29

INTERNATIONAL STANDARD

ISO 5608

Second edition
1989-04-15

Turning and copying tool holders and cartridges for indexable inserts — Designation

Porte-plaquette de tournage et de copiage et cartouches — Désignation

Reference number
ISO 5608 : 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 5608 was prepared by Technical Committee ISO/TC 29, *Small tools*.

This second edition cancels and replaces the first edition (ISO 5608 : 1980), subclause 4.3 of which has been technically revised (addition of tool holders and cartridges style H).

Annex A of this International Standard is for information only.

International Organization for Standardization
Case postale 56 • CH-1211 Genève 20 • Switzerland
Printed in Switzerland

Turning and copying tool holders and cartridges for indexable inserts — Designation

1 Scope

This International Standard establishes a code of symbolization intended for the designation of turning and copying tool holders and cartridges with a rectangular shank having a standardized dimension f (see ISO 5610 and ISO 5611), intended for indexable inserts. Thus orders and specifications for such tools are simplified.

The designation of boring bars (tool holders with cylindrical shank) is given in ISO 6261.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were 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 editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 5610 : 1989, *Single-point tool holders for turning and copying, for indexable inserts — Dimensions.*

ISO 5611 : 1989, *Cartridges, type A, for indexable inserts — Dimensions.*

3 Explanation of the code

The code includes ten symbols for the designation of dimensions and other characteristics of the tool and the insert, of which the first nine symbols shall be used in any designation. The last symbol may be used when necessary.

In addition to the standardized designation (symbols (1) to (10)), a supplementary symbol consisting of a maximum of three letters and/or numbers may be added by the manufacturer for a better description of his products, on condition that this symbol is separated from the standardized designation by a dash and that it does not contain letters specified for reference (10).

No addition to or extension of the code specified in this International Standard shall be made without consultation with Technical Committee ISO/TC 29 and its agreement. Rather than adding symbols not provided for in this system, it is preferable to add to the designation conforming with this International Standard all necessary explanations in detailed sketches or specifications.

The meaning of the nine compulsory symbols and one optional symbol constituting the code is as follows:

(1)	Letter symbol identifying the method of holding the insert (see 4.1)	Compulsory symbols
(2)	Letter symbol identifying insert shape (see 4.2)[1]	
(3)	Letter symbol identifying tool style (see 4.3)	
(4)	Letter symbol identifying insert normal clearance (see 4.4)[1]	
(5)	Letter symbol identifying hand of tool (see 4.5)	
(6)	Number symbol identifying tool height (shank height of tool holders and height of cutting edge) (see 4.6)	
(7)	Number symbol identifying tool holder shank width or, for cartridges, letter C followed by a letter symbol identifying the cartridge type (see 4.7)	
(8)	Letter symbol identifying tool length (see 4.8)	
(9)	Number symbol identifying indexable insert size (see 4.9)[1]	
(10)	Letter symbol indicating special tolerances (see clause 5)	Optional symbol

EXAMPLE

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
C	T	G	N	R	32	25	M	16	Q

4 Compulsory symbols

4.1 Symbol for the method of holding the horizontally mounted insert — Reference (1)

Table 1

Letter symbol	Method of holding the insert
C	Top clamping (insert without hole)
M	Top and hole clamping (insert with hole)
P	Hole clamping (insert with hole)
S	Screw clamping through hole (insert with hole)

1) In accordance with ISO 1832.

4.2 Symbol for insert shape — Reference (2)

Table 2

Letter symbol	Insert shape	Insert type
H	Hexagonal	Equilateral and equiangular
O	Octagonal	
P	Pentagonal	
S	Square	
T	Triangular	
C	Rhombic with 80° included angle	Equilateral and non-equiangular
D	Rhombic with 55° included angle	
E	Rhombic with 75° included angle	
M	Rhombic with 86° included angle	
V	Rhombic with 35° included angle	
W	Hexagonal with 80° included angle	
L	Rectangular	Non-equilateral and equiangular
A	Parallelogram-shaped with 85° included angle	Non-equilateral and non-equiangular
B	Parallelogram-shaped with 82° included angle	
K	Parallelogram-shaped with 55° included angle	
R	Round	Round

NOTE — The included angle is always the smaller angle.

4.3 Symbol for tool style — Reference (3)

Table 3

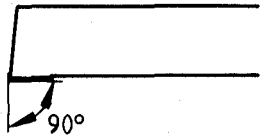
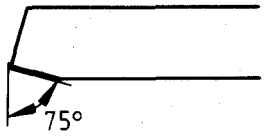
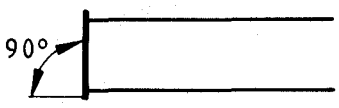
Letter symbol	Tool style	
A		90° cutting edge angle, straight shank, for side cutting
B		75° cutting edge angle, straight shank, for side cutting
C		90° cutting edge angle, straight shank, for end cutting

Table 3 (*continued*)

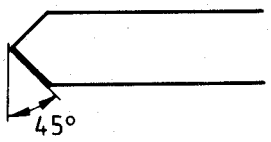
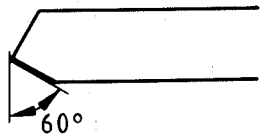
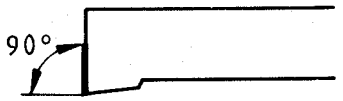
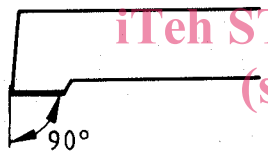
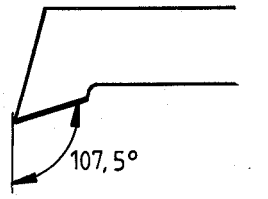
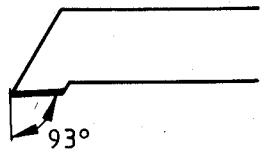
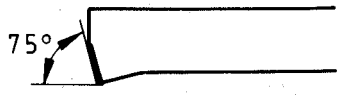
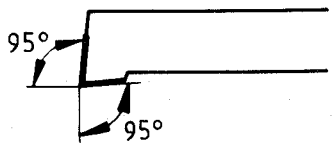
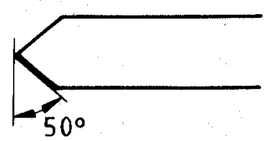
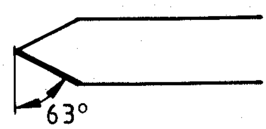
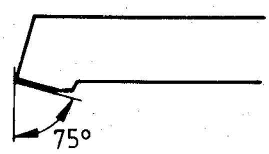
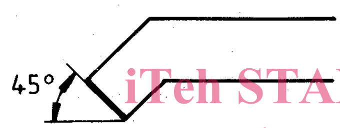
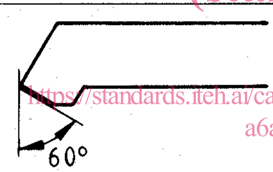
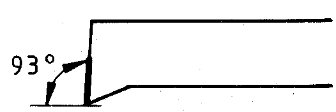
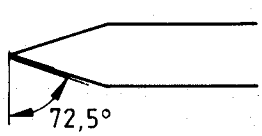
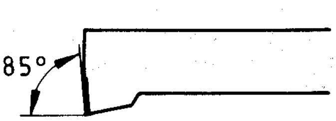
Letter symbol	Tool style	
D		45° cutting edge angle, straight shank, for side cutting
E		60° cutting edge angle, straight shank, for side cutting
F		90° cutting edge angle, offset shank, for end cutting
G		90° cutting edge angle, offset shank, for side cutting
H		107,5° cutting edge angle, offset shank, for side cutting
J		93° cutting edge angle, offset shank, for side cutting
K		75° cutting edge angle, offset shank, for end cutting
L		95° cutting edge angles on both cutting edges, offset shank, for side and end cutting
NOTE — Tools of style D may be equipped also with round inserts (shape R).		

Table 3 *(concluded)*

Letter symbol	Tool style	
M		50° cutting edge angle, straight shank, for side cutting
N		63° cutting edge angle, straight shank, for side cutting
R		75° cutting edge angle, offset shank, for side cutting
S		45° cutting edge angle, offset shank, for side cutting
T		60° cutting edge angle, offset shank, for side cutting
U		93° cutting edge angle, offset shank, for end cutting
V		72,5° cutting edge angle, straight shank, for side cutting
W		60° cutting edge angle, offset shank, for end cutting
Y		85° cutting edge angle, offset shank, for end cutting
NOTE — Tools of style S may be equipped also with round inserts (shape R).		

4.4 Symbol for the insert normal clearance — Reference (4)

Table 4

Letter symbol	Insert normal clearance
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°

NOTE — For non-equilateral inserts, the letter symbol applies to the normal clearance of the longer side.

4.5 Symbol for hand of tool — Reference (5)

Table 5

Letter symbol	Hand of tool
R	Right hand
L	Left hand
N	Either hand

4.6 Symbol for tool height — Reference (6)

4.6.1 Tool holders with rectangular shank cross-section and height of cutting edge h_1 equal to shank height h (see figure 1)

The number symbol for the tool height is the value of the shank height h, in millimetres. If the resulting symbol has only one digit, it shall be preceded by 0 (zero).

EXAMPLES

For h = 32 mm, the symbol is 32.

For h = 8 mm, the symbol is 08.

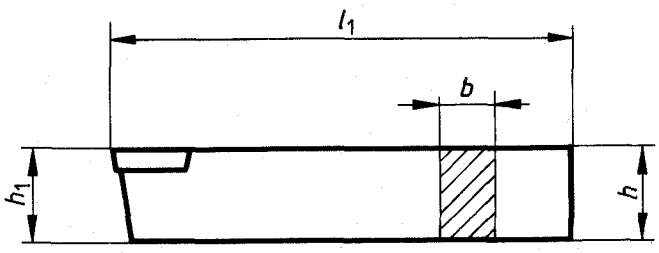


Figure 1

4.6.2 Cartridges with height of cutting edge h_1 not equal to shank height h (see figure 2)

The number symbol for the tool height is the value of the height of the cutting edge h_1, in millimetres. If the resulting symbol has only one digit, it shall be preceded by 0 (zero).

EXAMPLES

For h_1 = 12 mm, the symbol is 12.

For h_1 = 8 mm, the symbol is 08.

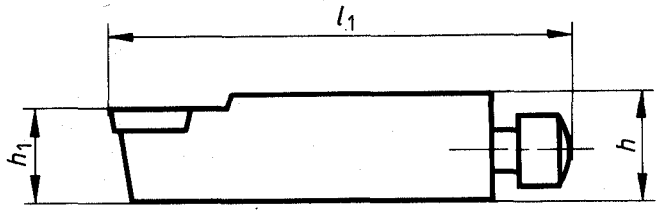


Figure 2

4.7 Symbol for tool width — Reference (7)

4.7.1 Tool holders with rectangular shank cross-section (see figure 1)

The number symbol for the tool width is the value of the shank width b, in millimetres. If the resulting symbol has only one digit, it shall be preceded by 0 (zero).

EXAMPLES

For b = 25 mm, the symbol is 25.

For b = 8 mm, the symbol is 08.

4.7.2 Cartridges (see figure 2)

When no indication of shank width is given, a two-letter symbol is indicated instead. The first letter is always **C** (cartridge) and the second letter identifies the cartridge type. The second letter is specified in the dimensional standards, for example type A in accordance with ISO 5611.

4.8 Symbol for tool length — Reference (8)

The letter symbol for the tool length shall be chosen from table 6.

For standardized tools where for each tool dimension only one length is specified, the letter symbol for tool length may be replaced by a dash.

For standardized cartridges having a tool length l_1 for which no letter symbol is provided in table 6 (for example, l_1 = 44 mm), symbol (8) shall be a dash.

Table 6

Letter symbol	Tool length, mm (l_1 in figures 1 and 2)
A	32
B	40
C	50
D	60
E	70
F	80
G	90
H	100
J	110
K	125
L	140
M	150
N	160
P	170
Q	180
R	200
S	250
T	300
U	350
V	400
W	450
X	Special length, to be specified
Y	500

4.9 Symbol for indexable insert size — Reference (9)

Table 7

Insert type	Number symbol
Equilateral and equiangular (H, O, P, S, T) and equilateral and non-equiangular (C, D, E, M, V, W)	The symbol of designation for the insert size is the edge length, disregarding any decimals. EXAMPLE Edge length: 16,5 mm Symbol of designation: 16
Non-equilateral and equiangular (L) and non-equilateral and non-equiangular (A, B, K)	The symbol of designation for the insert size is always the length of the major cutting edge or of the longer cutting edge, disregarding any decimals. EXAMPLE Length of the major cutting edge: 19,5 mm Symbol of designation: 19
Round (R)	The symbol of designation for the insert size is always the diameter, disregarding any decimals. EXAMPLE Diameter: 15,875 mm Symbol of designation: 15
NOTE — When the symbol resulting from the retained part of the value of a metric dimension has only one digit, it shall be preceded by 0 (zero). EXAMPLE Edge length: 9,525 mm Symbol of designation: 09	