



## 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.

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 3630/2 was prepared by Technical Committee ISO/TC 106, *Dentistry*.

NOTE — ISO 3630/2 was originally circulated as ISO/DIS 3630/DAD 1.

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.

# Dental root canal instruments —

## Part 2: Enlargers

### 0 Introduction

This part of ISO 3630 forms part of a three-part International Standard on dental root canal instruments which will eventually comprise

Part 1: Files, reamers and barbed broaches.

Part 2: Enlargers.

Part 3: Condensers and spreaders.

When the first edition of ISO 3630 (ISO 3630-1984) is revised, it will be renumbered as ISO 3630/1. Further requirements (for example bending, torque and cutting ability) will be included in future work on this three-part series of ISO 3630.

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 3630 specifies requirements for root canal instruments of the following types:

- a) enlarger, type G;
- b) enlarger, type B1;
- c) enlarger, type P.

### 2 References

ISO 1797, *Dental rotary instruments — Shanks.*

ISO 2014, *Writing of calendar dates in all-numeric form.*

ISO 3630, *Dental root canal instruments.*<sup>1)</sup>

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

### 3 Material

The instruments shall be made from cold worked tool steel. The type of steel and the treatment given to it is left to the discretion of the manufacturer.

### 4 Dimensional requirements

The dimensions are given in millimetres.

The dimensional requirements of the instruments shall comply with the respective tables and figures; within the dimensional requirements, variations in shape and design are permissible. Compliance shall be tested in accordance with ISO 3630.

#### 4.1 Nominal diameters and nominal size designation

Table 1 gives the series of nominal diameters for the working part and the corresponding designations to be used for the types of dental root canal instruments specified in this part of ISO 3630.

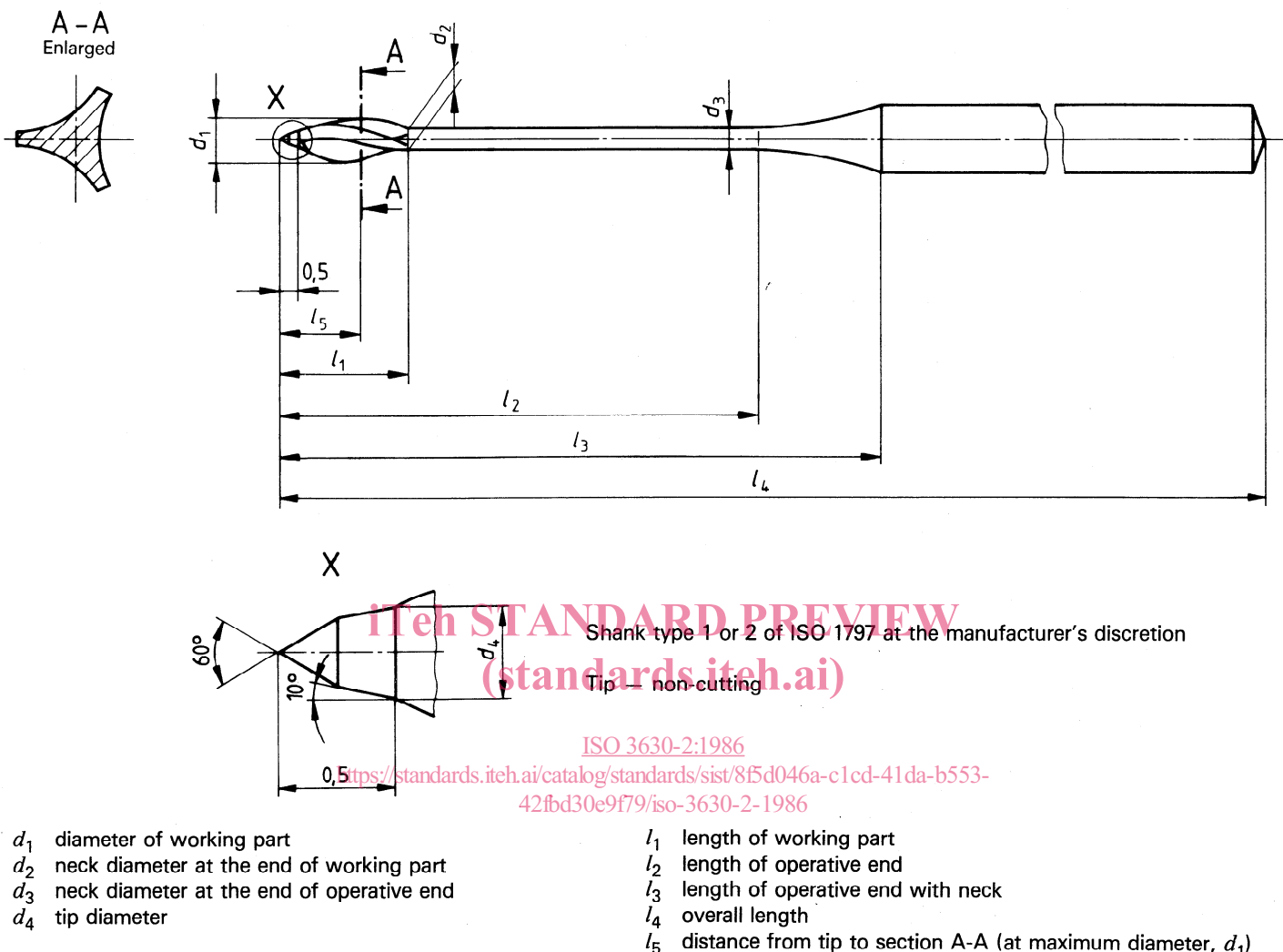
The designations of nominal sizes are given by three digits corresponding to the value of the nominal diameter, in hundredths of a millimetre.

**Table 1 — Nominal diameters and nominal size designation**

Nominal diameter	Nominal size designation
0,50	050
0,70	070
0,90	090
1,10	110
1,20	120
1,30	130
1,40	140
1,50	150
1,60	160
1,70	170
1,90	190

1) See clause 0 for explanation of status of ISO 3630 in relation to this part of ISO 3630.

4.2 Enlarger, type G



$d_1$  diameter of working part  
 $d_2$  neck diameter at the end of working part  
 $d_3$  neck diameter at the end of operative end  
 $d_4$  tip diameter

$l_1$  length of working part  
 $l_2$  length of operative end  
 $l_3$  length of operative end with neck  
 $l_4$  overall length  
 $l_5$  distance from tip to section A-A (at maximum diameter,  $d_1$ )

Figure 1

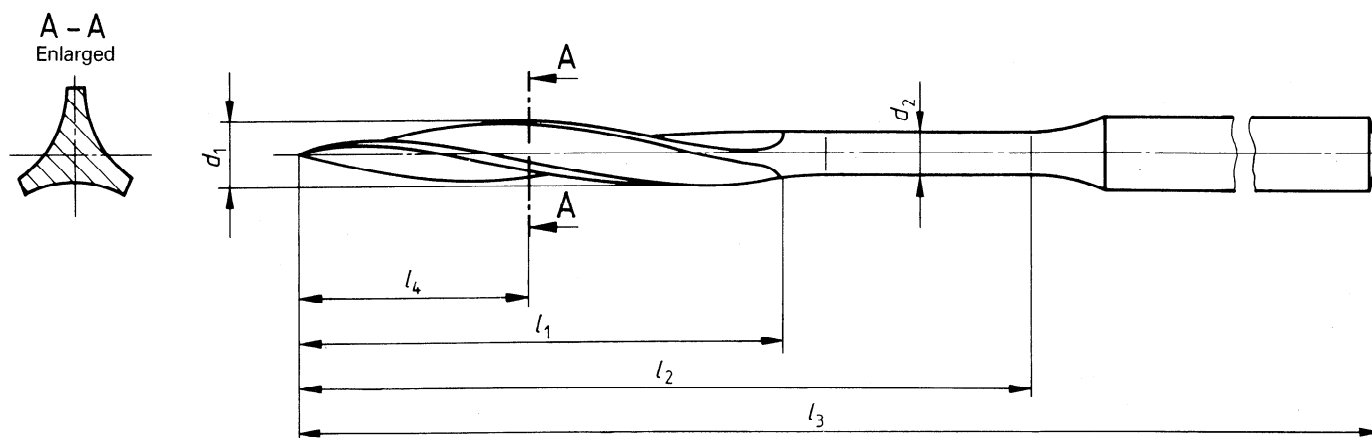
Table 2 – Dimensions and designation

Nominal size	$d_1$ $\pm 0,05$	$l_1$ min.	$d_2$ max.	$d_3$ max.	$d_4$ max.	$l_5$ $\approx$	Number of blades min.	Designation	
								Colour	Ring marking on shank
050	0,5	2,5	0,38	0,36	0,30	1,50	3	white	I
070	0,7	2,9	0,48	0,45	0,30	1,70	3	yellow	II
090	0,9	3,3	0,58	0,55	0,35	1,90	3	red	III
110	1,1	3,7	0,68	0,65	0,35	2,10	3	blue	III I
130	1,3	4,1	0,78	0,74	0,44	2,30	3	green	III II
150	1,5	4,5	0,87	0,83	0,44	2,50	3	black	III III

Table 3 – Lengths  $l_2$ ,  $l_3$  and  $l_4$

Shank (See ISO 1797)	$l_2$ min.	$l_3$ min.	$l_4$
Type 1	15,2	19	32 $\pm 0,5$
Type 2			60,5 $\pm 1$

4.3 Enlarger, type B1



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  
 $l_3$  overall length  
 $l_4$  distance from tip to section A-A (at maximum diameter,  $d_1$ )

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 Figure 2

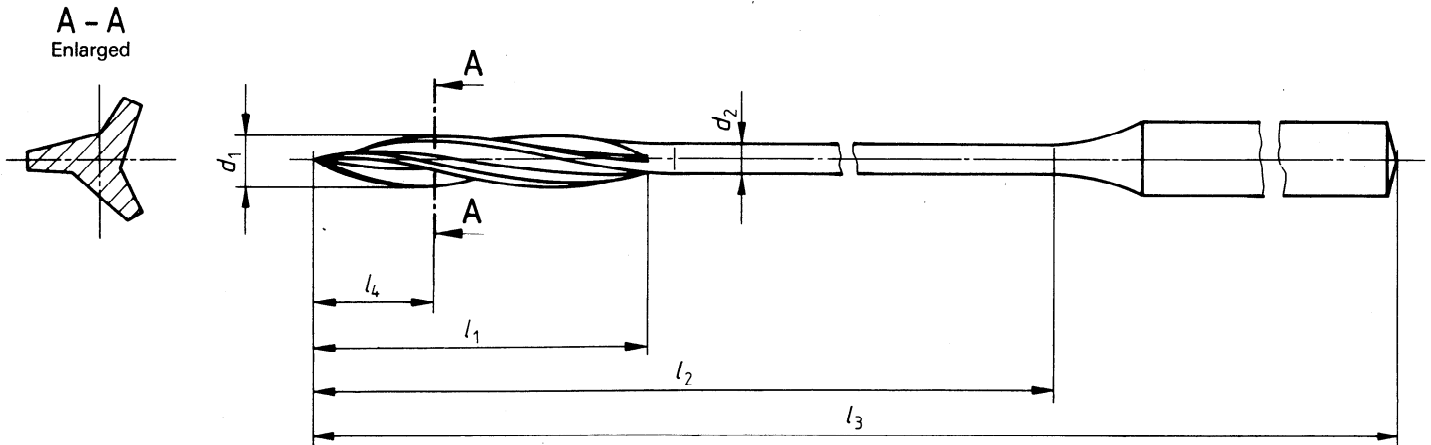
ISO 3630-2:1986  
 Table 4 — Dimensions and designation  
<https://standards.itteh.ai/catalog/standards/sist/815d040a-c1cd-41da-b553-42fbd30e9179/iso-3630-2-1986>

Nominal size	$d_1$ $\pm 0,05$	$l_1$ min.	$d_2$ max.	$l_4$ $\approx$	Number of blades min.	Designation	
						Colour	Ring marking on shank
070	0,7	9,0	0,60	4,50	3	white	I
090	0,9	9,0	0,68	4,50	3	yellow	II
110	1,1	9,0	0,70	4,50	3	red	III
130	1,3	9,5	0,80	4,75	3	blue	III I
150	1,5	9,5	0,90	4,75	3	green	III II
170	1,7	9,5	1,00	4,75	3	black	III III

Table 5 — Lengths  $l_2$  and  $l_3$

Shank (See ISO 1797)	$l_2$ min.	$l_3$
Type 1	13	$32 \pm 0,5$
Type 2	26	$60,5 \pm 1$

4.4 Enlarger, type P



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  
 $l_3$  overall length  
 $l_4$  distance from tip to section A-A (at maximum diameter,  $d_1$ )

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Figure 3

ISO 3630-2:1986  
 Table 6 – Dimensions and designation  
<https://standards.iteh.ai/catalog/standards/sist/815d046a-c1cd-41da-b553-42fb130e9f79/iso-3630-2-1986>

Nominal size	$d_1$ $\pm 0,08$	$l_1$ min.	$d_2$ max.	$l_4$ $\approx$	Number of blades min.	Designation	
						Colour	Ring marking on shank
120	1,2	13,5	1,03	6,75	3	white	I
140	1,4	14,0	1,15	7,00	3	yellow	II
160	1,6	14,5	1,30	7,25	3	red	III
190	1,9	15,0	1,45	7,50	3	blue	IIII

Table 7 – Lengths  $l_2$  and  $l_3$

Shank (See ISO 1797)	$l_2$ min.	$l_3$
Type 1	20	33 $\pm 0,5$
Type 2	22	53,5 $\pm 1$

## 5 Designation and marking

The nominal sizes of the instruments shall be indicated by marking the shank either with the colour or rings in accordance with table 8.

**Table 8 – Designation of nominal sizes by colours or rings**

Nominal size	Designation by colours or rings					
	Enlarger, type G		Enlarger, type B1		Enlarger, type P	
	colour	rings	colour	rings	colour	rings
050	white	I	—	—	—	—
070	yellow	II	white	I	—	—
090	red	III	yellow	II	—	—
110	blue	III I	red	III	—	—
120	—	—	—	—	white	I
130	green	III II	blue	III I	—	—
140	—	—	—	—	yellow	II
150	black	III III	green	III II	—	—
160	—	—	—	—	red	III
170	—	—	black	III III	—	—
190	—	—	—	—	blue	IIII

## 6 Packaging and marking

Root canal instruments are supplied at the discretion of the manufacturer as single instruments or in sets of usually six instruments.

Each package shall be marked with at least the following information:

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- type of instrument;
  - overall length of instrument; [ISO 3630-2:1986](https://standards.iteh.ai/catalog/standards/sist/8f5d046a-c1cd-41da-b553-42fbd30e9f79/iso-3630-2-1986)
  - nominal size of instrument; <https://standards.iteh.ai/catalog/standards/sist/8f5d046a-c1cd-41da-b553-42fbd30e9f79/iso-3630-2-1986>
  - name of manufacturer or distributor;
  - date of manufacture (coded or with open code), expressed, if applicable, in accordance with ISO 2014.

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ISO 3630-2:1986

<https://standards.iteh.ai/catalog/standards/sist/8f5d046a-c1cd-41da-b553-42fd30e9f79/iso-3630-2-1986>