International Standard 5611

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION•МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ•ORGANISATION INTERNATIONALE DE NORMALISATION

Cartridges, type A, for indexable inserts — Dimensions

Cartouches du type A, à plaquettes amovibles — Dimensions

First edition — 1981-08-01

UDC 621.941.025.7

Ref. No. ISO 5611-1981 (E)

Descriptors : lathe tools, inserts, tool holders, dimensions, cutting angles.

Price based on 6 pages

Foreword

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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.

International Standard ISO 5611 was developed by Technical Committee ISO/TC 29, *Small tools*, and was circulated to the member bodies in October 1977.

It has been approved by the member bodies of the following countries :

Australia	India	Romania
Austria	Israel	South Africa, Rep. of
Belgium	Italy	Spain
Brazil	Japan	Sweden
Chile	Korea, Dem. P. Rep. of	Switzerland
Czechoslovakia	Korea, Rep. of	United Kingdom
France	Mexico	USA
Germany, F. R.	Netherlands	USSR
Hungary	Poland	Yugoslavia

No member body expressed disapproval of the document.

Printed in Switzerland

Cartridges, type A, for indexable inserts — Dimensions

1 Scope and field of application

This International Standard lays down the general dimensions of type A cartridges for indexable inserts, and includes preferred cartridges (see clause 6).

2 References

ISO 883, *Indexable (throwaway) carbide inserts without fixation hole — Dimensions.*

ISO 3002/1, *Geometry of the active part of cutting tools — Part 1 : General terms, reference systems, tool and working angles.*

ISO 3364, *Indexable (throwaway) carbide inserts with cylindrical fixation hole — Dimensions.*

ISO 5608, *Turning and copying tool holders and cartridges for indexable (throwaway) inserts — Designation.*[1)]

3 Designation

3.1 The identification system for cartridges is given in ISO 5608.

3.2 Cartridges covered by this International Standard are designated as type A. Hence, the symbol CA shall be applied in reference (7) of the code of symbolization.

3.3 For cartridges with lengths according to this International Standard, a dash replaces the letter symbol identifying tool length.

For cartridges of lengths other than those specified in this International Standard, letter symbols to be used for tool length are given in ISO 5608, sub-clause 3.8.

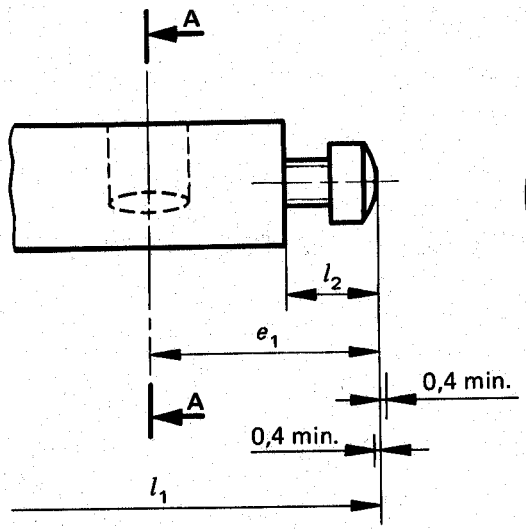
1) At present at the stage of draft.

4 Dimensions

4.1 Shank

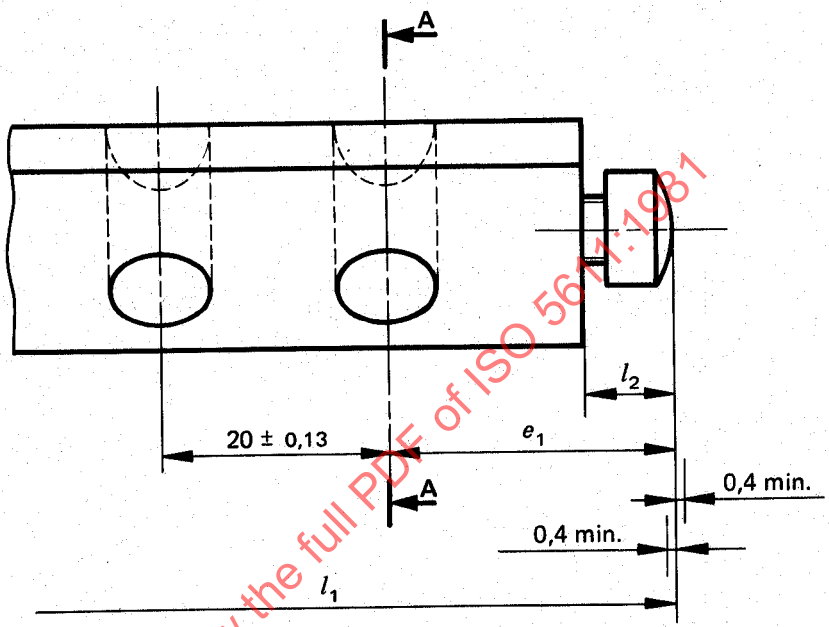
The following dimensions apply to shanks of all cartridge styles :

— for cartridges having h_1 = 10, 12, 16 and 20 mm

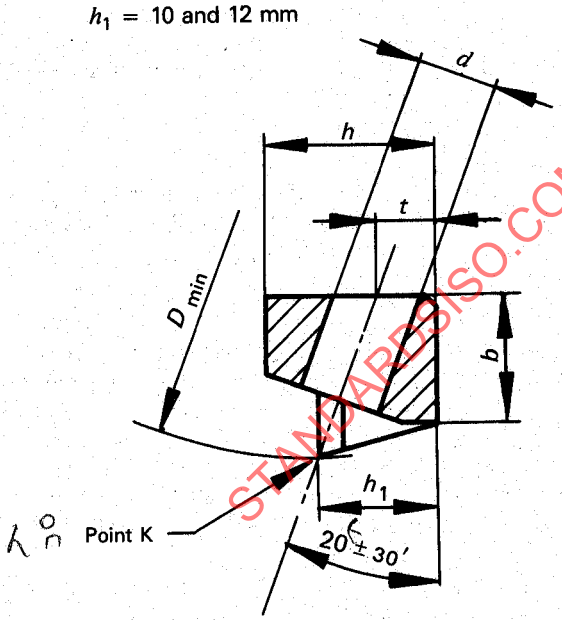


Section A-A

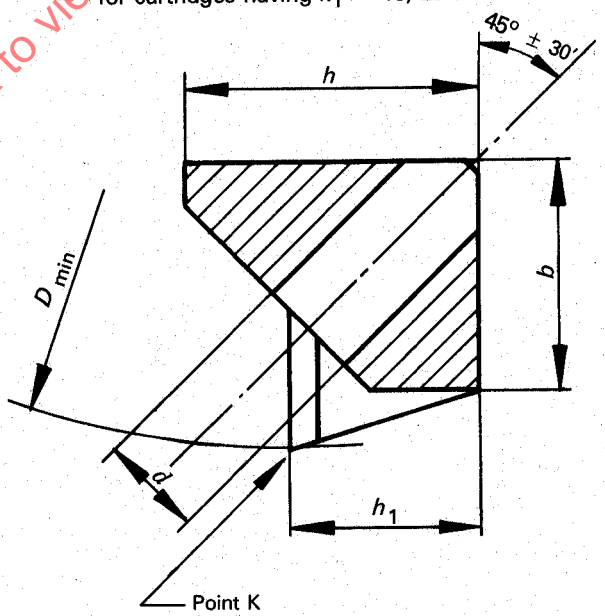
— for cartridges having h_1 = 25 mm



— for cartridges having h_1 = 10 and 12 mm



— for cartridges having h_1 = 16, 20 and 25 mm



Dimensions in millimetres

h_1 ± 0,08	h max.	b max.	e_1	l_2	t ± 0,13	d	Fastening screw
10	15	11	20	8	5	7	M6
12	20	16	20	8	6	7	M6
16	25	20	25	8	0	9	M8
20	30	20	30	10	0	9	M8
25	35	25	30	10	0	11	M10

Figure 1

4.2 Application of dimensions l_1, f and h_1

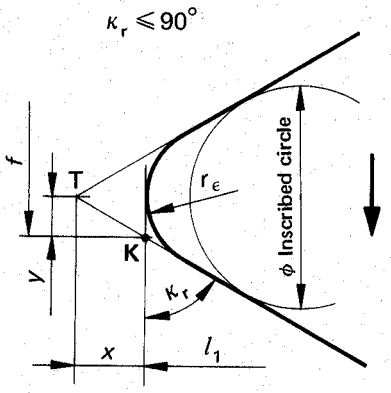


Figure 2

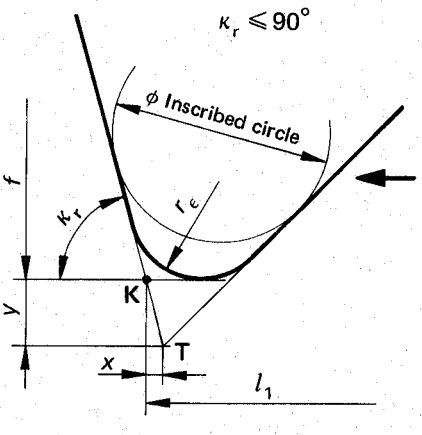


Figure 3

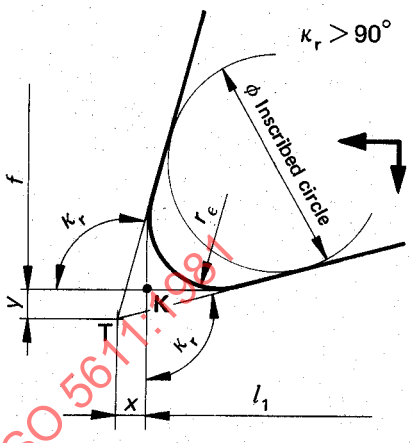


Figure 4

4.2.1 The length dimension l_1 is the distance from the specified point K (see figures 2, 3 and 4) to the end of the shank, including the adjusting screw length l_2 in its mid position.

Dimension f is the distance between the specified point K and the rear backing surface of the cartridge, measured over a master insert.

Dimension h_1 is the height to the specified point K measured over a master insert.

The values of l_1, f and h_1 according to clause 6 are given for cartridges equipped with master inserts having corner radii according to 4.2.3.

4.2.2 The specified point K is :

— for $\kappa < 90°$ (figures 2 and 3), the point of intersection of the tangent to the rounded corner with the prolongation of the major cutting edge;

— for $\kappa > 90°$ (figure 4), the point of intersection of two mutually perpendicular tangents to the rounded corner.

4.2.3 The corner radius r_ϵ of the master inserts used for the definition of dimensions l_1, f and h_1, is a function of the diameter of the inscribed circle of the insert, as follows :

Dimensions in millimetres

Diameter of the inscribed circle	6,35	7,94	9,525	12,70	15,875	19,05
Corner, radius r_ϵ (nominal)	0,4		0,8		1,2	

NOTE — Dimensions l_1, f and h_1 assume corner radii converted from inch values, i.e. r_ϵ = 0,397 — 0,794 and 1,191 mm.

4.2.4 Cartridges may be equipped with inserts having the size according to clause 6 and any corner radius r_ϵ. For corner radii r_ϵ other than those specified in 4.2.3, dimensions l_1 and f shall be corrected by using the values x and y (see figures 2, 3 and 4), which are the distances from the specified point K, as defined in 4.2.2, to the theoretical corner T.

The new dimensions l_1 and f are found from the differences between x and y corresponding to the corner radius according to 4.2.3 and x and y corresponding to the real corner radius.

5 Preferred cartridges styles

5.1 Cartridge styles established by this International Standard are the styles shown in figures 5 to 16. In these figures, right-hand cartridges are shown : left-hand ones are symmetrical in their layout.

5.2 The length adjusting screw, as well as a transverse adjusting screw are at the manufacturer's option; however dimensions f and l_1 given in clause 6 must be maintained.

5.3 Cartridges are classified into four families in respect of working major direction and the corner defined. This allows interchangeability of cartridges within a family.

FAMILY 1

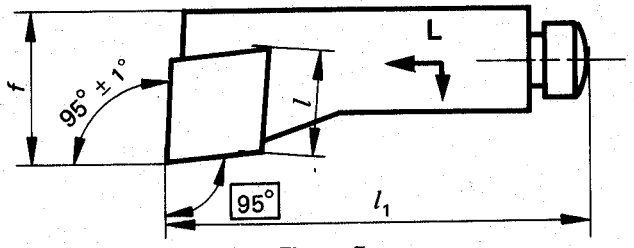


Figure 5

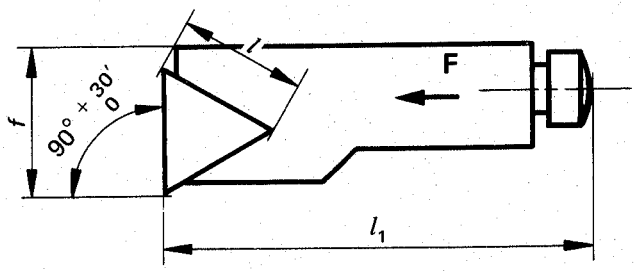


Figure 6

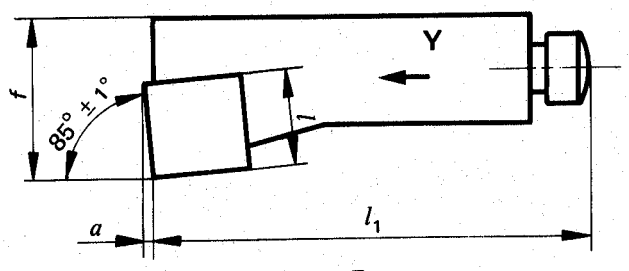


Figure 7

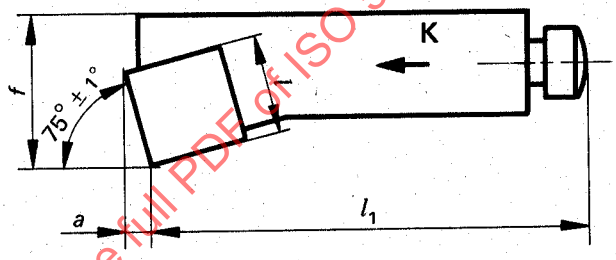


Figure 8

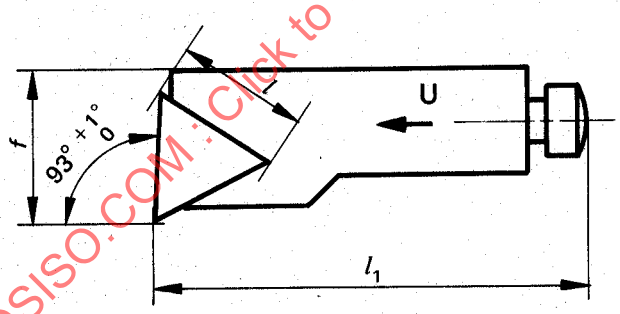


Figure 9