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**Bore cutters with key drive — Form  
milling cutters with constant profile**

*Fraises à alésage lisse à entraînement par clavette — Fraises de forme  
à profil constant*

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## Foreword

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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 3860 was prepared by Technical Committee ISO/TC 29, *Small tools*, Subcommittee SC 2, *High speed steel cutting tools and their attachments*.

This second edition cancels and replaces the first edition (ISO 3860:1976), of which it constitutes a minor revision. In particular, the normative references have been updated and the indications of the tolerance classes are given in accordance with ISO 2768-1 and ISO 2768-2.

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# Bore cutters with key drive — Form milling cutters with constant profile

## 1 Scope

This International Standard specifies the dimensions of bore form milling cutters with a constant profile with key drive.

This International Standard deals with the following three types of bore cutters with key drive:

- convex milling cutters;
- concave milling cutters;
- corner-rounding cutters.

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

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

ISO 2768-2, *General tolerances — Part 2: Geometrical tolerances for features without individual tolerance indications*

## 3 Dimensions

### 3.1 General

All dimensions and tolerances are given in millimetres. Tolerances not specified shall be of tolerance class “m” in accordance with ISO 2768-1 and of class “K” in accordance with ISO 2768-2.

The interchangeability dimensions of cutters with key drive and arbors shall be in accordance with ISO 240.

### 3.2 Convex milling cutters

The dimensions of convex milling cutters shall be in accordance with the dimensions shown in Figure 1 and Table 1.

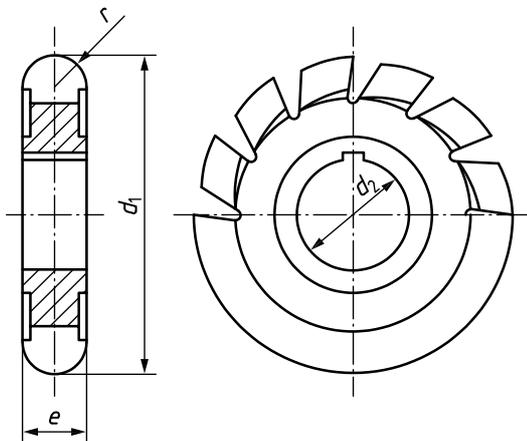


Figure 1 — Convex milling cutters

Table 1 — Dimensions of convex milling cutters

$d_1$ js16	$d_2^a$ H7	$e$	$r$ k11
50	16	2	1
		2,5	1,25
		3,2	1,6
		4	2
63	22	5	2,5
		6,3 (6) <sup>b</sup>	3,15 (3) <sup>b</sup>
		8	4
		10	5
80	27	12,6 (12) <sup>b</sup>	6,3 (6) <sup>b</sup>
		16	8
100	32	20	10
		25 (24) <sup>b</sup>	12,5 (12) <sup>b</sup>
125		32	16
		40	20

<sup>a</sup>  $d_2$  is in accordance with Clause 2 of ISO 240:1994.  
<sup>b</sup> The values given in parentheses are alternatives.

### 3.3 Concave milling cutters

The dimensions of concave milling cutters shall be in accordance with the dimensions shown in Figure 2 and Table 2.

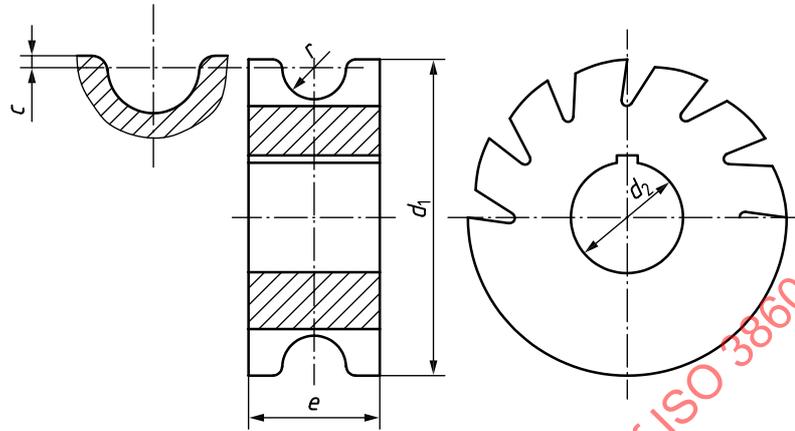


Figure 2 — Concave milling cutters

Table 2 — Dimensions of concave milling cutters

$c$	$d_1$ js16	$d_2^a$ H7	$e$	$r$ N11	
0,2	50	16	6	1	
				1,25	
0,25	63	22	8	1,6	
				9	2
0,3	80	27	10	2,5	
0,4				12	3,15 (3) <sup>b</sup>
0,5				16	4
0,6	100	32	20	5	
0,8				24	6,3 (6) <sup>b</sup>
1,0	125	32	32	8	
1,2				36	10
1,6			40	12,5 (12) <sup>b</sup>	
2,0			50	16	
			60	20	

<sup>a</sup>  $d_2$  is in accordance with Clause 2 of ISO 240:1994.

<sup>b</sup> The values given in parentheses are alternatives.

3.4 Corner-rounding cutters

The dimensions of corner-rounding cutters shall be in accordance with the dimensions shown in Figure 3 and Table 3.

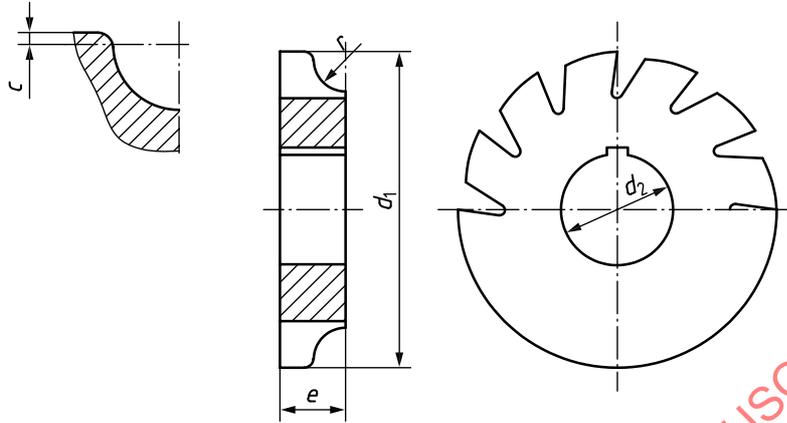


Figure 3 — Corner-rounding cutters

Table 3 — Dimensions of corner-rounding cutters

$c$	$d_1$ js16	$d_2^a$ H7	$e$	$r$ N11
0,2	50	16	4	1
				1,25
0,25	63	22	5	1,6
				2
				2,5
0,3	63	22	6	3,15 (3) <sup>b</sup>
0,4				4
0,5				5
0,6	80	27	12	6,3 (6) <sup>b</sup>
0,8				8
1,0	100	32	18	10
1,2				12,5 (12) <sup>b</sup>
1,6	125	32	24	16
2,0				20

<sup>a</sup>  $d_2$  is in accordance with Clause 2 of ISO 240:1994.  
<sup>b</sup> The values given in parentheses are alternatives.