

Hardmetal insert tooling —

Part 7: Specification for dimensions for single point turning and copying tool holders for indexable inserts

ICS 25.100.01

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Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee MTE/18, Tools, tips and inserts for cutting applications, upon which the following bodies were represented:

- British Engineers Cutting Tools Association
- British Hardmetal Association
- Co-opted members

This British Standard, having been prepared under the direction of the Engineering Sector Board, was published under the authority of the Standards Board and comes into effect on 15 February 1997

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First published March 1982
First revision July 1986
Second edition July 1990
Third edition February 1997

The following BSI references relate to the work on this standard:
Committee reference MTE/18
Draft for comment 93/701147 DC

ISBN 0 580 27014 9

Amendments issued since publication

Amd. No.	Date	Comments

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National foreword

This British Standard has been prepared by Technical Committee MTE/18 and is identical with ISO 5610:1995 *Single point tool holders for turning and copying for indexable inserts — Dimensions* published by the International Organization for Standardization (ISO). It supersedes BS 4193-7:1990 which is withdrawn.

Cross-reference. The Technical Committee has reviewed the provisions of ISO 3002-1:1982 to which normative reference is made in the text, and has decided that it is acceptable for use in conjunction with this standard.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 12, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 Scope

This International Standard specifies the general dimensions of turning and copying single-point tool holders for indexable inserts, and specifies preferred tool holders (see clause 5).

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 3002-1:1982, *Basic quantities in cutting and grinding — Part 1: Geometry of the active part of cutting tools — General terms, reference systems, tool and working angles, chip breakers.*

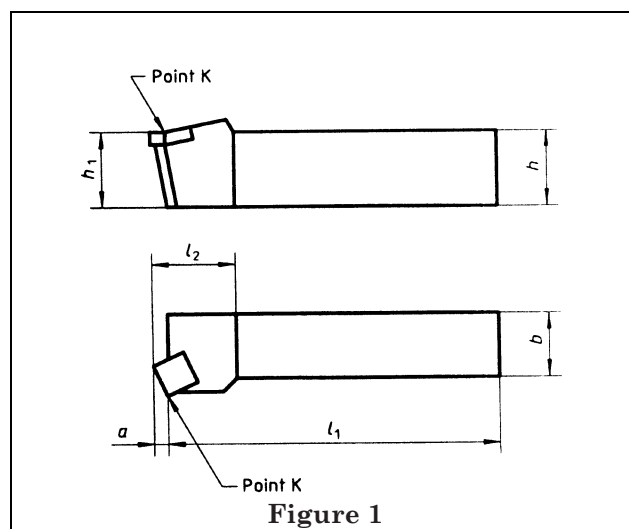
3 Remarks

The designation of turning and copying tool holders is dealt with in ISO 5608; however, it should be noted that for preferred tool holders in accordance with clause 5, a dash replaces the letter symbol identifying tool length.

4 Dimensions

4.1 Shank

See Figure 1 and Table 1.



4.2 Head length l_2

See Figure 1 and Table 2.

The head lengths given in Table 2 do not apply to tool holders with rhombic indexable inserts shapes D and V (see ISO 5608).

4.3 Dimension f

See the figures in clause 5 and Table 3.

Table 1

Dimensions in millimetres										
h h13		8	10	12	16	20	25	32	40	50
b h13	$b = h$	8	10	12	16	20	25	32	40	50
	$b = 0,8 h$		8	10	12	16	20	25	32	40
l_1 k16	long tool holders	60	70	80	100	125	150	170	200	250
	short tool holders	40	50	60	70	80	100	125	150	—
h_1 js14		$h_1 = h$								

Table 2

Dimensions in millimetres	
Diameter of the inscribed circle of the insert	l_2 max.
6,35	25
9,525	32
12,7	36
15,875	40
19,05	45
25,4	50

Table 3

Dimensions in millimetres

<i>b</i>	<i>f</i>				
	Series 1 ^a	Series 2	Series 3	Series 4	Series 5
		+0,5 0	+0,5 0	+0,5 0	+0,5 0
8	4	7	8,5	9	10
10	5	9	10,5	11	12
12	6	11	12,5	13	16
16	8	13	16,5	17	20
20	10	17	20,5	22	25
25	12,5	22	25,5	27	32
32	16	27	33	35	40
40	20	35	41	43	50
50	25	43	51	53	60
For tool holders style	D, N, V	B, T	A	R	F, G, H, J, K, L, S
^a Tolerance for symmetrical tool holders (style D and V): $\pm 0,25$ Tolerance for non-symmetrical tool holders (style N): $\begin{matrix} +0,5 \\ 0 \end{matrix}$					

4.4 Identification of dimensions l_1 , f and h_1

4.4.1 The length dimension l_1 is the distance from the specified point K (see Figure 2 to Figure 5) to the end of the shank.

Dimension f is the distance between the specified point K and the rear backing surface of the tool holder.

Dimension h_1 is the height to the specified point K.

The values of l_1 as specified in 4.1, f as specified in 4.3 and h_1 as specified in 4.1 are given for tool holders equipped with master inserts having corner radii in accordance with 4.4.3.

Special case of tool styles D and S with round inserts:

For tools style S, point K according to Figure 6 is retained for defining l_1 and f . h_1 is defined by reference to a point on the cutting edge in a plane which passes through point K and the axis of the insert, and which is normal to the reference plane P_r (i.e. normal to the base of the tool).

For tools style D, point K is defined as the intersection point between a plane parallel to P_f passing through the axis of the insert, a plane perpendicular to P_f and the tangent to the cutting edge, and a plane containing A_γ .

4.4.2 The specified point K is defined as follows:

Consider planes P_f (assumed working plane) and P_s (tool cutting edge plane) according to ISO 3002-1 for a selected point on the major cutting edge (for example point of tangency of major cutting edge with inscribed circle).

a) For $\kappa_r \leq 90^\circ$, point K is defined as the intersection of plane P_s , a plane parallel to plane P_f tangent to the corner radius and a plane containing the tool face A_γ (see Figure 2 and Figure 3).

b) For $\kappa_r > 90^\circ$, point K is defined as the intersection of a plane parallel to plane P_f tangent to the corner radius, a plane perpendicular to plane P_f tangent to the corner radius and a plane containing the tool face A_γ (see Figure 4 and Figure 5).