INTERNATIONAL STANDARD

ISO 5609

Second edition
1989-04-01

Boring bars for indexable inserts — Dimensions

Porte-plaquette de tournage intérieur — Dimensions

Reference number
ISO 5609 : 1989 (E)

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.

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 5609 was prepared by Technical Committee ISO/TC 29, *Small tools*.

This second edition cancels and replaces the first edition (ISO 5609 : 1985), clause 4 of which has been technically revised (addition of boring bars style Q).

Annex A of this International Standard is for information only.

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Boring bars for indexable inserts — Dimensions

1 Scope

This International Standard specifies the general dimensions of solid steel boring bars with cylindrical shank for indexable inserts, and specifies preferred boring bars (see clause 4).

2 Remark

The designation system for boring bars is given in ISO 6261.

3 Dimensions

3.1 General dimensions

See figure 1 and table 1.

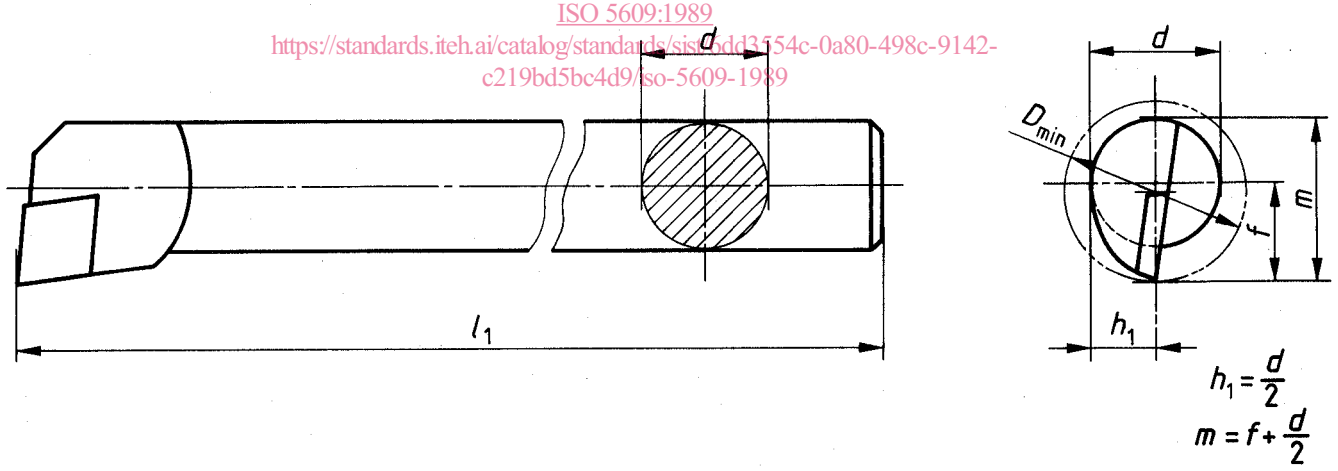


Figure 1

Table 1

Dimensions in millimetres

Shank diameter, d g7		08	10	12	16	20	25	32	40	50	60
Shank length, l_1 k16	preferred series	80	100	125	150	180	200	250	300	350	400
	secondary series	100	125	150	200	250	300	350	400	450	500
Dimension, $f\ ^{0}_{-0,25}$		6	7	9	11	13	17	22	27	35	43
Minimum diameter of bore, D_{min}		11	13	16	20	25	32	40	50	63	80
NOTE — One or more flats on the shank may be provided at the manufacturer's option.											

3.2 Identification of dimensions l_1 and f

3.2.1 The length dimension l_1 is the distance from the specified point K (see figures 2 and 3) to the end of the shank.

Dimension f is the distance between the specified point K and the axis of the boring bar, measured over a master insert.

The values of both l_1 and f, as specified in 3.1, are given for boring bars equipped with master inserts having corner radii in accordance with 3.2.3.

3.2.2 The specified point K is defined as follows:

a) for $\varkappa_r \leqslant 90°$ (see figure 2), the point of intersection of the tangent to the rounded corner with the prolongation of the major cutting edge;

b) for $\varkappa_r > 90°$ (see figure 3), the point of intersection of two mutually perpendicular tangents to the rounded corner.

3.2.3 The corner radius r_ϵ of the master inserts used for the definition of dimensions l_1 and f is a function of the diameter of the inscribed circle of the insert, as indicated in table 2.

Table 2

Dimensions in millimetres

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

3.2.4 Boring bars may be equipped with inserts of sizes as specified in clause 4 and any corner radius r_ϵ.

For corner radii r_ϵ other than those specified in 3.2.3, dimensions l_1 and f shall be corrected by using the values x and y (see figures 2 and 3), which are the distances from the specified point K 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 3.2.3, and x and y corresponding to the real corner radius.

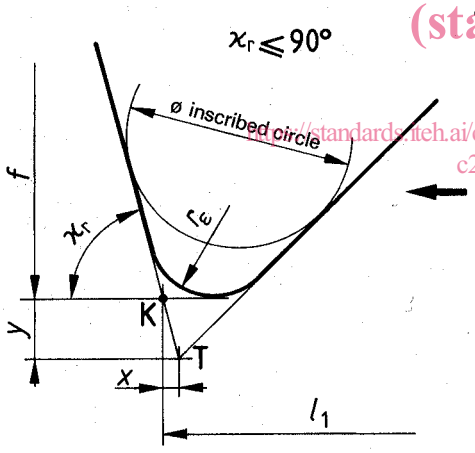


Figure 2

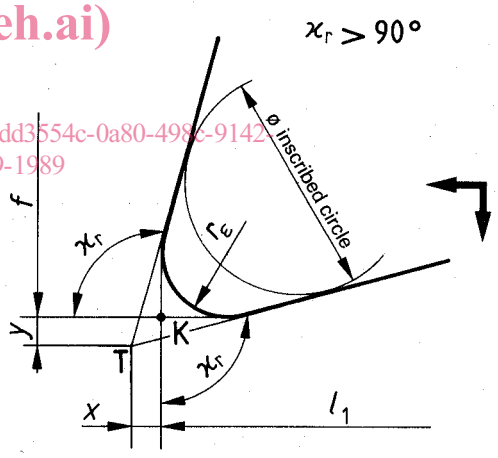


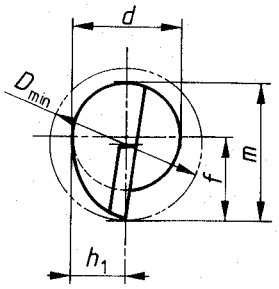
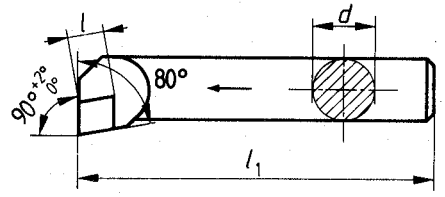
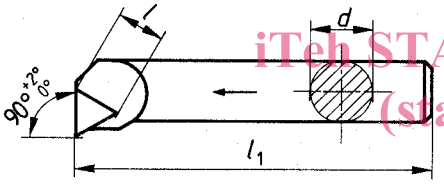
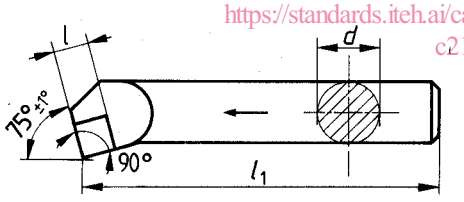
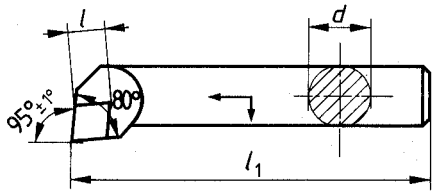
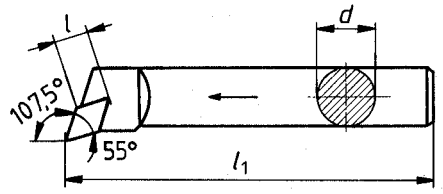
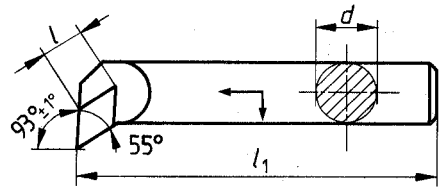
Figure 3

4 Preferred boring bars

See table 3.

Table 3

Dimensions in millimetres

Style			08	10	12	16	20	25	32	40	50	60
		d g7										
		l_1 k16	80	100	125	150	180	200	250	300	350	400
		$f_{-0,25}^{0}$	6	7	9	11	13	17	22	27	35	43
		D_{min}	11	13	16	20	25	32	40	50	63	80
F		l (designation)	06	06	—	—	—	—	—	—	—	—
		l (designation)	—	11	11	11	11/16	16	16	16/22	22	22/27
K		l (designation)	—	—	—	09	09	09/12	12	12/15	15/19	15/19
L		l (designation)	06	06	06	09	09	12	12	12	16/19	16/19
Q		l (designation)	—	—	07	07	11	11/15	11/15	15	15	—
U		l (designation)	—	—	07	07	11/15	11/15	15	15	15/19	15/19

Annex A
(informative)

Bibliography

ISO 883 : 1985, *Indexable hardmetal (carbide) inserts with rounded corners, without fixing hole — Dimensions.*

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ISO 6261 : 1984, *Boring bars (tool holders with cylindrical shank) for indexable inserts — Designation.*

ISO 6987-1 : 1983, *Indexable hardmetal (carbide) inserts with rounded corners, with partly cylindrical fixing hole — Part 1: Dimensions of inserts with 7° normal clearance.*

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Descriptors: tools, cutting tools, boring tools, inserts, tool holders, dimensions.

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