
**Dentistry — Root canal instruments —
Part 4:
Auxiliary instruments**

Art dentaire — Instruments pour canaux radiculaires —

Partie 4: Instruments auxiliaires

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ISO 3630-4:2009

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Published in Switzerland

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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.

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 3630-4 was prepared by Technical Committee ISO/TC 106, *Dentistry*, Subcommittee SC 4, *Dental instruments*.

ISO 3630 consists of the following parts, under the general title *Dentistry — Root canal instruments*:

— *Part 1: General requirements and test methods*

— *Part 2: Enlargers*

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— *Part 3: Condensers, pluggers and spreaders*

— *Part 4: Auxiliary instruments*

The following part is under preparation:

— *Part 5: Shaping and cleaning instruments*

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Dentistry — Root canal instruments —

Part 4: Auxiliary instruments

1 Scope

This part of ISO 3630 specifies requirements and test methods for hand-held or mechanically operated instruments for performing root canal procedures not cited in ISO 3630-1, 3630-2, 3630-3 or 3630-5.

This part of ISO 3630 specifies requirements for size, product designation, safety considerations, instructions and labelling.

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 1797-1, *Dental rotary instruments — Shanks — Part 1: Shanks made of metals*
[ISO 3630-4:2009](https://standards.iteh.ai/catalog/standards/iso-3630-4-2009)

ISO 1797-2, *Dental rotary instruments — Shanks — Part 2: Shanks made of plastics*
[78f229a8d233/iso-3630-4-2009](https://standards.iteh.ai/catalog/standards/iso-3630-4-2009)

ISO 1942, *Dentistry — Vocabulary*

ISO 3630-1:2008, *Dentistry — Root-canal instruments — Part 1: General requirements and test methods*

ISO 3630-2:2000, *Dental root-canal instruments — Part 2: Enlargers*

3 Terms, definitions and symbols

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 1942, ISO 3630-1 and the following apply.

3.1.1

barbed broach

root-canal instrument with barbs designed for removing the pulp tissue

3.1.2

rasp

root-canal instrument in which sharp prominences have been formed on the working part and which is designed to enlarge a root canal by abrasive action

3.1.3

paste carrier

root-canal instrument designed for conveying filling material or medicaments into a root canal

3.1.4

root-canal explorer

root-canal instrument designed for exploring the root canal system

3.1.5

cotton broach

root-canal instrument used with cotton for drying root canals or placing medicaments

3.1.6

height of barb

height measured perpendicularly from the outside of the core to the barbed tip

3.1.7

core diameter of the instrument

diameter of the solid portion of the barbed broach or rasp

3.2 Symbols

For the purposes of this document, the following symbols apply.

d_1 diameter of core or working part at length l_1 ;

d_2 diameter of core or working part at length l_2 ;

d_3 diameter of core or working part at length l_3 ;

h height of barb;

l_1 tip length, measured from tip point (for Type 1 and Type 2) to base of first barb;

l_2 length for measuring point d_2 ;

l_3 length for measuring point d_3 and minimum length of working part, distance from the tip of the instrument to the tip of the last barb;

l_4 length of operative part.

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4 Classification

For the purposes of this document, root-canal instruments are classified according to the shape and intended endodontic application of the instrument as follows:

- Type 1: barbed broaches;
- Type 2: rasps;
- Type 3: paste carriers;
- Type 4: explorers and cotton broaches.

5 Requirements

5.1 Material

The material for the working part of the root-canal instrument and for the handle or shank is left to the discretion of the manufacturer. The handle and shank security shall meet the requirement specified in ISO 3630-1:2008, 5.7.

5.2 Dimensions

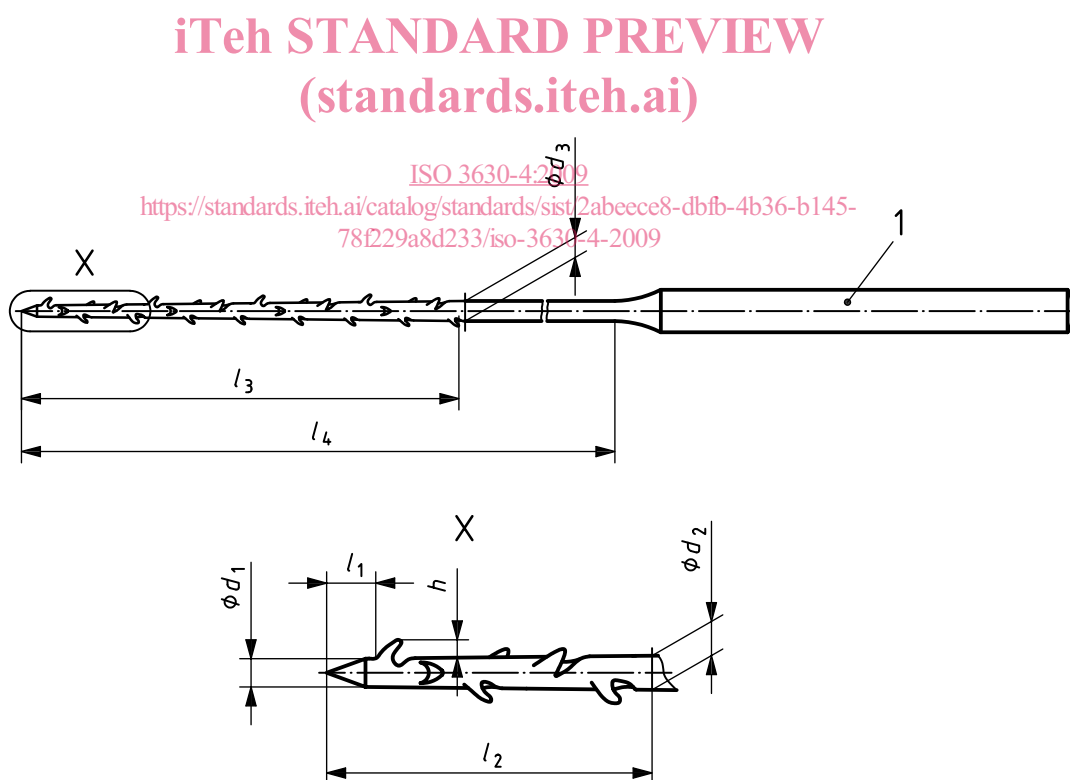
5.2.1 General

The nominal diameters, selected by the manufacturer, represent the sizes of the instrument and shall meet the requirements included in Figures 1 to 4 and Tables 1 to 4.

The length of the operative part of the root-canal instrument shall be the nominal length as specified by the manufacturer with a tolerance of $\pm 0,5$ mm.

5.2.2 Barbed broaches (Type 1 instruments)

Type 1 instruments shall meet the dimensions and tolerances specified in Figure 1 and Table 1. The shape of the tip and the design of the handle for hand use are at the discretion of the manufacturer.



Key

1 handle

Figure 1 — Type 1 instruments (barbed broaches)

Table 1 — Dimensions and designations for Type 1 instruments (barbed broaches)

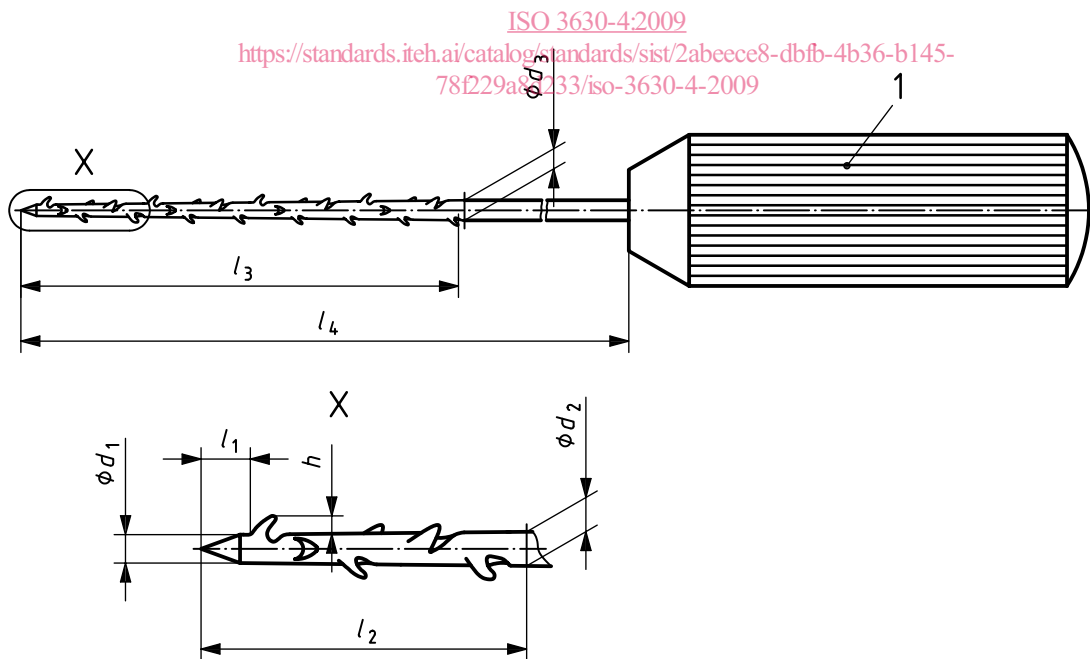
Dimensions in millimetres

Nominal size	d_1	Tolerance	d_2	Tolerance	d_3	Tolerance	l_2	l_3 $\pm 1,5$	l_4 min.	h	Number of barbs min.	Designation by	
												colour	number of rings
020	0,12	$\pm 0,02$	0,15	$\pm 0,02$	0,22	$\pm 0,02$	3	10,5	20	0,075	36	purple	0
025	0,14		0,17		0,24					0,085		white	1
030	0,16		0,19		0,26					0,096		yellow	2
035	0,18	$\pm 0,03$	0,21	$\pm 0,03$	0,28	$\pm 0,03$				0,105		red	3
040	0,21		0,24		0,31	$\pm 0,03$				0,120		blue	4
050	0,25	$\pm 0,04$	0,28	$\pm 0,04$	0,35	$\pm 0,04$				0,140		green	5
060	0,29		0,32		0,39	$\pm 0,04$				0,160		black	6

5.2.3 Rasps (Type 2 instruments)

Type 2 instruments shall meet the dimensions and tolerances specified in Figure 2 and Table 2. The shape of the tip and the design of the handle are at the discretion of the manufacturer.

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Key
1 handle

Figure 2 — Type 2 instruments (rasps)

Table 2 — Dimensions and designations for Type 2 instruments (rasps)

Dimensions in millimetres

Nominal size ^a	d_1 +0,03 0	d_2 +0,03 0	d_3 +0,03 0	l_2	l_3 $\pm 1,5$	l_4 min.	h	Number of barbs min.	Designation by	
									colour	number of rings
025	0,15	0,20	0,31	3	10,5	20	0,05	50	white	1
030	0,18	0,23	0,34				0,06		yellow	2
035	0,21	0,26	0,37				0,07		red	3
040	0,24	0,29	0,40				0,08		blue	4
045	0,27	0,32	0,43				0,09		green	5
050	0,30	0,35	0,46				0,10		black	6

^a Nominal size = $h \times 2 + d_1$ because of 50 barbs.

5.2.4 Paste carriers (Type 3 instruments)

Type 3 instruments shall meet the dimensions and tolerances specified in Figure 3 and Table 3. The taper of the working part shall be from 0 % to 2 %. Shanks shall be of Types 1 and 2 of ISO 1797-1 and ISO 1797-2.

The winding of the spiral shall be such as to convey the material to the tip of the instrument when rotated clockwise as viewed from the handle or shank end.

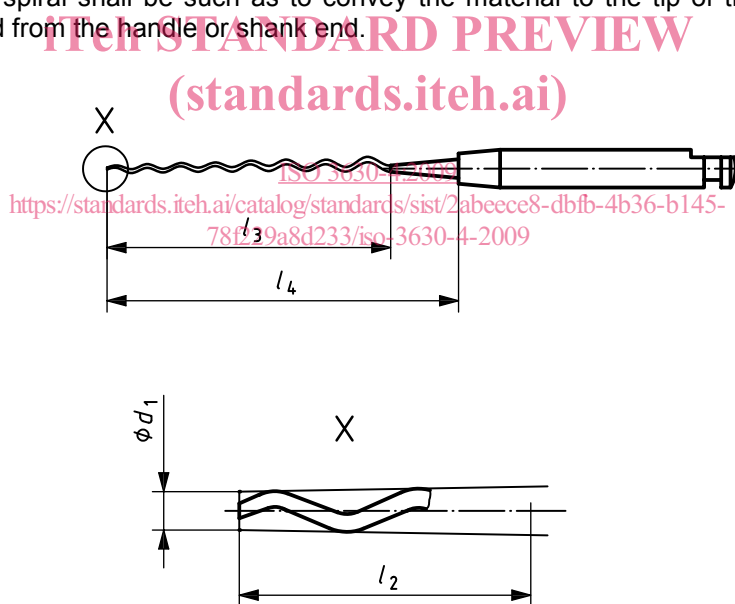


Figure 3 — Type 3 instruments (paste carriers)

Table 3 — Dimensions and designations for Type 3 instruments (paste carriers)

Dimensions in millimetres

Nominal size	d_1 $\pm 0,02$	l_2	l_3 min.	Designation by	
				colour	number of rings
025	0,25	3	16	red	1
030	0,30			blue	2
035	0,35			green	3
040	0,40			black	4