

INTERNATIONAL STANDARD



5864

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

ISO inch screw threads — Allowances and tolerances

Filetages ISO en inches — Jeux et tolérances

First edition — 1978-10-15

UDC 621.882.082 : 621.753.1

Ref. No. ISO 5864-1978 (E)

Descriptors : screw threads, ISO screw threads, specifications, designations, classifications, dimensional tolerances, clearances.

Price based on 12 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 5864 was developed by Technical Committee ISO/TC 1, *Screw threads*, and was circulated to the member bodies in December 1976.

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

Australia	Hungary	Norway
Belgium	India	South Africa, Rep. of
Bulgaria	Ireland	Sweden
Denmark	Korea, Rep. of	U.S.A.
Egypt, Arab Rep. of	Mexico	Yugoslavia
Germany, F.R.	Netherlands	

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

Canada
United Kingdom
U.S.S.R.



AMENDMENT SLIP
Published 1979-03-01

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MODIFICATION TO FOREWORD (*Inside front cover*)

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



INTERNATIONAL STANDARD ISO 5864-1978 (E)/ERRATUM

Gr-81-08-21

Published 19 81

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ISO inch screw threads - Allowances and tolerances

(Title)

ERRATUM

Page 11

Table 4, the value indicated for 20 threads per inch, length of thread engagement above 0,667 D up to and including 1,500 D and thread size 0,375 should be 82 instead of 78.

(Text)

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ISO inch screw threads – Allowances and tolerances

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a system of allowances and tolerances for standard thread series, covering the range of diameters from 0.06 to 6 in, and pitches from 80 to 4 threads per inch.

2 REFERENCES

ISO 263, *ISO inch screw threads – General plan and selection for screws, bolts and nuts – Diameter range 0.06 to 6 in.*

ISO/R 725, *ISO inch screw threads – Basic dimensions.*

ISO 5408, *Screw threads – Vocabulary.*¹⁾

3 TERMINOLOGY AND SYMBOLS

3.1 Terminology

In this International Standard, the terms “external threads” and “internal threads” are synonymous with bolt threads and nut threads, respectively, as used in some other International Standards.

3.2 Symbols

The following symbols are used :

Symbol	Explanation
d	Major diameter of external thread (nominal diameter)
d_2	Pitch diameter of external thread
d_1	Minor diameter of external thread
D	Major diameter of internal thread (nominal diameter)
D_2	Pitch diameter of internal thread
D_1	Minor diameter of internal thread
P	Pitch
n	Number of threads per inch
L_e	Length of thread engagement (for formula)

LE	Length of thread engagement (for designation)
SE	Special length of thread engagement (for designation)
PD	Pitch diameter (for designation)
MOD	Modified diameter limits (for designation)
H	Height of fundamental triangle
$\left. \begin{matrix} T_d \\ T_{d_2} \\ T_{D_2} \\ T_{D_1} \end{matrix} \right\}$	Tolerances for d, d_2, D_2 and D_1

4 SIZES AND SERIES

Nominal sizes, basic dimensions and the thread pitches available in each size and the pitch series in which they are classified appear in ISO 263 and ISO/R 725.

Thread series are groups of diameter-pitch combinations distinguished from each other by the number of threads per inch applied to series of specific diameters. The various diameter-pitch combinations are of three series with graded pitches, coarse (UNC), fine (UNF) and extra fine (UNEF) and eight series with constant pitches, 4 UN, 6 UN, 8 UN, 12 UN, 16 UN, 20 UN, 28 UN, and 32 UN.

5 THREAD CLASSES

5.1 Thread classes are distinguished from each other by the amounts of tolerance and allowance. The function of these classes is to provide for various grades of fit when threaded parts are assembled. Three classes of external threads (1A, 2A, and 3A), and three classes of internal threads (1B, 2B, and 3B) have been established for general purpose use.

Thread classes 1A and 1B are applicable for bolts and nuts where easy assembly is required or where rough handling and foreign material may restrict assembly of a closer tolerance class. This class provides a liberal tolerance and is applicable only to sizes 0.25 inch and over the UNC and UNF series.

1) At present at the stage of draft.