INTERNATIONAL STANDARD

ISO 5610-12

Second edition
2014-09-01

Tool holders with rectangular shank for indexable inserts —

Part 12: **Style S**

Porte-plaquette à queue rectangulaire pour plaquettes amovibles —

Partie 12: Forme S

STANDARDSISO.COM : Click to view the full PDF of ISO 5610-12:2014

Reference number
ISO 5610-12:2014(E)

© ISO 2014

STANDARDSISO.COM : Click to view the full PDF of ISO 5610-12:2014

COPYRIGHT PROTECTED DOCUMENT

© ISO 2014

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

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

© ISO 2014 – All rights reserved

Contents

Page

STANDARDSISO.COM : Click to view the full PDF of ISO 5610-12:2014

© ISO 2014 – All rights reserved

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 5610-12:2010), 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*

STANDARDSISO.COM : Click to view the full PDF of ISO 5610-12:2014

 © ISO 2014 – All rights reserved

— *Part 14: Style H*

— *Part 15: Style V*

STANDARDSISO.COM : Click to view the full PDF of ISO 5610-12:2014

© ISO 2014 – All rights reserved

STANDARDSISO.COM : Click to view the full PDF of ISO 5610-12:2014

Tool holders with rectangular shank for indexable inserts —

Part 12: Style S

1 Scope

This part of ISO 5610 specifies tool holders with rectangular shank, style S, i.e. with offset shank and cutting edge angle $\kappa_r = 45°$ 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.

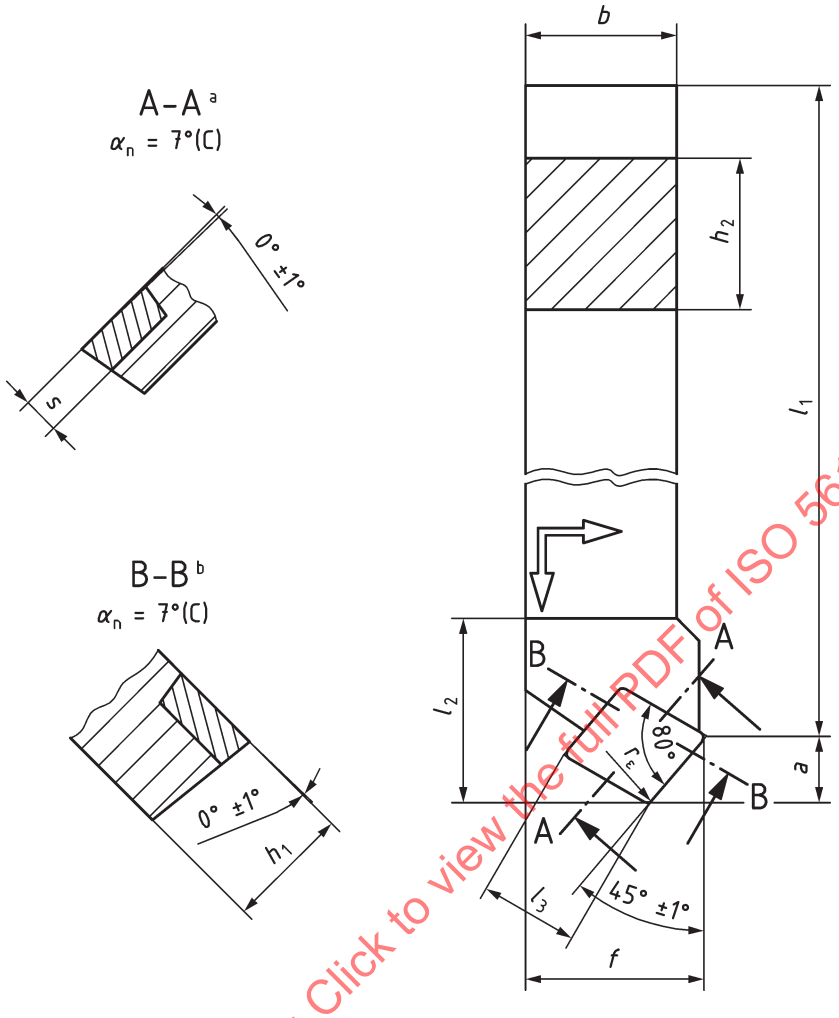
For explanation of the designation code for tool holders, see ISO 5608.

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

STANDARDSISO.COM : Click to view the full PDF of ISO 5610-12:2014

© ISO 2014 – All rights reserved

3.2 Tool holder style S 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 S for rhombic indexable insert — C

STANDARDSISO.COM : Click to view the full PDF of ISO 5610-12:2014

© ISO 2014 – All rights reserved

Table 1

Dimensions in millimetres

Symbol[a]	h_1 js13	b h13	l_3 ≈	a	f +0,5 0	h_2 h13	l_1[a] k16	l_2 max	s[b]
SCSCR 0808 — 06	8	8	6,4	4,2	10	8	60	12	2,38
SCSCL 0808 — 06									
SCSCR 1010 — 06	10	10	6,4	4,2	12	10	70	12	2,38
SCSCL 1010 — 06									

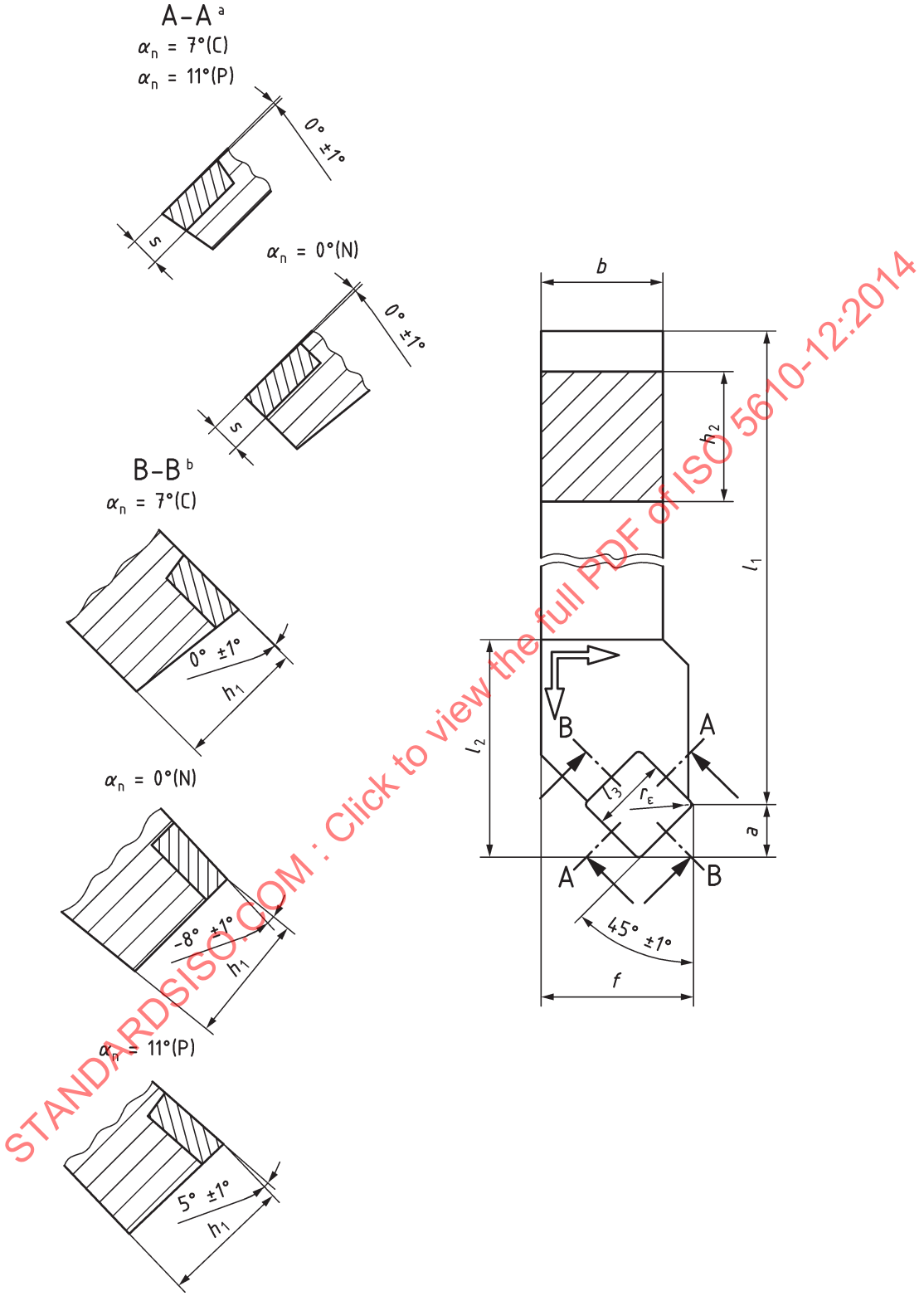
[a] For the selection of length, l_1, the dash can be replaced by the dimensions of ISO 5610-1:2014, Table 2. For letter symbols identifying the tool length, see ISO 5608:2012, Table 6.

[b] Insert thickness without shim, if applicable.

STANDARDSISO.COM : Click to view the full PDF of ISO 5610-12:2014

© ISO 2014 – All rights reserved

3.3 Tool holder style S for square indexable insert shape S



STANDARDSISO.COM : Click to view the full PDF of ISO 5610-12:2014

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 S for square indexable insert — S

© ISO 2014 – All rights reserved

Table 2

Dimensions in millimetres

Symbol[a]	h_1 js13	b h13	l_3 ≈	a	f +0,5 0	h_2 h13	l_1[a] k16	l_2 max.	s[b]
SSSCR 1212 — 09	12	12	9,525	6,1	16	12	—	32	3,97
SSSCL 1212 — 09									
PSSNR 1212 — 09									3,18
PSSNL 1212 — 09									
CSSPR 1212 — 09									
CSSPL 1212 — 09									
SSSCR 1616 — 09	16	16	9,525	6,1	20	16	—	32	3,97
SSSCL 1616 — 09									
PSSNR 1616 — 09									3,18
PSSNL 1616 — 09									
CSSPR 1616 — 09									
CSSPL 1616 — 09									
SSSCR 1616 — 12	16	16	12,7	8,3	20	16	—	36	4,76
SSSCL 1616 — 12									
PSSNR 1616 — 12									
PSSNL 1616 — 12									3,18
CSSPR 1616 — 12									
CSSPL 1616 — 12									
SSSCR 2020 — 12	20	20	12,7	8,3	25	20	—	36	4,76
SSSCL 2020 — 12									
PSSNR 2020 — 12									
PSSNL 2020 — 12									3,18
CSSPR 2020 — 12									
CSSPL 2020 — 12									
CSSNR 2525 — 12	25	25	12,7	8,3	32	25	—	36	7,94
CSSNL 2525 — 12									
SSSCR 2525 — 12									4,76
SSSCL 2525 — 12									
PSSNR 2525 — 12									
PSSNL 2525 — 12									
CSSPR 2525 — 12									3,18
CSSPL 2525 — 12									

[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.

STANDARDSISO.COM : Click to view the full PDF of ISO 5610-12:2014

© ISO 2014 – All rights reserved

Table 2

Symbol[a]	h_1 js13	b h13	l_3 ≈	a	f +0,5 0	h_2 h13	l_1[a] k16	l_2 max.	s[b]
SSSCR 2525 — 15	25	25	15,875	10,2	32	25	—	40	5,56
SSSCL 2525 — 15									
PSSNR 2525 — 15									6,35
PSSNL 2525 — 15									
CSSPR 2525 — 19	25	25	19,05	12,5	32	25	—	45	4,76
CSSPL 2525 — 19									
CSSNR 3225 — 12	32	25	12,7	8,3	32	32	—	36	7,94
CSSNL 3225 — 12									
SSSCR 3225 — 12									4,76
SSSCL 3225 — 12									
PSSNR 3225 — 12									
PSSNL 3225 — 12									
CSSPR 3225 — 12									3,18
CSSPL 3225 — 12									
CSSNR 3225 — 15	32	25	15,875	10,2	32	32	—	40	7,94
CSSNL 3225 — 15									
SSSCR 3225 — 15	32	25	15,875	10,2	40	32	—	40	5,56
SSSCL 3225 — 15									
PSSNR 3225 — 15									6,35
PSSNL 3225 — 15									
CSSPR 3225 — 19	32	25	19,05	12,5	40	32	—	45	4,76
CSSPL 3225 — 19									
SSSCR 3232 — 19	32	32	19,05	12,5	40	32	—	45	6,35
SSSCL 3232 — 19									
PSSNR 3232 — 19									
PSSNL 3232 — 19									
CSSPR 3232 — 19									4,76
CSSPL 3232 — 19									
SSSCR 4040 — 19	40	40	19,05	12,5	50	40	—	45	6,35
SSSCL 4040 — 19									
PSSNR 4040 — 19									
PSSNL 4040 — 19									
CSSPR 4040 — 19									4,76
CSSPL 4040 — 19									
PSSNR 4040 — 25	40	40	25,4	16	50	40	—	50	7,94
PSSNL 4040 — 25									

[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.

STANDARDSISO.COM : Click to view the full PDF of ISO 5610-12:2014

© ISO 2014 – All rights reserved

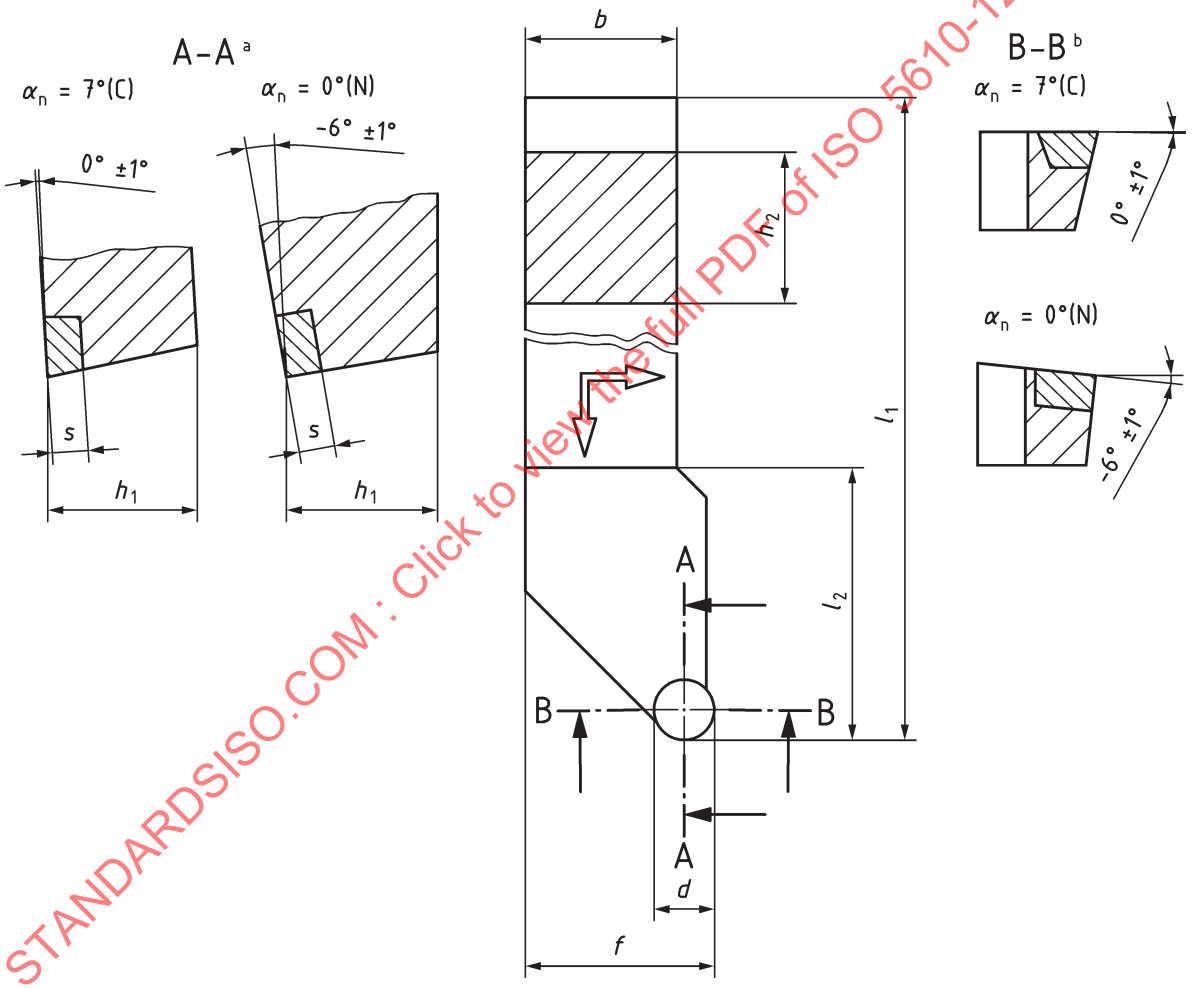
Table 2

Symbol[a]	h_1 js13	b h13	l_3 ≈	a	f +0,5 0	h_2 h13	l_1[a] k16	l_2 max.	s[b]
PSSNR 5050 — 25	50	50	25,4	16	60	50	—	50	7,94
PSSNL 5050 — 25									

[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.

3.4 Tool holder style S for round indexable insert shape R



STANDARDSISO.COM : Click to view the full PDF of ISO 5610-12:2014

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 3 — Tool holder style S for round indexable insert — R

© ISO 2014 – All rights reserved

Table 3

Dimensions in millimetres

Symbol[a]	h_1 js13	b h13	d	f +0,5 0	h_2 h13	l_1[a] k16	l_2 max.	s[b]
SRSCR 0808 — 06	8	8	6	10	8	—	25	2,38
SRSCL 0808 — 06								
SRSCR 1010 — 06	10	10	6	12	10	—	25	2,38
SRSCL 1010 — 06								
SRSCR 1010 — 08			8					3,18
SRSCL 1010 — 08								
SRSCR 1212 — 06	12	12	6	16	12	—	32	2,38
SRSCL 1212 — 06								
SRSCR 1212 — 08			8					3,18
SRSCL 1212 — 08								
SRSCR 1616 — 06	16	16	6	20	16	—	32	2,38
SRSCL 1616 — 06								
SRSCR 1616 — 08			8					3,18
SRSCL 1616 — 08								
SRSCR 1616 — 10			10					3,97
SRSCL 1616 — 10								
SRSCR 2020 — 06	20	20	6	25	20	—	36	2,38
SRSCL 2020 — 06								
SRSCR 2020 — 08			8					3,18
SRSCL 2020 — 08								
SRSCR 2020 — 10			10					3,97
SRSCL 2020 — 10								
SRSCR 2020 — 12			12					4,76
SRSCL 2020 — 12								

[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.

STANDARDSISO.COM : Click to view the full PDF of ISO 5610-12:2014

© ISO 2014 – All rights reserved

Table 3

Symbol[a]	h_1 js13	b h13	d	f +0,5 0	h_2 h13	l_1[a] k16	l_2 max.	s[b]
SRSCR 2525 — 06	25	25	6	32	25	—	40	2,38
SRSCL 2525 — 06								
SRSCR 2525 — 08			8					3,18
SRSCL 2525 — 08								
CRSNR 2525 — 09			9,52					4,76
CRSNL 2525 — 09								
SRSCR 2525 — 10			10					3,97
SRSCL 2525 — 10								
SRSCR 2525 — 12			12					4,76
SRSCL 2525 — 12								
PRSNR 2525 — 12								
PRSNL 2525 — 12								
CRSNR 2525 — 12			12,7					7,94
CRSNL 2525 — 12								
SRSCR 2525 — 16			16					5,56
SRSCL 2525 — 16								
SRSCR 3225 — 12	32	25	12	32	32	—	40	4,76
SRSCL 3225 — 12								
CRSNR 3225 — 12			12,7				36	7,94
CRSNL 3225 — 12								
SRSCR 3225 — 16			16				40	5,56
SRSCL 3225 — 16								
CRSNR 3232 — 12		32	12,7				36	7,94
CRSNL 3232 — 12								
PRSNR 3232 — 19			19,05	40			40	6,35
PRSNL 3232 — 19								
CRSNR 3232 — 19							45	7,94
CRSNL 3232 — 19								
SRSCR 3232 — 20	32	32	20	40	32	—	45	6,35
SRSCL 3232 — 20								
PRSCR 3232 — 20								
PRSCL 3232 — 20								

[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.

STANDARDSISO.COM : Click to view the full PDF of ISO 5610-12:2014

© ISO 2014 – All rights reserved

Table 3

Symbol[a]	h_1 js13	b h13	d	f +0,5 0	h_2 h13	l_1[a] k16	l_2 max.	s[b]
SRSCR 4040 — 25	40	40	25	50	40	—	50	7,94
SRSCL 4040 — 25								
PRSCR 4040 — 25								
PRSCL 4040 — 25								
CRSNR 4040 — 25			25,4					9,52
CRSNL 4040 — 25								
PRSNR 4040 — 25								
PRSNL 4040 — 25								

[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:

a) "Tool holder";

b) a reference to this part of ISO 5610 (i.e. ISO 5610-12);

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 S (S), 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 $l_3 = 6{,}4$ mm (06) is designated as follows:

Tool holder ISO 5610-12 - SCSCR 1010 E06

EXAMPLE 2 Tool holder for a horizontally mounted, bore-clamped (P) square indexable insert shape S (S), tool holder style S (S), 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 $l_3 = 12{,}7$ mm (12) is designated as follows:

Tool holder ISO 5610-12 - PSSNR 3225 P12

EXAMPLE 3 Tool holder for countersunk screw-clamped (S) round indexable insert shape R (R), tool holder style S (S), for normal clearance of indexable insert $\alpha_n = 7°$ (C), right-hand type (R), with height $h_1 = 20$ mm and width $b = 20$ mm (2020), length $l_1 = 125$ mm (K), diameter $d = 10$ mm (10) is designated as follows:

Tool holder ISO 5610-12 - SRSCR 2020 K10

STANDARDSISO.COM : Click to view the full PDF of ISO 5610-12:2014

© ISO 2014 – All rights reserved