

BS ISO 5611-11:2015



BSI Standards Publication

Cartridges, type A, for indexable inserts

Part 11: Style W

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National foreword

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BS ISO 5611-10:2015 and BS ISO 5611-12:2015 it supersedes BS 4193-8:1997 (dual numbered as ISO 5611:1995) which is withdrawn.

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.

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Cartridges, type A, for indexable inserts —

Part 11: Style W

Cartouches du type A, à plaquettes amovibles —

Partie 11: Forme W



Reference number
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Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	1
3 Dimensions	1
4 Designation	4
5 Material	5
6 Design	5
6.1 Method of holding.....	5
6.2 Corner radius r_ϵ	5
6.3 Adjusting screw.....	6
7 Extent of delivery	6
8 Marking	6

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).

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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 5611-11, together with ISO 5611-1, 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 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*

Cartridges, type A, for indexable inserts —

Part 11: Style W

1 Scope

This part of ISO 5611 applies for cartridges type A, with hole(s) for fastening screw(s), of style W, i.e. with cutting edge angle $\kappa_r = 60^\circ$ for end cutting.

Cartridges are intended to be used with indexable inserts made of hard metal, ceramic or other cutting materials and are primarily mounted to be used for internal turning of operations.

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 1832, *Indexable inserts for cutting tools — Designation*

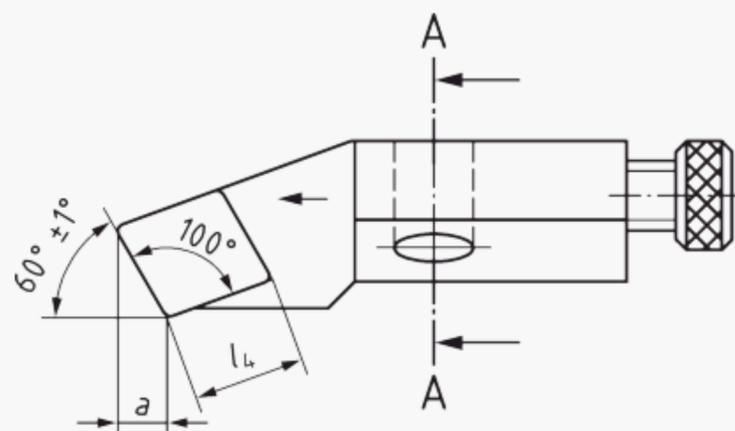
ISO 5608, *Turning and copying tool holders and cartridges for indexable inserts — Designation*

ISO 5611-1, *Cartridges, type A, for indexable inserts — Part 1: General survey, correlation and determination of dimensions*

3 Dimensions

Cartridges type A need not comply with the pictorial representation, only the dimensions given shall be observed.

For determination of dimensions h_1 , f and l_1 see ISO 5611-1. For explanation of the designation code for cartridges, see ISO 5608.



NOTE For other dimensions, see [Figure 2](#).

Figure 1 — Style W with height $h_1 = 6$ mm and 8 mm with rhombic indexable insert

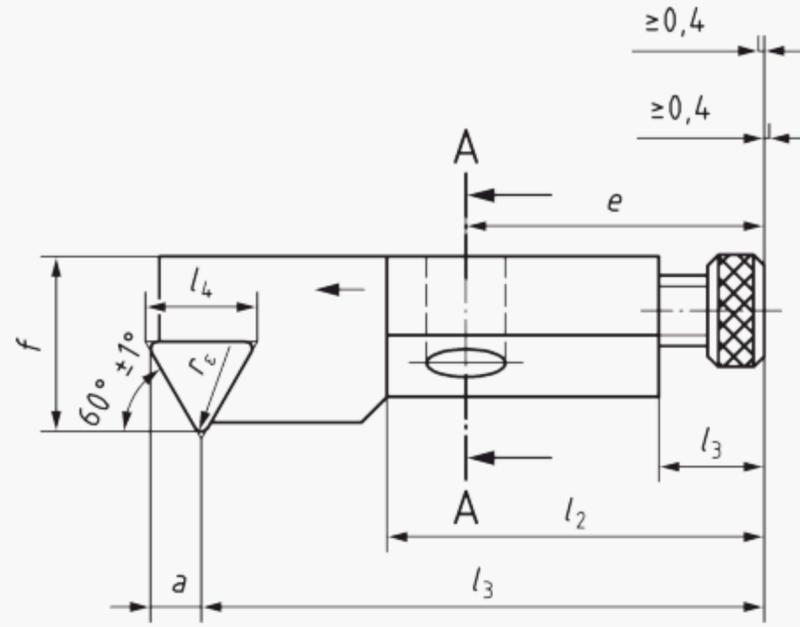
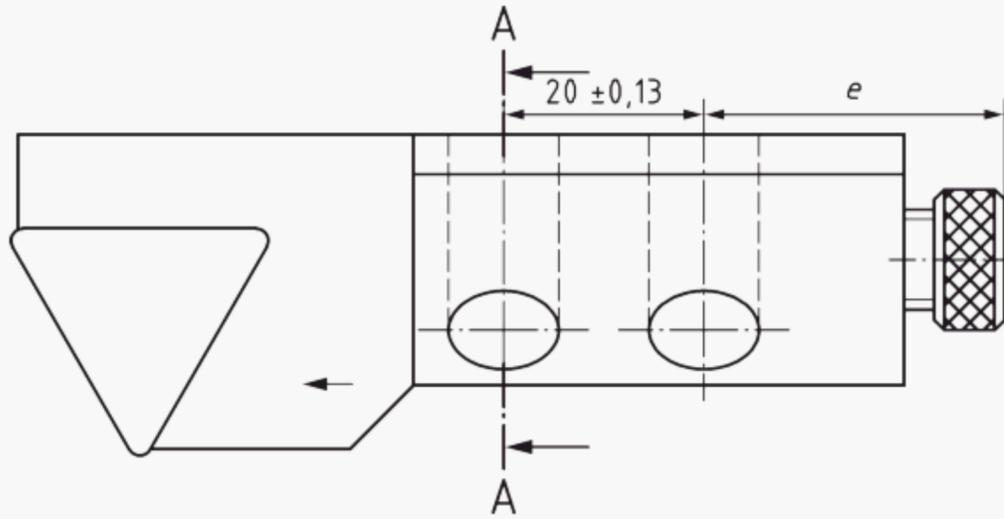


Figure 2 — Style W with height $h_1 = 8 \text{ mm}, 10 \text{ mm}, 12 \text{ mm}, 16 \text{ mm}$ and 20 mm with triangular indexable insert



NOTE For other dimensions, see [Figure 2](#).

Figure 3 — Style W with height $h_1 = 25 \text{ mm}$ with triangular indexable insert

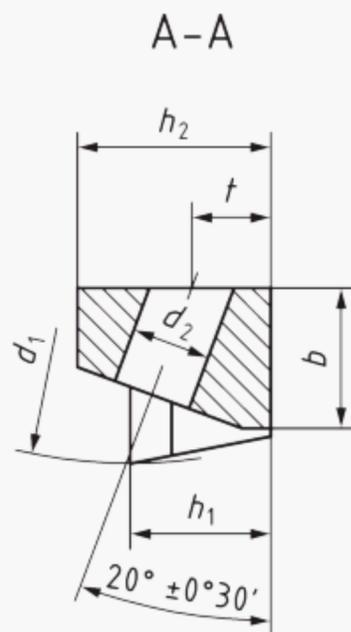


Figure 4 — Sectional drawing A-A at height $h_1 = 6 \text{ mm}, 8 \text{ mm}, 10 \text{ mm}$ and 12 mm

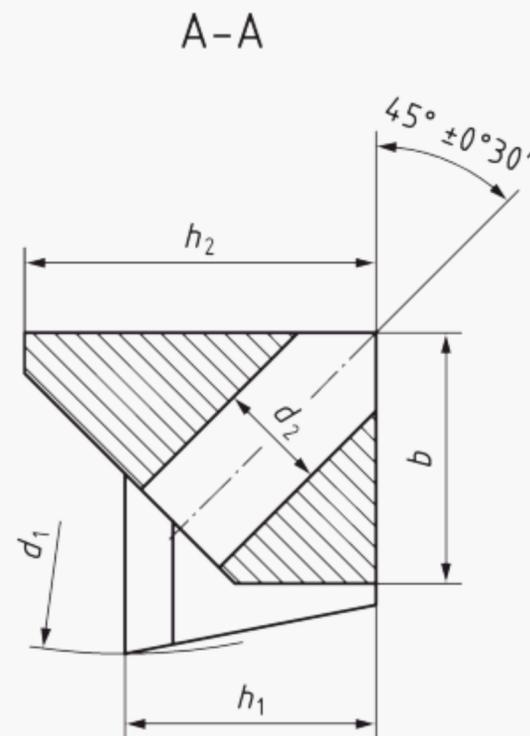


Figure 5 — Sectional drawing A-A at height $h_1 = 16$ mm, 20 mm and 25 mm

NOTE Pictured is a right hand cartridge (Figure 4); left hand cartridge (Figure 5) laterally reversed.

Table 1

Dimensions in millimetres

Symbol ^a	h_1 $\pm 0,08$	l_4 \approx	a	b 0 -0,2	d_1^b min.	d_2^c H13	e	f 0 -0,08	h_2 0 -0,2	l_1	l_2 min.	l_3	t $\pm 0,13$	Fastening screw
SCWPR 06CA — 05	6	5,6	2,6	6	20	4	12	8	8,5	21	16	4,5	3,5	M3,5
SCWPL 06CA — 05														
SCWCR 08CA — 06	8	6,4	3	8	25	4,5	17	10	11	28	21,5	6	4,5	M4
SCWCL 08CA — 06														
STWCR 08CA — 09	8	9,6	4,3	8	25	4,5	17	10	11	28	21,5	6	4,5	M4
STWCL 08CA — 09														
STWCR 10CA — 11	10	11	5	11	40	7	20	14	15	44	26	8	5	M6
STWCL 10CA — 11														
CTWPR 12CA — 11	12	11	5	16	50	7	20	20	20	47	26	8	6	M6
CTWPL 12CA — 11														
PTWCR 12CA — 16	12	16,5	7,2	16	50	7	20	20	20	47	26	8	6	M6
PTWCL 12CA — 16														
STWPR 12CA — 16														
STWPL 12CA — 16														

^a Cartridges for indexable inserts for holding horizontally mounted with hole clamping (first letter symbol P) can be equipped with additional top and hole clamping; the letter symbol replaced P by M in this case.

^b Smallest possible internal diameter for operating.

^c The hole for fastening screws of the cartridges can be designed also as slotted hole at the manufacturer's option.

Table 1 (continued)

Symbol ^a	h_1 ±0,08	l_4 ≈	a	b 0 -0,2	d_1^b min.	d_2^c H13	e	f 0 -0,08	h_2 0 -0,2	l_1	l_2 min.	l_3	t ±0,13	Fastening screw
CTWPR 16CA — 16	16	16,5	7,2	20	60	9	25	25	25	53	32,5	8	—	M8
CTWPL 16CA — 16														
PTWNR 16CA — 16														
PTWNL 16CA — 16														
STWCR 16CA — 16														
STWCL 16CA — 16														
PTWNR 20CA — 22	20	22	10	20	70	9	30	25	30	60	37,5	10	—	M8
PTWNL 20CA — 22														
PTWNR 25CA — 27	25	27,5	12,2	25	100	11	30	32	35	87	59	10	—	M10
PTWNL 25CA — 27														

^a Cartridges for indexable inserts for holding horizontally mounted with hole clamping (first letter symbol P) can be equipped with additional top and hole clamping; the letter symbol replaced P by M in this case.
^b Smallest possible internal diameter for operating.
^c The hole for fastening screws of the cartridges can be designed also as slotted hole at the manufacturer's option.

4 Designation

A cartridge in accordance with this part of ISO 5611 shall be designated by:

- “Cartridge”;
- reference of this part of ISO 5611, i.e. ISO 5611-11;
- letter symbol identifying the method of holding the insert, in accordance with ISO 5608;
- letter symbol identifying insert shape, in accordance with ISO 1832;
- letter symbol identifying cartridge style, in accordance with ISO 5608;
- letter symbol identifying insert normal clearance, in accordance with ISO 1832;
- letter symbol identifying hand of cartridge, in accordance with ISO 5608;
- number symbol identifying tool height (shank height of cartridges and height of cutting edge), in accordance with ISO 5608;
- number symbol identifying tool holder shank width or, for cartridges, letter C followed by a letter symbol identifying the cartridge type, in accordance with ISO 5608;
- letter symbol identifying tool length, in accordance with ISO 5608;
- number symbol identifying indexable insert size, in accordance with ISO 1832.

EXAMPLE Cartridge with screw clamping through hole (S) triangular indexable insert shape (T), cartridge style W (W), for the insert normal clearance 7° (C), right hand cartridge (R), with height $h_1 = 12$ mm (12), cartridge Type A (CA), length $l_1 = 47$ mm (-), edge length $l_4 = 16,5$ mm (16) is designated as follows:

Cartridge ISO 5611-11 – STWCR 12CA – 16

5 Material

Steel with a tensile strength of at least 1 200 N/mm².

6 Design

6.1 Method of holding

(first letter symbol identifying the method of holding the insert)

6.1.1 Cartridge for indexable inserts with insert normal clearance $\alpha_n = 7^\circ$

(fourth symbol identifying insert normal clearance C)

— holding screw clamping through hole; letter symbol S, e.g. SCWCR.

6.1.2 Cartridge for indexable inserts with insert normal clearance $\alpha_n = 11^\circ$

(fourth symbol identifying insert normal clearance P)

— holding with top clamping; letter symbol C, e.g. CTWPR;

— holding screw clamping through hole; letter symbol S, e.g. SCWPR.

6.1.3 Cartridge for indexable inserts with insert normal clearance $\alpha_n = 0^\circ$

(fourth symbol identifying insert normal clearance N)

— holding with hole clamping; letter symbol P, e.g. PTWNR.

6.2 Corner radius r_ϵ

Cartridges in accordance with this part of ISO 5611 can be equipped with indexable inserts with cutting edge lengths l_4 as specified in [Table 1](#) and any corner radius r_ϵ .

The values for a , f and l_1 given in [Table 1](#) apply to cartridges with indexable inserts having corner radii r_ϵ in accordance with [Table 2](#).

For cartridges with indexable inserts with corner radii other than those specified in [Table 2](#), the dimensions of a , f and l_1 shall be determined in accordance with ISO 5611-1.

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

Table 2

Dimensions in millimetres

$C\Box$	l_4		r_ε
		$T\Delta$	
5,6		—	0,4
6,4		—	
—		9,6	
—		11	
—		16,5	0,8
—		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.

6.3 Adjusting screw

For the adjustment of the cartridge in the direction of the f dimension, it is the manufacturer's option to equip the cartridge with an adjustment screw.

7 Extent of delivery

Cartridges to be delivered with complete clamping device and adjusting screws.

8 Marking

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

Additional marking depends on the manufacturer's option or upon agreement.

Deviations in marking are based upon agreement.

The general number of this International Standard (ISO 5611) shall be given on the packaging.

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