

INTERNATIONAL STANDARD

**ISO
68-2**

First edition
1998-12-15

ISO general purpose screw threads — Basic profile —

Part 2:

Inch screw threads

Filetages ISO pour usages généraux — Profil de base —

Partie 2: Filetages en inches



Reference number
ISO 68-2:1998(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 voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 68-2 was prepared by Technical Committee ISO/TC 1, *Screw threads*, Subcommittee SC 1, *Basic data*.

This first edition, together with ISO 68-1, cancels and replaces ISO 68:1973 which has been technically revised by separating the metric dimensions from the imperial dimensions.

ISO 68 consists of the following parts under the general title *ISO general purpose screw threads – Basic profile*

- *Part 1: Metric screw threads*
- *Part 2: Inch screw threads*

Annex of this part of ISO 68 is for information only.

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ISO general purpose screw threads — Basic profile —

Part 2:

Inch screw threads

1 Scope

This part of ISO 68 specifies the basic profile for ISO inch screw threads.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 68. At the time of publication the editions indicated were valid. All standards are subject to revision and parties to agreements based on this part of ISO 68 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 5408:1983, *Cylindrical screw threads — Vocabulary*.

ISO 5864:1993, *ISO inch screw threads — Allowances and tolerances*.

3 Definitions

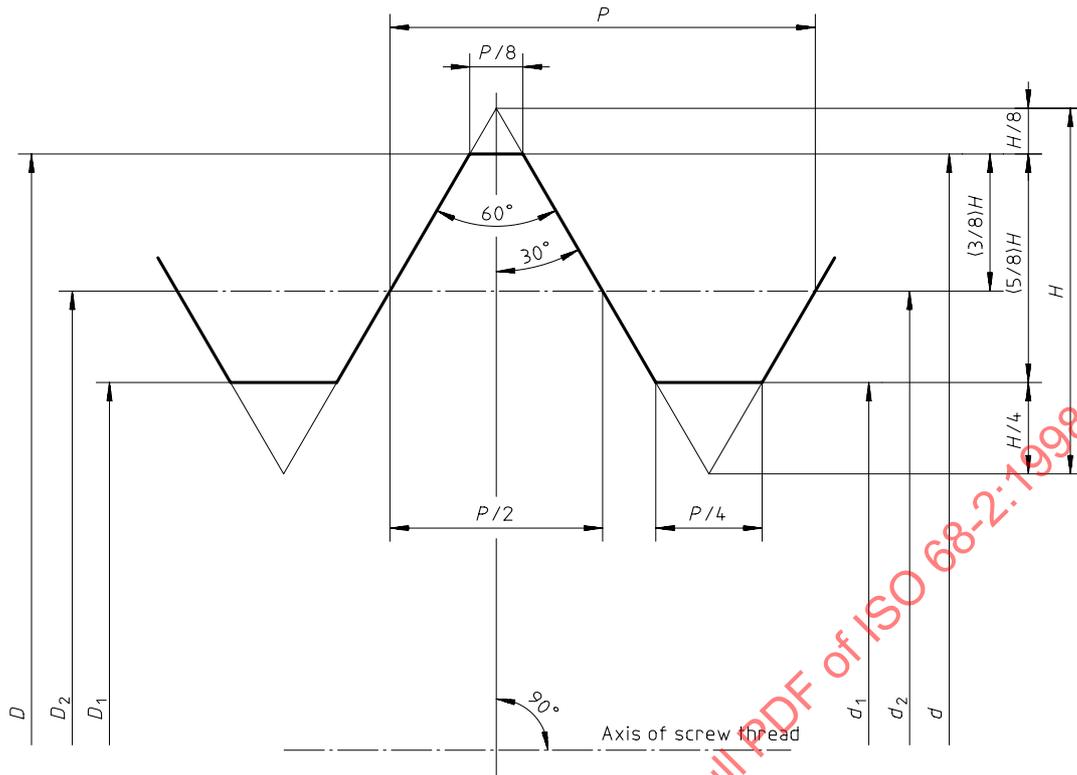
For the purpose of this part of ISO 68 the definitions given in ISO 5408 apply. Only the term "basic profile" which might be usefully restated is defined below.

3.1

basic profile

The theoretical profile of a screw thread in an axial plane defined by theoretical dimensions and angles common to internal and external threads

NOTE The basic profile is shown as a thick line in figure 1.



where

- D* is the basic major diameter of internal thread (nominal diameter)
- d* is the basic major diameter of external thread (nominal diameter)
- D₂* is the basic pitch diameter of internal thread
- d₂* is the basic pitch diameter of external thread
- D₁* is the basic minor diameter of internal thread
- d₁* is the basic minor diameter of external thread
- H* is the height of fundamental triangle
- P* is the pitch

Figure 1

4 Dimensions

The fundamental deviations and tolerances specified in ISO 5864 are applied to the dimensions of the basic profile shown in figure 1 and derived from table 1.

$$H = \frac{0,866\ 025\ 404}{n}$$

$$\frac{5}{8} H = \frac{0,541\ 265\ 877}{n}$$

$$\frac{3}{8} H = \frac{0,324\ 759\ 526}{n}$$

$$\frac{H}{4} = \frac{0,216\ 506\ 351}{n}$$

$$\frac{H}{8} = \frac{0,108\ 253\ 175}{n}$$

where *n* is the number of threads per inch.

Table 1

Dimensions in inches

Number of threads per inch n	Pitch P	H	$\frac{5}{8} H$	$\frac{3}{8} H$	$\frac{H}{4}$	$\frac{H}{8}$
80	0,012 500	0,010 825	0,006 766	0,004 059	0,002 706	0,001 353
72	0,013 889	0,012 028	0,007 518	0,004 511	0,003 007	0,001 504
64	0,015 625	0,013 532	0,008 457	0,005 074	0,003 383	0,001 691
56	0,017 857	0,015 465	0,009 665	0,005 799	0,003 866	0,001 933
48	0,020 833	0,018 042	0,011 276	0,006 766	0,004 511	0,002 255
44	0,022 727	0,019 682	0,012 301	0,007 381	0,004 921	0,002 460
40	0,025 000	0,021 651	0,013 532	0,008 119	0,005 413	0,002 706
36	0,027 778	0,024 056	0,015 035	0,009 021	0,006 014	0,003 007
32	0,031 250	0,027 063	0,016 915	0,010 149	0,006 766	0,003 383
28	0,035 714	0,030 929	0,019 331	0,011 599	0,007 732	0,003 866
24	0,041 667	0,036 084	0,022 553	0,013 532	0,009 021	0,004 511
20	0,050 000	0,043 301	0,027 063	0,016 238	0,010 825	0,005 413
18	0,055 556	0,048 113	0,030 070	0,018 042	0,012 028	0,006 014
16	0,062 500	0,054 127	0,033 829	0,020 297	0,013 532	0,006 766
14	0,071 429	0,061 859	0,038 662	0,023 197	0,015 465	0,007 732
13	0,076 923	0,066 617	0,041 636	0,024 982	0,016 654	0,008 327
12	0,083 333	0,072 169	0,045 105	0,027 063	0,018 042	0,009 021
11	0,090 909	0,078 730	0,049 206	0,029 524	0,019 682	0,009 841
10	0,100 000	0,086 603	0,054 127	0,032 476	0,021 651	0,010 825
9	0,111 111	0,096 225	0,060 141	0,036 084	0,024 056	0,012 028
8	0,125 000	0,108 253	0,067 658	0,040 595	0,027 063	0,013 532
7	0,142 857	0,123 718	0,077 324	0,046 394	0,030 929	0,015 465
6	0,166 667	0,144 338	0,090 211	0,054 127	0,036 084	0,018 042
5	0,200 000	0,173 205	0,108 253	0,064 952	0,043 301	0,021 651
4,5	0,222 222	0,192 450	0,120 281	0,072 169	0,048 113	0,024 056
4	0,250 000	0,216 506	0,135 316	0,081 190	0,054 127	0,027 063

Annex A (informative)

Table 1 values converted into metric units

Dimensions in millimetres

Number of threads per inch <i>n</i>	Pitch <i>P</i>	<i>H</i>	$\frac{5}{8} H$	$\frac{3}{8} H$	$\frac{H}{4}$	$\frac{H}{8}$
80	0,317 500	0,274 955	0,171 856	0,103 099	0,068 732	0,034 366
72	0,352 781	0,305 511	0,190 957	0,114 579	0,076 378	0,038 202
64	0,396 875	0,343 713	0,214 808	0,128 880	0,085 928	0,042 951
56	0,453 568	0,392 811	0,245 491	0,147 295	0,098 196	0,049 098
48	0,529 158	0,458 267	0,286 410	0,171 856	0,114 579	0,057 277
44	0,577 266	0,499 923	0,312 445	0,187 477	0,124 993	0,062 484
40	0,635 000	0,549 935	0,343 713	0,206 223	0,137 490	0,068 732
36	0,705 561	0,611 022	0,381 889	0,229 133	0,152 756	0,076 378
32	0,793 750	0,687 400	0,429 641	0,257 785	0,171 856	0,085 928
28	0,907 136	0,785 597	0,491 007	0,294 615	0,196 393	0,098 196
24	1,058 342	0,916 534	0,572 846	0,343 713	0,229 133	0,114 579
20	1,270 000	1,099 845	0,687 400	0,412 445	0,274 955	0,137 490
18	1,411 122	1,222 070	0,763 778	0,458 267	0,305 511	0,152 756
16	1,587 500	1,374 826	0,859 257	0,515 544	0,343 713	0,171 856
14	1,814 297	1,571 219	0,982 015	0,589 204	0,392 811	0,196 393
13	1,953 844	1,692 072	1,057 554	0,634 543	0,423 012	0,211 506
12	2,116 658	1,833 093	1,145 667	0,687 400	0,458 267	0,229 133
11	2,309 089	1,999 742	1,249 832	0,749 910	0,499 923	0,249 961
10	2,540 000	2,199 716	1,374 826	0,824 890	0,549 935	0,274 955
9	2,822 219	2,444 115	1,527 581	0,916 534	0,611 022	0,305 511
8	3,175 000	2,749 626	1,718 513	1,031 113	0,687 400	0,343 713
7	3,628 568	3,142 437	1,964 030	1,178 408	0,785 597	0,392 811
6	4,233 342	3,666 185	2,291 359	1,374 826	0,916 534	0,458 267
5	5,080 000	4,399 407	2,749 626	1,649 781	1,099 845	0,549 935
4,5	5,644 439	4,888 230	3,055 137	1,833 093	1,222 070	0,611 022
4	6,350 000	5,499 252	3,437 026	2,062 226	1,374 826	0,687 400