
**Dentistry — Endodontic
instruments —**

**Part 6:
Numeric coding system**

*Médecine bucco-dentaire — Instruments d'endodontie —
Partie 6: Système de codification numérique*

STANDARDSISO.COM : Click to view the full PDF of ISO/TR 3630-6:2023



STANDARDSISO.COM : Click to view the full PDF of ISO/TR 3630-6:2023



COPYRIGHT PROTECTED DOCUMENT

© ISO 2023

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

	Page
Foreword.....	iv
Introduction.....	v
1 Scope.....	1
2 Normative references.....	1
3 Terms and definitions.....	1
4 Numeric coding system for endodontic instruments.....	1
5 Numeric code for specific characteristics of endodontic instruments.....	2
5.1 Type of endodontic instrument.....	2
5.1.1 General.....	2
5.1.2 Cross-sections.....	2
5.1.3 Tips.....	3
5.1.4 Movement.....	4
5.2 Nominal size.....	5
5.3 Taper of working part.....	5
5.4 Designated length.....	6
5.5 Material.....	6
5.6 Type of handle or shank.....	6
5.7 Examples.....	7
Annex A (informative) Examples of instruments with a numeric coding system.....	8
Bibliography.....	11

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

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

A list of all parts in the ISO 3630 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

This document replaces the number coding of endodontic instruments of ISO 6360-5 and provides a modified number coding format.

This document also makes provisions for the information on endodontic instruments in the ISO 3630 series.

STANDARDSISO.COM : Click to view the full PDF of ISO/TR 3630-6:2023

STANDARDSISO.COM : Click to view the full PDF of ISO/TR 3630-6:2023

Dentistry — Endodontic instruments —

Part 6: Numeric coding system

1 Scope

This document specifies a coding system for specific characteristics of endodontic instruments, with a 12-digit code identifying general and specific characteristics of instruments or groups of instruments. The numerals identify the type of instrument, nominal size, taper, length, working part material, type and material of handle or shank.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 1942, *Dentistry — Vocabulary*

ISO 3630-1, *Dentistry — Endodontic instruments — Part 1: General requirements*

3 Terms and definitions

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

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

unspecified

characteristic which is not clearly stated and left to the discretion of the manufacturer

4 Numeric coding system for endodontic instruments

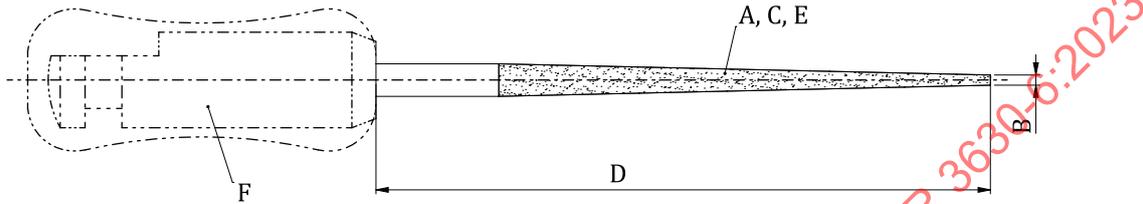
The coding system for endodontic instruments consists of 12 digits in six groups, as follows:

000	000	00	00	0	0
A	B	C	D	E	F

[Table 1](#) and [Figure 1](#) show the groupings.

Table 1 — Numeric groups

Group	Description	Subclause
A	type of instrument	5.1
B	nominal size of the working part	5.2
C	taper of the working part	5.3
D	designated length of the instrument	5.4
E	material of the working part	5.5
F	type of handle or shank	5.6



Key

- | | | | |
|---|----------------------------------|---|-------------------------------------|
| A | type of instrument | D | designated length of the instrument |
| B | nominal size of the working part | E | material of the working part |
| C | taper of the working part | F | type of handle or shank |

Figure 1 — Coding key

5 Numeric code for specific characteristics of endodontic instruments

5.1 Type of endodontic instrument

5.1.1 General

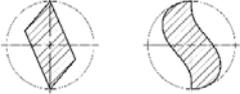
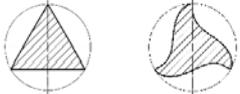
Group A consists of three digits which identify the type of the instrument as specified in [Table 2](#).

The group is subdivided into three elements, illustrating the cross-section of the active part, the tip of the instrument and the movement of the instrument during its usage. The movement is the one carried out by the clinician when using the instrument during an endodontic procedure.

5.1.2 Cross-sections

Digit 1 describes the cross-section of the instrument from “0” to “9”.

Table 2 — Description of the cross-sections of the instrument

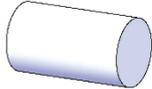
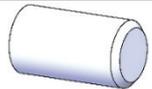
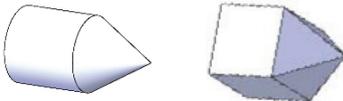
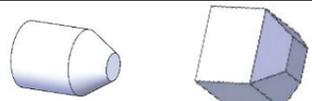
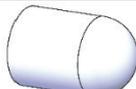
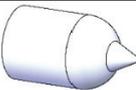
Digit 1	Pictorial illustration	Cross-sections Description	Example
0		circular cross-section	plugger /spreader
1		1 flute	H-file
2		2 flutes, diamond shape or parallelogram cross-section	B2 / Enlarger
3		3 flutes, triangular cross-section	K-file / K-reamer
4		4 flutes, square and/or rectangular cross-section	K-file
5		spiral cross-section	paste carrier
6		3 flutes with recessed core	NiTi engine driven instrument
7		eccentric cross-section	NiTi engine driven instrument
8		star	barbed broach
9	unspecified cross-section	—	—

5.1.3 Tips

Digit 2 in Table 2 describes the tip design of the instruments from “0” to “9”, as defined in ISO 3630-1, ISO 3630-2, ISO 3630-3, ISO 3630-4, ISO 3630-5 and ISO 3630-7¹⁾.

1) Under preparation. Stage at the time of publication: ISO/PWI 3630-7:2023.

Table 3 — Description of the tips of the instrument

Tips		
Digit 2	Pictorial illustration	Description
0		flat tip
1		flat tip with bevel or chamfer
2		conical or pyramidal tip
3		conical or pyramidal tip with a reduced transition angle
4		conical or pyramidal blunt tip
5		hemispherical tip
6		ogival tip
7		hemispherical or ogival with a guiding tip
8		eccentric tip
9		unspecified tip

5.1.4 Movement

Digit 3 in [Table 4](#) describes the most preferred movement during the usage of the instrument from “0” to “9”.

Table 4 — Description of the movements and techniques of the instrument

Movements and techniques			
Digit 3	Pictorial illustration	Description	Example
0	▪	no movement	absorbent point
1	↑ ↓	axial or vertical movement	spreaders / pluggers or Hedström
2	↻	partial clockwise or counterclockwise	K-Reamer
3	↻	continuous clockwise or counterclockwise rotation	NiTi engine driven files
4	↻	reciprocating rotation or movement	NiTi engine driven files
5	↶	step-back	K-file
6	⚡	vibrating motion	ultrasonic inserts
7	☸	heat transfer	heat carriers
8	placeholder for any additional not specified above		
9	unspecified movement or technique		

5.2 Nominal size

Group B consists of three digits 4, 5 and 6 which identify the nominal size of the working part. Quantitative size numbers are used, expressed in a hundredth of a millimetre (e.g. a size 60 which has a diameter of 0,6 mm is expressed as 060). The diameter designation is defined in ISO 3630-1:2019, Clause 5.

5.3 Taper of working part

Group C consists of two digits which identify the taper of the working part of endodontic instruments as shown in Table 5. The taper is identified, in per cent, as the enlargement of the diameter of the working part, in millimetres per millimetre length, as defined in ISO 3630-1, ISO 3630-2, ISO 3630-3, ISO 3630-4 and ISO 3630-5. The half size is rounded to the next larger taper size.

If an instrument does not have a taper (i.e. the taper is 0 %), the two group C digits are “00”. Specific taper as variable, negative or half size are expressed as described in Table 5.

Table 5 — Taper of working part codes

Digit 7, 8	Description	Codes for digit
xx	normal taper (2 %)	02
xx	no taper	00
xx	variable taper	—
xx	negative taper (e.g. -5 %)	-5
xx	half size (11,5 % is rounded to 12 %)	12 (rounded to the next higher “taper size”)

5.4 Designated length

Group D consists of two digits which identify the designated length of the instrument as shown in [Table 6](#). The length is identified in millimetres and specified in whole numbers. The designated length for the endodontic instrument is defined in ISO 3630-1, ISO 3630-2, ISO 3630-3, ISO 3630-4, ISO 3630-5 and ISO 3630-7.

Table 6 — Designated lengths

Digit 9, 10	Instrument	Designated length
xx	enlargers	total length
xx	compactors	operative length
xx	auxiliary instruments	operative length
xx	shaping and cleaning instruments	operative length
xx	ultrasonic inserts	00
xx	obturating cones	total length

5.5 Material

Group E consists of one digit which identifies the material used for the working part of the instrument as shown in [Table 7](#), as defined in ISO 3630-1.

Table 7 — Material of working part codes

Digit 11	Material designation
1	stainless steel
2	polymer
3	absorbent material
4	diamond coated
5	nickel titanium
6	heat-treated nickel titanium
7	placeholder for any additional not specified above
8	placeholder for any additional not specified above
9	unspecified material

5.6 Type of handle or shank

Group F consists of one digit which identifies the type of handle or shank of the endodontic instrument as shown in [Table 8](#).

Table 8 — Handle or shank codes

Digit 12	Handle or shank type designation	Reference
0	no handle	—
1	manual plastics handle	ISO 3630-1
2	engine-driven plastics shank	ISO 3630-1
3	manual metallic handle	ISO 3630-1
4	engine-driven metallic shank - low speed ($\leq 1\ 000$ RPM)	ISO 3630-1
5	engine-driven metallic shank - high speed ($> 1\ 000$ RPM)	ISO 1797
6	threaded ultrasonic metallic shank	ISO 3630-7
7	placeholder for any additional not specified above	—
8	placeholder for any additional not specified above	—
9	unspecified handle or shank	—

5.7 Examples

[Annex A](#) illustrates application examples of the numeric coding system.

Annex A (informative)

Examples of instruments with a numeric coding system



Figure A.1 — K-file (ISO 3630-5)

In [Figure A.1](#), the cross-section is square, the tip is conical and the movement during the use is based on the step-back technique. The diameter at the tip is 0,15 mm and the taper of the working part is 2 %. The length of the active part is 21 mm, the material of the active part is stainless steel and the handle is made of plastics. See [Table A.1](#) for the corresponding numeric coding.

Table A.1 — K-file numeric coding example

	Cross-section	Tip	Movement	Diameter	Taper	Designated length	Material of the active part	Type of shank/handle
	1 digit	1 digit	1 digit	3 digits	2 digits	2 digits	1 digit	1 digit
K-File	4	2	5	015	02	21	1	1
Code: 425 015 02 21 1 1								



Figure A.2 — Gates-Glidden drill (ISO 3630-2)

In [Figure A.2](#), the cross-section of the active part is triangular, the tip is conical and the movement during the sequence is continuous rotation. The main diameter is 0,50 mm and there is no taper. The length of the instrument is 28 mm, the material of the active part is stainless steel and the high-speed shank is metal. See [Table A.2](#) for the corresponding numeric coding.

Table A.2 — Gates-Glidden drill numeric coding example

	Cross-section	Tip	Movement	Diameter	Taper	Designated length	Material of the active part	Type of shank/handle
	1 digit	1 digit	1 digit	3 digits	2 digits	2 digits	1 digit	1 digit
Gates	3	7	3	050	00	28	1	5
Code: 373 050 00 28 1 5								



Figure A.3 — Nickel titanium (NiTi) file (ISO 3630-5)