
International Standard



3630

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

Dental root canal instruments

Instruments pour canaux radiculaires utilisés en art dentaire

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[ISO 3630:1984](#)

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Descriptors : dentistry, dental instruments, reamers, files (tools), dimensions, colour codes, specifications.

Price based on 16 pages

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been authorized 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.

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.

International Standard ISO 3630 was developed by Technical Committee ISO/TC 106, *Dentistry*, and was circulated to the member bodies in August 1982.

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It has been approved by the member bodies of the following countries:

Belgium	New Zealand	Switzerland
China	Norway	United Kingdom
Czechoslovakia	Romania	USA
Germany, F.R.	South Africa, Rep. of	USSR
Japan	Sweden	

The member bodies of the following countries expressed disapproval of the document on technical grounds:

Australia
France
India

Dental root canal instruments

0 Introduction

This International Standard covers significant features of hand- and power-operated dental root canal instruments which are used by the dentist for the mechanical preparation of root canals for treatment.

Attention is drawn to the International Standard on a number coding system, 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 International Standard specifies requirements, test methods, coding and identification for hand- and power-operated dental root canal instruments. It covers root canal instruments of the following types (see ISO 1942):

- a) files types H and K;
- b) reamers types K and B2;
- c) barbed broaches; ✕
- d) rasps; ✕
- e) paste carriers; ✕
- f) explorers and cotton broaches (probes and applicators).

NOTE — Additional types of instruments will form the subject of future International Standards.

2 References

ISO 1797, *Dental rotary instruments — Fitting dimensions.*¹⁾

ISO 1942, *Dental vocabulary.*

ISO 6360, *Dental rotary instruments — Number coding system.*²⁾

3 Material

The instruments shall be made of stainless steel or carbon steel. The type of steel and the treatment shall be at the discretion of the manufacturer.

4 Dimensional requirements

The dimensions are given in millimetres. The dimensional requirements of the instruments shall be as given in the respective tables and figures. Compliance shall be tested in accordance with 7.1.

NOTE — The dimensional requirements for files, types H and K and reamers, type K are very similar. Recent developments however might lead to more divergencies. Therefore in 4.2.1 to 4.2.3 these three types of instrument are laid down separately.

4.1 Nominal sizes, designation and nominal diameters

Table 1 gives the series of nominal diameters for the working part and the corresponding designations to be used for all dental root canal instruments regardless of the type of instrument.

The designation of the nominal sizes are given by 3 digits corresponding to the value of the nominal diameter, in hundredths of a millimetre.

Table 1 — Nominal diameters and nominal size designation

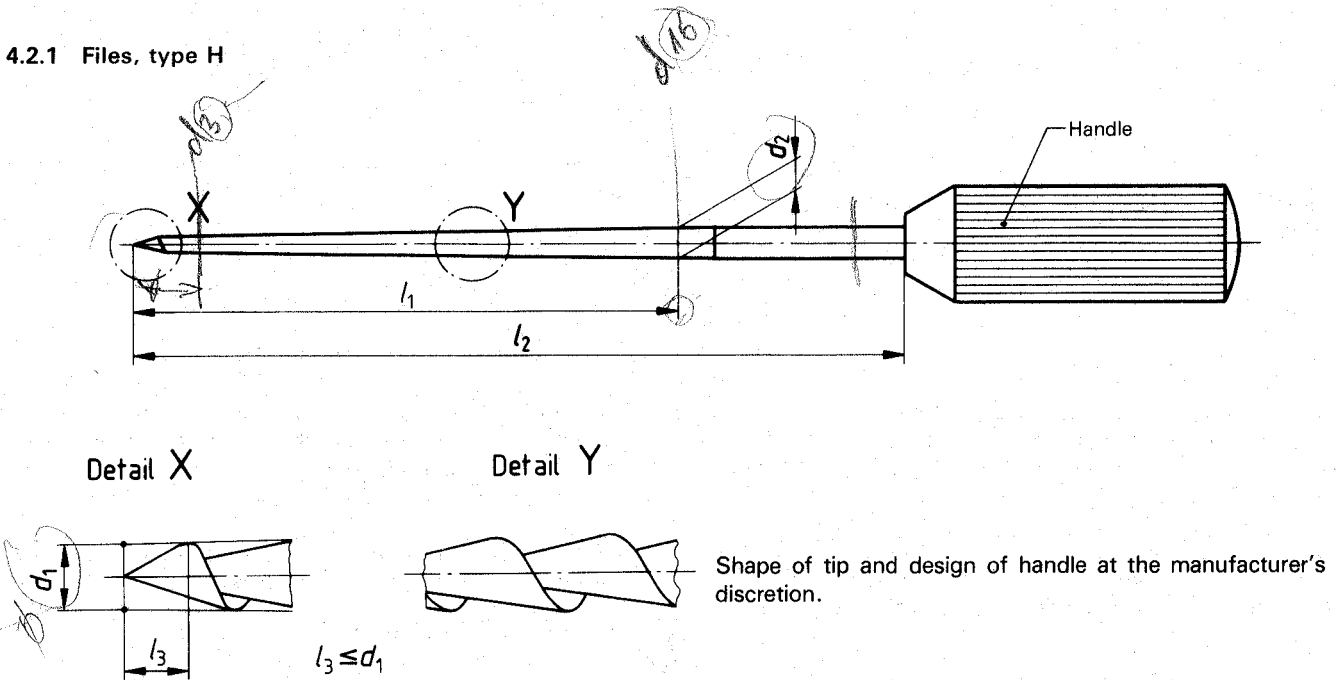
Nominal diameter	Nominal size designation
0,10	010
0,12	012
0,15	015
0,17	017
0,20	020
0,25	025
0,30	030
0,35	035
0,40	040
0,45	045
0,50	050
0,55	055
0,60	060
0,70	070
0,75	075
0,80	080
0,90	090
1,00	100
1,05	105
1,10	110
1,20	120
1,30	130
1,40	140

1) At present at the stage of draft. (Revision of ISO 1797-1976.)

2) At present at the stage of draft.

4.2 Files and reamers

4.2.1 Files, type H



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Taper along working part 0,02:1

- d_1 : diameter of the projection of the working part at the tip end
- d_2 : diameter at the end of working part
- l_1 : length of working part
- l_2 : length of operative end
- l_3 : tip length

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Figure 1 – Files, type H

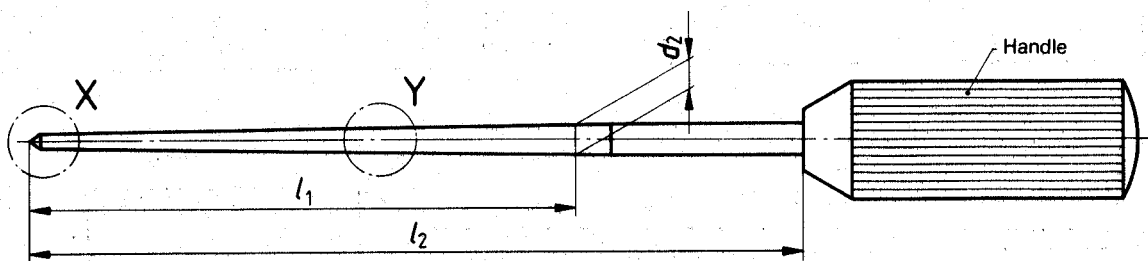
Table 2 – Dimensions and designation

Nominal sizes	d_1 $\pm 0,02$	d_2 $\pm 0,02$	l_1 min.	Colour designation
015	0,15	0,47	16	white
020	0,20	0,52		yellow
025	0,25	0,57		red
030	0,30	0,62		blue
035	0,35	0,67		green
040	0,40	0,72		black
045	0,45	0,77		white
050	0,50	0,82		yellow
055	0,55	0,87		red
060	0,60	0,92		blue
070	0,70	1,02		green
080	0,80	1,12		black
090	0,90	1,22		white
100	1,00	1,32		yellow
110	1,10	1,42		red
120	1,20	1,52		blue
130	1,30	1,62	green	
140	1,40	1,72	black	

Table 3 – Length l_2

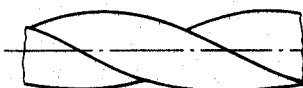
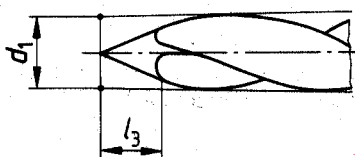
l_2 $\pm 0,5$
21
25
28
31

4.2.2 Files, type K



Detail X

Detail Y



Shape of tip and design of handle at the manufacturer's discretion.

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Taper along working part 0,02:1

- d_1 : diameter of the projection of the working part at the tip end
- d_2 : diameter at the end of working part
- l_1 : length of working part
- l_2 : length of operative end
- l_3 : tip length

Figure 2 — Files, type K

Table 4 — Dimensions and designation

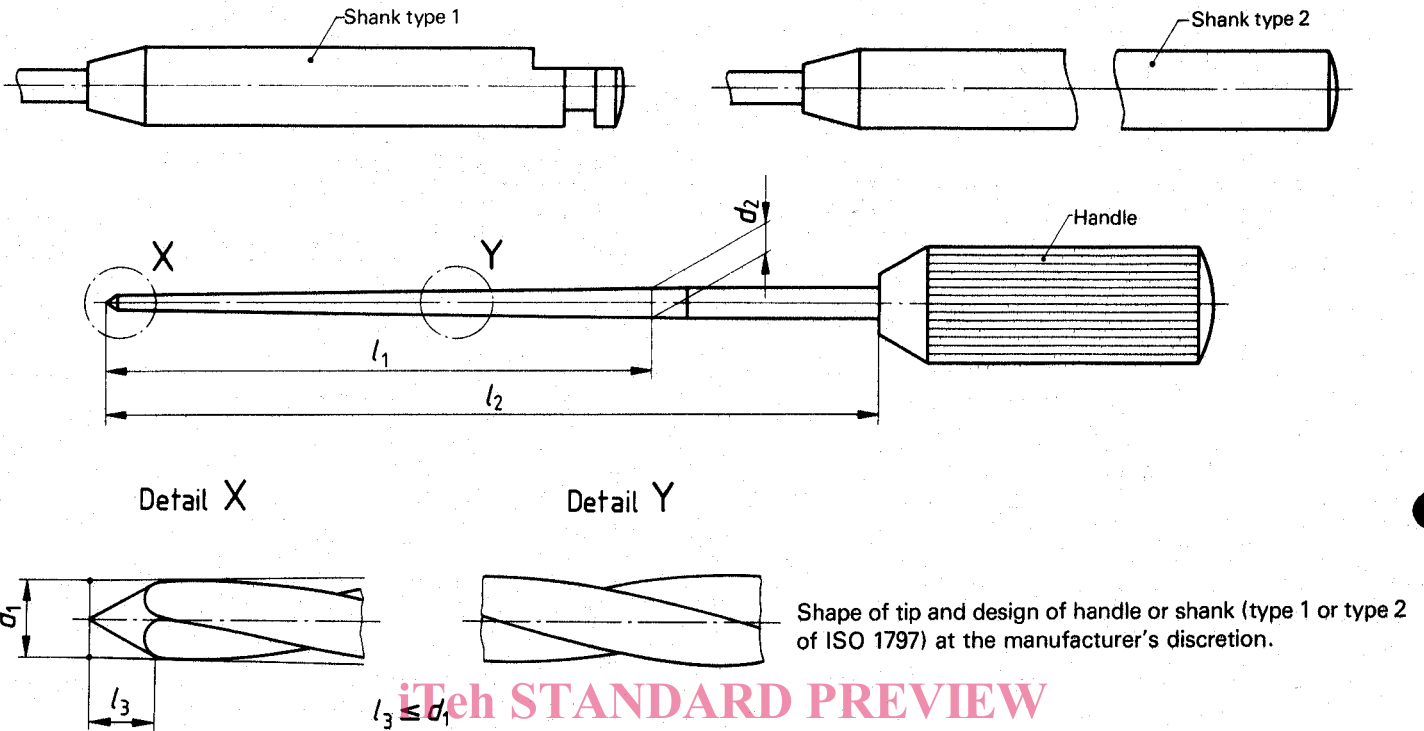
Nominal sizes	d_1 $\pm 0,02$	d_2 $\pm 0,02$	l_1 min.	Colour designation
010*	0,10	0,42	16	purple
015	0,15	0,47		white
020	0,20	0,52		yellow
025	0,25	0,57		red
030	0,30	0,62		blue
035	0,35	0,67		green
040	0,40	0,72		black
045	0,45	0,77		white
050	0,50	0,82		yellow
055	0,55	0,87		red
060	0,60	0,92		blue
070	0,70	1,02		green
080	0,80	1,12		black
090	0,90	1,22		white
100	1,00	1,32	yellow	
110	1,10	1,42	red	
120	1,20	1,52	blue	
130	1,30	1,62	green	
140	1,40	1,72	black	

Table 5 — Length l_2

l_2 $\pm 0,5$
21
25
28
31

* The size 010 is a super fine size and has therefore an individual colour which is purple.

4.2.3 Reamers, type K



Taper along working part 0,02:1

- d_1 : diameter of the projection of the working part at the tip end
- d_2 : diameter at the end of working part
- l_1 : length of working part
- l_2 : length of operative end
- l_3 : tip length

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Figure 3 — Reamers, type K

Table 6 — Dimensions and designation

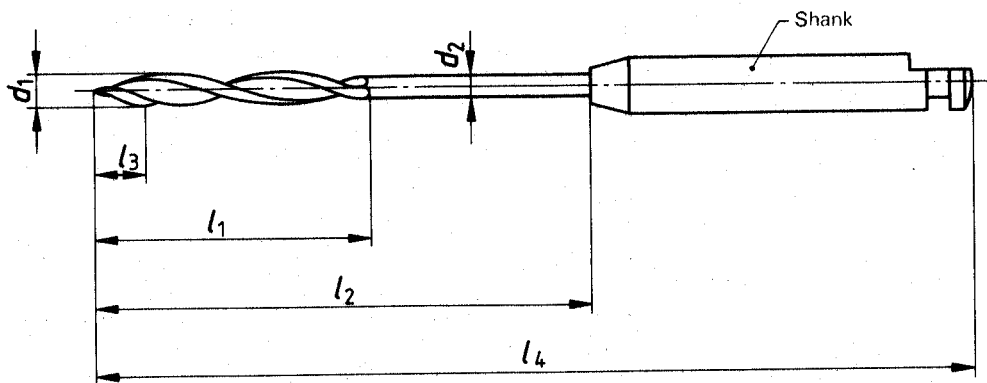
Nominal sizes	d_1 ± 0,02	d_2 ± 0,02	l_1 min.	Colour designation
010*	0,10	0,42	16	purple
015	0,15	0,47		white
020	0,20	0,52		yellow
025	0,25	0,57		red
030	0,30	0,62		blue
035	0,35	0,67		green
040	0,40	0,72		black
045	0,45	0,77		white
050	0,50	0,82		yellow
055	0,55	0,87		red
060	0,60	0,92		blue
070	0,70	1,02		green
080	0,80	1,12		black
090	0,90	1,22		white
100	1,00	1,32	yellow	
110	1,10	1,42	red	
120	1,20	1,52	blue	
130	1,30	1,62	green	
140	1,40	1,72	black	

Table 7 — Length l_2

l_2 ± 0,5
21
25
28
31

* The size 010 is a super fine size and has therefore an individual colour which is purple.

4.2.4 Reamers, type B2



Shank type 1 or 2 of ISO 1797 at the manufacturer's discretion

- d_1 : diameter of working part
- d_2 : neck diameter
- l_1 : length of working part
- l_2 : length of operative end
- l_3 : tip length
- l_4 : overall length

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Figure 4 — Reamers, type B2

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Table 8 — Dimensions and designation

Nominal sizes	d_1 $\pm 0,02$	d_2 min.	l_1 max.	l_3 max.	Designation ¹⁾	
					Colour	Ring marking on shank
030	0,30	0,20	7,5	0,5	purple	—
035	0,35	0,25	8	0,5	white	I
045	0,45	0,35	8	0,5	yellow	II
060	0,60	0,45	8	0,7	red	III
075	0,75	0,55	9	0,8	blue	III I
090	0,90	0,65	9	1	green	III II
105	1,05	0,75	10	1,1	black	III III

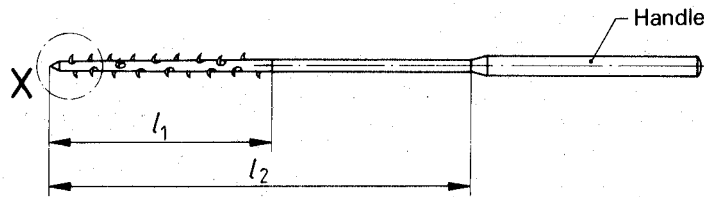
1) See clause 8.

Table 9 — Lengths l_2 and l_4

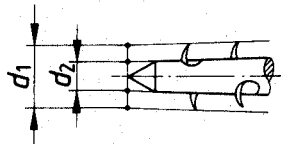
l_2		l_4 min.	
for shank type 1 $\pm 0,5$	for shank type 2 min.	for shank type 1	for shank type 2
18	25	33	61

4.3 Barbed broaches

Tip end at the manufacturer's discretion



Detail X



Hand use: design of handle at the manufacturer's discretion

Machine use (for reciprocating hand piece only): shank type 1 of ISO 1797.

Taper along working part 0,007 : 1 with a tolerance of $+0,003$ ₀

- d_1 : diameter of the projection of the working part at the tip end
- d_2 : diameter of core
- l_1 : length of working part
- l_2 : length of operative end

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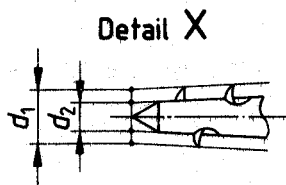
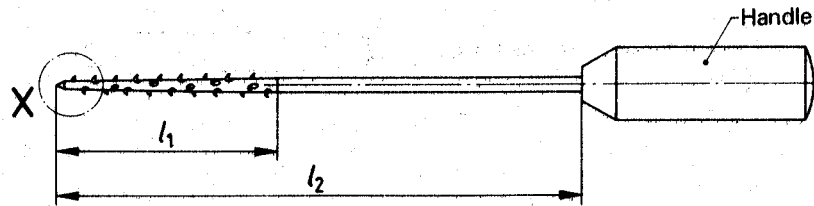
Figure 5 — Barbed broaches

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Table 10 — Dimensions and designation

Nominal sizes	d_1 +0,04 0	d_2 +0,02 0	l_1 $\pm 1,5$	l_2 min.	Height of barbs	Number of barbs min.	Designation	
							Colour	Numbers
025	0,24	0,12	10,5	20	0,5 d_2	36	white	1
030	0,28	0,14					yellow	2
035	0,34	0,17					red	3
040	0,40	0,20					blue	4
050	0,50	0,25					green	5
060	0,60	0,30					black	6

4.4 Rasps



Shape of tip and design of handle at the manufacturer's discretion.

Taper along working part 0,015 : 1 with a tolerance of $\begin{matrix} +0,005 \\ 0 \end{matrix}$

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- d_1 : diameter of the projection of the working part at the tip end
- d_2 : diameter of core
- l_1 : length of working part
- l_2 : length of operative end

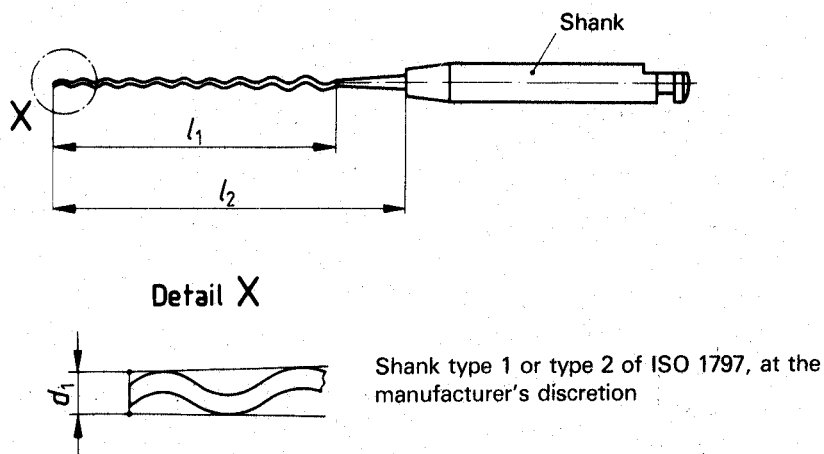
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<https://standards.iteh.ai/catalog/standards/sist/63073c4f-1d3d-4B2-a09a-bc7fcb290a58/iso-3630-1984>
Figure 6 — Rasps

Table 11 — Dimensions and designation

Nominal sizes	d_1 +0,03 0	d_2 +0,02 0	l_1 min.	l_2 $\pm 0,5$	Height of barbs	Number of barbs min.	Designation	
							Colour	Numbers
025	0,25	0,15	10,5	25,5	$1/3 \times d_2$	50	white	1
030	0,30	0,18					yellow	2
035	0,35	0,21					red	3
040	0,40	0,24					blue	4
045	0,45	0,27					green	5
050	0,50	0,30					black	6

4.5 Paste carriers



Working part tapered or cylindrical and winding of spiral at the manufacturer's discretion. The winding of the spiral shall be such as to convey the material to the tip of the instrument when rotated in a clockwise direction.

Taper, if applicable, along working part 0,02 : 1.

d_1 : diameter of the projection of the working part at the tip end
 l_1 : length of working part
 l_2 : length of operative end

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Figure 7 — Paste carriers

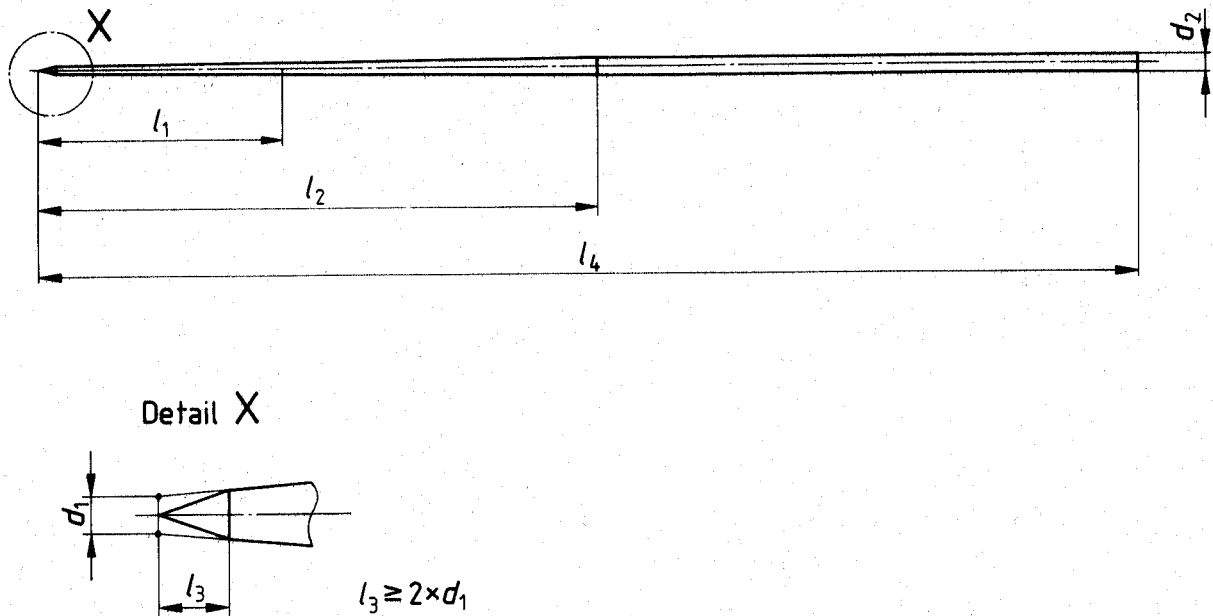
Table 12 — Dimensions and designation

Nominal sizes	d_1 0 -0,05	l_1 min.	Designation	
			Colour	Ring marking on shank
025	0,25	16	red	I
030	0,30		blue	II
035	0,35		green	III
040	0,40		black	IIII

Table 13 — Length l_2

l_2 $\pm 0,5$	
for shank type 1	for shank type 2
21	21
25	25
29	—

4.6 Explorers and cotton broaches



Cross-section along operative end: round or polygonal at the manufacturer's discretion.

Taper along operative end 0,007 : 1, with a tolerance of $\pm 0,003$.

d_1 : diameter of the projection of the working part at the tip end

d_2 : diameter of the handle

l_1 : length of working part

l_2 : length of operative end

l_3 : tip length

l_4 : overall length

Figure 8 – Explorers and cotton broaches

Table 14 – Dimensions and designation

Nominal sizes	d_1 $\pm 0,02$	d_2 max.	l_1 $\pm 1,5$	l_2 $\pm 0,5$	l_4 $\pm 1,5$	Designation	
						Colour	Numbers
012	0,12	0,8	10,5	25	50	white	1
015	0,14					yellow	2
017	0,17					red	3
020	0,20					blue	4
025	0,25					green	5
030	0,30					black	6