BS ISO 965-6:2025

BSI Standards Publication

ISO general purpose metric screw threads — Tolerances

Part 6: Limits of sizes for internal and external threads (fine and medium tolerance qualities, first and second choices)

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National foreword

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ISO general purpose metric screw threads — Tolerances —

Part 6: Limits of sizes for internal and external threads (fine and medium tolerance qualities, first and second choices)

Filetages métriques ISO pour usages généraux — Tolérances —

Partie 6: Limites de dimensions pour les filetages intérieurs et extérieurs (qualités de tolérances fine et moyenne, premier et deuxième choix)

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Foreword

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This document was prepared by Technical Committee ISO/TC 1, *Screw threads*.

A list of all parts in the ISO 965 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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ISO general purpose metric screw threads — Tolerances —

Part 6: Limits of sizes for internal and external threads (fine and medium tolerance qualities, first and second choices)

1 Scope

This document specifies the limits of sizes for major, pitch and minor diameters of ISO general purpose metric screw threads (M) conforming to ISO 261 and having basic and design profiles in accordance with ISO 68-1.

This document is applicable to the metric fastening screw threads with the ten tolerance classes (4H, 5H, 6H, 7H, 6G, 4h, 6h, 6g, 6f and 6e) recommended in ISO 965-1.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 965-1, *ISO general purpose metric screw threads — Part 1: Principles and basic data*

ISO 5408, *Screw threads — Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 5408 apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

4 Limits of sizes

4.1 General

The limits of sizes specified shall be derived from the fundamental deviations and tolerances specified in ISO 965-1.

The limits of sizes for major, pitch and minor diameters of screw threads (M) have been calculated by the following formulae, derived from the formulae provided in ISO 68-1 and ISO 965-1, and rounded to the third decimal place.

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Internal thread:

Major diameter $D_{\min} = D + EI$

Pitch diameter $D_{2\,\min} = D_2 + EI = D - 0{,}649\,519\,P + EI$

$D_{2\,\max} = D_{2\,\min} + T_{D2}$

Minor diameter $D_{1\,\min} = D_1 + EI = D - 1{,}082\,532\,P + EI$

$D_{1\,\max} = D_{1\,\min} + T_{D1}$

External thread:

Major diameter $d_{\max} = d + es$

$d_{\min} = d_{\max} - T_d$

Pitch diameter $d_{2\,\max} = d_2 + es = d - 0{,}649\,519\,P + es$

$d_{2\,\min} = d_{2\,\max} - T_{d2}$

Minor diameter $d_{1\,\max} = d_1 + es = d - 1{,}082\,532\,P + es$

$d_{3\,\max} = d_{1\,\max} - 0{,}866\,025\,404\,P/2 + 2\,C_{\max}$

$d_{3\,\min} = d_{1\,\max} - T_{d2} - 0{,}866\,025\,404\,P/2 + 0{,}250\,P$

Where *es* is a negative value.

For the symbols and their definitions see ISO 965-1.

The maximum major diameter of internal thread $D_{\max}$ is not specified.

Usually, the minimum major diameter of internal thread $D_{\min}$ and the maximum minor diameter of external thread $d_{1\,\max}$ are gauged by the crest diameter of GO thread gauges in accordance with ISO 1502.

For external threads, controlling the maximum minor diameter $d_{1\,\max}$ and the minimum root radius $R_{1\,\min}$ ensures the conformity of the maximum minor diameter $d_{3\,\max}$.

Whether to measure the maximum and minimum minor diameters of external thread, $d_{3\,\max}$ and $d_{3\,\min}$, shall be decided according to the relevant threaded product documents. Unless specifically defined otherwise, it is not necessary to carry out a measurement of the minor diameter d_3.

For the ten tolerance classes and nominal diameter ranges see Table 1.

Table 1 — M screw threads with the ten recommended tolerance classes

Screw thread	Tolerance class	Nominal diameter mm	Table number
Internal thread	4H	From 1 to 100	Table 2
	5H	From 1 to 300	Table 3
	6H	From 1,4 to 300	Table 4
	7H	From 3 to 200	Table 5
	6G	From 1,4 to 200	Table 6

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Table 1 *(continued)*

Screw thread	Tolerance class	Nominal diameter mm	Table number
External thread	4h	From 1 to 100	Table 7
	6h	From 1 to 100	Table 8
	6g	From 1 to 300	Table 9
	6f	From 1,6 to 200	Table 10
	6e	From 3 to 200	Table 11

4.2 Internal threads

Limits of sizes for the internal threads with tolerance class 4H shall be as specified in Table 2.

Table 2 — Limits of sizes for the internal threads with tolerance class 4H

Dimensions in millimetres

Nominal diameter D	Pitch P	Major diameter	Pitch diameter		Minor diameter	
		D_{min} [a]	$D_{2\,max}$	$D_{2\,min}$	$D_{1\,max}$	$D_{1\,min}$
1	0,2	1,000	0,910	0,870	0,821	0,783
1	0,25	1,000	0,883	0,838	0,774	0,729
1,1	0,2	1,100	1,010	0,970	0,921	0,883
1,1	0,25	1,100	0,983	0,938	0,874	0,829
1,2	0,2	1,200	1,110	1,070	1,021	0,983
1,2	0,25	1,200	1,083	1,038	0,974	0,929
1,4	0,2	1,400	1,310	1,270	1,221	1,183
1,4	0,3	1,400	1,253	1,205	1,128	1,075
1,6	0,2	1,600	1,512	1,470	1,421	1,383
1,6	0,35	1,600	1,426	1,373	1,284	1,221
1,8	0,2	1,800	1,712	1,670	1,621	1,583
1,8	0,35	1,800	1,626	1,573	1,484	1,421
2	0,25	2,000	1,886	1,838	1,774	1,729
2	0,4	2,000	1,796	1,740	1,638	1,567
2,2	0,25	2,200	2,086	2,038	1,974	1,929
2,2	0,45	2,200	1,968	1,908	1,793	1,713
2,5	0,35	2,500	2,326	2,273	2,184	2,121
2,5	0,45	2,500	2,268	2,208	2,093	2,013
3	0,35	3,000	2,829	2,773	2,684	2,621
3	0,5	3,000	2,738	2,675	2,549	2,459
3,5	0,35	3,500	3,329	3,273	3,184	3,121
3,5	0,6	3,500	3,181	3,110	2,950	2,850
4	0,5	4,000	3,738	3,675	3,549	3,459
4	0,7	4,000	3,620	3,545	3,354	3,242
4,5	0,5	4,500	4,238	4,175	4,049	3,959
4,5	0,75	4,500	4,088	4,013	3,806	3,688
5	0,5	5,000	4,738	4,675	4,549	4,459
5	0,8	5,000	4,560	4,480	4,259	4,134

[a] Refers to the imaginary coaxial cylinder through the endpoints of straight flanks.

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Table 2 *(continued)*

Nominal diameter	Pitch	Major diameter	Pitch diameter		Minor diameter	
D	P	D_{min}[a]	$D_{2\,max}$	$D_{2\,min}$	$D_{1\,max}$	$D_{1\,min}$
5,5	0,5	5,500	5,238	5,175	5,049	4,959
6	0,75	6,000	5,598	5,513	5,306	5,188
6	1	6,000	5,445	5,350	5,067	4,917
7	0,75	7,000	6,598	6,513	6,306	6,188
7	1	7,000	6,445	6,350	6,067	5,917
8	0,75	8,000	7,598	7,513	7,306	7,188
8	1	8,000	7,445	7,350	7,067	6,917
8	1,25	8,000	7,288	7,188	6,817	6,647
9	0,75	9,000	8,598	8,513	8,306	8,188
9	1	9,000	8,445	8,350	8,067	7,917
9	1,25	9,000	8,288	8,188	7,817	7,647
10	0,75	10,000	9,598	9,513	9,306	9,188
10	1	10,000	9,445	9,350	9,067	8,917
10	1,25	10,000	9,288	9,188	8,817	8,647
10	1,5	10,000	9,138	9,026	8,566	8,376
11	0,75	11,000	10,598	10,513	10,306	10,188
11	1	11,000	10,445	10,350	10,067	9,917
11	1,5	11,000	10,138	10,026	9,566	9,376
12	1	12,000	11,450	11,350	11,067	10,917
12	1,25	12,000	11,300	11,188	10,817	10,647
12	1,5	12,000	11,144	11,026	10,566	10,376
12	1,75	12,000	10,988	10,863	10,318	10,106
14	1	14,000	13,450	13,350	13,067	12,917
14	1,5	14,000	13,144	13,026	12,566	12,376
14	2	14,000	12,833	12,701	12,071	11,835
15	1	15,000	14,450	14,350	14,067	13,917
15	1,5	15,000	14,144	14,026	13,566	13,376
16	1	16,000	15,450	15,350	15,067	14,917
16	1,5	16,000	15,144	15,026	14,566	14,376
16	2	16,000	14,833	14,701	14,071	13,835
17	1	17,000	16,450	16,350	16,067	15,917
17	1,5	17,000	16,144	16,026	15,566	15,376
18	1	18,000	17,450	17,350	17,067	16,917
18	1,5	18,000	17,144	17,026	16,566	16,376
18	2	18,000	16,833	16,701	16,071	15,835
18	2,5	18,000	16,516	16,376	15,574	15,294
20	1	20,000	19,450	19,350	19,067	18,917
20	1,5	20,000	19,144	19,026	18,566	18,376
20	2	20,000	18,833	18,701	18,071	17,835
20	2,5	20,000	18,516	18,376	17,574	17,294
22	1	22,000	21,450	21,350	21,067	20,917

[a] Refers to the imaginary coaxial cylinder through the endpoints of straight flanks.

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Table 2 *(continued)*

Nominal diameter	Pitch	Major diameter	Pitch diameter		Minor diameter	
D	P	D_{min}[a]	$D_{2\,max}$	$D_{2\,min}$	$D_{1\,max}$	$D_{1\,min}$
22	1,5	22,000	21,144	21,026	20,566	20,376
22	2	22,000	20,833	20,701	20,071	19,835
22	2,5	22,000	20,516	20,376	19,574	19,294
24	1	24,000	23,456	23,350	23,067	22,917
24	1,5	24,000	23,151	23,026	22,566	22,376
24	2	24,000	22,841	22,701	22,071	21,835
24	3	24,000	22,221	22,051	21,067	20,752
25	1	25,000	24,456	24,350	24,067	23,917
25	1,5	25,000	24,151	24,026	23,566	23,376
25	2	25,000	23,841	23,701	23,071	22,835
26	1,5	26,000	25,151	25,026	24,566	24,376
27	1	27,000	26,456	26,350	26,067	25,917
27	1,5	27,000	26,151	26,026	25,566	25,376
27	2	27,000	25,841	25,701	25,071	24,835
27	3	27,000	25,221	25,051	24,067	23,752
28	1	28,000	27,456	27,350	27,067	26,917
28	1,5	28,000	27,151	27,026	26,566	26,376
28	2	28,000	26,841	26,701	26,071	25,835
30	1	30,000	29,456	29,350	29,067	28,917
30	1,5	30,000	29,151	29,026	28,566	28,376
30	2	30,000	28,841	28,701	28,071	27,835
30	3	30,000	28,221	28,051	27,067	26,752
30	3,5	30,000	27,907	27,727	26,566	26,211
32	1,5	32,000	31,151	31,026	30,566	30,376
32	2	32,000	30,841	30,701	30,071	29,835
33	1,5	33,000	32,151	32,026	31,566	31,376
33	2	33,000	31,841	31,701	31,071	30,835
33	3	33,000	31,221	31,051	30,067	29,752
33	3,5	33,000	30,907	30,727	29,566	29,211
36	1,5	36,000	35,151	35,026	34,566	34,376
36	2	36,000	34,841	34,701	34,071	33,835
36	3	36,000	34,221	34,051	33,067	32,752
36	4	36,000	33,592	33,402	32,045	31,670
38	1,5	38,000	37,151	37,026	36,566	36,376
39	1,5	39,000	38,151	38,026	37,566	37,376
39	2	39,000	37,841	37,701	37,071	36,835
39	3	39,000	37,221	37,051	36,067	35,752
39	4	39,000	36,592	36,402	35,045	34,670
40	1,5	40,000	39,151	39,026	38,566	38,376
40	2	40,000	38,841	38,701	38,071	37,835
40	3	40,000	38,221	38,051	37,067	36,752

[a] Refers to the imaginary coaxial cylinder through the endpoints of straight flanks.

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Table 2 *(continued)*

Nominal diameter	Pitch	Major diameter	Pitch diameter		Minor diameter	
D	P	D_{min} [a]	$D_{2\,max}$	$D_{2\,min}$	$D_{1\,max}$	$D_{1\,min}$
42	1,5	42,000	41,151	41,026	40,566	40,376
42	2	42,000	40,841	40,701	40,071	39,835
42	3	42,000	40,221	40,051	39,067	38,752
42	4	42,000	39,592	39,402	38,045	37,670
42	4,5	42,000	39,277	39,077	37,554	37,129
45	1,5	45,000	44,151	44,026	43,566	43,376
45	2	45,000	43,841	43,701	43,071	42,835
45	3	45,000	43,221	43,051	42,067	41,752
45	4	45,000	42,592	42,402	41,045	40,670
45	4,5	45,000	42,277	42,077	40,554	40,129
48	1,5	48,000	47,158	47,026	46,566	46,376
48	2	48,000	46,851	46,701	46,071	45,835
48	3	48,000	46,231	46,051	45,067	44,752
48	4	48,000	45,602	45,402	44,045	43,670
48	5	48,000	44,964	44,752	43,037	42,587
50	1,5	50,000	49,158	49,026	48,566	48,376
50	2	50,000	48,851	48,701	48,071	47,835
50	3	50,000	48,231	48,051	47,067	46,752
52	1,5	52,000	51,158	51,026	50,566	50,376
52	2	52,000	50,851	50,701	50,071	49,835
52	3	52,000	50,231	50,051	49,067	48,752
52	4	52,000	49,602	49,402	48,045	47,670
52	5	52,000	48,964	48,752	47,037	46,587
55	1,5	55,000	54,158	54,026	53,566	53,376
55	2	55,000	53,851	53,701	53,071	52,835
55	3	55,000	53,231	53,051	52,067	51,752
55	4	55,000	52,602	52,402	51,045	50,670
56	1,5	56,000	55,158	55,026	54,566	54,376
56	2	56,000	54,851	54,701	54,071	53,835
56	3	56,000	54,231	54,051	53,067	52,752
56	4	56,000	53,602	53,402	52,045	51,670
56	5,5	56,000	52,652	52,428	50,521	50,046
58	1,5	58,000	57,158	57,026	56,566	56,376
58	2	58,000	56,851	56,701	56,071	55,835
58	3	58,000	56,231	56,051	55,067	54,752
58	4	58,000	55,602	55,402	54,045	53,670
60	1,5	60,000	59,158	59,026	58,566	58,376
60	2	60,000	58,851	58,701	58,071	57,835
60	3	60,000	58,231	58,051	57,067	56,752
60	4	60,000	57,602	57,402	56,045	55,670
60	5,5	60,000	56,652	56,428	54,521	54,046

[a] Refers to the imaginary coaxial cylinder through the endpoints of straight flanks.

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Table 2 *(continued)*

Nominal diameter	Pitch	Major diameter	Pitch diameter		Minor diameter	
D	P	D_{min}[a]	$D_{2\,max}$	$D_{2\,min}$	$D_{1\,max}$	$D_{1\,min}$
62	1,5	62,000	61,158	61,026	60,566	60,376
62	2	62,000	60,851	60,701	60,071	59,835
62	3	62,000	60,231	60,051	59,067	58,752
62	4	62,000	59,602	59,402	58,045	57,670
64	1,5	64,000	63,158	63,026	62,566	62,376
64	2	64,000	62,851	62,701	62,071	61,835
64	3	64,000	62,231	62,051	61,067	60,752
64	4	64,000	61,602	61,402	60,045	59,670
64	6	64,000	60,339	60,103	58,005	57,505
65	1,5	65,000	64,158	64,026	63,566	63,376
65	2	65,000	63,851	63,701	63,071	62,835
65	3	65,000	63,231	63,051	62,067	61,752
65	4	65,000	62,602	62,402	61,045	60,670
68	1,5	68,000	67,158	67,026	66,566	66,376
68	2	68,000	66,851	66,701	66,071	65,835
68	3	68,000	66,231	66,051	65,067	64,752
68	4	68,000	65,602	65,402	64,045	63,670
68	6	68,000	64,339	64,103	62,005	61,505
70	1,5	70,000	69,158	69,026	68,566	68,376
70	2	70,000	68,851	68,701	68,071	67,835
70	3	70,000	68,231	68,051	67,067	66,752
70	4	70,000	67,602	67,402	66,045	65,670
70	6	70,000	66,339	66,103	64,005	63,505
72	1,5	72,000	71,158	71,026	70,566	70,376
72	2	72,000	70,851	70,701	70,071	69,835
72	3	72,000	70,231	70,051	69,067	68,752
72	4	72,000	69,602	69,402	68,045	67,670
72	6	72,000	68,339	68,103	66,005	65,505
75	1,5	75,000	74,158	74,026	73,566	73,376
75	2	75,000	73,851	73,701	73,071	72,835
75	3	75,000	73,231	73,051	72,067	71,752
75	4	75,000	72,602	72,402	71,045	70,670
76	1,5	76,000	75,158	75,026	74,566	74,376
76	2	76,000	74,851	74,701	74,071	73,835
76	3	76,000	74,231	74,051	73,067	72,752
76	4	76,000	73,602	73,402	72,045	71,670
76	6	76,000	72,339	72,103	70,005	69,505
78	2	78,000	76,851	76,701	76,071	75,835
80	1,5	80,000	79,158	79,026	78,566	78,376
80	2	80,000	78,851	78,701	78,071	77,835
80	3	80,000	78,231	78,051	77,067	76,752

[a] Refers to the imaginary coaxial cylinder through the endpoints of straight flanks.

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Table 2 *(continued)*

Nominal diameter D	Pitch P	Major diameter D_{min}[a]	Pitch diameter $D_{2\,max}$	Pitch diameter $D_{2\,min}$	Minor diameter $D_{1\,max}$	Minor diameter $D_{1\,min}$
80	4	80,000	77,602	77,402	76,045	75,670
80	6	80,000	76,339	76,103	74,005	73,505
82	2	82,000	80,851	80,701	80,071	79,835
85	2	85,000	83,851	83,701	83,071	82,835
85	3	85,000	83,231	83,051	82,067	81,752
85	4	85,000	82,602	82,402	81,045	80,670
85	6	85,000	81,339	81,103	79,005	78,505
90	2	90,000	88,851	88,701	88,071	87,835
90	3	90,000	88,231	88,051	87,067	86,752
90	4	90,000	87,602	87,402	86,045	85,670
90	6	90,000	86,339	86,103	84,005	83,505
95	2	95,000	93,861	93,701	93,071	92,835
95	3	95,000	93,241	93,051	92,067	91,752
95	4	95,000	92,614	92,402	91,045	90,670
95	6	95,000	91,353	91,103	89,005	88,505
100	2	100,000	98,861	98,701	98,071	97,835
100	3	100,000	98,241	98,051	97,067	96,752
100	4	100,000	97,614	97,402	96,045	95,670
100	6	100,000	96,353	96,103	94,005	93,505

[a] Refers to the imaginary coaxial cylinder through the endpoints of straight flanks.

Limits of sizes for the internal threads with tolerance class 5H shall be as specified in Table 3.

Table 3 — Limits of sizes for the internal threads with tolerance class 5H

Dimensions in millimetres

Nominal diameter D	Pitch P	Major diameter D_{min}[a]	Pitch diameter $D_{2\,max}$	Pitch diameter $D_{2\,min}$	Minor diameter $D_{1\,max}$	Minor diameter $D_{1\,min}$
1	0,25	1,000	0,894	0,838	0,785	0,729
1,1	0,25	1,100	0,994	0,938	0,885	0,829
1,2	0,25	1,200	1,094	1,038	0,985	0,929
1,4	0,3	1,400	1,265	1,205	1,142	1,075
1,6	0,35	1,600	1,440	1,373	1,301	1,221
1,8	0,35	1,800	1,640	1,573	1,501	1,421
2	0,25	2,000	1,898	1,838	1,785	1,729
2	0,4	2,000	1,811	1,740	1,657	1,567
2,2	0,25	2,200	2,098	2,038	1,985	1,929
2,2	0,45	2,200	1,983	1,908	1,813	1,713
2,5	0,35	2,500	2,340	2,273	2,201	2,121
2,5	0,45	2,500	2,283	2,208	2,113	2,013
3	0,35	3,000	2,844	2,773	2,701	2,621
3	0,5	3,000	2,755	2,675	2,571	2,459

[a] Refers to the imaginary coaxial cylinder through the endpoints of straight flanks.

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Table 3 *(continued)*

Nominal diameter	Pitch	Major diameter	Pitch diameter		Minor diameter	
D	P	D_{min} [a]	$D_{2\,max}$	$D_{2\,min}$	$D_{1\,max}$	$D_{1\,min}$
3,5	0,35	3,500	3,344	3,273	3,201	3,121
3,5	0,6	3,500	3,200	3,110	2,975	2,850
4	0,5	4,000	3,755	3,675	3,571	3,459
4	0,7	4,000	3,640	3,545	3,382	3,242
4,5	0,5	4,500	4,255	4,175	4,071	3,959
4,5	0,75	4,500	4,108	4,013	3,838	3,688
5	0,5	5,000	4,755	4,675	4,571	4,459
5	0,8	5,000	4,580	4,480	4,294	4,134
5,5	0,5	5,500	5,255	5,175	5,071	4,959
6	0,75	6,000	5,619	5,513	5,338	5,188
6	1	6,000	5,468	5,350	5,107	4,917
7	0,75	7,000	6,619	6,513	6,338	6,188
7	1	7,000	6,468	6,350	6,107	5,917
8	0,75	8,000	7,619	7,513	7,338	7,188
8	1	8,000	7,468	7,350	7,107	6,917
8	1,25	8,000	7,313	7,188	6,859	6,647
9	0,75	9,000	8,619	8,513	8,338	8,188
9	1	9,000	8,468	8,350	8,107	7,917
9	1,25	9,000	8,313	8,188	7,859	7,647
10	0,75	10,000	9,619	9,513	9,338	9,188
10	1	10,000	9,468	9,350	9,107	8,917
10	1,25	10,000	9,313	9,188	8,859	8,647
10	1,5	10,000	9,166	9,026	8,612	8,376
11	0,75	11,000	10,619	10,513	10,338	10,188
11	1	11,000	10,468	10,350	10,107	9,917
11	1,5	11,000	10,166	10,026	9,612	9,376
12	1	12,000	11,475	11,350	11,107	10,917
12	1,25	12,000	11,328	11,188	10,859	10,647
12	1,5	12,000	11,176	11,026	10,612	10,376
12	1,75	12,000	11,023	10,863	10,371	10,106
14	1	14,000	13,475	13,350	13,107	12,917
14	1,5	14,000	13,176	13,026	12,612	12,376
14	2	14,000	12,871	12,701	12,135	11,835
15	1	15,000	14,475	14,350	14,107	13,917
15	1,5	15,000	14,176	14,026	13,612	13,376
16	1	16,000	15,475	15,350	15,107	14,917
16	1,5	16,000	15,176	15,026	14,612	14,376
16	2	16,000	14,871	14,701	14,135	13,835
17	1	17,000	16,475	16,350	16,107	15,917
17	1,5	17,000	16,176	16,026	15,612	15,376
18	1	18,000	17,475	17,350	17,107	16,917

[a] Refers to the imaginary coaxial cylinder through the endpoints of straight flanks.

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Table 3 *(continued)*

Nominal diameter	Pitch	Major diameter	Pitch diameter		Minor diameter	
D	P	D_{min} [a]	$D_{2\,max}$	$D_{2\,min}$	$D_{1\,max}$	$D_{1\,min}$
18	1,5	18,000	17,176	17,026	16,612	16,376
18	2	18,000	16,871	16,701	16,135	15,835
18	2,5	18,000	16,556	16,376	15,649	15,294
20	1	20,000	19,475	19,350	19,107	18,917
20	1,5	20,000	19,176	19,026	18,612	18,376
20	2	20,000	18,871	18,701	18,135	17,835
20	2,5	20,000	18,556	18,376	17,649	17,294
22	1	22,000	21,475	21,350	21,107	20,917
22	1,5	22,000	21,176	21,026	20,612	20,376
22	2	22,000	20,871	20,701	20,135	19,835
22	2,5	22,000	20,556	20,376	19,649	19,294
24	1	24,000	23,482	23,350	23,107	22,917
24	1,5	24,000	23,186	23,026	22,612	22,376
24	2	24,000	22,881	22,701	22,135	21,835
24	3	24,000	22,263	22,051	21,152	20,752
25	1	25,000	24,482	24,350	24,107	23,917
25	1,5	25,000	24,186	24,026	23,612	23,376
25	2	25,000	23,881	23,701	23,135	22,835
26	1,5	26,000	25,186	25,026	24,612	24,376
27	1	27,000	26,482	26,350	26,107	25,917
27	1,5	27,000	26,186	26,026	25,612	25,376
27	2	27,000	25,881	25,701	25,135	24,835
27	3	27,000	25,263	25,051	24,152	23,752
28	1	28,000	27,482	27,350	27,107	26,917
28	1,5	28,000	27,186	27,026	26,612	26,376
28	2	28,000	26,881	26,701	26,135	25,835
30	1	30,000	29,482	29,350	29,107	28,917
30	1,5	30,000	29,186	29,026	28,612	28,376
30	2	30,000	28,881	28,701	28,135	27,835
30	3	30,000	28,263	28,051	27,152	26,752
30	3,5	30,000	27,951	27,727	26,661	26,211
32	1,5	32,000	31,186	31,026	30,612	30,376
32	2	32,000	30,881	30,701	30,135	29,835
33	1,5	33,000	32,186	32,026	31,612	31,376
33	2	33,000	31,881	31,701	31,135	30,835
33	3	33,000	31,263	31,051	30,152	29,752
33	3,5	33,000	30,951	30,727	29,661	29,211
36	1,5	36,000	35,186	35,026	34,612	34,376
36	2	36,000	34,881	34,701	34,135	33,835
36	3	36,000	34,263	34,051	33,152	32,752
36	4	36,000	33,638	33,402	32,145	31,670

[a] Refers to the imaginary coaxial cylinder through the endpoints of straight flanks.

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Table 3 *(continued)*

Nominal diameter	Pitch	Major diameter	Pitch diameter		Minor diameter	
D	P	D_{min} [a]	$D_{2\,max}$	$D_{2\,min}$	$D_{1\,max}$	$D_{1\,min}$
38	1,5	38,000	37,186	37,026	36,612	36,376
39	1,5	39,000	38,186	38,026	37,612	37,376
39	2	39,000	37,881	37,701	37,135	36,835
39	3	39,000	37,263	37,051	36,152	35,752
39	4	39,000	36,638	36,402	35,145	34,670
40	1,5	40,000	39,186	39,026	38,612	38,376
40	2	40,000	38,881	38,701	38,135	37,835
40	3	40,000	38,263	38,051	37,152	36,752
42	1,5	42,000	41,186	41,026	40,612	40,376
42	2	42,000	40,881	40,701	40,135	39,835
42	3	42,000	40,263	40,051	39,152	38,752
42	4	42,000	39,638	39,402	38,145	37,670
42	4,5	42,000	39,327	39,077	37,659	37,129
45	1,5	45,000	44,186	44,026	43,612	43,376
45	2	45,000	43,881	43,701	43,135	42,835
45	3	45,000	43,263	43,051	42,152	41,752
45	4	45,000	42,638	42,402	41,145	40,670
45	4,5	45,000	42,327	42,077	40,659	40,129
48	1,5	48,000	47,196	47,026	46,612	46,376
48	2	48,000	46,891	46,701	46,135	45,835
48	3	48,000	46,275	46,051	45,152	44,752
48	4	48,000	45,652	45,402	44,145	43,670
48	5	48,000	45,017	44,752	43,147	42,587
50	1,5	50,000	49,196	49,026	48,612	48,376
50	2	50,000	48,891	48,701	48,135	47,835
50	3	50,000	48,275	48,051	47,152	46,752
52	1,5	52,000	51,196	51,026	50,612	50,376
52	2	52,000	50,891	50,701	50,135	49,835
52	3	52,000	50,275	50,051	49,152	48,752
52	4	52,000	49,652	49,402	48,145	47,670
52	5	52,000	49,017	48,752	47,147	46,587
55	1,5	55,000	54,196	54,026	53,612	53,376
55	2	55,000	53,891	53,701	53,135	52,835
55	3	55,000	53,275	53,051	52,152	51,752
55	4	55,000	52,652	52,402	51,145	50,670
56	1,5	56,000	55,196	55,026	54,612	54,376
56	2	56,000	54,891	54,701	54,135	53,835
56	3	56,000	54,275	54,051	53,152	52,752
56	4	56,000	53,652	53,402	52,145	51,670
56	5,5	56,000	52,708	52,428	50,646	50,046
58	1,5	58,000	57,196	57,026	56,612	56,376

[a] Refers to the imaginary coaxial cylinder through the endpoints of straight flanks.

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Table 3 *(continued)*

Nominal diameter	Pitch	Major diameter	Pitch diameter		Minor diameter	
D	P	D_{min} [a]	$D_{2\,max}$	$D_{2\,min}$	$D_{1\,max}$	$D_{1\,min}$
58	2	58,000	56,891	56,701	56,135	55,835
58	3	58,000	56,275	56,051	55,152	54,752
58	4	58,000	55,652	55,402	54,145	53,670
60	1,5	60,000	59,196	59,026	58,612	58,376
60	2	60,000	58,891	58,701	58,135	57,835
60	3	60,000	58,275	58,051	57,152	56,752
60	4	60,000	57,652	57,402	56,145	55,670
60	5,5	60,000	56,708	56,428	54,646	54,046
62	1,5	62,000	61,196	61,026	60,612	60,376
62	2	62,000	60,891	60,701	60,135	59,835
62	3	62,000	60,275	60,051	59,152	58,752
62	4	62,000	59,652	59,402	58,145	57,670
64	1,5	64,000	63,196	63,026	62,612	62,376
64	2	64,000	62,891	62,701	62,135	61,835
64	3	64,000	62,275	62,051	61,152	60,752
64	4	64,000	61,652	61,402	60,145	59,670
64	6	64,000	60,403	60,103	58,135	57,505
65	1,5	65,000	64,196	64,026	63,612	63,376
65	2	65,000	63,891	63,701	63,135	62,835
65	3	65,000	63,275	63,051	62,152	61,752
65	4	65,000	62,652	62,402	61,145	60,670
68	1,5	68,000	67,196	67,026	66,612	66,376
68	2	68,000	66,891	66,701	66,135	65,835
68	3	68,000	66,275	66,051	65,152	64,752
68	4	68,000	65,652	65,402	64,145	63,670
68	6	68,000	64,403	64,103	62,135	61,505
70	1,5	70,000	69,196	69,026	68,612	68,376
70	2	70,000	68,891	68,701	68,135	67,835
70	3	70,000	68,275	68,051	67,152	66,752
70	4	70,000	67,652	67,402	66,145	65,670
70	6	70,000	66,403	66,103	64,135	63,505
72	1,5	72,000	71,196	71,026	70,612	70,376
72	2	72,000	70,891	70,701	70,135	69,835
72	3	72,000	70,275	70,051	69,152	68,752
72	4	72,000	69,652	69,402	68,145	67,670
72	6	72,000	68,403	68,103	66,135	65,505
75	1,5	75,000	74,196	74,026	73,612	73,376
75	2	75,000	73,891	73,701	73,135	72,835
75	3	75,000	73,275	73,051	72,152	71,752
75	4	75,000	72,652	72,402	71,145	70,670
76	1,5	76,000	75,196	75,026	74,612	74,376

[a] Refers to the imaginary coaxial cylinder through the endpoints of straight flanks.

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Table 3 *(continued)*

Nominal diameter	Pitch	Major diameter	Pitch diameter		Minor diameter	
D	P	D_{min} [a]	$D_{2\,max}$	$D_{2\,min}$	$D_{1\,max}$	$D_{1\,min}$
76	2	76,000	74,891	74,701	74,135	73,835
76	3	76,000	74,275	74,051	73,152	72,752
76	4	76,000	73,652	73,402	72,145	71,670
76	6	76,000	72,403	72,103	70,135	69,505
78	2	78,000	76,891	76,701	76,135	75,835
80	1,5	80,000	79,196	79,026	78,612	78,376
80	2	80,000	78,891	78,701	78,135	77,835
80	3	80,000	78,275	78,051	77,152	76,752
80	4	80,000	77,652	77,402	76,145	75,670
80	6	80,000	76,403	76,103	74,135	73,505
82	2	82,000	80,891	80,701	80,135	79,835
85	2	85,000	83,891	83,701	83,135	82,835
85	3	85,000	83,275	83,051	82,152	81,752
85	4	85,000	82,652	82,402	81,145	80,670
85	6	85,000	81,403	81,103	79,135	78,505
90	2	90,000	88,891	88,701	88,135	87,835
90	3	90,000	88,275	88,051	87,152	86,752
90	4	90,000	87,652	87,402	86,145	85,670
90	6	90,000	86,403	86,103	84,135	83,505
95	2	95,000	93,901	93,701	93,135	92,835
95	3	95,000	93,287	93,051	92,152	91,752
95	4	95,000	92,667	92,402	91,145	90,670
95	6	95,000	91,418	91,103	89,135	88,505
100	2	100,000	98,901	98,701	98,135	97,835
100	3	100,000	98,287	98,051	97,152	96,752
100	4	100,000	97,667	97,402	96,145	95,670
100	6	100,000	96,418	96,103	94,135	93,505
105	2	105,000	103,901	103,701	103,135	102,835
105	3	105,000	103,287	103,051	102,152	101,752
105	4	105,000	102,667	102,402	101,145	100,670
105	6	105,000	101,418	101,103	99,135	98,505
110	2	110,000	108,901	108,701	108,135	107,835
110	3	110,000	108,287	108,051	107,152	106,752
110	4	110,000	107,667	107,402	106,145	105,670
110	6	110,000	106,418	106,103	104,135	103,505
115	2	115,000	113,901	113,701	113,135	112,835
115	3	115,000	113,287	113,051	112,152	111,752
115	4	115,000	112,667	112,402	111,145	110,670
115	6	115,000	111,418	111,103	109,135	108,505
120	2	120,000	118,901	118,701	118,135	117,835
120	3	120,000	118,287	118,051	117,152	116,752

[a] Refers to the imaginary coaxial cylinder through the endpoints of straight flanks.

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Table 3 *(continued)*

Nominal diameter D	Pitch P	Major diameter D_{min} [a]	Pitch diameter $D_{2\,max}$	Pitch diameter $D_{2\,min}$	Minor diameter $D_{1\,max}$	Minor diameter $D_{1\,min}$
120	4	120,000	117,667	117,402	116,145	115,670
120	6	120,000	116,418	116,103	114,135	113,505
125	2	125,000	123,901	123,701	123,135	122,835
125	3	125,000	123,287	123,051	122,152	121,752
125	4	125,000	122,667	122,402	121,145	120,670
125	6	125,000	121,418	121,103	119,135	118,505
125	8	125,000	120,159	119,804	117,140	116,340
130	2	130,000	128,901	128,701	128,135	127,835
130	3	130,000	128,287	128,051	127,152	126,752
130	4	130,000	127,667	127,402	126,145	125,670
130	6	130,000	126,418	126,103	124,135	123,505
130	8	130,000	125,159	124,804	122,140	121,340
135	2	135,000	133,901	133,701	133,135	132,835
135	3	135,000	133,287	133,051	132,152	131,752
135	4	135,000	132,667	132,402	131,145	130,670
135	6	135,000	131,418	131,103	129,135	128,505
140	2	140,000	138,901	138,701	138,135	137,835
140	3	140,000	138,287	138,051	137,152	136,752
140	4	140,000	137,667	137,402	136,145	135,670
140	6	140,000	136,418	136,103	134,135	133,505
140	8	140,000	135,159	134,804	132,140	131,340
145	2	145,000	143,901	143,701	143,135	142,835
145	3	145,000	143,287	143,051	142,152	141,752
145	4	145,000	142,667	142,402	141,145	140,670
145	6	145,000	141,418	141,103	139,135	138,505
150	2	150,000	148,901	148,701	148,135	147,835
150	3	150,000	148,287	148,051	147,152	146,752
150	4	150,000	147,667	147,402	146,145	145,670
150	6	150,000	146,418	146,103	144,135	143,505
150	8	150,000	145,159	144,804	142,140	141,340
155	3	155,000	153,287	153,051	152,152	151,752
155	4	155,000	152,667	152,402	151,145	150,670
155	6	155,000	151,418	151,103	149,135	148,505
160	3	160,000	158,287	158,051	157,152	156,752
160	4	160,000	157,667	157,402	156,145	155,670
160	6	160,000	156,418	156,103	154,135	153,505
160	8	160,000	155,159	154,804	152,140	151,340
165	3	165,000	163,287	163,051	162,152	161,752
165	4	165,000	162,667	162,402	161,145	160,670
165	6	165,000	161,418	161,103	159,135	158,505
170	3	170,000	168,287	168,051	167,152	166,752

[a] Refers to the imaginary coaxial cylinder through the endpoints of straight flanks.

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Table 3 *(continued)*

Nominal diameter	Pitch	Major diameter	Pitch diameter		Minor diameter	
D	P	D_{min}[a]	$D_{2\,max}$	$D_{2\,min}$	$D_{1\,max}$	$D_{1\,min}$
170	4	170,000	167,667	167,402	166,145	165,670
170	6	170,000	166,418	166,103	164,135	163,505
170	8	170,000	165,159	164,804	162,140	161,340
175	3	175,000	173,287	173,051	172,152	171,752
175	4	175,000	172,667	172,402	171,145	170,670
175	6	175,000	171,418	171,103	169,135	168,505
180	3	180,000	178,287	178,051	177,152	176,752
180	4	180,000	177,667	177,402	176,145	175,670
180	6	180,000	176,418	176,103	174,135	173,505
180	8	180,000	175,159	174,804	172,140	171,340
185	3	185,000	183,316	183,051	182,152	181,752
185	4	185,000	182,702	182,402	181,145	180,670
185	6	185,000	181,438	181,103	179,135	178,505
190	3	190,000	188,316	188,051	187,152	186,752
190	4	190,000	187,702	187,402	186,145	185,670
190	6	190,000	186,438	186,103	184,135	183,505
190	8	190,000	185,179	184,804	182,140	181,340
195	3	195,000	193,316	193,051	192,152	191,752
195	4	195,000	192,702	192,402	191,145	190,670
195	6	195,000	191,438	191,103	189,135	188,505
200	3	200,000	198,316	198,051	197,152	196,752
200	4	200,000	197,702	197,402	196,145	195,670
200	6	200,000	196,438	196,103	194,135	193,505
200	8	200,000	195,179	194,804	192,140	191,340
205	3	205,000	203,316	203,051	202,152	201,752
205	4	205,000	202,702	202,402	201,145	200,670
205	6	205,000	201,438	201,103	199,135	198,505
210	3	210,000	208,316	208,051	207,152	206,752
210	4	210,000	207,702	207,402	206,145	205,670
210	6	210,000	206,438	206,103	204,135	203,505
210	8	210,000	205,179	204,804	202,140	201,340
215	3	215,000	213,316	213,051	212,152	211,752
215	4	215,000	212,702	212,402	211,145	210,670
215	6	215,000	211,438	211,103	209,135	208,505
220	3	220,000	218,316	218,051	217,152	216,752
220	4	220,000	217,702	217,402	216,145	215,670
220	6	220,000	216,438	216,103	214,135	213,505
220	8	220,000	215,179	214,804	212,140	211,340
225	3	225,000	223,316	223,051	222,152	221,752
225	4	225,000	222,702	222,402	221,145	220,670
225	6	225,000	221,438	221,103	219,135	218,505

[a] Refers to the imaginary coaxial cylinder through the endpoints of straight flanks.

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Table 3 *(continued)*

Nominal diameter	Pitch	Major diameter	Pitch diameter		Minor diameter	
D	P	D_{min}[a]	$D_{2\,max}$	$D_{2\,min}$	$D_{1\,max}$	$D_{1\,min}$
230	3	230,000	228,316	228,051	227,152	226,752
230	4	230,000	227,702	227,402	226,145	225,670
230	6	230,000	226,438	226,103	224,135	223,505
230	8	230,000	225,179	224,804	222,140	221,340
235	3	235,000	233,316	233,051	232,152	231,752
235	4	235,000	232,702	232,402	231,145	230,670
235	6	235,000	231,438	231,103	229,135	228,505
240	3	240,000	238,316	238,051	237,152	236,752
240	4	240,000	237,702	237,402	236,145	235,670
240	6	240,000	236,438	236,103	234,135	233,505
240	8	240,000	235,179	234,804	232,140	231,340
245	3	245,000	243,316	243,051	242,152	241,752
245	4	245,000	242,702	242,402	241,145	240,670
245	6	245,000	241,438	241,103	239,135	238,505
250	3	250,000	248,316	248,051	247,152	246,752
250	4	250,000	247,702	247,402	246,145	245,670
250	6	250,000	246,438	246,103	244,135	243,505
250	8	250,000	245,179	244,804	242,140	241,340
255	4	255,000	252,702	252,402	251,145	250,670
255	6	255,000	251,438	251,103	249,135	248,505
260	4	260,000	257,702	257,402	256,145	255,670
260	6	260,000	256,438	256,103	254,135	253,505
260	8	260,000	255,179	254,804	252,140	251,340
265	4	265,000	262,702	262,402	261,145	260,670
265	6	265,000	261,438	261,103	259,135	258,505
270	4	270,000	267,702	267,402	266,145	265,670
270	6	270,000	266,438	266,103	264,135	263,505
270	8	270,000	265,179	264,804	262,140	261,340
275	4	275,000	272,702	272,402	271,145	270,670
275	6	275,000	271,438	271,103	269,135	268,505
280	4	280,000	277,702	277,402	276,145	275,670
280	6	280,000	276,438	276,103	274,135	273,505
280	8	280,000	275,179	274,804	272,140	271,340
285	4	285,000	282,702	282,402	281,145	280,670
285	6	285,000	281,438	281,103	279,135	278,505
290	4	290,000	287,702	287,402	286,145	285,670
290	6	290,000	286,438	286,103	284,135	283,505
290	8	290,000	285,179	284,804	282,140	281,340
295	4	295,000	292,702	292,402	291,145	290,670
295	6	295,000	291,438	291,103	289,135	288,505
300	4	300,000	297,702	297,402	296,145	295,670

[a] Refers to the imaginary coaxial cylinder through the endpoints of straight flanks.

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Table 3 *(continued)*

Nominal diameter D	Pitch P	Major diameter D_{min}[a]	Pitch diameter $D_{2\,max}$	Pitch diameter $D_{2\,min}$	Minor diameter $D_{1\,max}$	Minor diameter $D_{1\,min}$
300	6	300,000	296,438	296,103	294,135	293,505
300	8	300,000	295,179	294,804	292,140	291,340

[a] Refers to the imaginary coaxial cylinder through the endpoints of straight flanks.

Limits of sizes for the internal threads with tolerance class 6H shall be as specified in Table 4.

Table 4 — Limits of sizes for the internal threads with tolerance class 6H

Dimensions in millimetres

Nominal diameter D	Pitch P	Major diameter D_{min}[a]	Pitch diameter $D_{2\,max}$	Pitch diameter $D_{2\,min}$	Minor diameter $D_{1\,max}$	Minor diameter $D_{1\,min}$
1,4	0,3	1,400	1,280	1,205	1,160	1,075
1,6	0,35	1,600	1,458	1,373	1,321	1,221
1,8	0,35	1,800	1,658	1,573	1,521	1,421
2	0,4	2,000	1,830	1,740	1,679	1,567
2,2	0,45	2,200	2,003	1,908	1,838	1,713
2,5	0,35	2,500	2,358	2,273	2,221	2,121
2,5	0,45	2,500	2,303	2,208	2,138	2,013
3	0,35	3,000	2,863	2,773	2,721	2,621
3	0,5	3,000	2,775	2,675	2,599	2,459
3,5	0,35	3,500	3,363	3,273	3,221	3,121
3,5	0,6	3,500	3,222	3,110	3,010	2,850
4	0,5	4,000	3,775	3,675	3,599	3,459
4	0,7	4,000	3,663	3,545	3,422	3,242
4,5	0,5	4,500	4,275	4,175	4,099	3,959
4,5	0,75	4,500	4,131	4,013	3,878	3,688
5	0,5	5,000	4,775	4,675	4,599	4,459
5	0,8	5,000	4,605	4,480	4,334	4,134
5,5	0,5	5,500	5,275	5,175	5,099	4,959
6	0,75	6,000	5,645	5,513	5,378	5,188
6	1	6,000	5,500	5,350	5,153	4,917
7	0,75	7,000	6,645	6,513	6,378	6,188
7	1	7,000	6,500	6,350	6,153	5,917
8	0,75	8,000	7,645	7,513	7,378	7,188
8	1	8,000	7,500	7,350	7,153	6,917
8	1,25	8,000	7,348	7,188	6,912	6,647
9	0,75	9,000	8,645	8,513	8,378	8,188
9	1	9,000	8,500	8,350	8,153	7,917
9	1,25	9,000	8,348	8,188	7,912	7,647
10	0,75	10,000	9,645	9,513	9,378	9,188
10	1	10,000	9,500	9,350	9,153	8,917
10	1,25	10,000	9,348	9,188	8,912	8,647

[a] Refers to the imaginary coaxial cylinder through the endpoints of straight flanks.

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Table 4 *(continued)*

Nominal diameter	Pitch	Major diameter	Pitch diameter		Minor diameter	
D	P	D_{min} [a]	$D_{2\,max}$	$D_{2\,min}$	$D_{1\,max}$	$D_{1\,min}$
10	1,5	10,000	9,206	9,026	8,676	8,376
11	0,75	11,000	10,645	10,513	10,378	10,188
11	1	11,000	10,500	10,350	10,153	9,917
11	1,5	11,000	10,206	10,026	9,676	9,376
12	1	12,000	11,510	11,350	11,153	10,917
12	1,25	12,000	11,368	11,188	10,912	10,647
12	1,5	12,000	11,216	11,026	10,676	10,376
12	1,75	12,000	11,063	10,863	10,441	10,106
14	1	14,000	13,510	13,350	13,153	12,917
14	1,5	14,000	13,216	13,026	12,676	12,376
14	2	14,000	12,913	12,701	12,210	11,835
15	1	15,000	14,510	14,350	14,153	13,917
15	1,5	15,000	14,216	14,026	13,676	13,376
16	1	16,000	15,510	15,350	15,153	14,917
16	1,5	16,000	15,216	15,026	14,676	14,376
16	2	16,000	14,913	14,701	14,210	13,835
17	1	17,000	16,510	16,350	16,153	15,917
17	1,5	17,000	16,216	16,026	15,676	15,376
18	1	18,000	17,510	17,350	17,153	16,917
18	1,5	18,000	17,216	17,026	16,676	16,376
18	2	18,000	16,913	16,701	16,210	15,835
18	2,5	18,000	16,600	16,376	15,744	15,294
20	1	20,000	19,510	19,350	19,153	18,917
20	1,5	20,000	19,216	19,026	18,676	18,376
20	2	20,000	18,913	18,701	18,210	17,835
20	2,5	20,000	18,600	18,376	17,744	17,294
22	1	22,000	21,510	21,350	21,153	20,917
22	1,5	22,000	21,216	21,026	20,676	20,376
22	2	22,000	20,913	20,701	20,210	19,835
22	2,5	22,000	20,600	20,376	19,744	19,294
24	1	24,000	23,520	23,350	23,153	22,917
24	1,5	24,000	23,226	23,026	22,676	22,376
24	2	24,000	22,925	22,701	22,210	21,835
24	3	24,000	22,316	22,051	21,252	20,752
25	1	25,000	24,520	24,350	24,153	23,917
25	1,5	25,000	24,226	24,026	23,676	23,376
25	2	25,000	23,925	23,701	23,210	22,835
26	1,5	26,000	25,226	25,026	24,676	24,376
27	1	27,000	26,520	26,350	26,153	25,917
27	1,5	27,000	26,226	26,026	25,676	25,376
27	2	27,000	25,925	25,701	25,210	24,835

[a] Refers to the imaginary coaxial cylinder through the endpoints of straight flanks.

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