INTERNATIONAL STANDARD

ISO 10889-4

Third edition
2016-03-15

Tool holders with cylindrical shank —

Part 4: Type C with rectangular axial seat

Porte-outil à queue cylindrique —

Partie 4: Porte-outil axial de type C

Reference number
ISO 10889-4:2016(E)

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Foreword

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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 2, *Holding tools, adaptive items and interfaces*.

This third edition cancels and replaces the second edition (ISO 10889-4:2004), of which it constitutes a minor revision, notably with the addition of Annex A, which gives the relationship between the designations of this part of ISO 10889 and the ISO 13399 series.

ISO 10889 consists of the following parts, under the general title *Tool holders with cylindrical shank*:

— *Part 1: Cylindrical shank, location bore — Technical delivery conditions*

— *Part 2: Type A, shanks for tool holders of special designs*

— *Part 3: Type B with rectangular radial seat*

— *Part 4: Type C with rectangular axial seat*

— *Part 5: Type D with more than one rectangular seat*

— *Part 6: Type E with cylindrical seat*

— *Part 7: Type F with taper seat*

— *Part 8: Type Z, accessories*

Tool holders with cylindrical shank —

Part 4:
Type C with rectangular axial seat

1 Scope

This part of ISO 10889 specifies dimensions, designations and complementary technical delivery conditions for tool holders with a rectangular axial seat of types C1 to C4 with cylindrical shank in accordance with ISO 10889-1.

ISO 10889 is applicable to tool holders with cylindrical shank for machine tools with non-rotating tools, preferably for turning machines.

For non-standardized tool holders with rectangular axial seat, such as the tool holders shown in Figures 1 to 4, it is advisable to apply the corresponding specifications of this part of ISO 10889.

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 2768-1, *General tolerances — Part 1: Tolerances for linear and angular dimensions without individual tolerance indications*

ISO 2768-2, *General tolerances — Part 2: Geometrical tolerances for features without individual tolerance indications*

ISO 8015, *Geometrical product specifications (GPS) — Fundamentals — Concepts, principles and rules*

ISO 10889-1, *Tool holders with cylindrical shank — Part 1: Cylindrical shank, location bore — Technical delivery conditions*

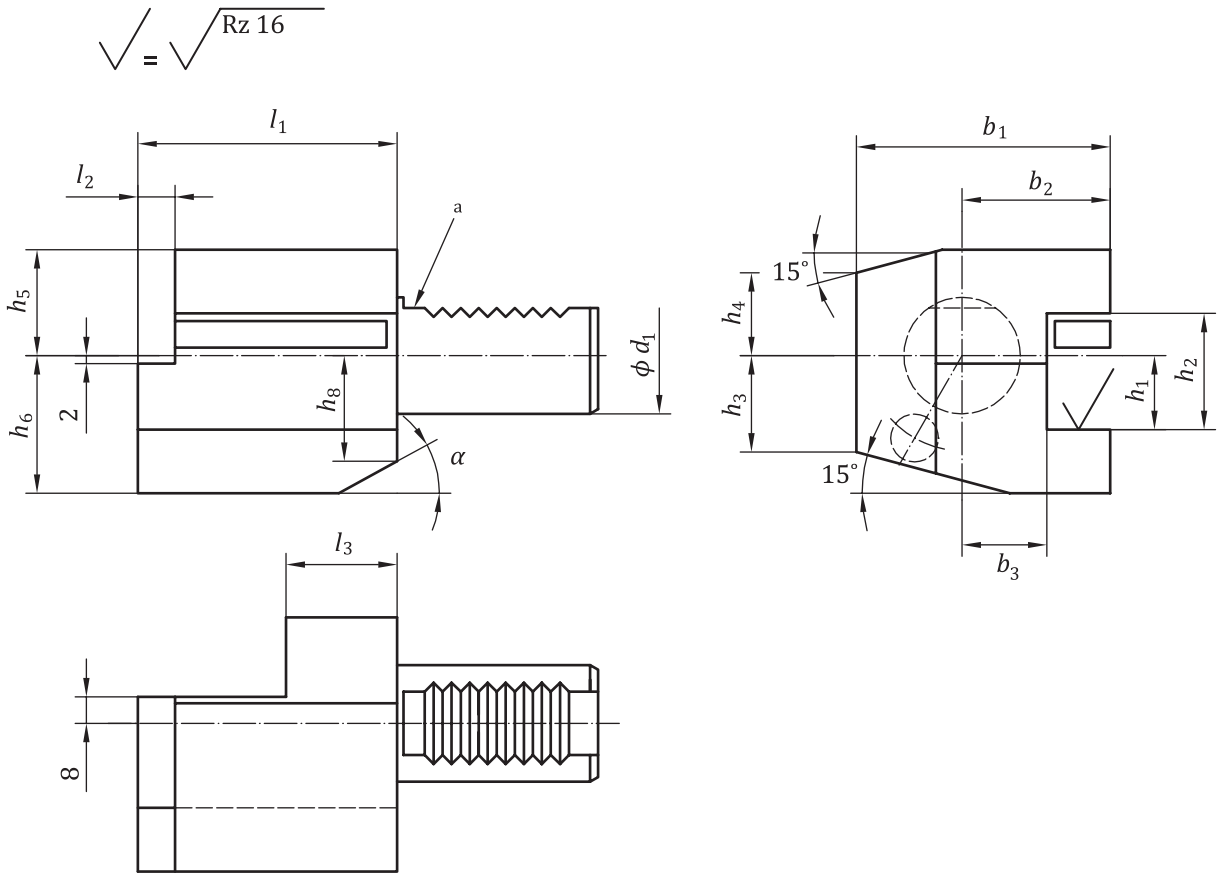
3 Dimensions

All dimensions and tolerances are given in millimetres. Tolerancing is done according to ISO 8015. Tolerances not specified shall be of tolerance class “m” in accordance with ISO 2768-1 and of class “H” in accordance with ISO 2768-2.

Unspecified details shall be chosen appropriately.

The dimensions of tool holders type C shall be in accordance with the dimensions shown in Figures 1 to 4 and given in Table 1.

The relationship between the symbols of this part of ISO 10889 and the symbols according to ISO 13399 is given in Annex A.

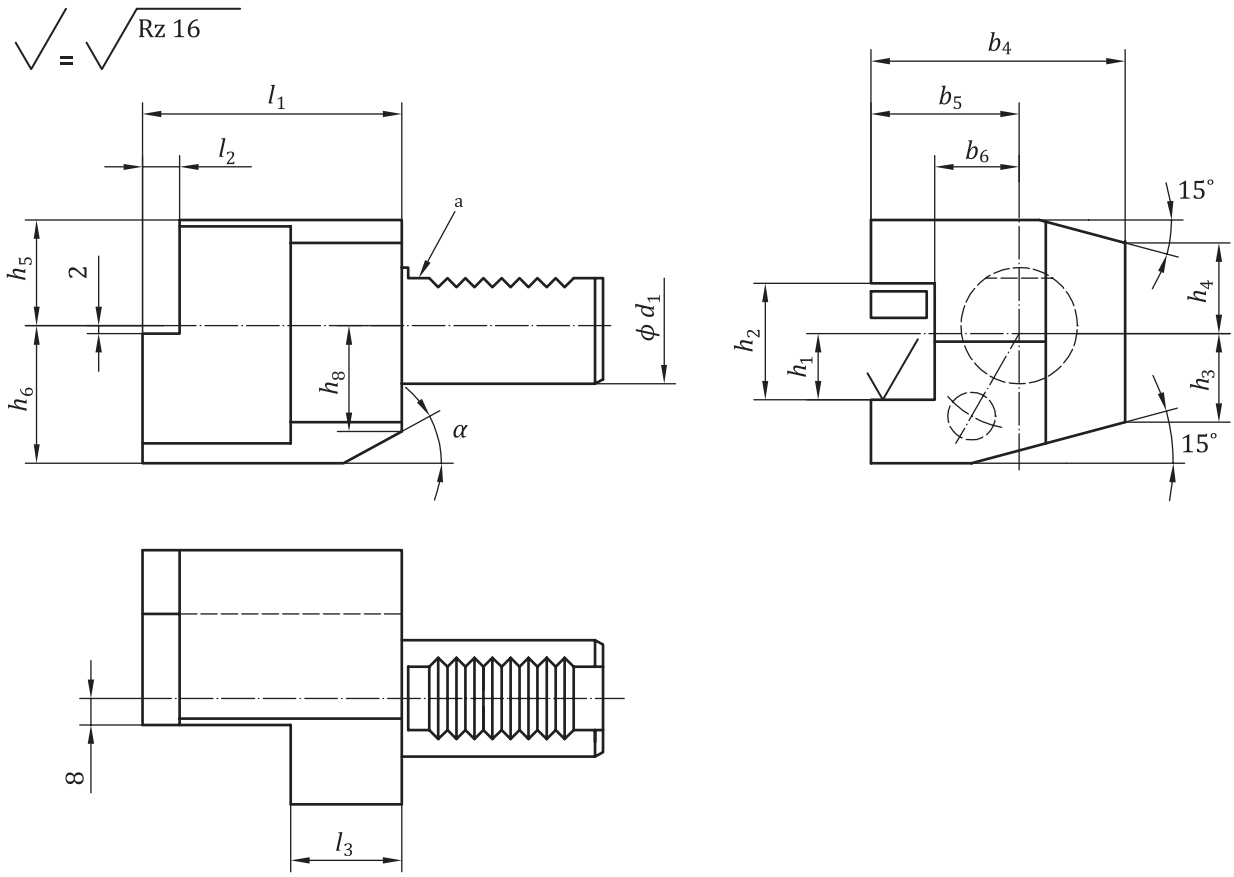


Key

a Cylindrical shank in accordance with ISO 10889-1.

NOTE Surface roughness is given in micrometres.

Figure 1 — Type C1 tool holder, right-hand

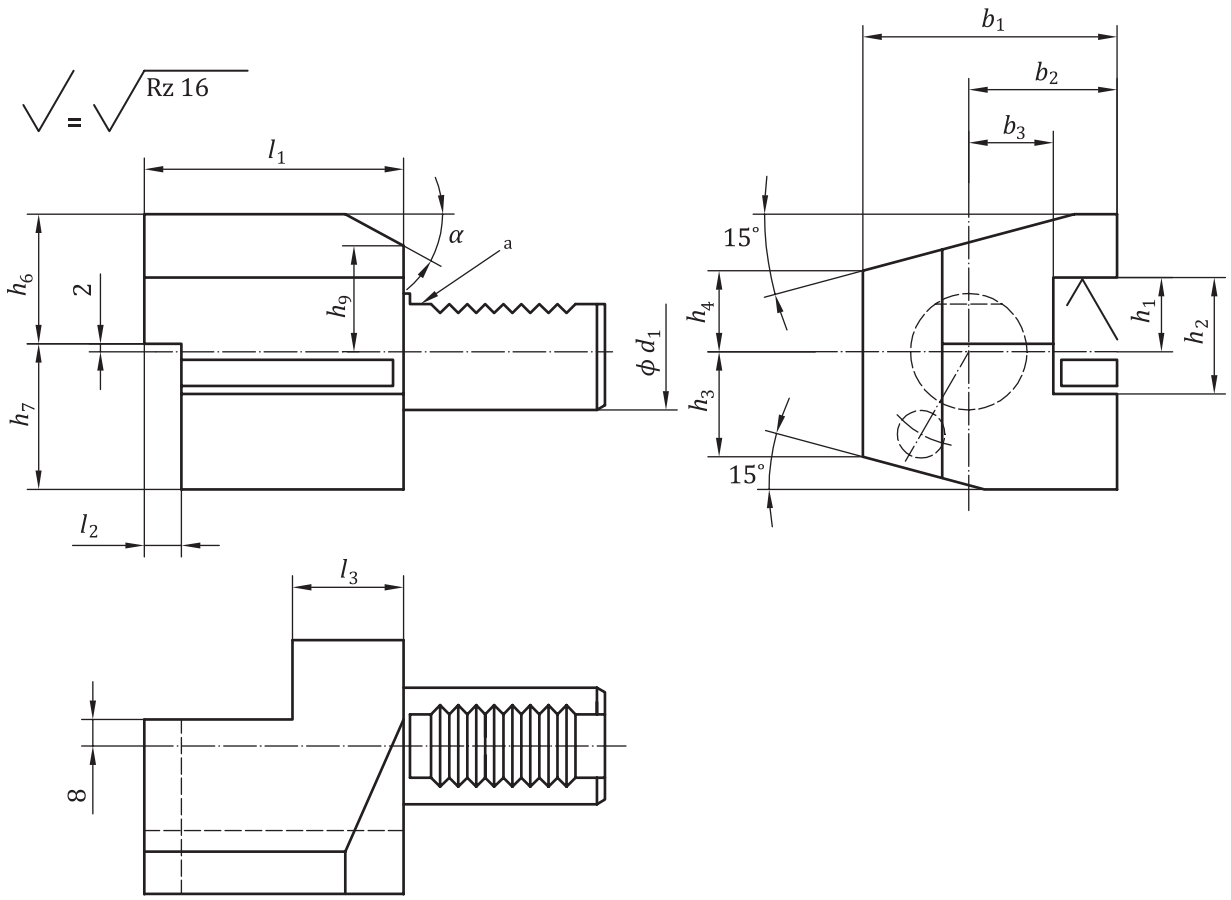


Key

a Cylindrical shank in accordance with ISO 10889-1.

NOTE Surface roughness is given in micrometres.

Figure 2 — Type C2 tool holder, left-hand

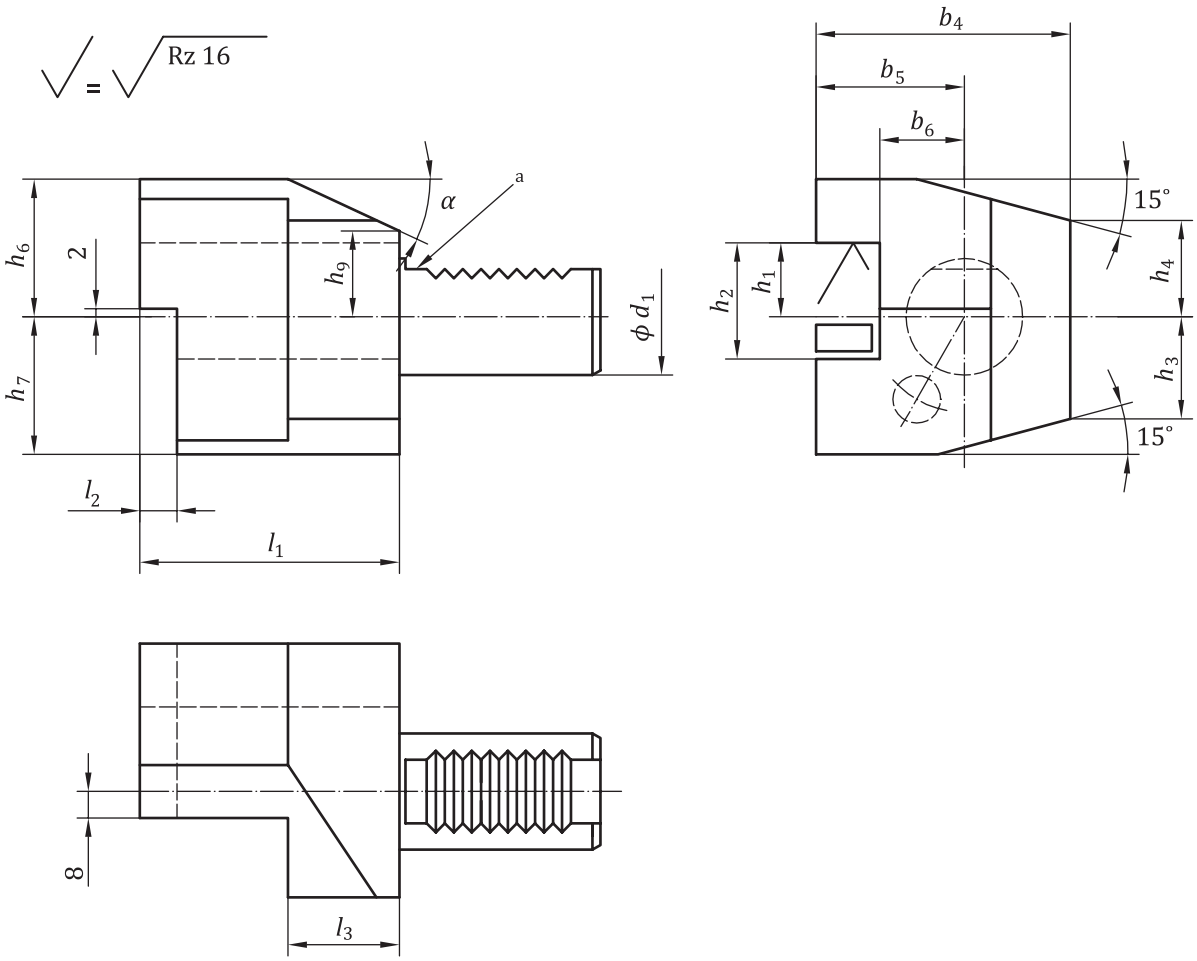


Key

a Cylindrical shank in accordance with ISO 10889-1.

NOTE Surface roughness is given in micrometres.

Figure 3 — Type C3 tool holder, overhead, right-hand



Key

a Cylindrical shank in accordance with ISO 10889-1.

NOTE Surface roughness is given in micrometres.

Figure 4 — Type C4 tool holder, overhead, left-hand

Table 1 — Type C tool holder dimensions

Dimensions in millimetres

d_1	b_1	b_2	b_3 +0,3 0	b_4	b_5	b_6 +0,3 0	h_1 +0 −0,1	h_2 max.	h_3	h_4	h_5	h_6	h_7	h_8	h_9	l_1	l_2	l_3	α
	Types C1 and C3			Types C1 and C4															
16	43	24	13	43	24	13	12	17	15	15	20	22	20	19	19	44	5	20	30°
20	52	27	13	—	—	—	16	22	19	19	25	30	25	23	23	55	7	30	30°
	65	40	26	65	40	26										50	—		
25	58	33	19	58	33	19	16	22	22,5	22,5	25	30	25	25	25	55	7	20	30°
30	70	35	17	76	41	23	20	29	26	22	28	38	35	30	28	70	10	30	25°
40	85	42,5	21	90	47,5	25,5	25	34	35	30	32,5	48	42,5	—	—	85	12,5	30	—
50	100	50	26	105	55	30,5	32	41	42	35	35	60	50	—	—	100	16	40	—
60	125	62,5	33	125	62,5	33	32	41	46	42,5	42,5	62,5	62,5	—	—	125	16	40	—
80	160	80	42	160	78	42	40	53	60	55	55	80	80	—	—	160	20	40	—

4 Geometrical tolerances

The geometrical tolerances shall be as defined in Figure 5.

Dimensions in millimetres

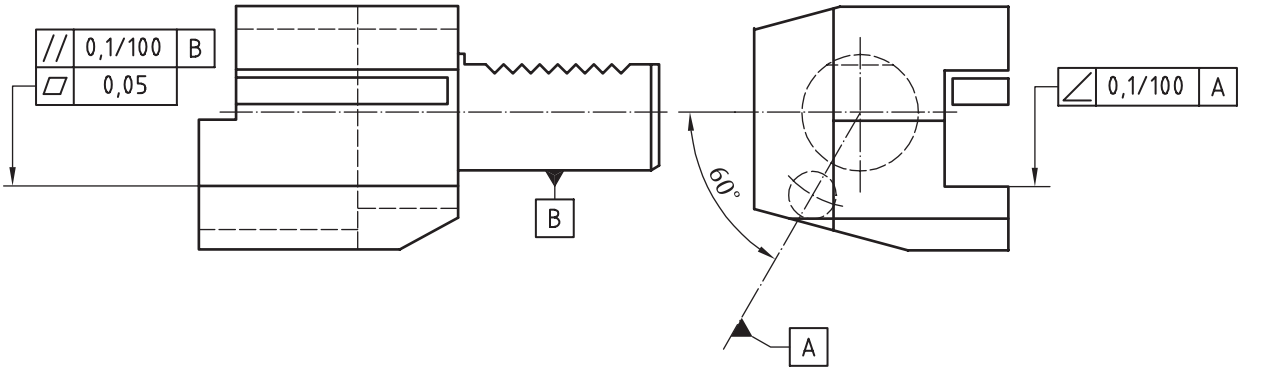


Figure 5 — Geometrical tolerances

5 Designation

A type C tool holder with rectangular axial seat in accordance with this part of ISO 10889 shall be designated by the following:

a) "Tool holder";

b) reference to this part of ISO 10889, i.e. ISO 10889-4;

c) type (C1, C2, C3 or C4),

d) nominal diameter, d_1, in millimetres;

e) nominal height, h_1, in millimetres;

f) nominal length, l_1, in millimetres, only if d_1 = 20 mm.

EXAMPLE 1 A tool holder with rectangular axial seat of type C1 with a nominal diameter, d_1 = 60 mm and a nominal height, h_1 = 32 mm, is designated as follows:

Tool holder ISO 10889-4 - C1 - 60 × 32

EXAMPLE 2 A tool holder with rectangular axial seat of type C1 with a nominal diameter, d_1 = 20 mm, a nominal height, h_1 = 16 mm, and a nominal length, l_1 = 55 mm, is designated as follows:

Tool holder ISO 10889-4 - C1 - 20 × 16 × 55

6 Technical delivery conditions

6.1 General

As a complement to the requirements of ISO 10889-1, those given in 6.2 and 6.3 also apply.

6.2 Design

Tool holders with a rectangular axial seat are equipped with a coolant outlet with adjustable direction. The design is at the discretion of the manufacturer, e.g. ball-type nozzle.

The tools shall be adjustable in the tool holder at right angles to the rectangular seat. The design is at the discretion of the manufacturer.

It shall be possible to reduce the dimension h_1 specified in Table 1 to the next smallest standardized dimension h_1 as given in Table 2. The design is at the discretion of the manufacturer.

Table 2 — Smaller standardized dimension, h_1

Dimensions in millimetres

d_1	**16**	**20**	**25**	**30**	**40**	**50**	**60**	**80**
h_1	10	12	12	16	20	25	25	32

Tool holders may also be supplied with a hardened contact surface. It shall be then mentioned in the designation (H for hardened contact surface).

EXAMPLE A tool holder with rectangular axial seat of type C1 with a nominal diameter, d_1 = 40 mm, a nominal height, h_1 = 20 mm, with hardened contact surface is designated as follows:

Tool holder ISO 10889-4 - C1 - 40 × 20 H

6.3 Scope of delivery

The scope of delivery of tool holders includes clamping elements for the clamping of the tools. The design of the clamping elements is at the discretion of the manufacturer.

Annex A
(informative)

Relationship between designations in this part of ISO 10889 and ISO 13399

For the relationship between the symbols of this part of ISO 10889 and symbols according to ISO 13399, see Table A.1.

Table A.1 — Relationship between symbols in this part of ISO 10889 and ISO 13399

Symbol in this part of ISO 10889	Reference in this part of ISO 10889	Property name in ISO 13399	Symbol in ISO 13399	Reference in ISO 13399 (BSU code)
d_1	Figures 1 to 4	connection diameter machine side	DCONMS	71EBDBF5060E6
b_1	Figures 1 and 3	overall width	OAW	71CF299257986
b_2	Figures 1 and 3	radial width	RADW	726E3E8DA5589
b_3	Figures 1 and 3	functional width	WF	71CF29984CDA7
b_4	Figures 2 and 4	overall width	OAW	71CF299257986
b_5	Figures 2 and 4	radial width	RADW	726E3E8DA5589
b_6	Figures 2 and 4	functional width	WF	71CF29984CDA7
l_1	Figures 1 to 4	protruding length	LPR	71DCD394BB20E
l_2	Figures 1 to 4	—	—	—
l_3	Figures 1 to 4	—	—	—
h_1	Figures 1 to 4	functional height	HF	71CF29994E737
h_2	Figures 1 to 4	—	—	—
h_3	Figures 1 to 4	radial height chamfer distance lower	RHCDL	726E3E8F925AC
h_4	Figures 1 to 4	radial height chamfer distance upper	RHCDU	726E3E9005480
h_5	Figures 1 to 4	—	OAH[a] – RADH	—
h_6	Figures 1 to 4	radial height	RADH	726E3E86B5284
h_7	Figures 1 to 4	—	OAH[a] – RADH	—
h_8	Figures 1 to 4	—	—	—
h_9	Figures 1 to 4	—	—	—

[a] OAH is the “overall height” (code BSU 71D078EB73E87).

Table A.1 *(continued)*

Symbol in this part of ISO 10889	Reference in this part of ISO 10889	Property name in ISO 13399	Symbol in ISO 13399	Reference in ISO 13399 (BSU code)
2	Figures 1 to 4	radial offset height	RADHOF	726E3E8AF37E4
15°	Figures 1 to 4	radial height chamfer angle lower	RHCAL	726E3E8E6CEE3
15°	Figures 1 to 4	radial height chamfer angle upper	RHCAU	726E3E8F2AE05

[a] OAH is the "overall height" (code BSU 71D078EB73E87).

Bibliography

[1] ISO 8015, *Geometrical product specifications (GPS) — Fundamentals — Concepts, principles and rules*

[2] ISO 13399 (all parts), *Cutting tool data representation and exchange*

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