INTERNATIONAL STANDARD

ISO 2490

Third edition
2007-10-01

Solid (monobloc) gear hobs with tenon drive or axial keyway, 0,5 to 40 module — Nominal dimensions

Fraises-mères monoblocs à entraînement par tenon ou par clavette, de modules 0,5 à 40 — Dimensions nominales

Reference number
ISO 2490:2007(E)

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 2490 was prepared by Technical Committee ISO/TC 60, *Gears*, Subcommittee SC 1, *Nomenclature and wormgearing*.

This third edition cancels and replaces the second edition (ISO 2490:1996), of which Tables 1 and 2, Figure 1 and Annex A have been technically revised.

Solid (monobloc) gear hobs with tenon drive or axial keyway, 0,5 to 40 module — Nominal dimensions

1 Scope

This International Standard specifies the nominal dimensions of general-purpose single-start solid (monobloc) gear hobs with axial keyway or tenon drive of 0,5 to 40 module.

These hobs are intended for the production of gears which conform to ISO 54 and present a 20° pressure angle in conformity with ISO 53.

NOTE Solid hobs are those made from one solid piece of material, as opposed to hobs which have inserted blades.

2 Normative references

The following referenced documents are indispensable for the application 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 53:1998, *Cylindrical gears for general and heavy engineering — Standard basic rack tooth profile*

ISO 54:1996, *Cylindrical gears for general engineering and for heavy engineering — Modules*

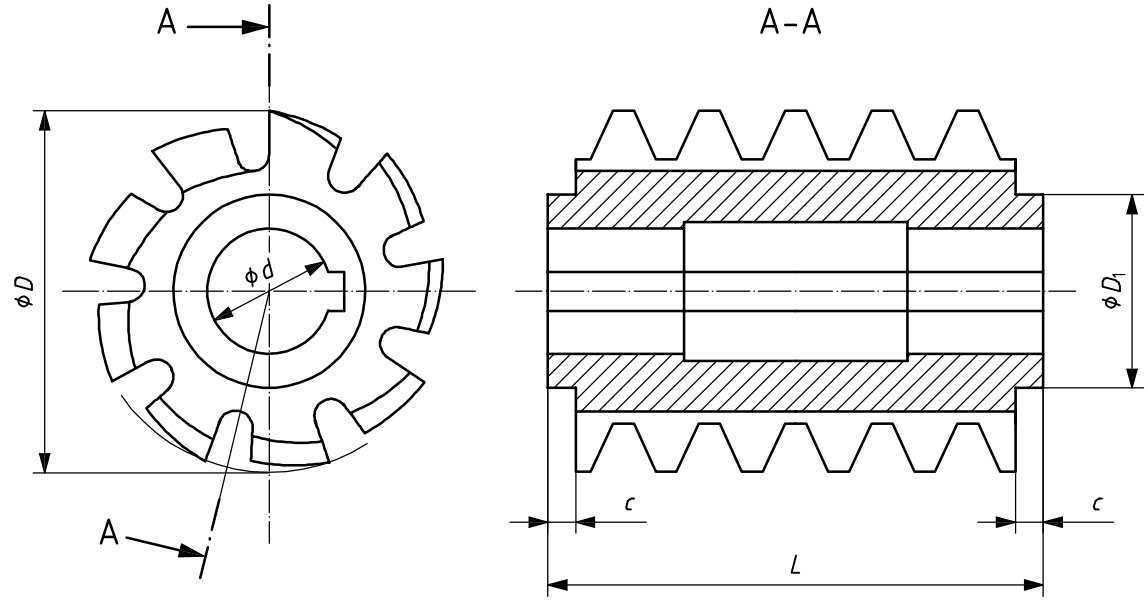
ISO 240:1994, *Milling cutters — Interchangeability dimensions for cutter arbors or cutter mandrels*

ISO 2768-1:1989, *General tolerances — Part 1: Tolerances for linear and angular dimensions without individual tolerance indications*

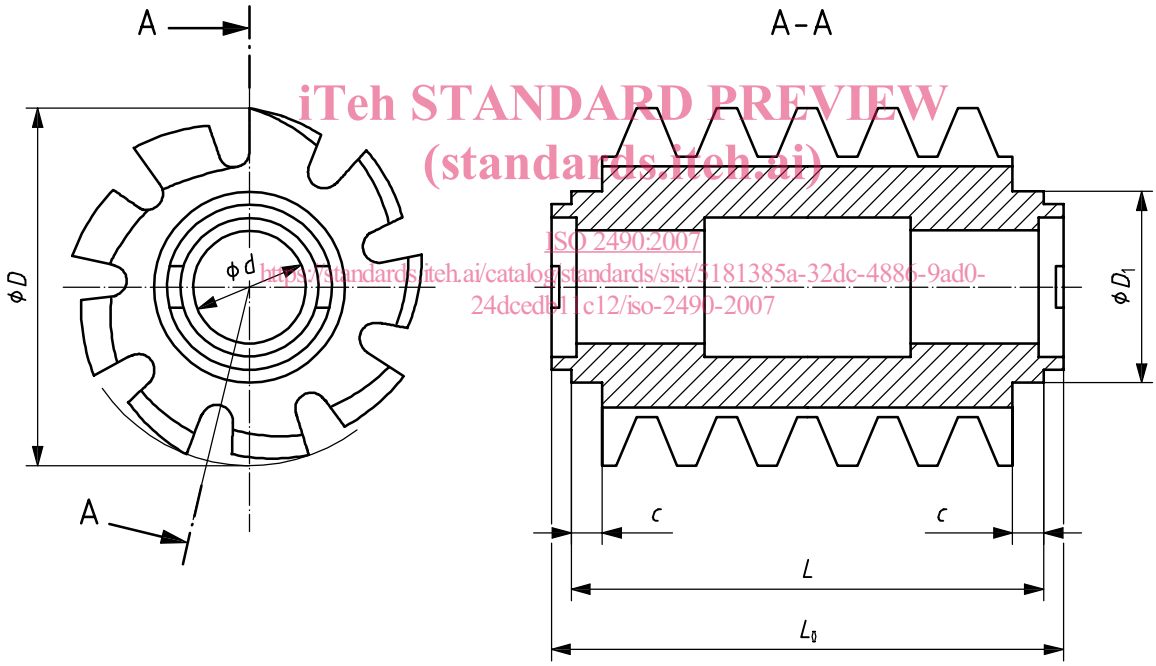
ISO 2780:1986, *Milling cutters with tenon drive — Interchangeability dimensions with cutter arbors — Metric series*

3 Nominal dimensions

The nominal dimensions shall be as shown in Figure 1 and given in Tables 1 and 2.



a) Hob with axial keyway



b) Hob with tenon drive

Key

$\varnothing D_1$ hub diameter (mm)
$\varnothing D$ outside diameter (mm)
$\varnothing d$ bore diameter (mm)
L overall length of hob with axial keyway (mm)
L_0 overall length of hob with tenon drive (mm)
c minimum hub length (mm)

NOTE Keyway dimensions are specified in ISO 240 and tenonway dimensions are specified in ISO 2780.

Figure 1 — Gear hob dimensions

Table 1 — Nominal dimensions of small-bore-type single-thread gear hobs

Type [b]	Module, m		Hub diameter	Outside diameter	Bore diameter	Reference			
	Series					Overall length	Overall length	Minimum hub length	Typical number of gashes
	I	II	D_1 mm	D [a] mm	d [b] mm	L [a] mm	L_0 [a] mm	c mm	
1	0,5	—	Diameter at manufacturer's discretion	24	8	10	—	1	12
	—	0,55		24	8	10	—	1	12
	0,6	—		24	8	10	—	1	12
	—	0,7		24	8	10	—	1	12
	—	0,75		24	8	12	—	1	12
	0,8	—		24	8	12	—	1	12
	—	0,9		24	8	12	—	1	12
	1,0	—		24	8	12	—	1	12
2	0,5	—		32	10	20	30	2	12
	—	0,55		32	10	20	30	2	12
	0,6	—		32	10	20	30	2	12
	—	0,7		32	10	20	30	2	12
	—	0,75		32	10	20	30	2	12
	0,8	—		32	10	20	30	2	12
	—	0,9		32	10	20	30	2	12
	1,0	—		32	10	20	30	2	12
	—	1,125		32	10	20	30	2	12
	1,25	—		40	10	25	35	2	10
	—	1,375		40	10	25	35	2	10
	1,50	—		40	10	25	35	2	10
	—	1,75		40	10	30	40	2	10
	2,0	—		40	10	30	40	2	10
3	0,5	—		32	13	20	30	2	12
	—	0,55		32	13	20	30	2	12
	0,6	—		32	13	20	30	2	12
	—	0,7		32	13	20	30	2	12
	—	0,75		32	13	20	30	2	12
	0,8	—		32	13	20	30	2	12
	—	0,9		32	13	20	30	2	12
	1,0	—		32	13	20	30	2	12
	—	1,125		32	13	20	30	2	12
	1,25	—		40	13	25	35	2	10
	—	1,375		40	13	25	35	2	10
	1,5	—		40	13	25	35	2	10
	—	1,75		40	13	30	40	2	10
	2,0	—		40	13	30	40	2	10

[a] Tolerances of outside diameter, D, L and L_0 shall be the "coarse" class as given in ISO 2768-1.

[b] The type is the segmentation based on the bore diameters.

Table 2 — Nominal dimensions of single-thread gear hobs

Module, m		Hub diameter	Outside diameter	Bore diameter	Reference			
Series					Overall length	Overall length	Minimum hub length	Typical number of gashes
I	II	D_1 mm	D [a] mm	d [b] mm	L [a] mm	L_0 [a] mm	c mm	
1	—	Diameter at manufacturer's discretion	50	22	50	65	4	14
—	1,125		50	22	50	65	4	14
1,25	—		50	22	50	65	4	14
—	1,375		50	22	50	65	4	14
1,5	—		55	22	55	70	4	14
—	1,75		55	22	55	70	4	14
2	—		65	27	60	75	4	14
—	2,25		65	27	60	75	4	14
2,5	—		70	27	65	80	4	14
—	2,75		70	27	65	80	4	14
3	—		75	32	70	85	4	14
—	3,5		80	32	75	90	4	14
4	—		85	32	80	95	4	14
—	4,5		90	32	85	100	4	14
5	—		95	32	90	105	4	14
—	5,5		100	32	95	110	5	12
6	—		105	32	100	115	5	12
—	6,5		110	32	110	125	5	12
—	7		115	32	115	130	5	12
8	—		120	32	140	160	5	10
—	9		125	32	140	160	5	10
10	—		130	32	170	190	5	10
—	11		150	40	170	190	6	9
12	—		160	40	200	220	6	9
—	14		180	40	200	220	6	9
16	—		200	50	250	275	6	9
—	18		220	50	250	275	6	9
20	—		240	60	300	325	6	9
—	22		250	60	300	325	6	9
25	—		280	60	360	385	6	9
—	28		320	80	400	430	6	9
32	—		350	80	450	480	6	9
—	36		380	80	450	480	6	9
40	—		400	80	480	510	6	9

[a] Tolerances of dimensions D, L and L_0 shall be the "coarse" class as given in ISO 2768-1.

[b] ISO 2780 (tenonway dimensions) only gives values for bores up to 50 mm in diameter.

Annex A
(informative)

Multiple thread hobs