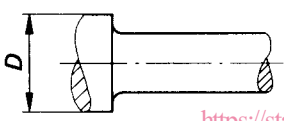


TABLE 3

Thread diameter mm	<i>D</i> Tolerance	
	Slotted	Cross-recessed
≥ 1 ≤ 1,4	h12	h13
> 1,4 ≤ 3	h13	h13

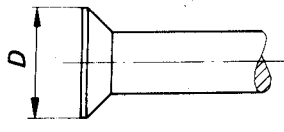


TABLE 4

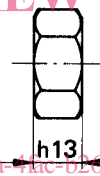
Thread diameter mm	<i>D</i> Tolerance ¹⁾
≥ 1 ≤ 1,4	h10
> 1,4 < 2	h12
≥ 2 < 3	h13

1) For roundness of countersink cross-recessed head screws, see figure 9 in table 6.

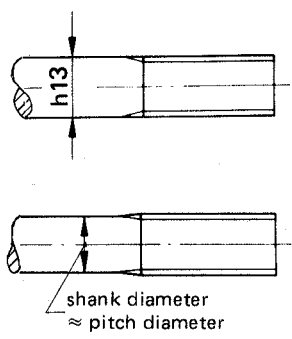
8 THICKNESS OF NUTS

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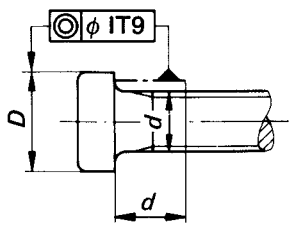
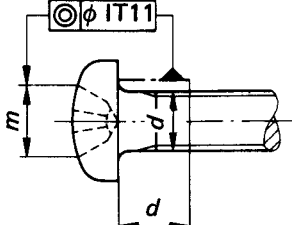
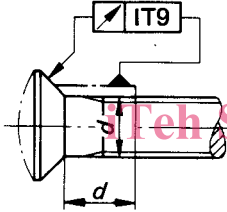
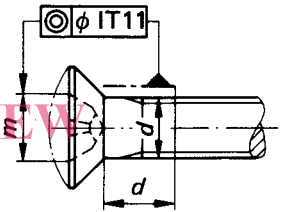
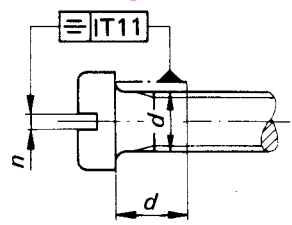
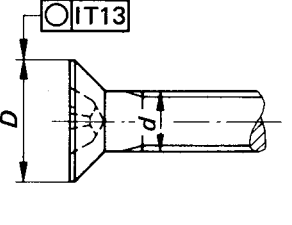
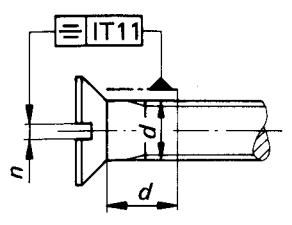
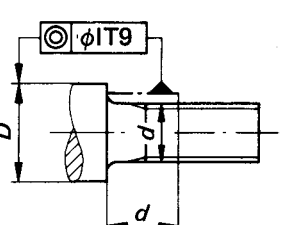
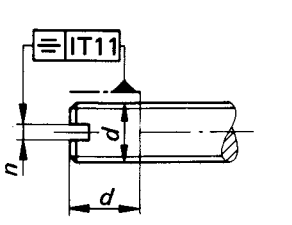
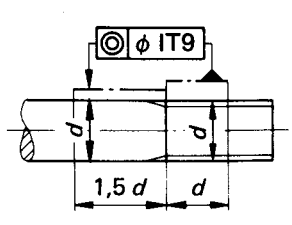
9 SHANK DIAMETERS



10 TOLERANCES OF FORM AND POSITION

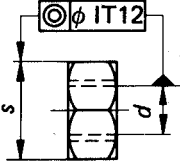
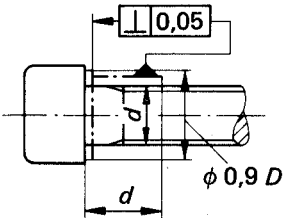
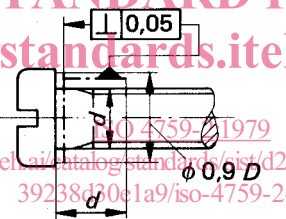
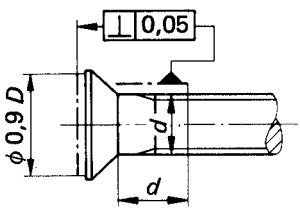
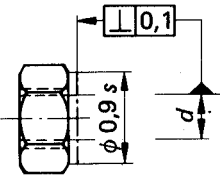
In accordance with ISO 1101/I the tolerances of form and position indicated in figures 1 to 15 do not necessarily imply the use of any particular method of production measurement or gauging.

TABLE 6

Figure	Feature	Tolerance based on dimension	Figure	Feature	Tolerance based on dimension
1		D	6		d
2		d	7		d
3		d	8		d
4		d	9		d
5		d	10		d

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TABLE 6 (Concluded)

Figure	Feature	Tolerance based on dimension
11		s
12		
13		
14		
15		

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