INTERNATIONAL STANDARD

ISO 6261

Third edition
2011-09-01

Tool holders with cylindrical shank (boring bars) for indexable inserts — Designation

Porte-plaquette à queue cylindrique (porte-plaquette d'alésage) — Désignation

Reference number
ISO 6261:2011(E)

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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 2.

The main task of technical committees is to prepare International Standards. 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 document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 6261 was prepared by Technical Committee ISO/TC 29, *Small tools*, Subcommittee SC 9, *Tools with cutting edges made of hard cutting materials*.

This third edition cancels and replaces the second edition (ISO 6261:1995), which has been technically revised.

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Tool holders with cylindrical shank (boring bars) for indexable inserts — Designation

1 Scope

This International Standard defines a code for the designation of tool holders for internal turning (boring bars) operations with cylindrical shank and standardized dimension, f, for indexable inserts (see ISO 5609) in order to simplify orders and specifications for such tools.

The designation of turning and copying tool holders and of cartridges for indexable inserts with rectangular shank is given in ISO 5608.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 1832, *Indexable inserts for cutting tools — Designation*

3 Configuration of the designation

The designation code includes ten symbols for the designation of dimensions and other characteristics of the tool holder and the indexable insert.

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/her products on condition that this symbol is separated from the standardized designation by a hyphen.

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

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The meaning of the ten compulsory symbols constituting the code is as follows:

Position	Definition of designation symbols
1	letter symbol identifying the type of tool (see 4.1);
2	number symbol identifying the diameter of the shank (see 4.2);
3	letter symbol identifying the length of the tool (see 4.3);
-	hyphen not counted as a symbol;
4	letter symbol identifying the method of holding the indexable insert (see 4.4);
5	letter symbol identifying the indexable insert shape (see 4.5) (in accordance with ISO 1832);
6	letter symbol identifying the style of the tool (see 4.6);
7	letter symbol identifying the insert normal clearance (see 4.7);
8	letter symbol identifying the hand of the tool (see 4.8);
9	number symbol identifying the size of the indexable insert (see 4.9) (in accordance with ISO 1832);
10	number symbol identifying the numbers of flats and their location (see 4.10).

EXAMPLE

1	2	3	-	4	5	6	7	8	9	-	10
S	25	S	-	P	S	K	N	R	12	-	41

The term “tool” refers to boring bars (tool holders with cylindrical shank).

4 Designation symbols

4.1 Symbol for the type of tool — Letter symbol position 1

See Table 1.

Table 1 — Letter symbol position 1

Letter symbol	Type of tool
S	Solid steel tool
A	Solid steel tool with coolant/lubrication hole
B	Solid steel tool with anti-vibration device
D	Solid steel tool with anti-vibration device and coolant/lubrication hole
C	Hardmetal (carbide) tool with fixed steel head
E	Hardmetal (carbide) tool with fixed steel head and coolant/lubrication hole
F	Hardmetal (carbide) tool with fixed steel head and anti-vibration device
G	Hardmetal (carbide) tool with fixed steel head, anti-vibration device and coolant/lubrication hole
H	Solid heavy metal tool
J	Solid heavy metal tool with coolant/lubrication hole
K	Heavy metal tool with fixed steel head
L	Heavy metal tool with fixed steel head and coolant/lubrication hole

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4.2 Symbol for the diameter of the shank — Number symbol position 2

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

EXAMPLE 1

shank diameter 25 mm
symbol 25

EXAMPLE 2

shank diameter 8 mm
symbol 08

4.3 Symbol for the tool length — Letter symbol position 3

See Table 2.

Table 2 — Letter symbol position 3

Dimensions in millimetres

Letter symbol	Tool length
A	32
B	40
C	50
D	60
E	70
F	80
G	90
H	100
J	110
K	125
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

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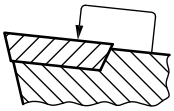
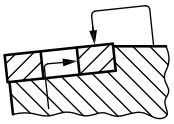
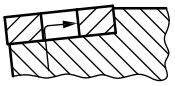
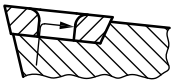
4.4 Symbol for the method of holding the horizontally mounted indexable insert — Letter symbol position 4

See Table 3.

Table 3 — Letter symbol position 4

Letter symbol	Method of holding	Indexable insert	Illustration
C	Top clamping	without hole	
M	Top and hole clamping	with hole or with counterbore for holding	
P	Hole clamping		
S	Screw clamping through hole	with counterbore for holding	

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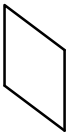
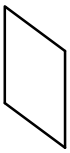
4.5 Symbol for the indexable insert shape — Letter symbol position 5

See Table 4.

Table 4 — Letter symbol position 5

Letter symbol	Included angle ε_r	Indexable insert shape		Remark
H	120°	Hexagonal		Equilateral and equiangular
O	135°	Octagonal		
P	108°	Pentagonal		
S	90°	Square		
T	60°	Triangular		
C	80°	Rhombic		Equilateral but non-equiangular
D	55°			
E	75°			
M	86°			
V	35°			
W	80°	Hexagonal with 80° included angle		
L	90°	Rectangular		Non-equilateral but equiangular
A	85°	Parallelogram-shaped		Non-equilateral and non-equiangular
B	82°			
K	55°			
R	—	Round		Round

NOTE The included angle is always the smaller angle.

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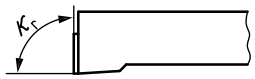
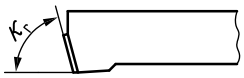
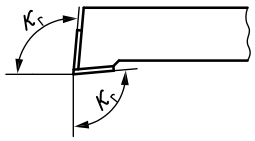
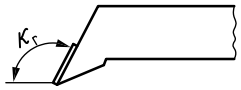
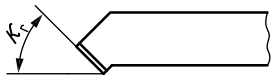
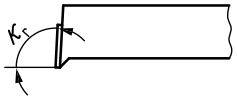
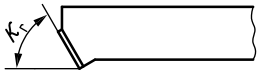
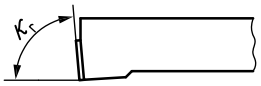
4.6 Symbol for the tool style — Letter symbol position 6

Table 5 — Letter symbol position 6

Letter symbol	Tool style	
F		90° cutting edge angle, offset shank, for end 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
P		117,5° cutting edge angle, offset shank, for end cutting
Q		107,5° cutting edge angle, offset shank, for end cutting
S[a]		45° cutting edge angle, offset shank, for side and end cutting
U		93° cutting edge angle, offset shank, for end cutting
W		60° cutting edge angle, offset shank, for end cutting
Y		85° cutting edge angle, offset shank, for end cutting

[a] Tools of style S may also be equipped with round inserts (shape R).

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4.7 Symbol for the indexable insert normal clearance — Letter symbol position 7

The letter symbols according to Table 6 apply for indexable insert normal clearance, α_n, on the cutting edge (see Figure 1).

For non-equilateral indexable inserts, the symbols apply to the normal clearance of the longer side.

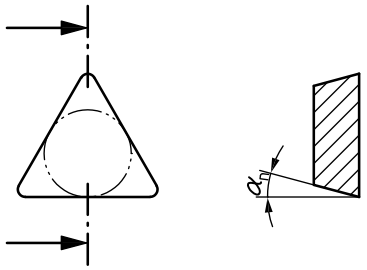


Figure 1 — Normal clearance, α_n

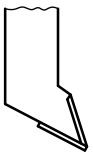
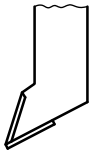
Table 6 — Letter symbol position 7

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

4.8 Symbol for the hand of tool — Letter symbol position 8

See Table 7.

Table 7 — Letter symbol position 8

Letter symbol	Hand of tool	Illustration
R	Right hand	
L	Left hand	

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4.9 Symbol for the indexable insert size — Number symbol position 9

See Table 8.

Table 8 — Number symbol position 9

Indexable 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 indexable insert size is the side length, disregarding any decimals. EXAMPLE Edge length: 16,5 mm Number symbol: 16
Non-equilateral but equiangular (L), and non-equilateral and non-equiangular (A, B, K)	The symbol of designation for the indexable insert size is always given for the major cutting edge or the longer cutting edge. The symbol of designation is the length, disregarding any decimals. EXAMPLE Length of the major cutting edge: 19,5 mm Number symbol: 19
Round insert (R)	The symbol of designation for the indexable insert size is always given for the diameter value, disregarding any decimals. EXAMPLE Diameter: 15,875 mm Number symbol: 15
NOTE When the number symbol resulting from the retained value has only one digit, it shall be preceded by 0 (zero). EXAMPLE Cutting edge length: 9,525 mm Number symbol of designation: 09	

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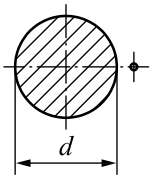
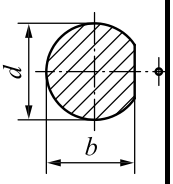
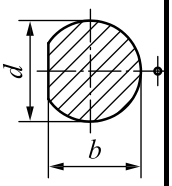
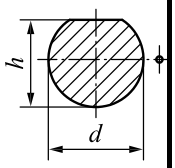
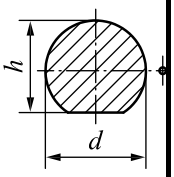
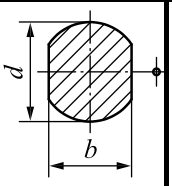
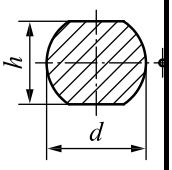
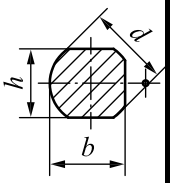
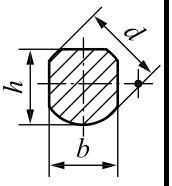
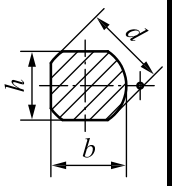
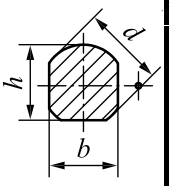
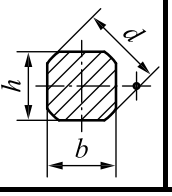
4.10 Symbol for round shank shape — Number symbol position 10 — Number of flats

See Table 9.

Table 9 — Code for round shank shape — Number of flats

Shank shape		Shank shape		Shank shape		Shank shape		Shank shape	
Code	Illustration	Code	Illustration	Code	Illustration	Code	Illustration	Code	Illustration
10		11		12		13		14	
—	—	21		22		—	—	—	—
—	—	31		32		33		34	
—	0151	41		—	—	—	—	—	—

b width of flat

d shank diameter

h height of flat

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Annex A
(informative)

Relationship between designations in this International Standard and ISO 13399 (all parts)

A.1 Relationship between designations

For relationship between designations in this International Standard and preferred symbols according to ISO 13399 (all parts), see Table A.1.

Table A.1 — Relationship between designations in this International Standard and ISO 13399 (all parts)

Letter/number symbol in ISO 6261	Reference in ISO 6261	Property name in ISO 13399 (all parts)	Symbol in ISO 13399 (all parts)	Reference in ISO 13399 (all parts)
Type of tool (symbol 1)	4.1 Table 1	Design configuration style code	DCC	ISO/TS 13399-3
Diameter of shank (symbol 2)	4.2	Shank diameter	DMM	ISO/TS 13399-3
Tool length (symbol 3)	4.3 Table 2	Functional length	LF	ISO/TS 13399-3
Method of holding the indexable insert (symbol 4)	4.4 Table 3	Clamping type code	MTP	ISO/TS 13399-3
Indexable insert shape (symbol 5)	4.5 Table 4	Insert shape code	SC	ISO/TS 13399-2
Insert normal clearance angle, α_n (symbol 7)	4.7 Table 6	Clearance angle major	AN	ISO/TS 13399-2
Hand of tool (symbol 8)	4.8 Table 7	Hand	HAND	ISO/TS 13399-3
Insert size (symbol 9)	4.9 Table 8	Cutting edge length	L	ISO/TS 13399-2
Round shank shape (symbol 10)	4.10 Table 9	Shank cross sectional shape code	SX	ISO/TS 13399-3

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Bibliography

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

[2] ISO 5609, *Boring bars for indexable inserts — Dimensions*

[3] ISO 13399 (all parts), *Cutting tool data representation and exchange*

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