International Standard 3823/2

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION•МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ•ORGANISATION INTERNATIONALE DE NORMALISATION

Dental rotary instruments — Part 2 : Steel and carbide finishing burs

Instruments rotatifs dentaires — Partie 2 : Fraises à finir en acier et carbure

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Descriptors : dentistry, dental instruments, dental rotary-cutting instruments, burs (dental), specifications, dimensions, quality control.

Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 3823/2 was prepared by Technical Committee ISO/TC 106, *Dentistry*.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

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Dental rotary instruments — Part 2 : Steel and carbide finishing burs

0 Introduction

This International Standard is one of a series of standards relating to dental rotary instruments. It consists of two parts :

Part 1 : Steel and carbide burs.

Part 2 : Steel and carbide finishing burs.

The various dimensional and other requirements specified for steel and carbide finishing burs are those considered important to ensure the interchangeability of these instruments.

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

1 Scope and field of application

This part of ISO 3823 specifies dimensions of, and requirements for, the twelve most commonly used forms of steel and carbide finishing burs. It is envisaged to extend the scope of this International Standard to cover other forms of burs.

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

2 References

ISO 1797, *Dental rotary instruments — Shanks.*

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

ISO 6360, *Dental rotary instruments — Number coding system.*

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

3 Classification

Dental finishing burs shall be classified, according to the material of the working part, into the following two types :

— **Type 1** : Steel finishing burs

— **Type 2** : Carbide finishing burs

4 Symbols

d_1 diameter of the working part, head diameter

d_2 neck diameter

l_1 length of the working part, head length

l_2 overall length

5 Material

The shaft shall be made of steel or other suitable material. The working parts of steel finishing burs shall be made of steel and those of carbide finishing burs of tungsten carbide.

The selection of the type of material and the treatment shall be left to the discretion of the manufacturer.

6 Dimensions and number of blades

All dimensions are in millimetres.

The dimensions, determined as described in ISO 8325, shall be as specified in the tables and shown in figures 1 to 12.

For the overall length, see clause 7.

Shank types 1, 2 or 3 shall be in accordance with ISO 1797.

A dash in a column of a table indicates that the particular size is not available.

6.1 Round head

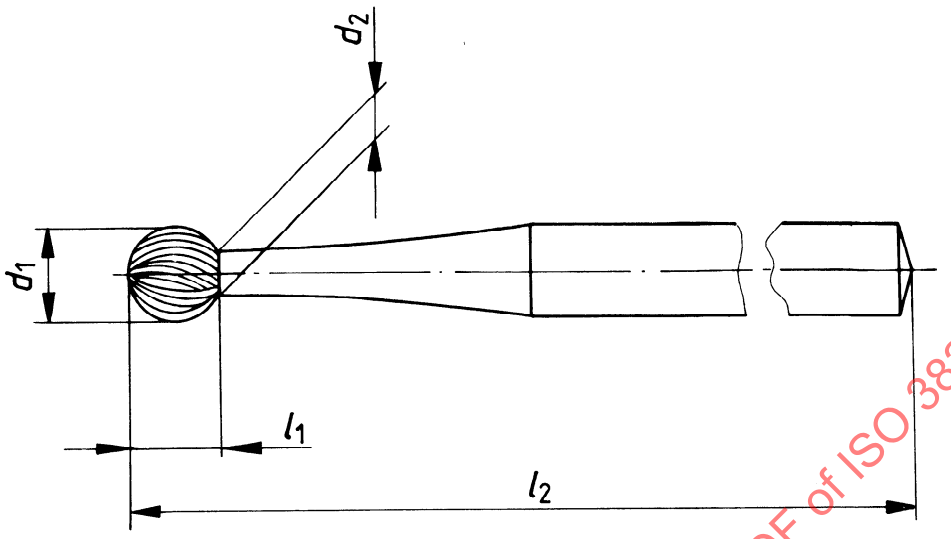


Figure 1

Table 1 — Dimensions and number of blades

Nominal size	d_1	l_1 min.		d_2	Number of blades min.	
		Type 1	Type 2	max.	Type 1	Type 2
008	0,8 ± 0,08	0,58	—	0,64	10	—
010	1,0 ± 0,08	0,73	0,65	0,78	12	12
012	1,2 ± 0,08	0,90	0,79	0,88	14	12
014	1,4 ± 0,10	1,08	0,82	0,98	16	12
016	1,6 ± 0,10	1,26	—	1,04	16	—
018	1,8 ± 0,10	1,46	1,26	1,12	16	12
021	2,1 ± 0,10	1,71	—	1,20	20	—
023	2,3 ± 0,10	1,89	1,60	1,29	20	12
025	2,5 ± 0,10	2,05	—	1,40	20	—
027	2,7 ± 0,10	2,23	1,95	1,48	22	12
029	2,9 ± 0,10	2,39	—	1,60	22	—
031	3,1 ± 0,10	2,53	2,44	1,68	24	22
033	3,3 ± 0,10	2,72	—	1,78	26	—
035	3,5 ± 0,10	2,92	—	1,82	28	—
037	3,7 ± 0,10	3,09	—	1,92	30	—
040	4,0 ± 0,10	3,40	—	2,06	32	—
042	4,2 ± 0,10	3,51	—	2,16	32	—
045	4,5 ± 0,10	3,80	—	2,16	32	—
047	4,7 ± 0,10	3,97	—	2,24	36	—
050	5,0 ± 0,10	4,25	—	2,32	36	—

6.2 Bud

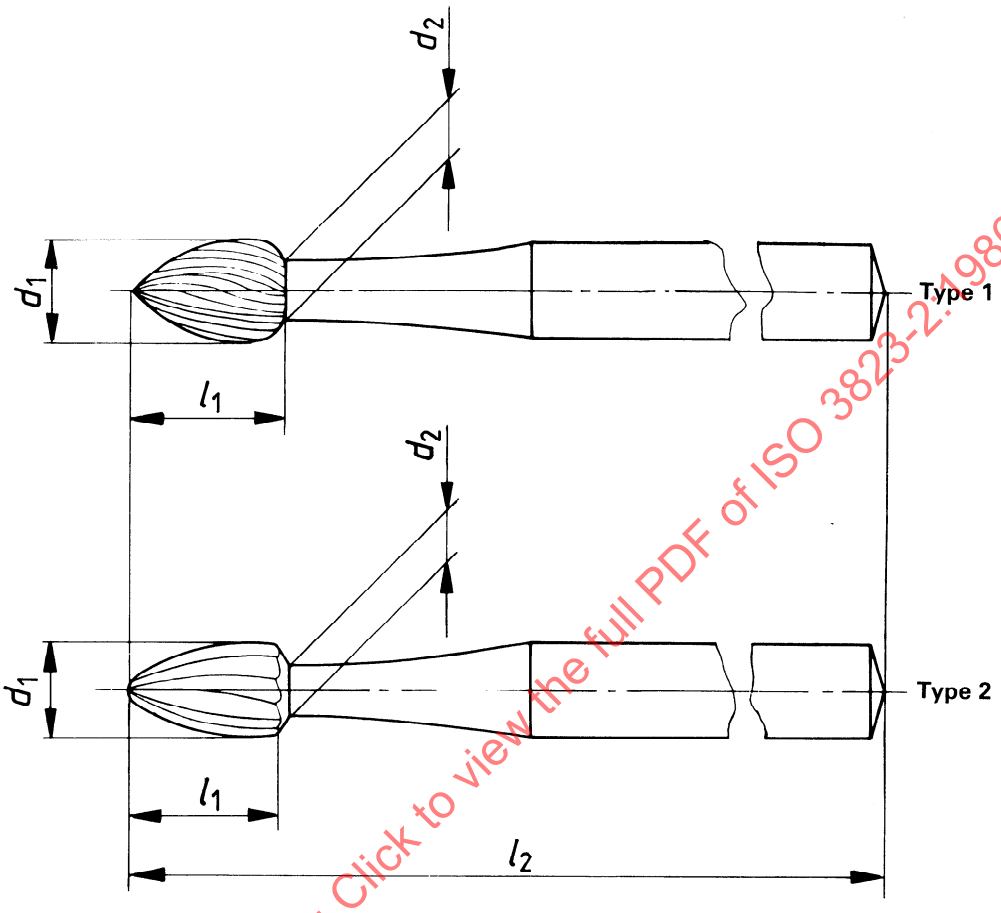
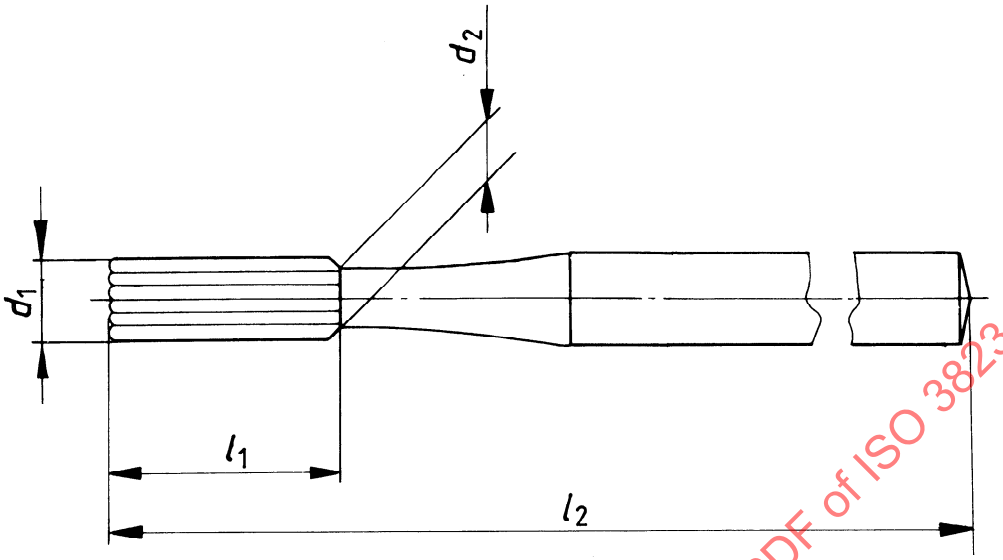


Figure 2

Table 2 — Dimensions and number of blades

Nominal size	d_1 ± 0,08	l_1 min. Type 1	l_1 min. Type 2	d_2 max.	Number of blades min. Type 1	Number of blades min. Type 2
010	1,0	1,10	—	0,78	12	—
012	1,2	1,40	—	0,88	14	—
014	1,4	1,70	3,0	0,98	14	10
016	1,6	2,00	—	1,04	16	—
018	1,8	2,35	3,3	1,12	16	10
021	2,1	2,75	—	1,20	20	—
023	2,3	3,05	3,9	1,29	20	10

6.3 Cylindrical



Taper angle of the head ⩽ 2°

Figure 3

Table 3 — Dimensions and number of blades

Nominal size	d_1 ± 0,08	l_1 min.		d_2 max.	Number of blades min.	
		Type 1	Type 2		Type 1	Type 2
008	0,8	3,3	—	0,88	10	—
010	1,0	3,8	3,7	1,08	12	10
012	1,2	3,8	3,7	1,28	14	10
014	1,4	4,3	4,1	1,35	14	10
016	1,6	4,3	—	1,50	16	—
018	1,8	4,8	—	1,60	16	—
021	2,1	4,8	—	1,70	20	—
023	2,3	5,3	5,0	1,80	20	18

6.4 Flame

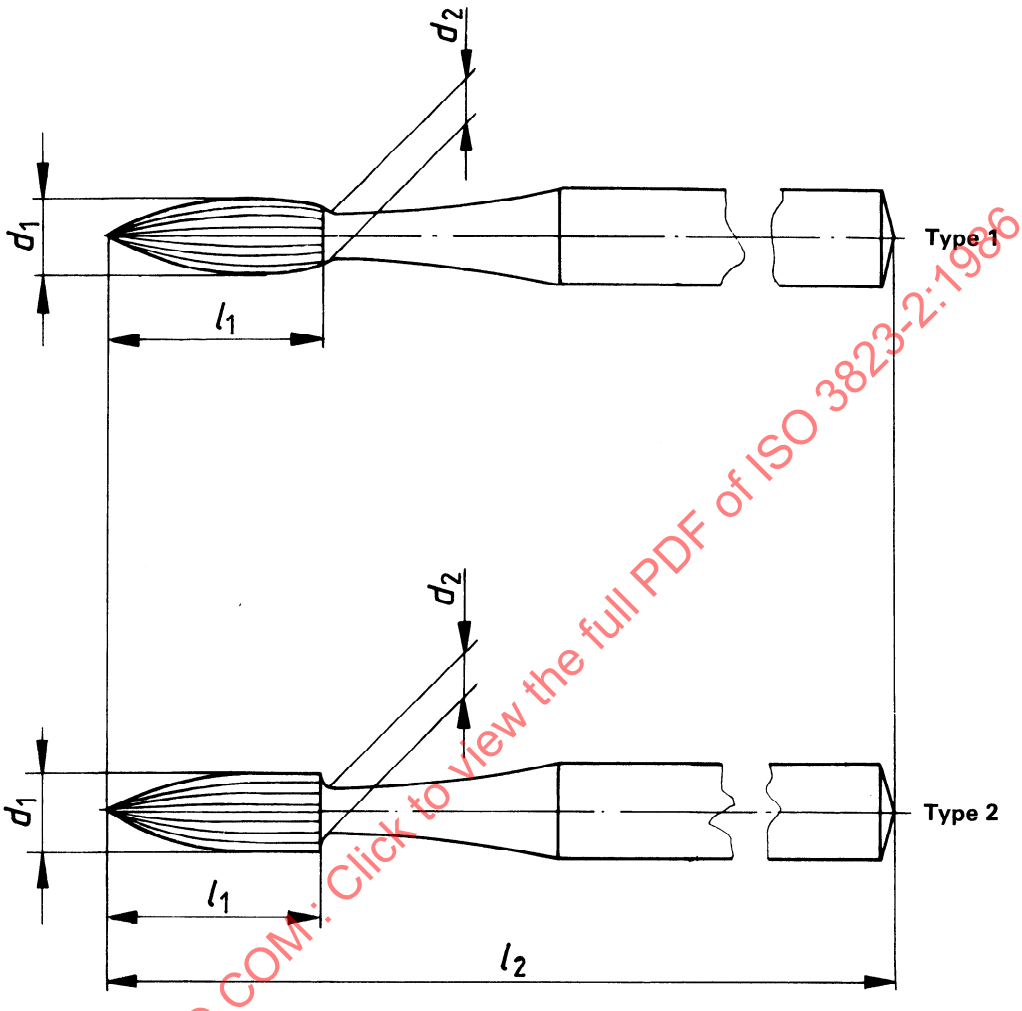
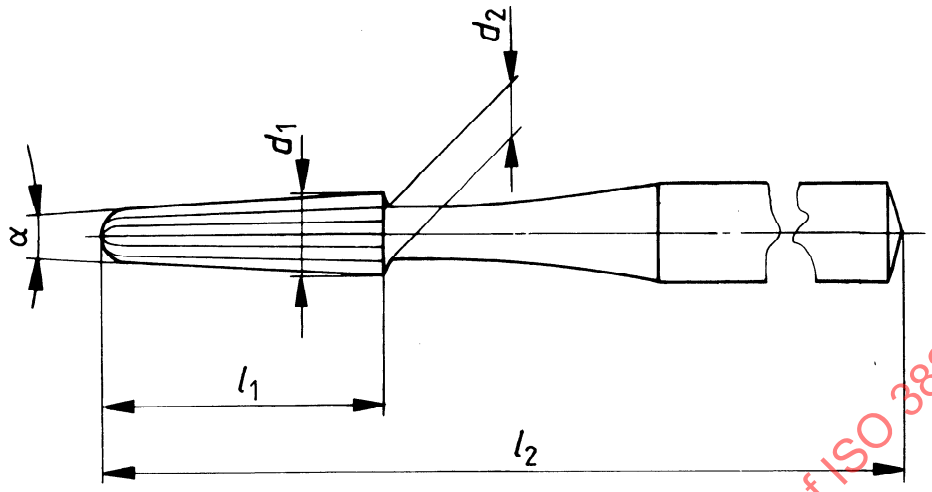


Figure 4

Table 4 — Dimensions and number of blades

Nominal size	d_1 ± 0,08	l_1 min.		d_2 max.	Number of blades min.	
		Type 1	Type 2		Type 1	Type 2
010	1,00	3,8	3,2	0,86	12	10
012	1,20	3,8	3,7	0,96	14	10
014	1,40	4,3	3,7	1,00	14	14
016	1,60	4,3	4,1	1,05	16	16
018	1,80	4,8	—	1,15	16	—
021	2,10	4,8	—	1,20	20	—
023	2,30	5,3	—	1,30	20	—

6.5 Tapered, rounded end, regular



α = 4° to 8°

Figure 5

Table 5 — Dimensions and number of blades

Nominal size	d_1 ± 0,08	l_1 min. Type 2	d_2 max.	Number of blades min.
010	1,00	3,7	0,86	10

6.6 Egg

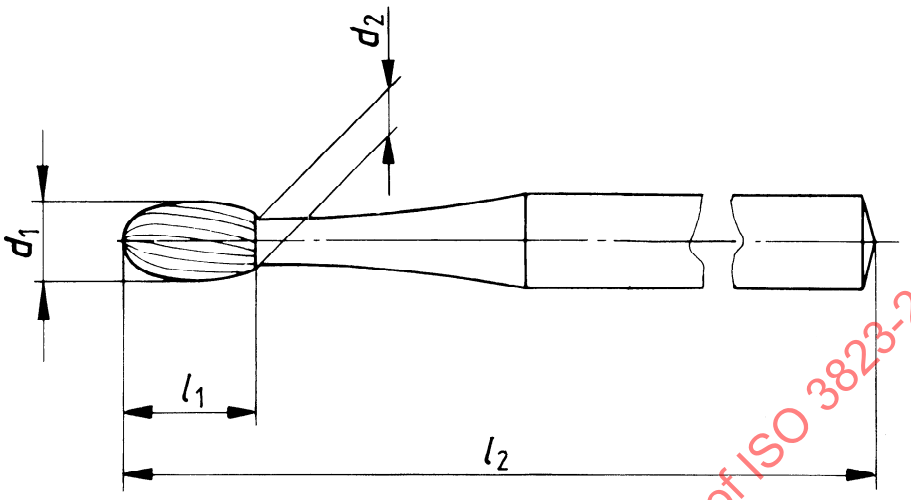
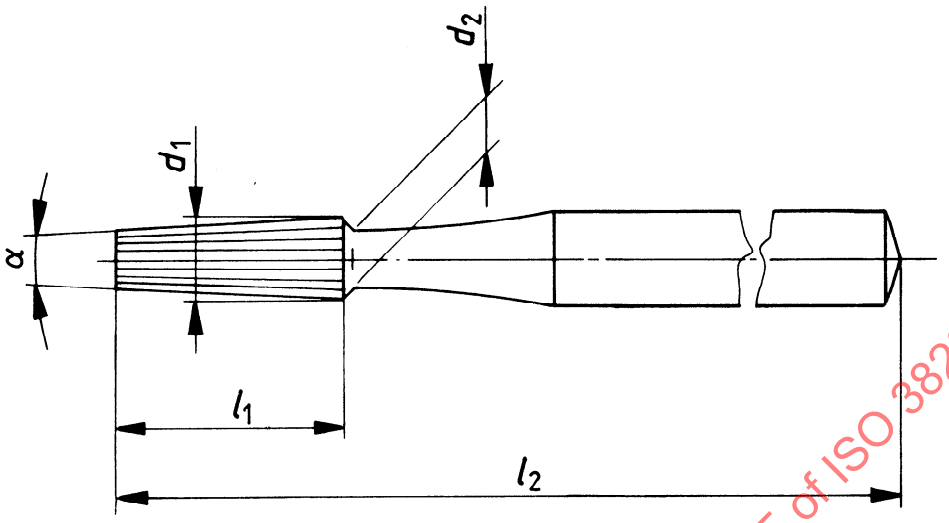


Figure 6

Table 6 — Dimensions and number of blades

Nominal size	d_1 ± 0,08	l_1 min.		d_2 max.	Number of blades min.	
		Type 1	Type 2		Type 1	Type 2
014	1,4	2,2	2,6	1,10	16	10
018	1,8	2,8	3,0	1,35	16	10
023	2,3	—	3,3	1,45	—	10
027	2,7	3,7	—	—	22	—
031	3,1	3,7	—	—	24	—

6.7 Tapered, regular



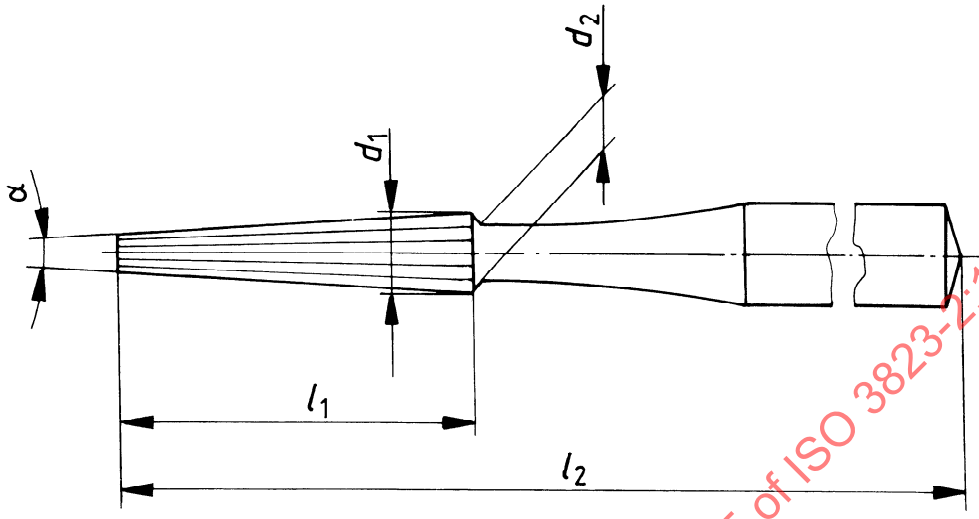
α = 4° to 8°

Figure 7

Table 7 — Dimensions and number of blades

Nominal size	d_1 ± 0,08	l_1 min.		d_2 max.	Number of blades min.	
		Type 1	Type 2		Type 1	Type 2
010	1,0	3,0	2,9	1,08	8	10
012	1,2	3,0	2,9	1,28	10	10
014	1,4	3,5	—	1,35	10	—
016	1,6	3,5	3,3	1,50	12	10
018	1,8	3,5	—	1,60	12	—
021	2,1	4,0	—	1,70	14	—
023	2,3	4,0	—	1,80	14	—

6.8 Tapered, head length over 8,5 mm



α = 4° to 8°

Figure 8

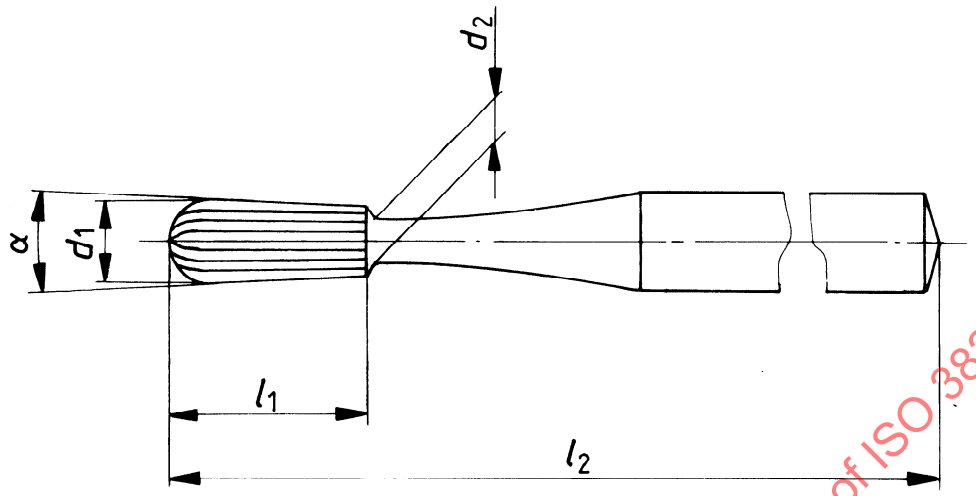
Table 8 — Dimensions and number of blades

Nominal size	d_1 ± 0,08	l_1 min. Type 2	d_2 max.	Number of blades min.
014	1,4	8,5	1,35	10
016	1,6	8,5	1,50	10
018	1,8	8,5	1,60	10

Table 9 — Overall lengths, l_2

Length of instrument	Overall length, l_2, for instruments with shanks		
	Shank type 1 ± 0,5	Shank type 2	Shank type 3 ± 0,5
Short	23,5	—	21,5
Standard	27,0	46,0 ± 0,5	24,0
Long	31,0	64,5 ± 1	26,0
Extra long	39,0	70,0 ± 1	30,0

6.9 Pear, long



α = 2° to 6°

Figure 9

Table 10 — Dimensions and number of blades

Nominal size	d_1 ± 0,08	l_1 min. Type 2	d_2 max.	Number of blades min.
012	1,2	3,7	0,96	10
014	1,4	4,1	0,98	10
016	1,6	4,1	1,04	10