INTERNATIONAL STANDARD

ISO 5610-9

Second edition
2014-09-01

Tool holders with rectangular shank for indexable inserts —

Part 9: **Style L**

Porte-plaquette à queue rectangulaire pour plaquettes amovibles —

Partie 9: Forme L

Reference number
ISO 5610-9:2014(E)

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

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 5610-9:2010), 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 9: Style L

1 Scope

This part of ISO 5610 specifies tool holders with rectangular shank, style L, i.e. with offset shank and cutting edge angle κ_r = 95° for side and end 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

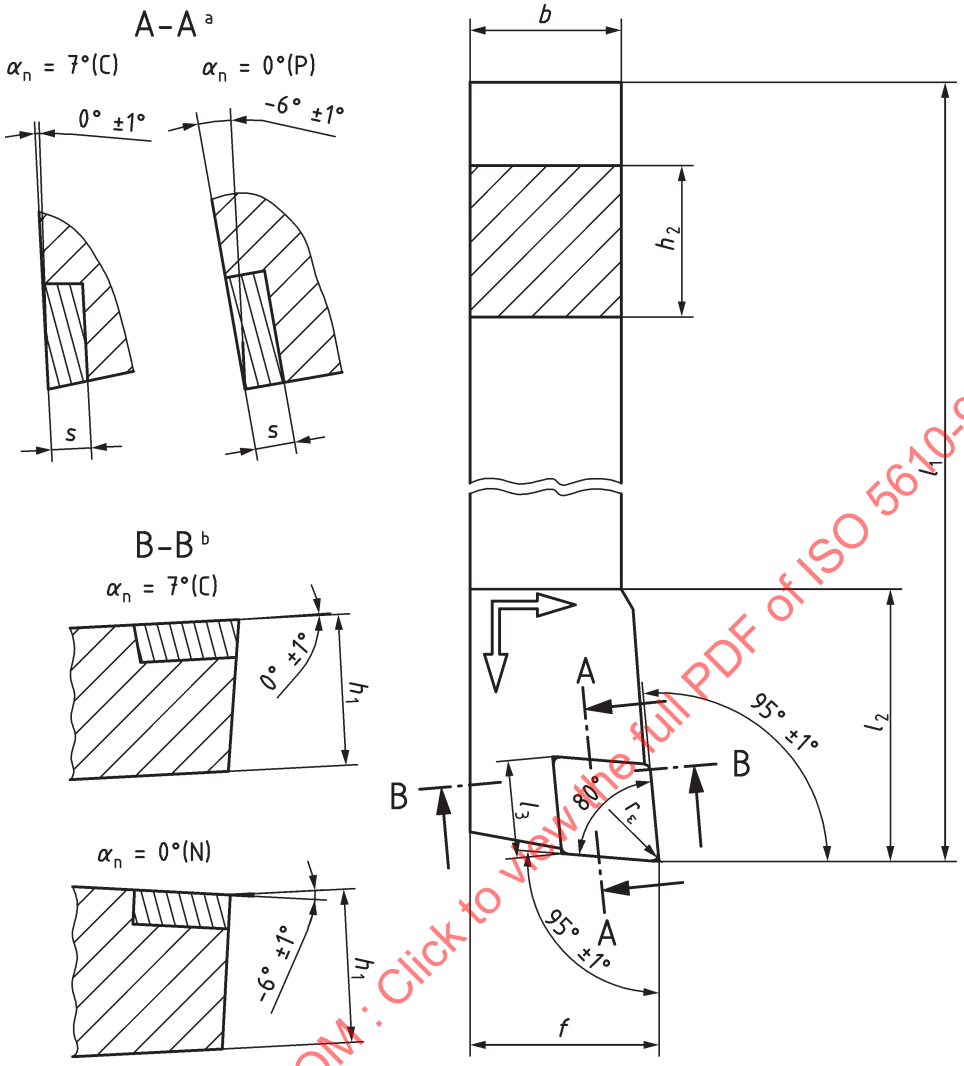
It is not necessary for tool holders to comply with the pictorial representation; only the dimensions given shall be observed.

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 L for rhombic indexable insert shape C



Key

a Inclination angle, λ_s.

b Rake angle, γ_o.

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

Figure 1 — Tool holder style L 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]
SCLCR 0808 — 06	8	8	6,4	10	8	—	12	2,38
SCLCL 0808 — 06								

a For the selection of length, l_1, the dash may be replaced by the dimensions of ISO 5610-1:2014, Table 2. For letter symbols identifying the tool length, see ISO 5608:2012, Table 6.

b Insert thickness without shim, if applicable.

Table 1

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]
SCLCR 1010 — 06	10	10	6,4	12	10	—	12	2,38
SCLCL 1010 — 06								
SCLCR 1212 — 09	12	12	9,7	16	12	—	32	3,97
SCLCL 1212 — 09								
SCLCR 1616 — 09	16	16	9,7	20	16	—	32	3,97
SCLCL 1616 — 09								
SCLCR 1616 — 12	16	16	12,9	20	16	—	36	4,76
SCLCL 1616 — 12								
PCLNR 1616 — 12								
PCLNL 1616 — 12								
SCLCR 2020 — 12	20	20	12,9	25	20	—	36	4,76
SCLCL 2020 — 12								
PCLNR 2020 — 12								
PCLNL 2020 — 12								
CCLNR 2525 — 12	25	25	12,9	32	25	—	36	7,95
CCLNL 2525 — 12								
SCLCR 2525 — 12								4,76
SCLCL 2525 — 12								
PCLNR 2525 — 12								
PCLNL 2525 — 12								
CCLNR 2525 — 16	25	25	16,1	32	25	—	40	7,95
CCLNL 2525 — 16								
PCLNR 2525 — 16								6,35
PCLNL 2525 — 16								
CCLNR 3225 — 12	32	25	12,9	32	32	—	36	7,95
CCLNL 3225 — 12								
SCLCR 3225 — 12								4,76
SCLCL 3225 — 12								
PCLNR 3225 — 12								
PCLNL 3225 — 12								
CCLNR 3225 — 16	32	25	16,1	32	32	—	40	7,95
CCLNL 3225 — 16								
PCLNR 3225 — 16								6,35
PCLNL 3225 — 16								
PCLNR 3225 — 19	32	32	19,3	40	32	—	45	6,35
PCLNL 3225 — 19								

[a] For the selection of length, l_1, the dash may be replaced by the dimensions of ISO 5610-1:2014, Table 2. For letter symbols identifying the tool length, see ISO 5608:2012, Table 6.

[b] Insert thickness without shim, if applicable.

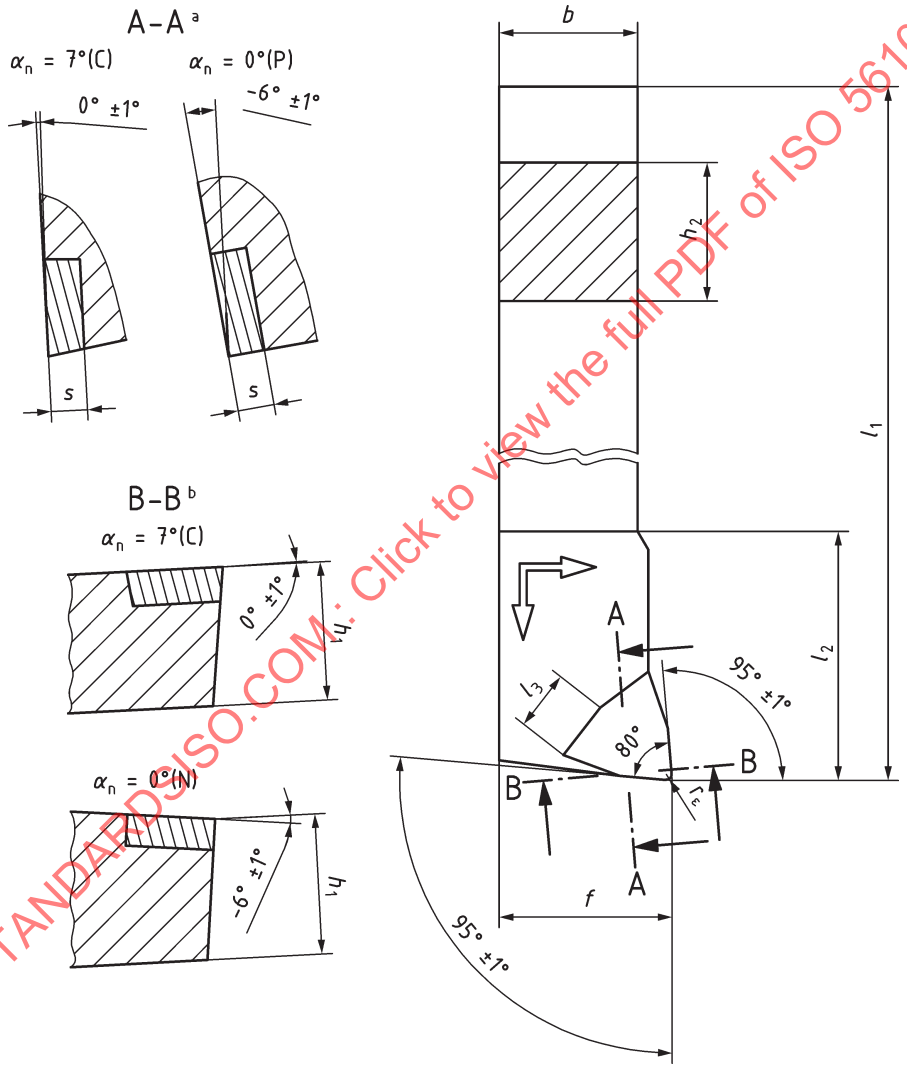
Table 1

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]
PCLNR 4040 — 19	40	40	19,3	50	40	—	45	6,35
PCLNL 4040 — 19								

[a] For the selection of length, l_1, the dash may be replaced by the dimensions of ISO 5610-1:2014, 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 L for hexagonal indexable insert shape W



Key

a Inclination angle, λ_S.

b Rake angle, γ_o.

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

Figure 2 — Tool holder style L for hexagonal indexable insert — W

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]
SWLCR 0808 — 04	8	8	4,35	10	8	—	25	2,38
SWLNL 0808 — 04								
SWLCR 1010 — 04	10	10	4,35	12	10	—	25	2,38
SWLCL 1010 — 04								
SWLCR 1212 — 04	12	12	4,35	16	12	—	25	2,38
SWLCL 1212 — 04								
SWLCR 1212 — 06	12	12	6,5	16	12	—	25	4,76
SWLCL 1212 — 06								
PWLNR 1616 — 06	16	16	6,5	20	16	—	36	4,76
PWLNL 1616 — 06								
SWLNR 1616 — 06								3,97
SWLNL 1616 — 06								
PWLNR 2020 — 06	20	20	6,5	25	20	—	36	4,76
PWLCL 2020 — 06								
SWLNR 2020 — 06								
SWLCL 2020 — 06								3,97
PWLNR 2020 — 08			8,7				45	
PWLNL 2020 — 08								
PWLNR 2525 — 06	25	25	6,5	32	25	—	36	4,76
PWLNL 2525 — 06								
SWLCR 2525 — 06								3,97
SWLCL 2525 — 06								
PWLNR 2525 — 08			8,7				45	4,76
PWLNL 2525 — 08								
PWLNR 3225 — 06	32	25	6,5	32	32	—	36	4,76
PWLNL 3225 — 06								
PWLNR 3225 — 08			8,7				45	
PWLNL 3225 — 08								
PWLNR 3232 — 08	32	32	8,7	40	32	—	45	4,76
PWLNL 3232 — 08								

[a] For the selection of length, l_1, the dash can be replaced by the dimensions of ISO 5610-1:2014, 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 5610-9);

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 horizontally mounted bore-clamped (P) rhombic indexable insert shape C (C), tool holder style L (L), 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 $l_3 = 12{,}9$ mm (12) is designated as follows:

Tool holder ISO 5610-9 - PCLNR 3225 P12

EXAMPLE 2 Tool holder for a horizontally mounted bore-clamped (P) trigon indexable insert shape W (W), tool holder style L (L), for normal clearance of indexable insert $\alpha_n = 0°$ (N), 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 $l_3 = 8{,}7$ mm (08) is designated as follows:

Tool holder ISO 5610-9 - PWLNR 2020 K08

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 length, 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.

