BS ISO 5611-1:2015

BSI Standards Publication

Cartridges, type A, for indexable inserts

Part 1: General survey, correlation and determination of dimensions

National foreword

This British Standard is the UK implementation of ISO 5611-1:2015. Together with BS ISO 5611-2, BS ISO 5611-3, BS ISO 5611-4, BS ISO 5611-5, BS ISO 5611-6, BS ISO 5611-7, BS ISO 5611-8, BS ISO 5611-9, BS ISO 5611-10, BS ISO 5611-11 and BS ISO 5611-12 it supersedes BS 4193-8:1997 (dual numbered as ISO 5611:1995) which will be withdrawn upon publication of the rest of the parts in this series.

The UK participation in its preparation was entrusted to Technical Committee MTE/18, Tools tips and inserts for cutting applications.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

ublished by BSI Standards Limited 2015

ISBN 978 0 580 83608 4

ICS 25.100.01

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 November 2015.

Amendments/corrigenda issued since publication

Date	Text affected

BS ISO 5611-1:2015

INTERNATIONAL STANDARD

ISO 5611-1

First edition
2015-11-01

Cartridges, type A, for indexable inserts —

Part 1: General survey, correlation and determination of dimensions

Cartouches du type A, à plaquettes amovibles —

Partie 1: Vue d'ensemble, corrélation et détermination des dimensions

Reference number
ISO 5611-1:2015(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.

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 first edition of ISO 5611-1, together with ISO 5611-2, ISO 5611-3, ISO 5611-4, ISO 5611-5, ISO 5611-6. ISO 5611-7, ISO 5611-8, ISO 5611-9, ISO 5611-10, ISO 5611-11, and ISO 5611-12, cancels and replaces ISO 5611:1995, which has been technically revised.

ISO 5611 consists of the following parts, under the general title *Cartridges, type A, for indexable inserts*:

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

— *Part 2: Style F*

— *Part 3: Style G*

— *Part 4: Style J*

— *Part 5: Style K*

— *Part 6: Style L*

— *Part 7: Style R*

— *Part 8: Style S*

— *Part 9: Style T*

— *Part 10: Style U*

— *Part 11: Style W*

— *Part 12: Style Y*

INTERNATIONAL STANDARD ISO 5611-1:2015(E)

Cartridges, type A, for indexable inserts —

Part 1: General survey, correlation and determination of dimensions

1 Scope

This part of ISO 5611 is general and is completed by ISO 5611-2 to ISO 5611-12. ISO 5611 applied for cartridges, type A, for indexable inserts and gives their styles in relation to their dimensions in accordance with ISO 5611-2 to ISO 5611-12. These cartridges are primarily intended for indexable inserts made of hard metal, ceramic or other cutting materials to be used for turning operations.

These kinds of cartridges are mainly clamped with one or two screws on the cartridges.

Explanation of the designation code according to ISO 5608.

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 5611-2[1)], *Cartridges, type A, for indexable inserts — Part 2: Style F*

ISO 5611-3[1)], *Cartridges, type A, for indexable inserts — Part 3: Style G*

ISO 5611-4[1)], *Cartridges, type A, for indexable inserts — Part 4: Style J*

ISO 5611-5[1)], *Cartridges, type A, for indexable inserts — Part 5: Style K*

ISO 5611-6[1)], *Cartridges, type A, for indexable inserts — Part 6: Style L*

ISO 5611-7[1)], *Cartridges, type A, for indexable inserts — Part 7: Style R*

ISO 5611-8[1)], *Cartridges, type A, for indexable inserts — Part 8: Style S*

ISO 5611-9[1)], *Cartridges, type A, for indexable inserts — Part 9: Style T*

ISO 5611-10[1)], *Cartridges, type A, for indexable inserts — Part 10: Style U*

ISO 5611-11[1)], *Cartridges, type A, for indexable inserts — Part 11: Style W*

ISO 5611-12[1)], *Cartridges, type A, for indexable inserts — Part 12: Style Y*

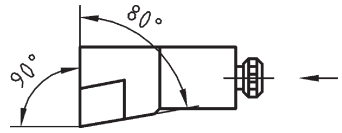
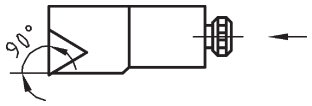
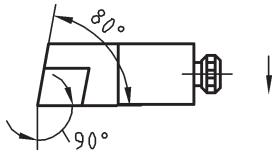
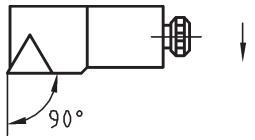
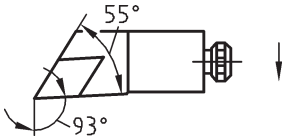
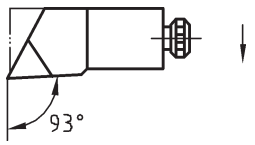
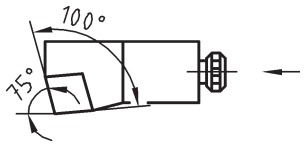
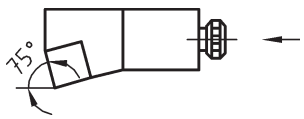
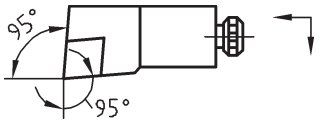
3 Survey

Table 1 contains the survey of cartridges, type A, for indexable inserts which are standardized in ISO 5611-2 to ISO 5611-12 their corresponding letter symbols and the height h_1 of the cutting edge. The arrows in the figures show the primary direction of feed.

1) To be published.

Table 1 — Survey of cartridges, type A

Dimensions in millimetres

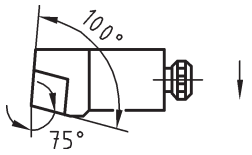
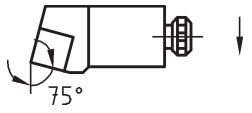
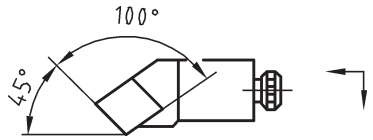
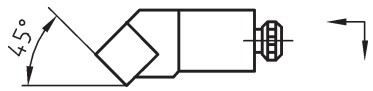
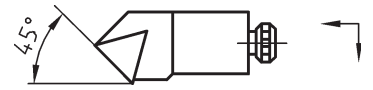
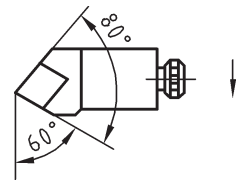
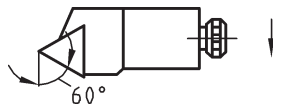
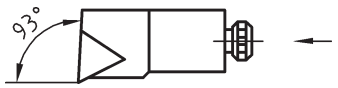
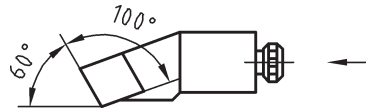
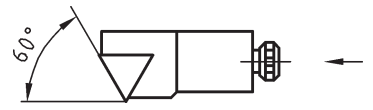
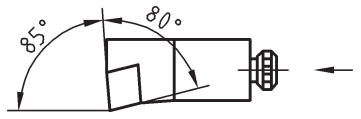
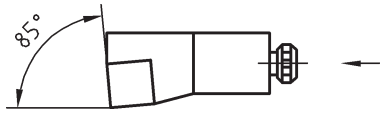
Style	Sketch	Height of the cutting edge h_1							Dimensions in ISO
		6	8	10	12	16	20	25	
F		•	•						ISO 5611-2
			•	•	•	•	•	•	
G		•	•						ISO 5611-3
			•	•	•	•	•	•	
J			•						ISO 5611-4
			•	•	•	•	•	•	
K		•	•						ISO 5611-5
				•	•	•	•	•	
L		•	•	•	•	•	•	•	ISO 5611-6

[a] It is left to the manufacturer's discretion or by agreement with edge angle εr = 80° instead 100°.

• = Standardized dimensions.

blank = Not standardized.

Table 1 *(continued)*

Style	Sketch	Height of the cutting edge h_1							Dimensions in ISO
		6	8	10	12	16	20	25	
R		•[a]	•[a]						ISO 5611-7
				•	•	•	•	•	
S		•[a]	•						ISO 5611-8
				•	•	•	•	•	
			•	•	•	•	•	•	
T		•	•						ISO 5611-9
			•	•	•	•	•	•	
U			•	•	•	•	•	•	ISO 5611-10
W		•	•						ISO 5611-11
			•	•	•	•	•	•	
Y		•	•						ISO 5611-12
				•	•	•	•	•	

[a] It is left to the manufacturer's discretion or by agreement with edge angle εr = 80° instead 100°.

• = Standardized dimensions.

blank = Not standardized.

4 Correlation of dimensions

4.1 Length l_1 and dimension f

Table 2 contains the correlation between the length l_1 and the dimension f to their relevant height h_1 of the cutting edge and style of the cartridges, see also Figure 1.

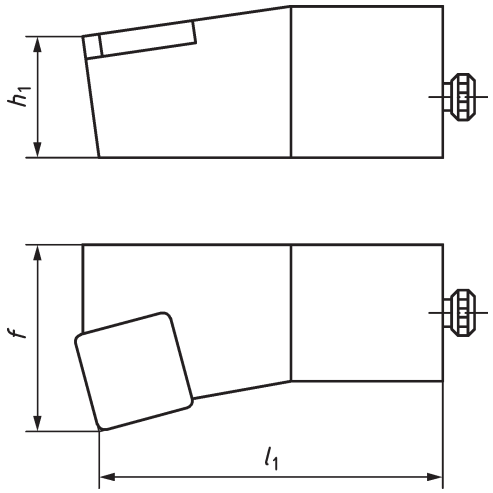


Figure 1 — Cartridge style K

Table 2 — Correlation of dimensions

Dimensions in millimetres

h_1	l_1 for cartridge style		f $^{0}_{-0,08}$ for cartridge style	
±0,08	F, G, J, K, L, R, T, U, Y	W, S	F, G, J, K, L, R, S, U, W, Y	T
6	25	21	8	5,5
8	32	28	10	6
10	50	44	14	9
12	55	47	20	13
16	63	53	25	15
20	70	60		
25	100	87	32	20

4.2 Smallest possible internal diameter for operating

Table 3 contains the smallest possible internal diameter $d_{1\,min}$ for operating in relation with the relevant cartridge size h_1, see also Figures 4 and 5.

Table 3 — Smallest possible internal diameter for operating

Dimensions in millimetres

h_1 ± 0,08	6	8	10	12	16	20	25
d_1 min.	20	25	40	50	60	70	100

4.3 Correlation of the shank dimension and fastening of the shank

Table 4 contains the correlation between the shank dimensions and the bore diameter for fastening the shank and their relevant height h_1 of the cutting edge, see Figures 2, 3, 4 and 5.

Dimension l_3 applies to the adjusting screw in its mid-position, which is the reference point of the length l_1, see 5.3. From this position, a minimum adjusting length of 0,4 mm shall be given in both directions.

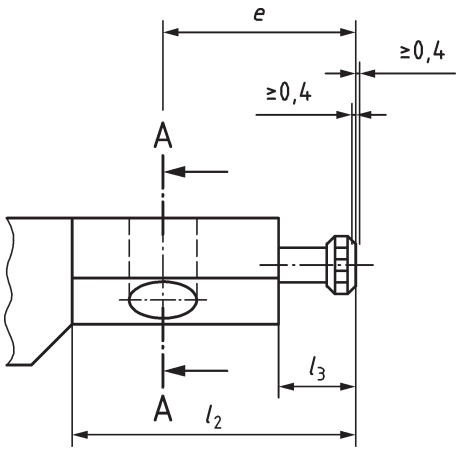


Figure 2 — Shank having h_1 = 6 mm, 8 mm, 10 mm, 12 mm, 16 mm and 20 mm

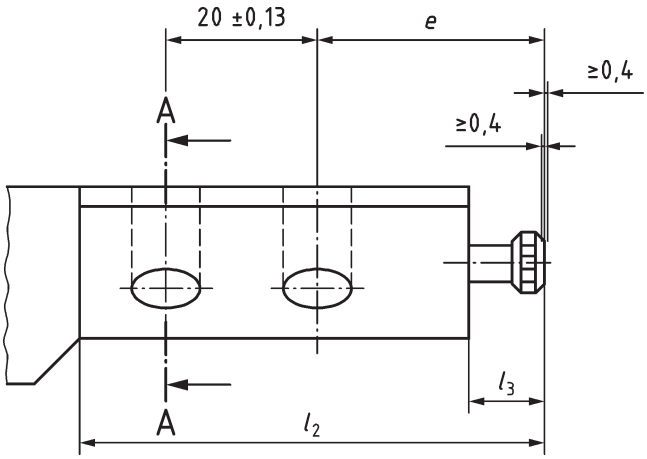


Figure 3 — Shank having h_1 = 25 mm

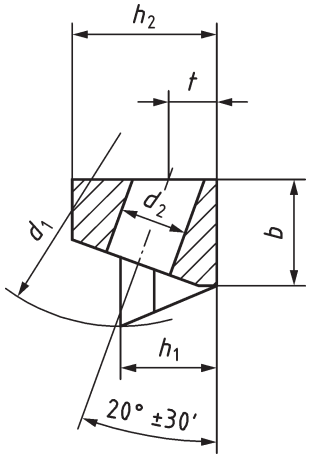


Figure 4 — Sectional drawing A–A for cartridges having h_1 = 6 mm, 8 mm, 10 mm or 12 mm

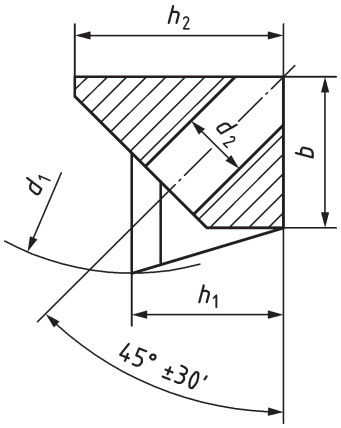


Figure 5 — Sectional drawing A–A for cartridges having h_1 = 16 mm, 0 mm or 25 mm

Table 4 — Correlation of the shank dimension and fastening of the shank

Dimensions in millimetres

h_1 ±0,08	b 0 -0,2	d_2[a] H13	e	h_2 0 -0,2	l_2 min.	l_3	t ±0,13	**Fastening screw**
6	6	4	12	8,5	16	4,5	3,5	M3,5
8	8	4,5	17	11	21,5	6	4,5	M4
10	11	7	20	15	26	8	5	M6
12	16			20			6	
16	20	9	25	25	32,5	10	—	M8
20	20	9	30	30	37,5		—	M8
25	25	11		35	59			M10

[a] The hole for fastening screws can be designed also as slotted hole at the manufacturer's option.

5 Determination of dimensions

5.1 Cutting edge corners

5.1.1 Cutting edge corner *K*

The specified point *K* is defined as follows:

Consider plane P_f (assumed working plane) and P_s (tool cutting edge plane) according to ISO 3002-1 for a selected point on the major cutting edge (for example point of tangency of major cutting edge with inscribed circle).

a) For $\kappa_r \leq 90°$, point *K* is defined as the intersection of plane P_s, a plane parallel to plane P_f tangent to the corner radius and a plane containing the tool face A_γ (see Figures 6 and 7).

b) For $\kappa_r > 90°$, point *K* is defined as the intersection of a plane parallel to plane P_f tangent to the corner radius, a plane perpendicular to plane P_f tangent to the corner radius and a plane containing the tool face A_γ (see Figures 8 and 9).

NOTE The position of the cutting edge corner *K* is dependent from the corner radius r_ε of the indexable insert.

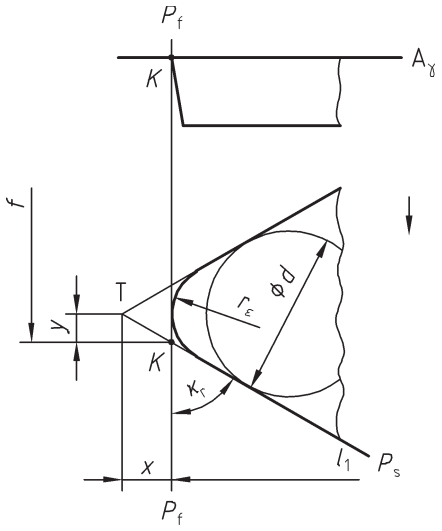


Figure 6 — Cutting edge angle $\kappa_r \leq 90°$, with transverse feed

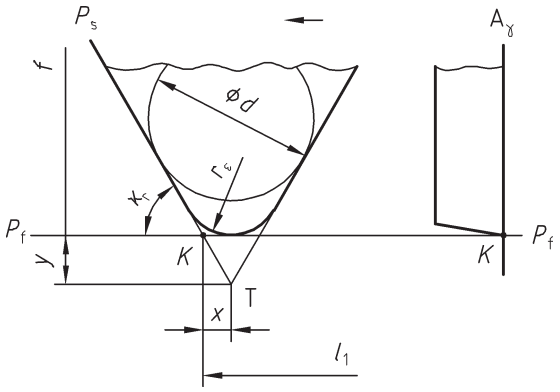


Figure 7 — Cutting edge angle $\kappa_r \leq 90°$, with longitudinal feed

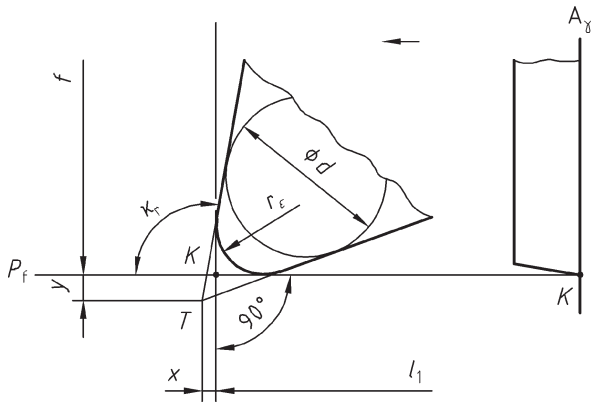


Figure 8 — Cutting edge angle $\kappa_r > 90°$, with transverse feed

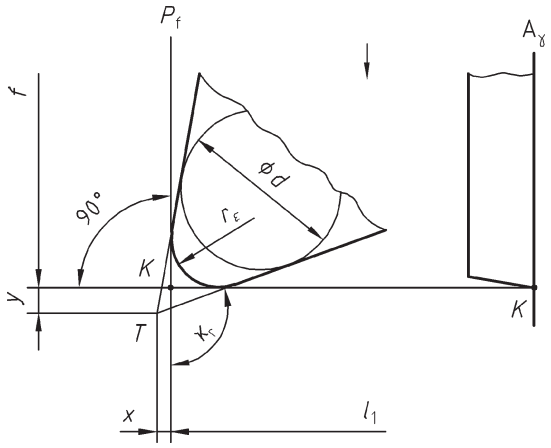


Figure 9 — Cutting edge angle $\kappa_r > 90°$, with longitudinal feed

5.1.2 Theoretical cutting edge corner *T*

The intersection of the theoretical extensions of major cutting edge and minor cutting edge is considered as the theoretical cutting edge corner *T*, see Figures 6 to 9.

NOTE The position of the theoretical corner *T* is independent of the corner radius r_ε of the indexable insert.

5.2 Corner radius r_ε of master inserts

Table 5 contains the values of the corner radius r_ε of the master insert (master gauge) used for the definition and testing of length l_1, dimension *f* and height h_1.

The corner radius r_ε of the master indexable insert is a function of the size of the indexable insert associated to cartridges and in Table 5 it is therefore related to the diameter of the inscribed circle.

Table 5 — Corner radius r_ε of master inserts

Dimensions in millimetres

d	r_ε **Nominal dimensions**[a]
5,56	0,4
6,35	
7,94	
9,525	0,8
12,7	
15,875	1,2
19,05	
25,4	2,4

[a] For the determination of the values of l_1, f and the correction values x and y are derived from the accurate values of the corner radii r_ε = 0,397 mm; 0,794 mm; 1,191 mm and 2,381 mm, which correspond to the inch dimensions.

5.3 Length l_1

The length l_1 (for values see Table 2) is the distance between the specified point K and the shank end including adjustable screw in their mid-position (see Figure 1, Figures 6 to 9 and figures in Table 6), measured on a master indexable insert with corner radius r_ε in accordance with 5.2.

For cartridges with indexable inserts with a corner radius r_ε deviating from Table 5, the modified length l_1 shall be determined with correction value x as shown in Figures 6 to 9.

The correction value x (see Table 6) corresponds to the distance, measured parallel to the shank, between the specified point K and the theoretical corner T.

The modified length is obtained from the length l_1 given in Table 2 and the difference between the values x for the new corner radius and the corner radius given in Table 5.

5.4 Dimension f

Dimension f (for values see Table 2) is the distance between the specified point K and the rear backing surface of the cartridges (see Figure 1, Figures 6 to 9 and figures in Table 6), measured on a master insert with corner radius r_ε in accordance with 5.2.

For cartridges with inserts with a corner radius r_ε deviating from Table 5, the modified dimension f shall be determined with correction value y as shown in Figures 6 to 9.

Correction value y corresponds to the distance between the specified point K and the theoretical cutting edge corner T, measured transverse to the shank.

The modified dimension f is obtained from the value given in Table 2 and the difference between the y-values for the new corner radius and the corner radius given in Table 5.

5.5 Height h_1

The height h_1 determined the size of the cartridges and specified the distance between the cutting edge K and the base of the cartridges (see Figures 1 to 5) measured on a master indexable insert and optional on a master shim.

5.6 Tolerances

The tolerances given in Tables 2 and 4 for the dimension f and the height h_1 measured on a master indexable insert and a master shim, if applicable. Therefore, the tolerances on f and h_1 do not include the tolerances on indexable insert, shim and respectively width of shank.

5.7 Dimension a

5.7.1 General

Dimension a is related to the determination of the overall width and overall length of cartridges.

In general, the width of cartridges corresponds to dimension f for the shank width and its length l_1 with the exception of cartridges of styles which are listed in 5.7.2 and 5.7.3.

5.7.2 Styles R and T

For styles R and T, the overall width of the cartridge is the sum of the values for f and a.

Dimension a is defined as the distance between the specified point K and the tangent to the corner radius of the indexable insert, measured perpendicular to the shank length, see also figures in Table 6.

5.7.3 Styles K, S, W and Y

For styles K, S, W and Y the overall length of the cartridges is the sum of the values for l_1 and a.

Dimension a is defined as the distance between the specified point K and the tangent on the corner radius of the indexable insert, measured parallel to the shank length, see also figures in Table 6.

5.7.4 Values for dimension a

The values for dimension a are given in the respective dimension standards and apply to indexable inserts with corner radii in accordance with 5.2, with rake angle $\gamma_0 = 0°$ and inclination angle $\lambda_s = 0°$.

For cartridges with indexable inserts with corner radii deviating from the values given in Table 5, the modified dimension a shall be determined for styles R and T with correction values y and for styles K, S, W and Y with correction value x; for values for x and y see Table 6.

For the rake angle γ_0 and cutting edge inclination angle λ_s varying between − 6° and + 6°, variations of the values for a are less than 0,1 mm and thus negligible.

5.8 Correction values x and y

The correction values x and y given in Table 6 apply to rake angle $\gamma_0 = 0°$ and cutting edge inclination $\lambda_s = 0°$. Rake angles γ_0 and cutting edge inclinations λ_s varying between − 6° and + 6° result in variations from the x- and y-values in the range of 0,001 mm to 0,01 mm, which are significantly smaller than the tolerances on f and h_1. If necessary, the correction values have to be determined.

Table 6 — Correction values *x* and *y*

Dimensions in millimetres

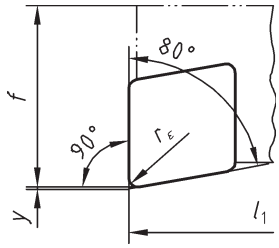
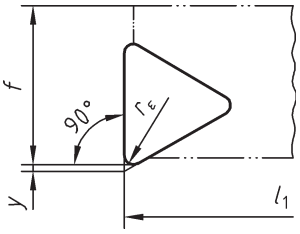
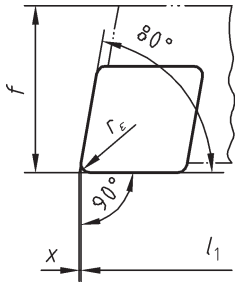
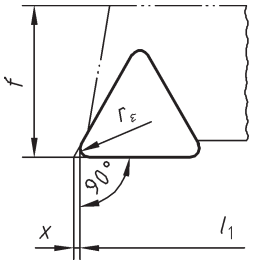
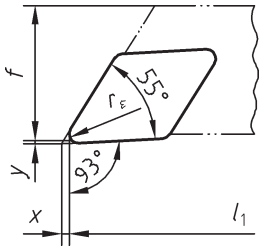
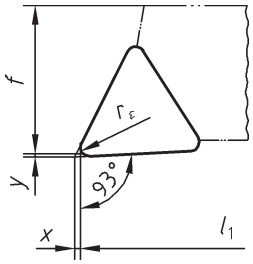
Style	Sketch	r_ε	*x*	*y*
F		0,2	—	0,039
		0,4	—	0,076
		0,8	—	0,152
		1,2	—	0,288
		1,6	—	0,305
		2,4	—	0,457
		0,2	—	0,149
		0,4	—	0,291
		0,8	—	0,581
		1,2	—	0,872
		1,6	—	1,162
		2,4	—	1,743
G		0,2	0,039	—
		0,4	0,076	—
		0,8	0,152	—
		1,2	0,228	—
		1,6	0,305	—
		2,4	0,457	—
		0,2	0,149	—
		0,4	0,291	—
		0,8	0,581	—
		1,2	0,872	—
		1,6	1,162	—
		2,4	1,743	—
J		0,2	0,176	0,020
		0,4	0,344	0,039
		0,8	0,688	0,079
		1,2	1,031	0,118
		1,6	1,375	0,157
		2,4	2,062	0,236
		0,2	0,138	0,018
		0,4	0,269	0,035
		0,8	0,538	0,071
		1,2	0,806	0,106
		1,6	1,075	0,142
		2,4	1,613	0,213

Table 6 *(continued)*

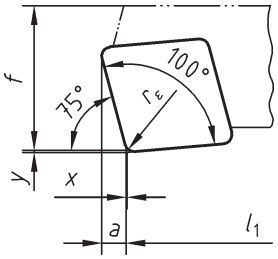
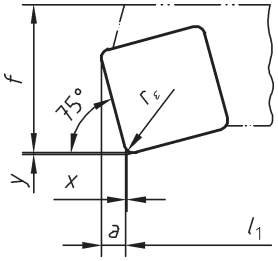
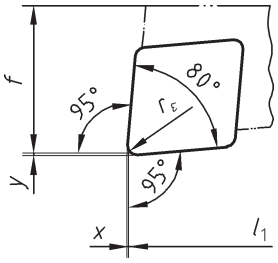
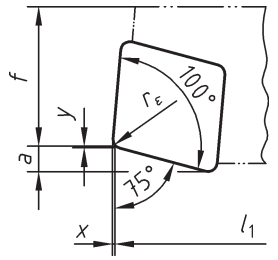
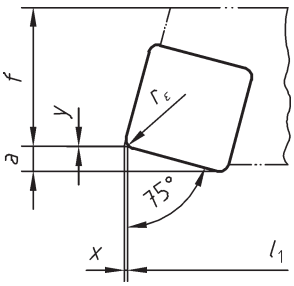
Style	Sketch	r_ε	x	y
K		0,2	0,004	0,014
		0,4	0,007	0,028
		0,8	0,015	0,055
		1,2	0,022	0,083
		1,6	0,029	0,110
		2,4	0,044	0,165
		0,2	0,012	0,046
		0,4	0,024	0,089
		0,8	0,048	0,178
		1,2	0,072	0,268
		1,6	0,096	0,357
		2,4	0,143	0,535
L		0,2	0,020	0,020
		0,4	0,040	0,040
		0,8	0,079	0,079
		1,2	0,119	0,119
		1,6	0,159	0,159
		2,4	0,238	0,238
R		0,2	0,014	0,004
		0,4	0,028	0,007
		0,8	0,055	0,015
		1,2	0,083	0,022
		1,6	0,110	0,029
		2,4	0,165	0,044
		0,2	0,046	0,012
		0,4	0,089	0,024
		0,8	0,178	0,048
		1,2	0,268	0,072
		1,6	0,357	0,096
		2,4	0,535	0,143

Table 6 *(continued)*

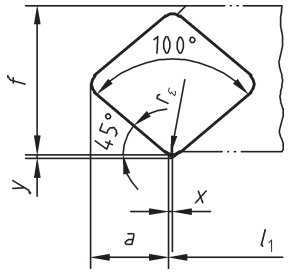
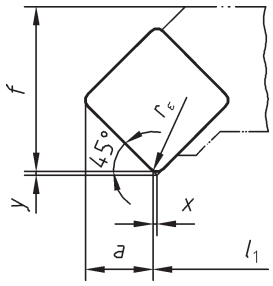
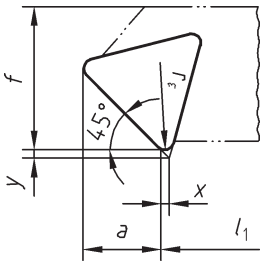
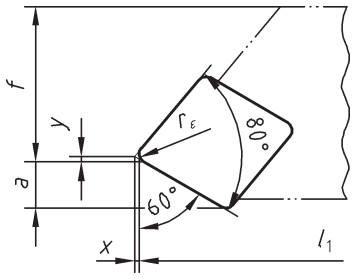
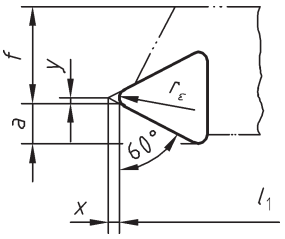
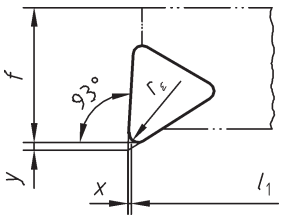
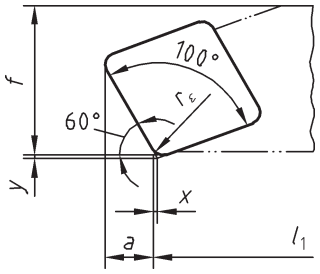
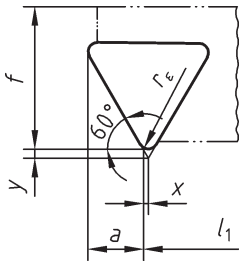
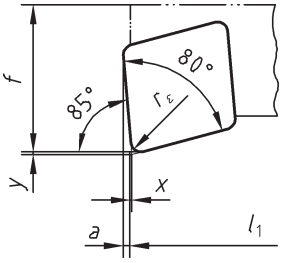
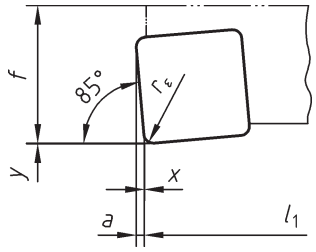
Style	Sketch	r_ε	x	y
S		0,2	0,061	0,061
		0,4	0,119	0,119
		0,8	0,239	0,239
		1,2	0,358	0,358
		1,6	0,477	0,477
		2,4	0,715	0,715
		0,2	0,084	0,084
		0,4	0,164	0,164
		0,8	0,329	0,329
		1,2	0,493	0,493
		1,6	0,658	0,658
		2,4	0,986	0,986
		0,2	0,185	0,185
		0,4	0,370	0,370
		0,8	0,740	0,740
		1,2	1,109	1,109
		1,6	1,479	1,479
		2,4	2,219	2,219
T		0,2	0,108	0,062
		0,4	0,211	0,122
		0,8	0,422	0,244
		1,2	0,634	0,366
		1,6	0,845	0,488
		2,4	1,267	0,731
		0,2	0,203	0,117
		0,4	0,397	0,229
		0,8	0,794	0,458
		1,2	1,191	0,687
		1,6	1,588	0,917
		2,4	2,381	1,375
U		0,2	0,018	0,138
		0,4	0,035	0,269
		0,8	0,071	0,538
		1,2	0,106	0,806
		1,6	0,142	1,075
		2,4	0,213	1,613

Table 6 *(continued)*

Style	Sketch	r_ε	x	y
W		0,2	0,027	0,046
		0,4	0,052	0,090
		0,8	0,104	0,180
		1,2	0,156	0,270
		1,6	0,208	0,360
		2,4	0,312	0,540
		0,2	0,117	0,203
		0,4	0,229	0,379
		0,8	0,458	0,794
		1,2	0,687	1,191
		1,6	0,917	1,588
		2,4	1,375	2,381
Y		0,2	0,005	0,056
		0,4	0,010	0,109
		0,8	0,019	0,218
		1,2	0,029	0,327
		1,6	0,038	0,436
		2,4	0,057	0,653
		0,2	0,001	0,016
		0,4	0,003	0,033
		0,8	0,006	0,066
		1,2	0,009	0,099
		1,6	0,012	0,132
		2,4	0,017	0,198

Annex A
(informative)

Relationship between designations in ISO 5611 and ISO/TS 13399-2 and ISO/TS 13399-3

For the relationship between designations in the ISO 5611 series and preferred symbols according to ISO/TS 13399-2 and ISO/TS 13399-3, see Table A.1.

Table A.1 — Relationship between designations in the ISO 5611 series and ISO/TS 13399-2 and ISO/TS 13399-3

Symbol in ISO 5611 (all parts)	Reference in ISO 5611	Property name in ISO/TS 13399-2 and ISO/ TS 13399-3	Symbol in ISO/TS 13399-2 and ISO/ TS 13399-3	Reference in ISO/TS 13399-2 and ISO/TS 13399-3
a[a]	ISO 5611-1:2015, 5.7.3 in direction of overall length	Dimension *a* on lf	LFA	ISO/TS 13399-3 71D0793ECEF9A
a[b]	ISO 5611-1:2015, 5.7.2 in direction of overall width	Dimension *a* on wf	WFA	ISO/TS 13399-3 71CF299431CAC
b	ISO 5611-1:2015, 4.2, Figure 4 and Figure 5; 4.3, Table 4	Shank width	B	ISO/TS 13399-3 71CF298751FCF
d	ISO 5611-1:2015, 5.2, Table 5	Inscribed circle diameter	IC	ISO/TS 13399-2 71CE7A96D9F7D
d_1	ISO 5611-1:2015, 4.2, Table 3; 4.2, Figure 4 and Figure 5	Minimum bore diameter	DMIN	ISO/TS 13399-3 71D07543367C5
d_2	ISO 5611-1:2015, 4.2, Figure 4 and Figure 5; 4.3, Table 4	Diameter access hole	DAH	ISO/TS 13399-3 71EBB2F865924
e	ISO 5611-1:2015, 4.2, Figure 2 and Figure 3; 4.3, Table 4	Mounting hole distance	MHD	ISO/TS 13399-3 71EAC0E9FA4CD
20 ± 0,13	ISO 5611-1:2015, 4.2, Figure 3	Mounting hole distance 2	MHD2	ISO/TS 13399-3 71EAC0EF68BB7
20° ± 30’	ISO 5611-1:2015, 4.2, Figure 4	Mounting hole angle	MHA	ISO/TS 13399-3 71EAC0F064E2DWF
45° ± 30’	ISO 5611-1:2015, 4.2, Figure 5	Mounting hole angle	MHA	ISO/TS 13399-3 71EAC0F064E2D
f	ISO 5611-1:2015, 4.1, Figure 1; 4.1, Table 2	Functional width	WF	ISO/TS 13399-3 71CF29984CDA7

[a] Dimension a measured in the direction of l_1.

[b] Dimension a measured in the direction of *f*.

Table A.1 *(continued)*

Symbol in ISO 5611 (all parts)	**Reference in ISO 5611**	**Property name in ISO/TS 13399-2 and ISO/ TS 13399-3**	**Symbol in ISO/TS 13399-2 and ISO/ TS 13399-3**	**Reference in ISO/TS 13399-2 and ISO/TS 13399-3**
h_1	ISO 5611-1:2015, 4.1, Figure 1 and Table 2; 4.3, Table 4	Functional height	HF	ISO/TS 13399-3 71CF29994E737
h_2	ISO 5611-1:2015, 4.2, Figure 4 and Figure 5; 4.3, Table 4	Shank height	H	ISO/TS 13399-3 71CF29883E014
l_1	ISO 5611-1:2015, 4.1, Figure 1; 4.1, Table 2	Functional length	LF	ISO/TS 13399-3 71DCD39338974
l_2	ISO 5611-1:2015, 4.2, Figure 2 and Figure 3; 4.3, Table 4	Shank length	LS	ISO/TS 13399-3 71CF298870946
l_3	ISO 5611-1:2015, 4.2, Figure 2 and Figure 3; 4.3, Table 4	adjusting screw protrusion	ASP	ISO/TS 13399-3 71EAC0F0EFDB6
r_ε	ISO 5611-1:2015, 5.1.1, Figure 6 to Figure 9; 5.2, Table 5	Corner radius	RE	ISO/TS 13399-2 71DD6C8ACA503
t	ISO 5611-1:2015, 4.2, Figure 4; 4.3, Table 4	Mounting hole height	MHH	ISO/TS 13399-3 71EAC0EFA1BF3
γ_o	ISO 5611-2 to ISO 5611-12	Rake angle orthogonal	GAMO	ISO/TS 13399-3 71D0808F8F719
λ_s	ISO 5611-2 to ISO 5611-12	Inclination angle	LAMS	ISO/TS 13399-3 71D075754F8A3
s	ISO 5611-2 to ISO 5611-12	Insert thickness	S	ISO/TS 13399-2 71CE7A9F5308C
κ_r	ISO 5611-2 to ISO 5611-12	Tool cutting edge angle	KAPR	ISO/TS 13399-3 71D078F683C9B

[a] Dimension a measured in the direction of l_1.

[b] Dimension a measured in the direction of *f*.

Bibliography

[1] 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*

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

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