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# INTERNATIONAL STANDARD



# 725

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

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## ISO inch screw threads — Basic dimensions

*Filetages ISO en inches — Dimensions de base*

First edition — 1978-11-15

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**Descriptors** : screw threads, ISO screw threads, inch screw threads, dimensions.

Price based on 5 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 725 was developed by Technical Committee ISO/TC 1, *Screw threads*.

It was submitted directly to the ISO Council, in accordance with clause 6.13.1 of the Directives for the technical work of ISO. It cancels and replaces ISO Recommendation R 725-1968, which had been approved by the member bodies of the following countries :

Australia	France	South Africa, Rep. of
Austria	Hungary	Spain
Belgium	India	Sweden
Brazil	Israel	Switzerland
Canada	Japan	Turkey
Chile	Netherlands	United Kingdom
Czechoslovakia	New Zealand	U.S.A.
Denmark	Norway	Yugoslavia
Egypt, Arab Rep. of	Poland	
Finland	Romania	

The member body of the following country had expressed disapproval of the document on technical grounds :

Germany, F.R.

# ISO inch screw threads – Basic dimensions

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## 1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies the basic dimensions, in inches, of ISO inch screw threads according to ISO 263, *ISO inch screw threads – General plan and selection for screws, bolts and nuts – Diameter range 0.06 to 6 in.* The values refer to the basic profile according to ISO 68, *ISO general purpose screw threads – Basic profile.*

$D$  = basic major diameter of internal thread

$d$  = basic major diameter of external thread

$D_2$  = basic pitch diameter of internal thread

$d_2$  = basic pitch diameter of external thread

$D_1$  = basic minor diameter of internal thread

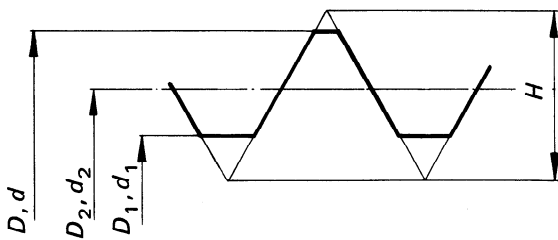
$d_1$  = basic minor diameter of external thread

$H$  = height of fundamental triangle

$n$  = number of threads per inch (25,4 mm)

The values of  $D_2$ ,  $d_2$ ,  $D_1$  and  $d_1$  have been calculated from the following formulae and rounded, in the tables, to the fourth decimal place :

## 2 BASIC DIMENSIONS



$$D_2 = D - 2 \times \frac{3}{8} H = D - \frac{0.649\ 519}{n}$$

$$d_2 = d - 2 \times \frac{3}{8} H = d - \frac{0.649\ 519}{n}$$

$$D_1 = D - 2 \times \frac{5}{8} H = D - \frac{1.082\ 532}{n}$$

$$d_1 = d - 2 \times \frac{5}{8} H = d - \frac{1.082\ 532}{n}$$

Size	Number of threads per inch <i>n</i>	Major diameter <i>D, d</i>	Pitch diameter <i>D<sub>2</sub>, d<sub>2</sub></i>	Minor diameter <i>D<sub>1</sub>, d<sub>1</sub></i>
No. 0	80	0.06	0.051 9	0.046 5
No. 1	72	0.073	0.064 0	0.058 0
	64		0.062 9	0.056 1
No. 2	64	0.086	0.075 9	0.069 1
	56		0.074 4	0.066 7
No. 3	56	0.099	0.087 4	0.079 7
	48		0.085 5	0.076 4
No. 4	48	0.112	0.098 5	0.089 4
	40		0.095 8	0.084 9
No. 5	44	0.125	0.110 2	0.100 4
	40		0.108 8	0.097 9
No. 6	40	0.138	0.121 8	0.110 9
	32		0.117 7	0.104 2
No. 8	36	0.164	0.146 0	0.133 9
	32		0.143 7	0.130 2
No. 10	32	0.19	0.169 7	0.156 1
	24		0.162 9	0.144 9
No. 12	32	0.216	0.195 7	0.182 2
	28		0.192 8	0.177 3
	24		0.188 9	0.170 9
1/4	32	0.25	0.229 7	0.216 2
	28		0.226 8	0.211 3
	20		0.217 5	0.195 9
5/16	32	0.312 5	0.292 2	0.278 7
	28		0.289 3	0.273 8
	24		0.285 4	0.267 4
	20		0.280 0	0.258 4
	18		0.276 4	0.252 4
3/8	32	0.375	0.354 7	0.341 2
	28		0.351 8	0.336 3
	24		0.347 9	0.329 9
	20		0.342 5	0.320 9
	16		0.334 4	0.307 3
7/16	32	0.437 5	0.417 2	0.403 7
	28		0.414 3	0.398 8
	20		0.405 0	0.383 4
	16		0.396 9	0.369 8
	14		0.391 1	0.360 2
1/2	32	0.5	0.479 7	0.466 2
	28		0.476 8	0.461 3
	20		0.467 5	0.445 9
	16		0.459 4	0.432 3
	13		0.450 0	0.416 7

Size	Number of threads per inch <i>n</i>	Major diameter <i>D, d</i>	Pitch diameter <i>D<sub>2</sub>, d<sub>2</sub></i>	Minor diameter <i>D<sub>1</sub>, d<sub>1</sub></i>
9/16	32	0.562 5	0.542 2	0.528 7
	28		0.539 3	0.523 8
	24		0.535 4	0.517 4
	20		0.530 0	0.508 4
	18		0.526 4	0.502 4
	16		0.521 9	0.494 8
5/8	12	0.625	0.508 4	0.472 3
	32		0.604 7	0.591 2
	28		0.601 8	0.586 3
	24		0.597 9	0.579 9
	20		0.592 5	0.570 9
	18		0.588 9	0.564 9
11/16	16	0.687 5	0.584 4	0.557 3
	12		0.570 9	0.534 8
	11		0.566 0	0.526 6
	32		0.667 2	0.653 7
	28		0.664 3	0.648 8
	24		0.660 4	0.642 4
3/4	20	0.75	0.655 0	0.633 4
	16		0.646 9	0.619 8
	12		0.633 4	0.597 3
	32		0.729 7	0.716 2
	28		0.726 8	0.711 3
	20		0.717 5	0.695 9
13/16	16	0.812 5	0.709 4	0.682 3
	12		0.695 9	0.659 8
	10		0.685 0	0.641 7
	32		0.792 2	0.778 7
7/8	28	0.875	0.789 3	0.773 8
	20		0.780 0	0.758 4
	16		0.771 9	0.744 8
	12		0.758 4	0.722 3
	9		0.854 7	0.841 2
15/16	32	0.937 5	0.851 8	0.836 3
	28		0.842 5	0.820 9
	20		0.834 4	0.807 3
	16		0.828 6	0.797 7
	12		0.820 9	0.784 8
1	9	1	0.802 8	0.754 7
	32		0.917 2	0.903 7
	28		0.914 3	0.898 8
	20		0.905 0	0.883 4
	16		0.896 9	0.869 8
1	12	1	0.883 4	0.847 3
	32		0.979 7	0.966 2
	28		0.976 8	0.961 3
	20		0.967 5	0.945 9
	16		0.959 4	0.932 3
1	12	1	0.945 9	0.909 8
	8		0.918 8	0.864 7

Size	Number of threads per inch <i>n</i>	Major diameter <i>D, d</i>	Pitch diameter <i>D<sub>2</sub>, d<sub>2</sub></i>	Minor diameter <i>D<sub>1</sub>, d<sub>1</sub></i>
<b>1 1/16</b>	28	1.062 5	1.039 3	1.023 8
	20		1.030 0	1.008 4
	18		1.026 4	1.002 4
	16		1.021 9	0.994 8
	12		1.008 4	0.972 3
	8		0.981 3	0.927 2
<b>1 1/8</b>	28	1.125	1.101 8	1.086 3
	20		1.092 5	1.070 9
	18		1.088 9	1.064 9
	16		1.084 4	1.057 3
	12		1.070 9	1.034 8
	8		1.043 8	0.989 7
<b>1 3/16</b>	28	1.187 5	1.164 3	1.148 8
	20		1.155 0	1.133 4
	18		1.151 4	1.127 4
	16		1.146 9	1.119 8
	12		1.133 4	1.097 3
	8		1.106 3	1.052 2
<b>1 1/4</b>	28	1.25	1.226 8	1.211 3
	20		1.217 5	1.195 9
	18		1.213 9	1.189 9
	16		1.209 4	1.182 3
	12		1.195 9	1.159 8
	8		1.168 8	1.114 7
<b>1 5/16</b>	28	1.312 5	1.289 3	1.273 8
	20		1.280 0	1.258 4
	18		1.276 4	1.252 4
	16		1.271 9	1.244 8
	12		1.258 4	1.222 3
	8		1.231 3	1.177 2
<b>1 3/8</b>	28	1.375	1.351 8	1.336 3
	20		1.342 5	1.320 9
	18		1.338 9	1.314 9
	16		1.334 4	1.307 3
	12		1.320 9	1.284 8
	8		1.293 8	1.239 7
<b>1 7/16</b>	28	1.437 5	1.414 3	1.398 8
	20		1.405 0	1.383 4
	18		1.401 4	1.377 4
	16		1.396 9	1.369 8
	12		1.383 4	1.347 3
	8		1.356 3	1.302 2
<b>1 1/2</b>	28	1.5	1.476 8	1.461 3
	20		1.467 5	1.445 9
	18		1.463 9	1.439 9
	16		1.459 4	1.432 3
	12		1.445 9	1.409 8
	8		1.418 8	1.364 7
6	1.391 7	1.319 6		

Size	Number of threads per inch <i>n</i>	Major diameter <i>D, d</i>	Pitch diameter <i>D<sub>2</sub>, d<sub>2</sub></i>	Minor diameter <i>D<sub>1</sub>, d<sub>1</sub></i>
<b>1 9/16</b>	20	1.562 5	1.530 0	1.508 4
	18		1.526 4	1.502 4
	16		1.521 9	1.494 8
	12		1.508 4	1.472 3
	8		1.481 3	1.427 2
	6		1.454 2	1.382 1
<b>1 5/8</b>	20	1.625	1.592 5	1.570 9
	18		1.588 9	1.564 9
	16		1.584 4	1.557 3
	12		1.570 9	1.534 8
	8		1.543 8	1.489 7
	6		1.516 7	1.444 6
<b>1 11/16</b>	20	1.687 5	1.655 0	1.633 4
	18		1.651 4	1.627 4
	16		1.646 9	1.619 8
	12		1.633 4	1.597 3
	8		1.606 3	1.552 2
	6		1.579 2	1.507 1
<b>1 3/4</b>	20	1.75	1.717 5	1.695 9
	16		1.709 4	1.682 3
	12		1.695 9	1.659 8
	8		1.668 8	1.614 7
	6		1.641 7	1.569 6
	5		1.620 1	1.533 5
<b>1 13/16</b>	20	1.812 5	1.780 0	1.758 4
	16		1.771 9	1.744 8
	12		1.758 4	1.722 3
	8		1.731 3	1.677 2
	6		1.704 2	1.632 1
	<b>1 7/8</b>		20	1.875
16		1.834 4	1.807 3	
12		1.820 9	1.784 8	
8		1.793 8	1.739 7	
6		1.766 7	1.694 6	
<b>1 15/16</b>		20	1.937 5	
	16	1.896 9		1.869 8
	12	1.883 4		1.847 3
	8	1.856 3		1.802 2
	6	1.829 2		1.757 1
	<b>2</b>	20		2
16		1.959 4	1.932 3	
12		1.945 9	1.909 8	
8		1.918 8	1.864 7	
6		1.891 7	1.819 6	
4 1/2		1.855 7	1.759 4	

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Size	Number of threads per inch <i>n</i>	Major diameter <i>D, d</i>	Pitch diameter <i>D<sub>2</sub>, d<sub>2</sub></i>	Minor diameter <i>D<sub>1</sub>, d<sub>1</sub></i>
<b>2 1/8</b>	20	2.125	2.092 5	2.070 9
	16		2.084 4	2.057 3
	12		2.070 9	2.034 8
	8		2.043 8	1.989 7
	6		2.016 7	1.944 6
<b>2 1/4</b>	20	2.25	2.217 5	2.195 9
	16		2.209 4	2.182 3
	12		2.195 9	2.159 8
	8		2.168 8	2.114 7
	6		2.141 7	2.069 6
<b>2 3/8</b>	20	2.375	2.342 5	2.320 9
	16		2.334 4	2.307 3
	12		2.320 9	2.284 8
	8		2.293 8	2.239 7
	6		2.266 7	2.194 6
<b>2 1/2</b>	20	1.5	2.467 5	2.445 9
	16		2.459 4	2.432 3
	12		2.445 9	2.409 8
	8		2.418 8	2.364 7
	6		2.391 7	2.319 6
<b>2 5/8</b>	20	2.625	2.592 5	2.570 9
	16		2.584 4	2.557 3
	12		2.570 9	2.534 8
	8		2.543 8	2.489 7
	6		2.516 7	2.444 6
<b>2 3/4</b>	20	2.75	2.717 5	3.695 9
	16		2.709 4	2.682 3
	12		2.695 9	2.659 8
	8		2.668 8	2.614 7
	6		2.641 7	2.569 6
<b>2 7/8</b>	20	2.875	2.842 5	2.820 9
	16		2.834 4	2.807 3
	12		2.810 9	2.784 8
	8		2.793 8	2.739 7
	6		2.766 7	2.694 6
<b>3</b>	20	3	2.967 5	2.945 9
	16		2.959 4	2.932 3
	12		2.945 9	2.909 8
	8		2.918 8	2.864 7
	6		2.891 7	2.819 6
<b>3 1/8</b>	20	3.125	3.092 5	3.070 9
	16		3.084 4	3.057 3
	12		3.070 9	3.034 8
	8		3.043 8	2.989 7
	6		3.016 7	2.944 6
<b>3 1/4</b>	20	3.25	3.217 5	3.195 9
	16		3.209 4	3.182 3
	12		3.195 9	3.159 8
	8		3.168 8	3.114 7
	6		3.141 7	3.069 6
<b>3 3/8</b>	20	3.375	3.342 5	3.320 9
	16		3.334 4	3.307 3
	12		3.320 9	3.284 8
	8		3.293 8	3.239 7
	6		3.266 7	3.194 6
<b>3 1/2</b>	20	3.5	3.467 5	3.445 9
	16		3.459 4	3.432 3
	12		3.445 9	3.409 8
	8		3.418 8	3.364 7
	6		3.391 7	3.319 6
<b>3 5/8</b>	20	3.625	3.592 5	3.570 9
	16		3.584 4	3.557 3
	12		3.570 9	3.534 8
	8		3.543 8	3.489 7
	6		3.516 7	3.444 6
<b>3 3/4</b>	20	3.75	3.717 5	3.695 9
	16		3.709 4	3.682 3
	12		3.695 9	3.659 8
	8		3.668 8	3.614 7
	6		3.641 7	3.569 6
<b>3 7/8</b>	20	3.875	3.842 5	3.820 9
	16		3.834 4	3.807 3
	12		3.820 9	3.784 8
	8		3.793 8	3.739 7
	6		3.766 7	3.694 6
<b>4</b>	20	4	4.017 5	3.995 9
	16		4.009 4	3.982 3
	12		4.000 9	3.959 8
	8		3.973 8	3.918 7
	6		3.946 7	3.891 6
<b>4 1/8</b>	20	4.125	4.092 5	4.070 9
	16		4.084 4	4.057 3
	12		4.070 9	4.034 8
	8		4.043 8	3.989 7
	6		4.016 7	3.944 6
<b>4 1/4</b>	20	4.25	4.167 5	4.145 9
	16		4.159 4	4.132 3
	12		4.150 9	4.109 8
	8		4.123 8	4.064 7
	6		4.096 7	4.019 6

Size	Number of threads per inch <i>n</i>	Major diameter <i>D, d</i>	Pitch diameter <i>D<sub>2</sub>, d<sub>2</sub></i>	Minor diameter <i>D<sub>1</sub>, d<sub>1</sub></i>
<b>3 1/8</b>	16	3.125	3.084 4	3.057 3
	12		3.070 9	3.034 8
	8		3.043 8	2.989 7
	6		3.016 7	2.944 6
<b>3 1/4</b>	16	3.25	3.209 4	3.182 3
	12		3.195 9	3.159 8
	8		3.168 8	3.114 7
	6		3.141 7	3.069 6
<b>3 3/8</b>	16	3.375	3.334 4	3.307 3
	12		3.320 9	3.284 8
	8		3.293 8	3.239 7
	6		3.266 7	3.194 6
<b>3 1/2</b>	16	3.5	3.459 4	3.432 3
	12		3.445 9	3.409 8
	8		3.418 8	3.364 7
	6		3.391 7	3.319 6
<b>3 5/8</b>	16	3.625	3.584 4	3.557 3
	12		3.570 9	3.534 8
	8		3.543 8	3.489 7
	6		3.516 7	3.444 6
<b>3 3/4</b>	16	3.75	3.709 4	3.682 3
	12		3.695 9	3.659 8
	8		3.668 8	3.614 7
	6		3.641 7	3.569 6
<b>3 7/8</b>	16	3.875	3.834 4	3.807 3
	12		3.820 9	3.784 8
	8		3.793 8	3.739 7
	6		3.766 7	3.694 6
<b>4</b>	16	4	3.959 4	3.932 3
	12		3.945 9	3.909 8
	8		3.918 8	3.864 7
	6		3.891 7	3.819 6
<b>4 1/8</b>	16	4.125	4.084 4	4.057 3
	12		4.070 9	4.034 8
	8		4.043 8	3.989 7
	6		4.016 7	3.944 6
<b>4 1/4</b>	16	4.25	4.209 4	4.182 3
	12		4.195 9	4.159 8
	8		4.168 8	4.114 7
	6		4.141 7	4.069 6
<b>4 3/8</b>	16	4.375	4.334 4	4.307 3
	12		4.320 9	4.284 8
	8		4.293 8	4.239 7
	6		4.266 7	4.219 6

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Size	Number of threads per inch <i>n</i>	Major diameter <i>D, d</i>	Pitch diameter <i>D<sub>2</sub>, d<sub>2</sub></i>	Minor diameter <i>D<sub>1</sub>, d<sub>1</sub></i>
4 3/8	16	4.375	4.334 9	4.307 3
	12		4.320 9	4.284 8
	8		4.293 8	4.239 7
	6		4.266 7	4.194 6
	4		4.212 6	4.104 4
4 1/2	16	4.5	4.459 4	4.432 3
	12		4.445 9	4.409 8
	8		4.418 8	4.364 7
	6		4.391 7	4.319 6
	4		4.337 6	4.229 4
4 5/8	16	4.625	4.584 4	4.557 3
	12		4.570 9	4.534 8
	8		4.543 8	4.489 7
	6		4.516 7	4.444 6
	4		4.462 6	4.354 4
4 3/4	16	4.75	4.709 4	4.682 3
	12		4.695 9	4.659 8
	8		4.668 8	4.614 7
	6		4.641 7	4.569 6
	4		4.587 6	4.479 4
4 7/8	16	4.875	4.834 4	4.807 3
	12		4.820 9	4.784 8
	8		4.793 8	4.739 7
	6		4.766 7	4.694 6
	4		4.712 6	4.604 4
5	16	5	4.959 4	4.932 3
	12		4.945 9	4.909 8
	8		4.918 8	4.864 7
	6		4.891 7	4.819 6
	4		4.837 6	4.729 4
5 1/8	16	5.125	5.084 4	5.057 3
	12		5.070 9	5.034 8
	8		5.043 8	4.989 7
	6		5.016 7	4.944 6
	4		4.962 6	4.854 4

Size	Number of threads per inch <i>n</i>	Major diameter <i>D, d</i>	Pitch diameter <i>D<sub>2</sub>, d<sub>2</sub></i>	Minor diameter <i>D<sub>1</sub>, d<sub>1</sub></i>
5 1/4	16	5.25	5.209 4	5.182 3
	12		5.195 9	5.159 8
	8		5.168 8	5.114 7
	6		5.141 7	5.069 6
	4		5.087 6	4.979 4
5 3/8	16	5.375	5.334 4	5.307 3
	12		5.320 9	5.284 8
	8		5.293 8	5.239 7
	6		5.266 7	5.195 6
	4		5.212 6	5.104 4
5 1/2	16	5.5	5.459 4	5.432 3
	12		5.445 9	5.409 8
	8		5.418 8	5.364 7
	6		5.391 7	5.319 6
	4		5.337 6	5.229 4
5 5/8	16	5.625	5.584 4	5.557 3
	12		5.570 9	5.534 8
	8		5.543 8	5.489 7
	6		5.516 7	5.444 6
	4		5.462 6	5.354 4
5 3/4	16	5.75	5.709 4	5.682 3
	12		5.695 9	5.659 8
	8		5.668 8	5.614 7
	6		5.641 7	5.569 6
	4		5.587 6	5.479 4
5 7/8	16	5.875	5.834 4	5.807 3
	12		5.820 9	5.784 8
	8		5.793 8	5.739 7
	6		5.766 7	5.694 6
	4		5.712 6	5.604 4
6	16	6	5.959 4	5.932 3
	12		5.945 9	5.909 8
	8		5.918 8	5.864 7
	6		5.891 7	5.819 6
	4		5.837 6	5.729 4

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