INTERNATIONAL STANDARD

ISO
5610-6

Second edition
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Tool holders with rectangular shank for indexable inserts —

Part 6:
Style G

Porte-plaquette à queue rectangulaire pour plaquettes amovibles —

Partie 6: Forme G

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 29, *Small tools*, Subcommittee SC 9, *Tools with defined cutting edges, cutting items*.

This second edition cancels and replaces the first edition (ISO 5610-6:2010), of which it constitutes a minor revision.

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 6:
Style G

1 Scope

This part of ISO 5610 specifies tool holders with rectangular shank, style G, i.e. with offset shank and cutting edge angle κ_r = 90° for side cutting.

These tool holders are primarily intended for indexable inserts made of hard metal 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 5610-1:2014, Table A.1.

2 Normative references

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

ISO 5608:2012, *Turning and copying tool holders and cartridges for indexable inserts — Designation*

ISO 5610-1:2014, *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 G for rhombic indexable insert shape C
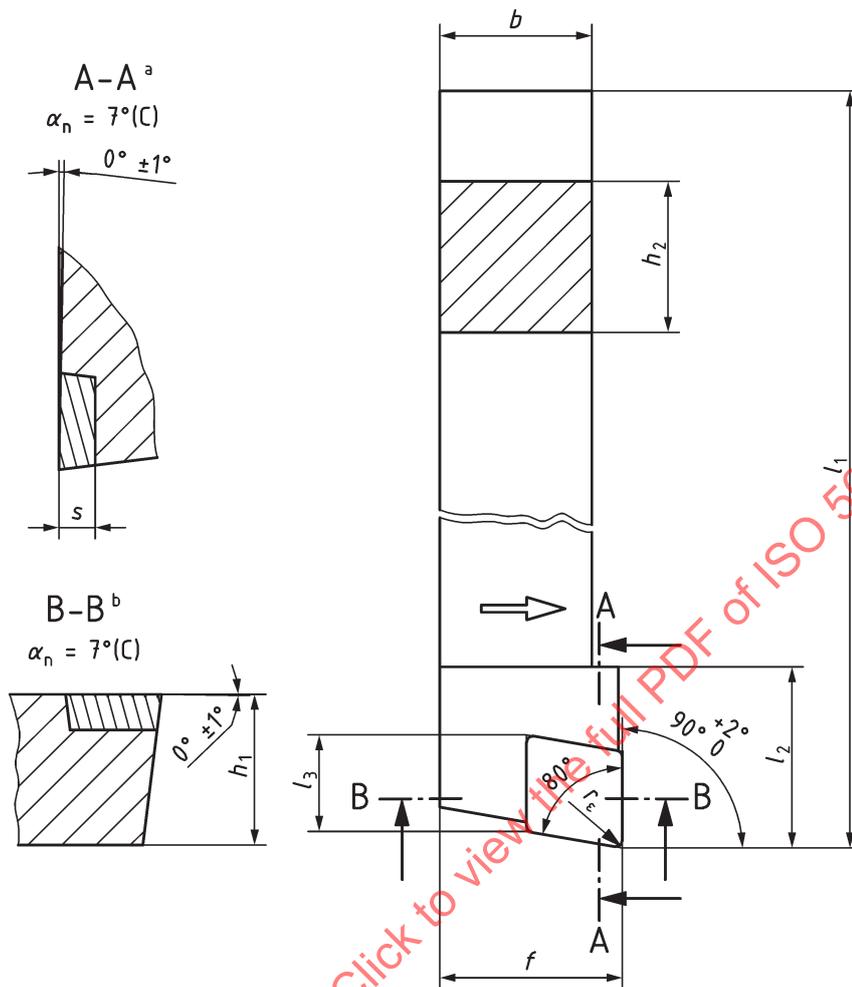
Key

a   Inclination angle, λ_S.

b   Rake angle, γ_0.

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

Figure 1 — Tool holder style G for rhombic indexable insert — C

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]
SCGCR 0808 — 06	8	8	6,4	10	8	—	12	2,38
SCGCL 0808 — 06	8	8	6,4	10	8	—	12	2,38
SCGCR 1010 — 06	10	10	6,4	12	10	—	12	2,38
SCGCL 1010 — 06	10	10	6,4	12	10	—	12	2,38

a   For the selection of length, l_1, the dash can be replaced by the dimensions of ISO 5610-1:2010, Table 2. For letter symbols identifying the tool length, see ISO 5608:2012, Table 6.

b   Insert thickness without shim, if applicable.

3.3 Tool holder style G for triangular indexable insert shape T

Key

a   Inclination angle, λ_s.

b   Rake angle, γ_0.

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

Figure 2 — Tool holder style G for triangular indexable insert — T
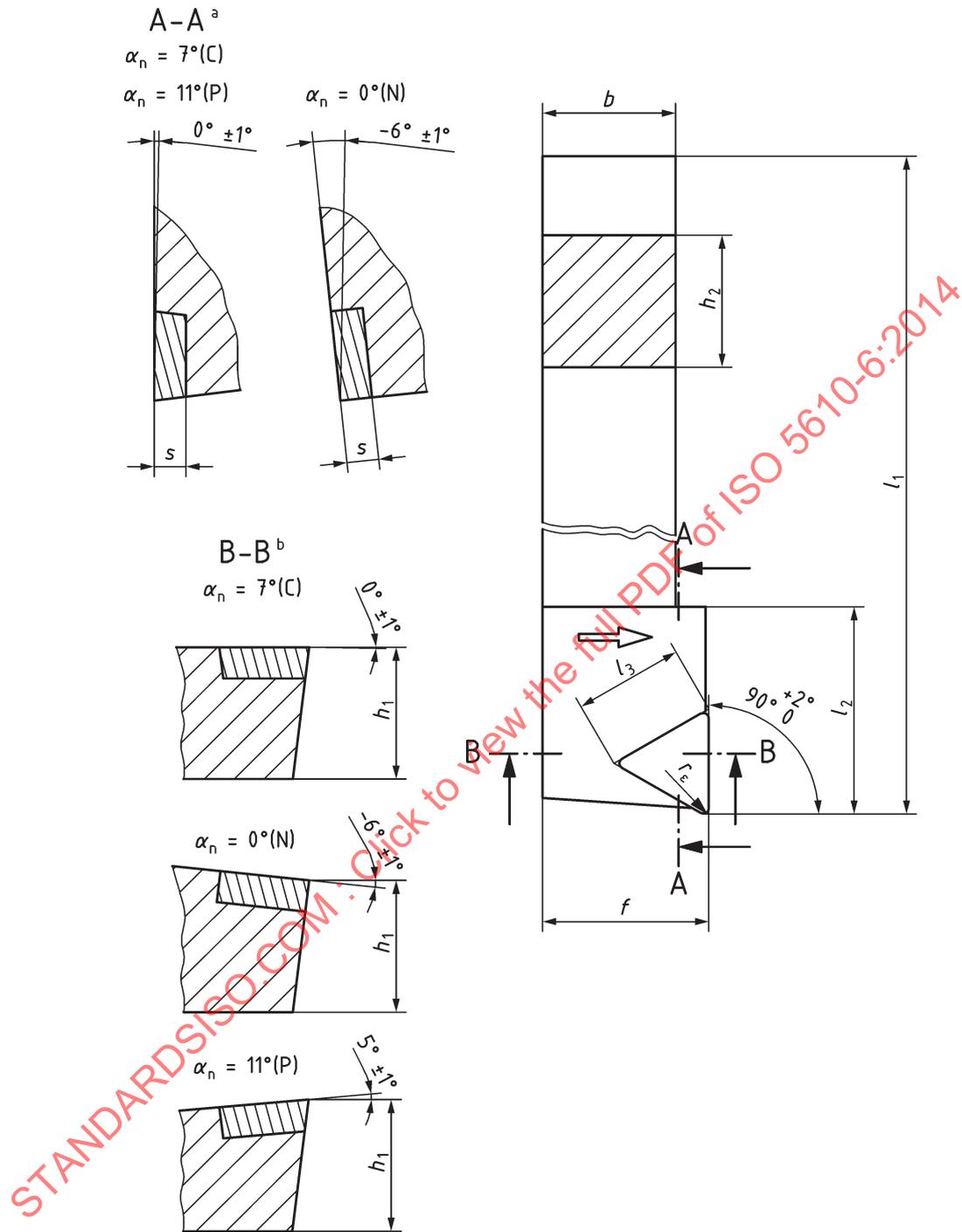
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Table 2

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]
STGCR 1212 — 11	12	12	11	16	12	—	25	2,38
STGCL 1212 — 11								
PTGNR 1212 — 11								3,18
PTGNL 1212 — 11								
CTGPR 1212 — 11								
CTGPL 1212 — 11								
STGCR 1616 — 11	16	16	11	20	16	—	25	2,38
STGCL 1616 — 11								
PTGNR 1616 — 11								3,18
PTGNL 1616 — 11								
CTGPR 1616 — 11								
CTGPL 1616 — 11								
STGCR 1616 — 16	16	16	16,5	20	16	—	32	3,97
STGCL 1616 — 16								
PTGNR 1616 — 16								4,76
PTGNL 1616 — 16								
CTGPR 1616 — 16								3,18
CTGPL 1616 — 16								
STGCR 2020 — 16	20	20	16,5	25	20	—	32	3,97
STGCL 2020 — 16								
PTGNR 2020 — 16								4,76
PTGNL 2020 — 16								
CTGPR 2020 — 16								3,18
CTGPL 2020 — 16								
STGCR 2525 — 16	25	25	16,5	32	25	—	32	3,97
STGCL 2525 — 16								
PTGNR 2525 — 16								4,76
PTGNL 2525 — 16								
CTGPR 2525 — 16								3,18
CTGPL 2525 — 16								
STGCR 2525 — 22	25	25	22	32	25	—	36	4,76
STGCL 2525 — 22								
PTGNR 2525 — 22								
PTGNL 2525 — 22								
CTGPR 2525 — 22								
CTGPL 2525 — 22								

[a] For the selection of length, l_1, the dash can be replaced by the dimensions of ISO 5610-1:2010, Table 2. For letter symbols identifying the tool length, see ISO 5608:2012, Table 6.

[b] Insert thickness without shim, if applicable.

Table 2

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]
STGCR 3225 — 16	32	25	16,5	32	32	—	32	3,97
STGCL 3225 — 16								
PTGNR 3225 — 16								4,76
PTGNL 3225 — 16								
CTGPR 3225 — 16								3,18
CTGPL 3225 — 16								
STGCR 3225 — 22	32	25	22	32	32		36	4,76
STGCL 3225 — 22								
PTGNR 3225 — 22								
PTGNL 3225 — 22								
CTGPR 3225 — 22								
CTGPL 3225 — 22								
STGCR 3232 — 22	32	32	22	40	32	—	36	4,76
STGCL 3232 — 22								
PTGNR 3232 — 22								
PTGNL 3232 — 22								
CTGPR 3232 — 22								
CTGPL 3232 — 22								
STGCR 4040 — 22	40	40	22	50	40	—	36	4,76
STGCL 4040 — 22								
PTGNR 4040 — 22								
PTGNL 4040 — 22								
CTGPR 4040 — 22								
CTGPL 4040 — 22								
PTGNR 4040 — 27	40	40	27,5	50	40	—	40	6,35
PTGNL 4040 — 27								
PTGNR 5050 — 27	50	50	27,5	60	50	—	40	6,35
PTGNL 5050 — 27								

[a] For the selection of length, l_1, the dash can be replaced by the dimensions of ISO 5610-1:2010, Table 2. For letter symbols identifying the tool length, see ISO 5608:2012, Table 6.

[b] Insert thickness without shim, if applicable.

4 Designation

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

a) "Tool holder";

b) a reference to this part of ISO 5610 (i.e. ISO 5610-6);

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 C (C), tool holder style G (G), for normal clearance of indexable insert α_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 = 6,4 mm (06) is designated as follows:

Tool holder ISO 5610-6 - SCGCR 1010 E06

EXAMPLE 2   Tool holder for a horizontally mounted, bore-clamped (P) triangular indexable insert shape T (T), tool holder style G (G), for normal clearance of indexable insert α_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 = 22 mm (22) is designated as follows:

Tool holder ISO 5610-6 - PTGNR 3225 P22

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 and 2.

Other types of mounting are at 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 and 2, 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 can be equipped with indexable inserts with cutting edge lengths, l_3, as specified in Tables 1 and 2, and any corner radius, r_ε.

The values for l_1 given in ISO 5610-1:2014, Table 2, apply to tool holders with indexable inserts having corner radii, r_ε, in accordance with Table 3.