

# INTERNATIONAL STANDARD

**ISO**  
**7787-3**

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## **Dental rotary instruments — Cutters —**

### **Part 3:**

**Carbide laboratory cutters for milling machines**

*Instruments rotatifs dentaires — Fraises techniques —*

*Partie 3: Fraises techniques en carbure pour machines de meulage*



Reference number  
ISO 7787-3:1991(E)

## 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.

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.

International Standard ISO 7787-3 was prepared by Technical Committee ISO/TC 106, *Dentistry*, Sub-Committee SC 4, *Dental instruments*.

ISO 7787 consists of the following parts, under the general title *Dental rotary instruments — Cutters*:

- Part 1: *Steel laboratory cutters*
- Part 2: *Carbide laboratory cutters*
- Part 3: *Carbide laboratory cutters for milling machines*

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# Dental rotary instruments — Cutters —

## Part 3:

## Carbide laboratory cutters for milling machines

### 1 Scope

This part of ISO 7787 specifies the dimensional and other requirements for the three most commonly used carbide cutters for milling machines which are predominantly used in the dental laboratory.

Special characteristics of cutters, for example spiralled blades, cross-cut, are not covered by this International Standard. These will be dealt with in a future International Standard.

Attention is drawn to ISO 6360-1 which specifies a 15 digit number for the identification of dental rotary instruments of all types.

NOTE 1 The various dimensional and other requirements specified for carbide cutters are those considered important to ensure the interchangeability of these instruments.

### 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 7787. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 7787 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 1797-1:1991<sup>1)</sup>, *Dental rotary instruments — Shanks — Part 1: Shanks made of metals.*

1) To be published.

ISO 2157:1984, *Dental rotary instruments — Nominal sizes and designation.*

ISO 2859-1:1989, *Sampling procedures for inspection by attributes — Part 1: Sampling plans indexed by acceptable quality level (AQL) for lot-by-lot inspection.*

ISO 6360-1:1985, *Dental rotary instruments — Number coding system — Part 1: General characteristics.*

ISO 8325:1985, *Dental rotary instruments — Test methods.*

### 3 Symbols

The following symbols are used in this part of ISO 7787:

$d_1$  diameter of the working part, head diameter

$d_2$  diameter at the end of the working part

$l_1$  length of the working part, head length

$l_2$  overall length of instrument

### 4 Material

The shaft shall be made of steel or other suitable material.

The working part shall be made of tungsten carbide.

The selection of the type of material and the treatment given to it is left to the discretion of the manufacturer.

**5 Dimensions and number of blades**

The shank shall be type 2 or 4 of ISO 1797-1.

All dimensions are in millimetres.

The dimensions, determined as described in ISO 8325, shall be as specified in the tables and figures for each type, with the nominal size as specified in ISO 2157.

**5.1 Cylindrical, side cutting only**

A cylindrical cutter for side cutting only shall be as specified in figure 1 and table 1.

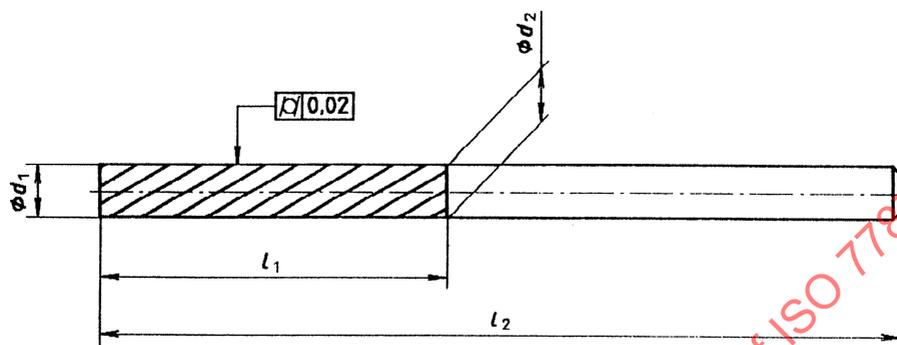


Figure 1

Table 1 — Dimensions and number of blades

Nominal size	$d_1$ $\pm 0,08$	$l_1$ $\pm 0,5$	$l_2$ $\pm 0,5$	$d_2$ max.	Number of blades min.
010	1,0	8	30	1,08	12
015	1,5	10	30	1,58	16
023	2,3	15	34	2,35	22

## 5.2 Hemispherical, cylindrical

A hemispherical, cylindrical cutter shall be as specified in figure 2 and table 2.

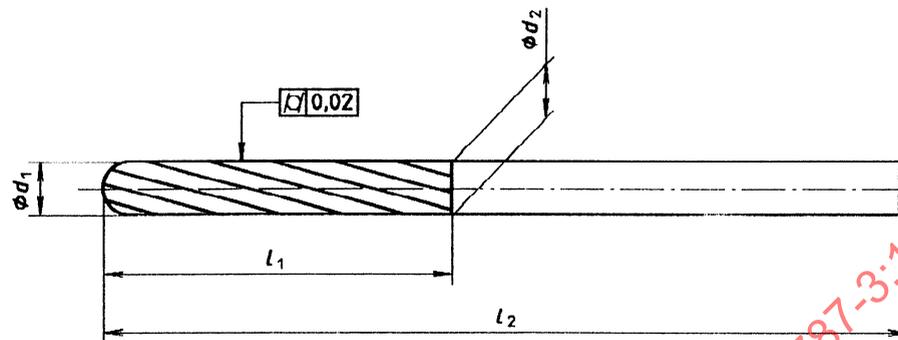


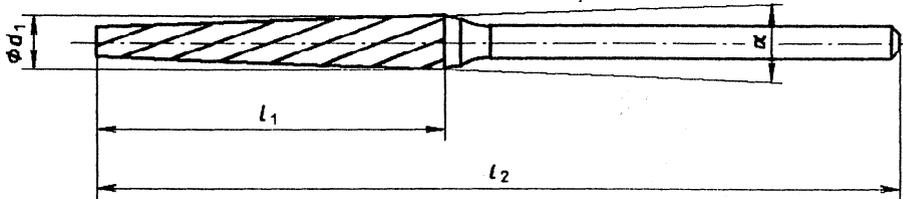
Figure 2

Table 2 — Dimensions and number of blades

Nominal size	$d_1$ $\pm 0,08$	$l_1$ $\pm 0,5$	$l_2$ $\pm 0,5$	$d_2$ max.	Number of blades min.
010	1,0	8	30	1,08	12
015	1,5	10	30	1,58	16
023	2,3	15	34	2,35	22

**5.3 Truncated conical, side cutting only**

A truncated conical cutter for side cutting only shall be as specified in figure 3 and table 3.



**Figure 3**

**Table 3 — Dimensions and number of blades**

Nominal size	$d_1$		$l_1$ $\pm 0,5$	$l_2$ $\pm 0,5$	$\alpha^\circ$ $\pm 20'$	Number of blades min.
		tol.				
023	2,3	$\pm 0,08$	13	32	4	12
025	2,5				6	12
031	3,1				8	14
035	3,5				10	16
040	4,0	$\pm 0,10$			12	18

**6 Run-out**

The total indicated run-out determined as specified in ISO 8325 shall not exceed 0,08 mm.

The measurement point is at the middle of the working part.

**7 Sampling and acceptance levels**

The acceptable quality level (AQL) according to ISO 2859-1 shall be 6,5.