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**Dental elevators —**  
**Part 2:**  
**Warwick James elevators**

*Élévateurs dentaires —*  
*Partie 2: Élévateurs Warwick James*

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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 3.

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 part of ISO 15087 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 15087-2 was prepared by Technical Committee ISO/TC 106, *Dentistry*, Subcommittee SC 4, *Dental instruments*.

ISO 15087 consists of the following parts, under the general title *Dental elevators*:

- *Part 1: General requirements*
- *Part 2: Warwick James elevators*
- *Part 3: Cryer elevators*
- *Part 4: Coupland elevators*
- *Part 5: Bein elevators*
- *Part 6: Flohr elevators*



# Dental elevators —

## Part 2: Warwick James elevators

### 1 Scope

This part of ISO 15087 gives requirements, including dimensions, for Warwick James dental elevators.

### 2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO 15087. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO 15087 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 1942-3, *Dental vocabulary — Part 3: Dental instruments*.

ISO 15087-1:1999, *Dental elevators — Part 1: General requirements*.

### 3 Terms and definitions

For the purposes of this part of ISO 15087, the terms and definitions given in ISO 1942-3 apply.

### 4 Design and dimensions

#### 4.1 General

4.1.1 Warwick James elevators shall conform to the general requirements given in ISO 15087-1.

4.1.2 Warwick James elevators shall be grouped into the following types according to the shape of the working end:

- Type 1 = Straight working end
- Type 2 = Left working end
- Type 3 = Right working end

4.1.3 Warwick James elevators shall be designed in accordance with Figures 1 and 2, and with dimensions in accordance with Table 1. Measurements of dimensions should be made as defined in Table 2.

NOTE Annex A of ISO 15087-1:1999 provides details of one method of measurement applicable to most types of dental hand instrument.

## 4.2 Length range

Warwick James elevators shall have an overall length in the range between 135 mm and 160 mm.

## 4.3 Handle

The design and dimensions of the Warwick James elevator handle shall be selected at the discretion of the manufacturer.

**Table 1 — Dimensions of Warwick James elevators**

Dimensions in millimetres  
(angular dimensions in degrees)

Dimensions	$b_1$	$b_2$	$b_3$	$h_1$	$l_1$	$r_1$	$\alpha$
<b>Tolerance</b>	$\pm 0,2$	$\pm 0,2$	$\pm 1,0$	$\pm 1,0$	ref <sup>a</sup>	ref <sup>a</sup>	$\pm 5$
<b>Type 1 (Straight)</b>	2,2	1,7	14,0	—	58	—	—
<b>Type 2 (Left)</b>	2,2	1,7	6,0	4,7	58	15	56
<b>Type 3 (Right)</b>	2,2	1,7	6,0	4,7	58	15	56

<sup>a</sup> Reference dimension.

**Table 2 — Points of measurement for Warwick James elevators**

Symbol	Designation	Point of measurement
$b_1$	Blade width	Measured at a distance of 3 mm from the extreme tip of the instrument.
$b_2$	Blade thickness	Measured at a distance of 3 mm from the extreme tip of the instrument.
$b_3$	Blade length	Measured from the farthest extremity of the blade, parallel to the centreline of the blade, to the heel of the blade.
$h_1$	Blade height	Measured from the centreline of the instrument, at right angles to the centreline of the instrument, to the farthest extremity of the blade.
$l_1$	Working length	Measured from the farthest extremity of the blade, parallel to the centreline of the instrument, to the intersection with the handle.
$r_1$	Radius of blade	Radius of curvature of the inner surface of the blade.
$\alpha$	Blade angle	Angle between the centreline of the instrument and the centreline of the blade.

Dimensions in millimetres

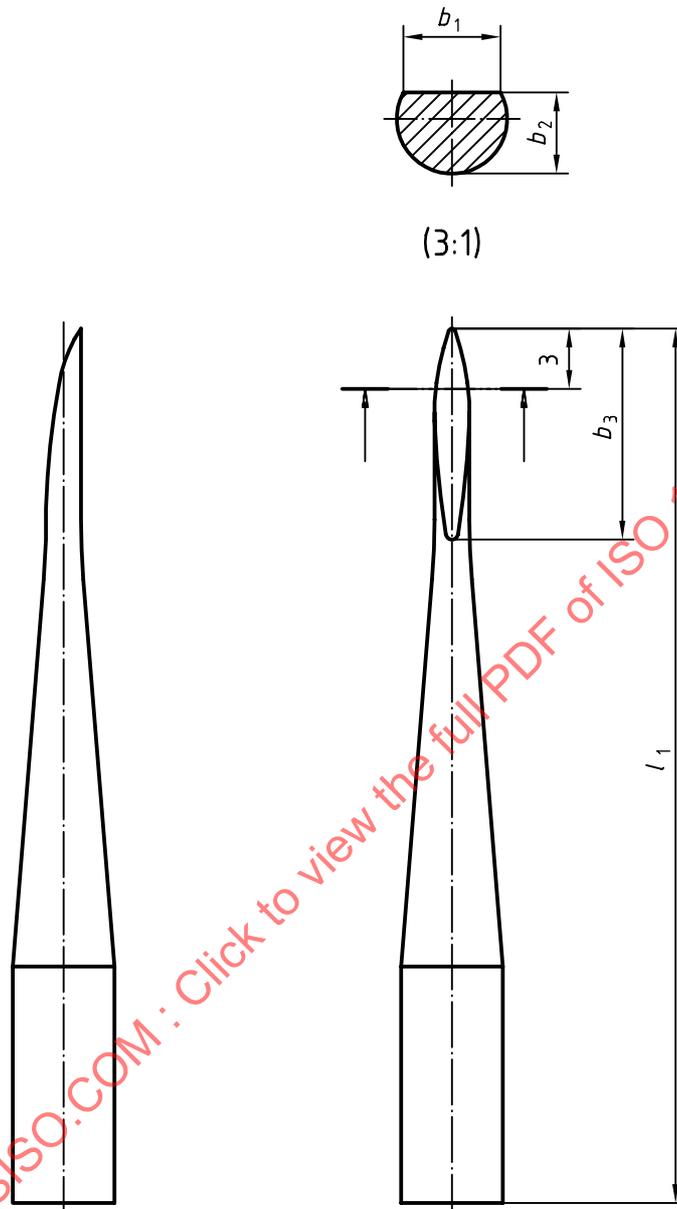


Figure 1 — Warwick James elevator, straight (type 1)

Dimensions in millimetres

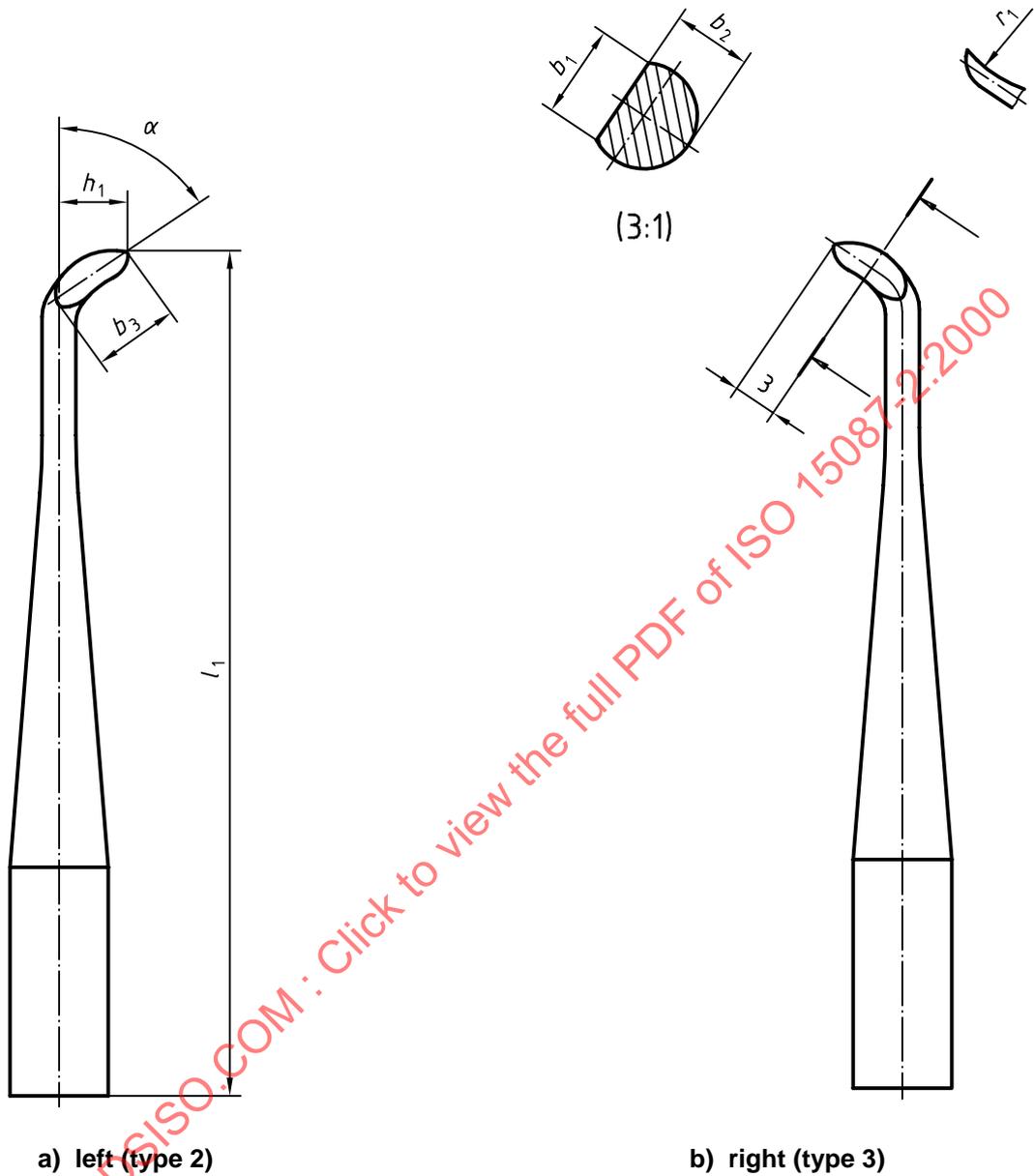


Figure 2 — Warwick James elevators, left and right

## 5 Designation, labelling and marking

If the Warwick James elevator meets the requirements of this part of ISO 15087, then the manufacturer may include in the catalogue, on the package of the product and on the instrument the number of this part of ISO 15087 (ISO 15087-2) followed by an oblique stroke and the number indicating the type of elevator as indicated in 4.1.2.

EXAMPLE A Warwick James elevator, type 1, in accordance with this part of ISO 15087 is labelled using the following format:

ISO 15087-2/1