INTERNATIONAL STANDARD

ISO 5610-7

First edition
2010-08-01

Tool holders with rectangular shank for indexable inserts —

Part 7: **Style J**

Porte-plaquette à queue rectangulaire pour plaquettes amovibles —

Partie 7: Forme J

Reference number
ISO 5610-7:2010(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 5610-7 was prepared by Technical Committee ISO/TC 29, *Small tools*, Subcommittee SC 9, *Tools with cutting edges made of hard cutting materials*.

This first edition of ISO 5610-7, together with ISO 5610-1, ISO 5610-2, ISO 5610-3, ISO 5610-4, ISO 5610-5, ISO 5610-6, ISO 5610-8, ISO 5610-9, ISO 5610-10, ISO 5610-11, ISO 5610-12, ISO 5610-13, ISO 5610-14 and ISO 5610-15, cancels and replaces ISO 5610:1998.

ISO 5610 consists of the following parts, under the general title *Tool holders with rectangular shank for indexable inserts*:

— *Part 1: General survey, correlation and determination of dimensions*

— *Part 2: Style A*

— *Part 3: Style B*

— *Part 4: Style D*

— *Part 5: Style F*

— *Part 6: Style G*

— *Part 7: Style J*

— *Part 8: Style K*

— *Part 9: Style L*

— *Part 10: Style N*

— *Part 11: Style R*

— *Part 12: Style S*

— *Part 13: Style T*

— *Part 14: Style H*

— *Part 15: Style V*

Tool holders with rectangular shank for indexable inserts —

Part 7: Style J

1 Scope

This part of ISO 5610 specifies tool holders with rectangular shank, style J, i.e. with offset shank and cutting edge angle $\kappa_r = 93°$ for side cutting.

These tool holders are primarily intended for indexable inserts made of hardmetal or other cutting materials to be mounted by clamping and to be used for turning operations.

NOTE The symbols for the dimensions shown in the tables of this part of ISO 5610 and the corresponding preferred symbols of properties defined in ISO/TS 13399-2 and ISO/TS 13399-3 are given in ISO 5610-1:2010, Table A.1.

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 5608:1995, *Turning and copying tool holders and cartridges for indexable inserts — Designation*

ISO 5610-1:2010, *Tool holders with rectangular shank for indexable inserts — Part 1: General survey, correlation and determination of dimensions*

3 Dimensions

3.1 General

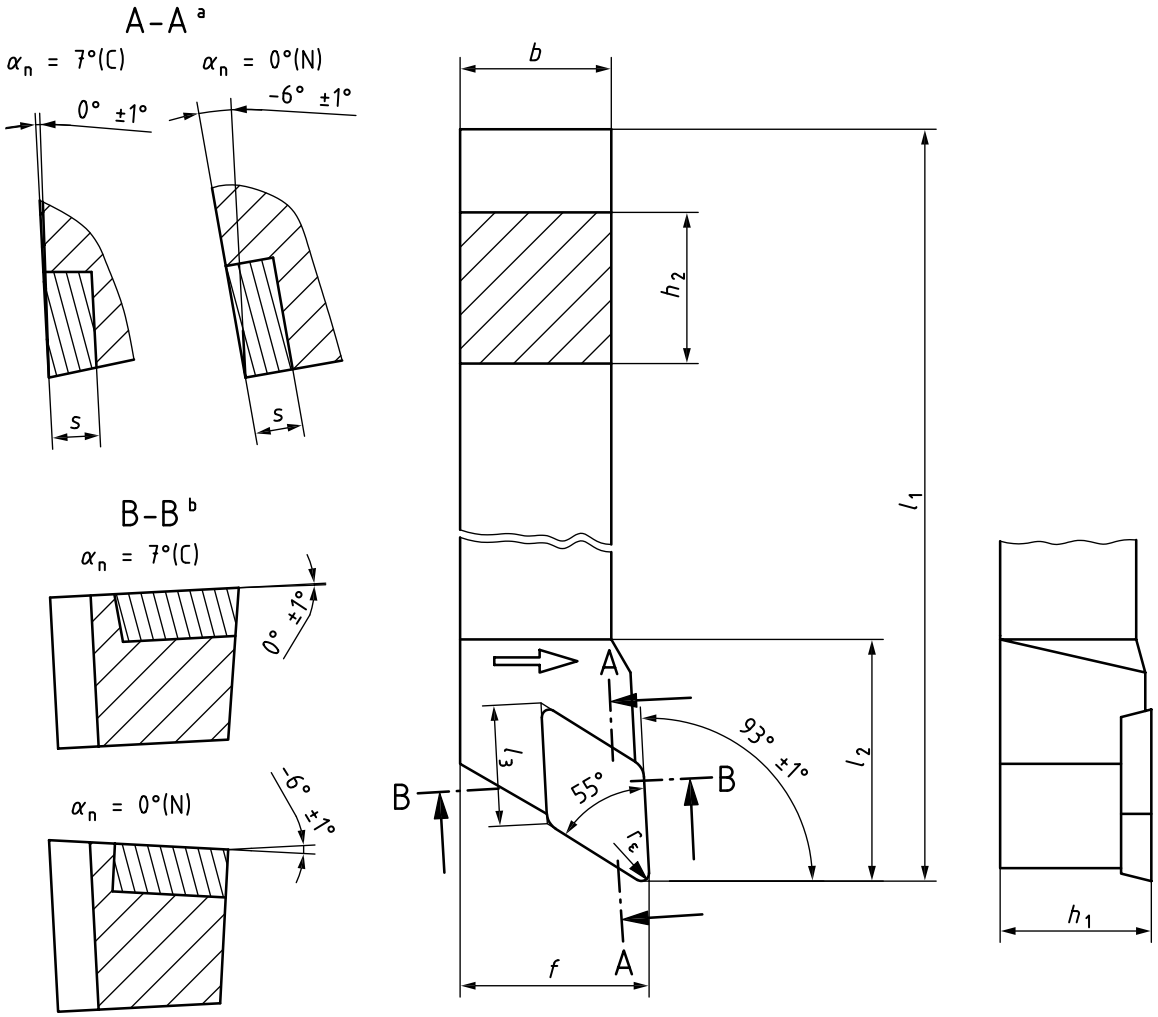
It is not necessary for tool holders to comply with the pictorial representation; only the dimensions given shall be observed.

For determination of dimensions h_1, f and l_1, see ISO 5610-1.

For explanation of the designation code for tool holders, see ISO 5608.

NOTE The values of rake angles and inclination angles shown in the figures are recommended values; they can vary according to the application.

3.2 Tool holder style J for rhombic indexable insert shape D



NOTE The figure shows a right-hand tool holder (R); left-hand tool holder (L) laterally reversed.

a Inclination angle λ_n.

b Rake angle γ_n.

Figure 1 — Tool holder style J for rhombic indexable insert — D

Table 1

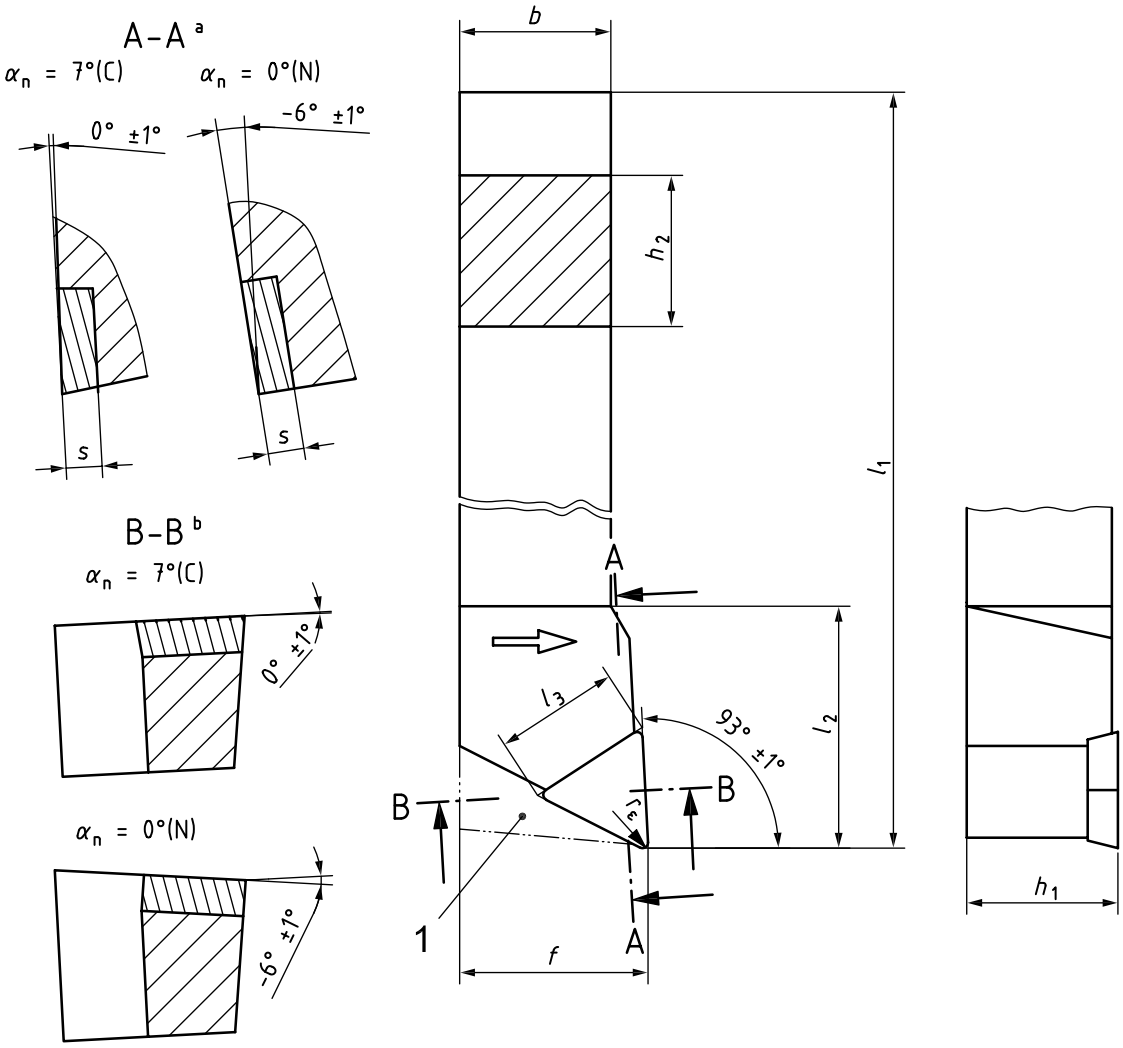
Dimensions in millimetres

Symbol[a]	h_1 js13	b h13	l_3 ≈	f $^{+0,5}_{0}$	h_2 h13	l_1[a] k16	l_2 max.	s[b]
SDJCR 0808 — 07	8	8	7,75	10	8	—	25	2,38
SDJCL 0808 — 07								
SDJCR 1010 — 07	10	10	7,75	12	10	—	25	2,38
SDJCL 1010 — 07								
SDJCR 1212 — 07	12	12	7,75	16	12	—	25	2,38
SDJCL 1212 — 07								
SDJCR 1616 — 11	16	16	11,6	20	16	—	32	3,97
SDJCL 1616 — 11								
SDJCR 2020 — 11	20	20	11,6	25	20	—	32	3,97
SDJCL 2020 — 11								
PDJNR 2020 — 15			15,5				40	6,35
PDJNL 2020 — 15								
CDJNR 2525 — 15	25	25	15,5	32	25	—	40	7,95
CDJNL 2525 — 15	25	25	15,5	32	25	—	40	7,95
SDJCR 2525 — 15								4,76
SDJCL 2525 — 15								
PDJNR 2525 — 15								6,35
PDJNL 2525 — 15								
CDJNR 3225 — 15	32	25	15,5	32	32	—	40	7,95
CDJNL 3225 — 15								
SDJCR 3225 — 15								4,76
SDJCL 3225 — 15								
PDJNR 3225 — 15								6,35
PDJNL 3225 — 15								
SDJCR 4032 — 15	40	32	15,5	40	40	—	40	4,76
SDJCL 4032 — 15								
PDJNR 4032 — 15								6,35
PDJNL 4032 — 15								

[a] For the selection of length, l_1, the en-dash may be replaced by the dimensions of ISO 5610-1:2010, Table 2. For letter symbols identifying the tool length, see ISO 5608:1995, Table 6.

[b] Insert thickness without shim, if any.

3.3 Tool holder style J for triangular indexable insert shape T



Key

1 style of tool holder with indexable insert contact on both sides

a Inclination angle λ_n.

b Rake angle γ_n.

NOTE The figure shows a right-hand tool holder (R); left-hand tool holder (L) laterally reversed.

Figure 2 — Tool holder style J for triangular indexable insert — T

Table 2

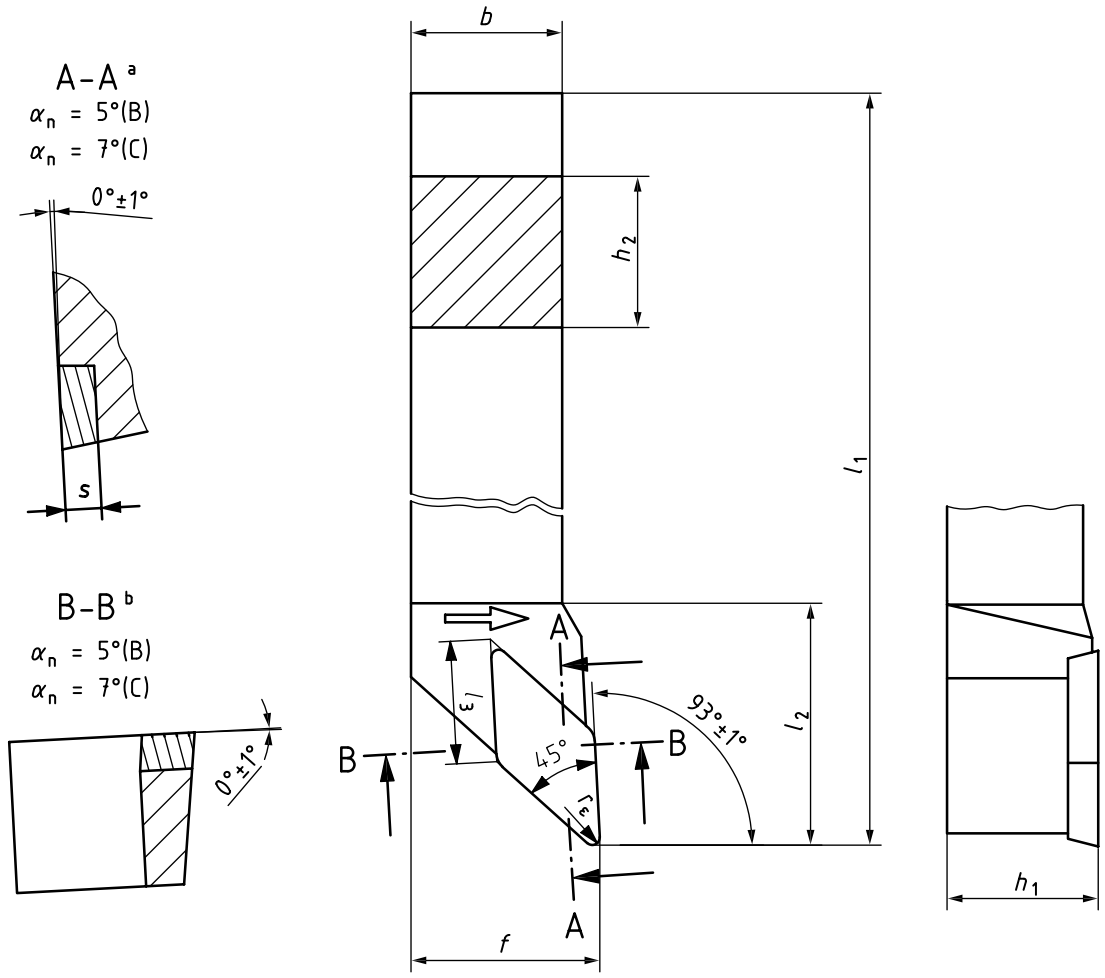
Dimensions in millimetres

Symbol[a]	h_1 js13	b h13	l_3 ≈	f $^{+0,5}_{0}$	h_2 h13	l_1[a] k16	l_2 max.	s[b]
STJCR 2020 — 16	20	20	16,5	25	20	—	32	3,97
STJCL 2020 — 16								
PTJNR 2020 — 16								4,76
PTJNL 2020 — 16								
CTJNR 2525 — 16	25	25	16,5	32	25	—	32	7,94
CTJNL 2525 — 16								
STJCR 2525 — 16								3,97
STJCL 2525 — 16								
PTJNR 2525 — 16								4,76
PTJNL 2525 — 16								
STJCR 2525 — 22	25	25	22	32	25	—	36	4,76
STJCL 2525 — 22								
PTJNR 2525 — 22								
PTJNL 2525 — 22								
CTJNR 3225 — 16	32	25	16,5	32	32	—	32	7,94
CTJNL 3225 — 16								
STJCR 3225 — 16								3,97
STJCL 3225 — 16								
PTJNR 3225 — 16								4,76
PTJNL 3225 — 16								
STJCR 3225 — 22	32	25	22	32	32	—	36	4,76
STJCL 3225 — 22								
PTJNR 3225 — 22								
PTJNL 3225 — 22								
STJCR 4032 — 22	40	32	22	40	40	—	36	4,76
STJCL 4032 — 22								
PTJNR 4032 — 22								
PTJNL 4032 — 22								
PTJNR 4032 — 27	40	32	27,5	40	40	—	40	6,35
PTJNL 4032 — 27								

[a] See Table 1.

[b] See Table 1.

3.4 Tool holder style J for rhombic indexable insert shape V



NOTE The figure shows a right-hand tool holder (R); left-hand tool holder (L) laterally reversed.

a Inclination angle λ_n.

b Rake angle γ_n.

Figure 3 — Tool holder style J for rhombic indexable insert — V

Table 3

Dimensions in millimetres

Symbol[a]	h_1 js13	b h13	l_3 ≈	f $^{+0,5}_{0}$	h_2 h13	l_1[a] k16	l_2 max.	s[b]
SVJBR 1212 — 11	12	12	11,1	16	12	—	25	3,18
SVJBL 1212 — 11								
SVJCR 1212 — 11								
SVJCL 1212 — 11								
SVJBR 1616 — 11	16	16	11,1	20	16	—	25	3,18
SVJBL 1616 — 11								
SVJCR 1616 — 11								
SVJCL 1616 — 11								
SVJCR 2020 — 11	20	20	11,1	25	20	—	25	3,18
SVJCL 2020 — 11								
SVJBR 2020 — 16			16,6				40	4,76
SVJBL 2020 — 16								
SVJCR 2525 — 11	25	25	11,1	32	25	—	25	3,18
SVJCL 2525 — 11								
SVJBR 2525 — 16			16,6				40	4,76
SVJBL 2525 — 16								
SVJBR 3225 — 16	32	25	16,6	32	32	—	40	4,76
SVJBL 3225 — 16								

[a] See Table 1.

[b] See Table 1.

4 Designation

A tool holder in accordance with this part of ISO 5610 shall be designated by:

a) “Tool holder”;

b) reference to this part of ISO 5610, i.e. ISO 5610-7;

c) type of mounting, in accordance with ISO 5608;

d) symbol for indexable insert shape, in accordance with ISO 5608;

e) symbol for tool style, in accordance with ISO 5608;

f) symbol for the indexable insert normal clearance, in accordance with ISO 5608;

g) symbol for hand of tool, in accordance with ISO 5608;

h) its height, h_1, width, b, and length, l_1 (symbol for tool length in accordance with ISO 5608);

i) its cutting edge length, l_3.

EXAMPLE 1 Tool holder for a screw-clamped (S) rhombic indexable insert shape D (D), tool holder style J (J), for normal clearance of indexable insert $\alpha_n = 7°$ (C), right-hand type (R), with height $h_1 = 10$ mm and width $b = 10$ mm (1010), length $l_1 = 70$ mm (E), for cutting edge length $l_3 = 7{,}75$ mm (07) is designated as follows:

Tool holder ISO 5610-7 - SDJCR 1010 E07

EXAMPLE 2 Tool holder for a horizontally mounted bore-clamped (P) triangular indexable insert shape T (T), tool holder style J (J), for normal clearance of indexable insert $\alpha_n = 0°$ (N), right-hand type (R), with height $h_1 = 32$ mm and width $b = 25$ mm (3225), length $l_1 = 170$ mm (P), for cutting edge length $l_3 = 16{,}5$ mm (16) is designated as follows:

Tool holder ISO 5610-7 - PTJNR 3225 P16

EXAMPLE 3 Tool holder for a screw-clamped (S) rhombic indexable insert shape V (V), tool holder style J (J), for normal clearance of indexable insert $\alpha_n = 5°$ (B), right-hand type (R), with height $h_1 = 20$ mm and width $b = 20$ mm (2020), length $l_1 = 125$ mm (K), for cutting edge length $l_3 = 16{,}6$ mm (16) is designated as follows:

Tool holder ISO 5610-7 - SVJBR 2020 K16

5 Material

The material should be steel with a tensile strength of at least 1 200 N/mm^2.

6 Design

6.1 Type of mounting

Standard design of tool holders with indexable insert shall be mounted in accordance with Tables 1 to 3.

Other types of mounting may be left to the manufacturer's discretion or upon agreement. The letter symbol in the designation, symbol 1, shall then be replaced by the respective symbol for the chosen or agreed-upon type of mounting, in accordance with ISO 5608.

For the modified type of mounting deviating from Tables 1 to 3, the relevant indexable insert thickness shall also be considered.

6.2 Corner radius, r_ε

Tool holders in accordance with this part of ISO 5610 may be equipped with indexable inserts with cutting edge lengths, l_3, as specified in Table 1 and any corner radius, r_ε.

The values for l_1 given in ISO 5610-1:2010, Table 2, apply to tool holders with indexable inserts having corner radii, r_ε, in accordance with Table 4.

Table 4

Dimensions in millimetres

l_3	r_ε
7,75	0,4
11,0	
11,1	
11,6	0,8
15,5	
16,5	
16,6	
22	
27,5	1,2
NOTE The values given for r_ε are nominal values. The accurate values converted from the inch dimensions are 0,397 mm, 0,794 mm and 1,191 mm.	

For indexable inserts with corner radii, r_ε, other than those specified in Tables 1 to 3, the dimensions of f and l_1 shall be determined in accordance with ISO 5610-1.

The tolerances on h_1, f and l_1 refer to dimensions measured with master indexable insert and master shim, if any.

6.3 Thickness, s, of indexable insert

The values for thickness, s, given in Tables 1 to 3, apply to indexable inserts without shim and for the standard design of tool holders.

For tool holders for indexable inserts with thicknesses deviating from the specified values, the thickness shall be indicated when ordering or upon delivery (in the handbook).

7 Extent of delivery

Tool holders shall be delivered complete with clamping device, but without indexable insert(s).

8 Marking

Tool holders shall be marked with the letter symbol and the name or trademark of the manufacturer.

Additional marking may be left to the manufacturer's discretion or upon agreement.

Deviations in marking shall be agreed upon.

A reference to this part of ISO 5610, i.e. ISO 5610-7:2010, shall be given on the packaging.

Bibliography

[1] ISO 883, *Indexable hardmetal (carbide) inserts with rounded corners, without fixing hole — Dimensions*

[2] ISO 3002-1, *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] ISO 3364, *Indexable hardmetal (carbide) inserts with rounded corners, with cylindrical fixing hole — Dimensions*

[4] ISO 6987, *Indexable hard material inserts with rounded corners, with partly cylindrical fixing hole — Dimensions*

[5] ISO/TS 13399-2, *Cutting tool data representation and exchange — Part 2: Reference dictionary for the cutting items*

[6] ISO/TS 13399-3, *Cutting tool data representation and exchange — Part 3: Reference dictionary for tool items*

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