

BS ISO 3860:2011



BSI Standards Publication

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

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The UK participation in its preparation was entrusted to Technical Committee MTE/18, Tools tips and inserts for cutting applications.

A list of organizations represented on this committee can be obtained on request to its secretary.

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ISBN 978 0 580 64848 9

ICS 25.100.20

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This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 May 2011.

**Amendments issued since publication**

Date	Text affected
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# INTERNATIONAL STANDARD

BS ISO 3860:2011

**ISO**  
**3860**

Second edition  
2011-05-01

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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*



Reference number  
ISO 3860:2011(E)

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Published in Switzerland

## 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.



# 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.

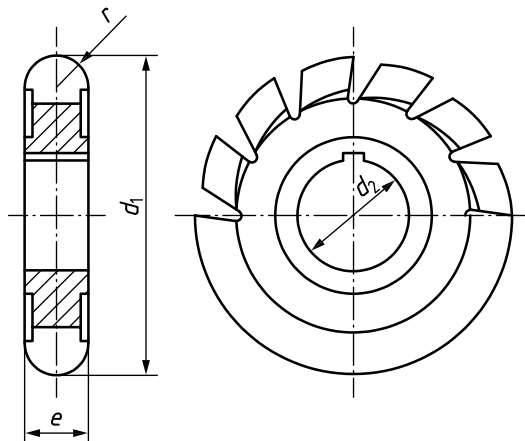


Figure 1 — Convex milling cutters

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.

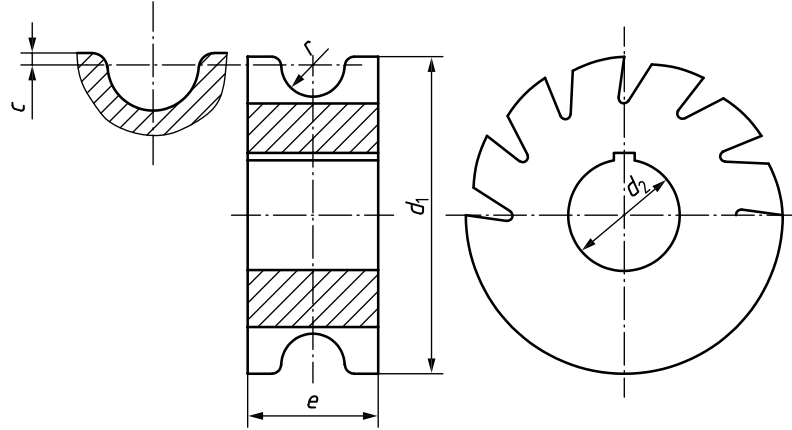


Figure 2 — Concave milling cutters

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			8	1,6		
				9	2	
0,3	63	22	10	2,5		
				12	3,15 (3) <sup>b</sup>	
0,4			16		4	
				0,5	20	5
0,6	80	27	24			6,3 (6) <sup>b</sup>
				0,8	32	8
1,0			100			32
				1,2	40	
1,6	50	16				
		2,0		125	60	

<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.

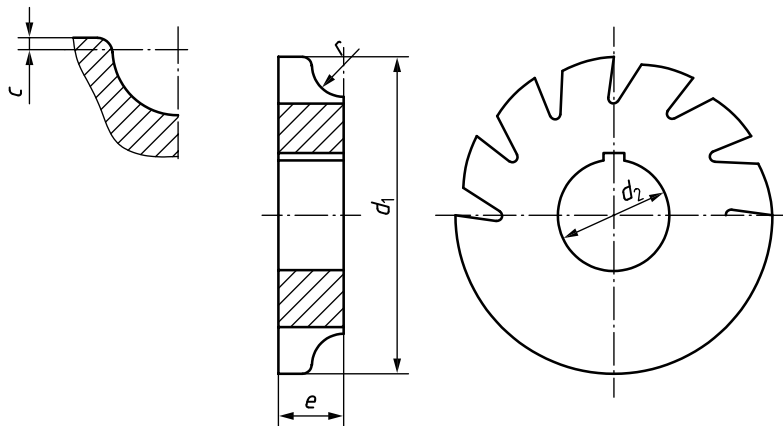


Figure 3 — Corner-rounding cutters

Table 3 — Dimensions of corner-rounding cutters

$c$	$d_1$ js16	$d_2^a$ H7	$e$	$r$ N11
0,2	50	16	4	1
0,25				1,25
	0,3	63	22	5
1,6				
0,4	80	27	12	2
0,5				2,5
0,6				3,15 (3) <sup>b</sup>
0,8	100	32	16	4
1,0				5
1,2	125	32	18	6,3 (6) <sup>b</sup>
1,6				8
2,0	125	32	20	10
2,0				12,5 (12) <sup>b</sup>
			24	16
			28	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.







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