
**Hollow taper interface with flange
contact surface —**

**Part 2:
Receivers of types A, C and E for
hollow taper shanks of types A, AB, C,
CB and EB**

Interfaces à cône creux-face —

*Partie 2: Nez de broches de type A, C et E pour queues à cône creux-
face de type A, AB, C, CB et EB*

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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 document 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).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 29, *Small tools*, Subcommittee SC 9, *Tools with defined cutting edges, holding tools, cutting items, adaptive items and interfaces*.

This second edition cancels and replaces the first edition (ISO 12164-2:2001), which has been technically revised.

The main changes are as follows:

- new receiver of type E added;
- new hollow taper shanks were assigned to the existing receiver of type A and type C;
- some editorial changes.

A list of all parts of the ISO 12164 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Hollow taper interface with flange contact surface —

Part 2:

Receivers of types A, C and E for hollow taper shanks of types A, AB, C, CB and EB

1 Scope

This document specifies dimensions for receivers with taper and flange contact surfaces for hollow taper shanks (HSK) in accordance with ISO 12164-1 to be applied on machine tools (e.g. for turning, drilling, milling, grinding and combinations of them).

This document specifies three types of receivers:

- type A for automatic tool change;
- type C for manual tool change only, via radial holes in both the receiver and the tool shank;
- type E for automatic tool change.

NOTE 1 The receivers of types A, C and E fit the HSK shanks of types A, AB, C, CB and EB (according to ISO 12164-1).

NOTE 2 HSK shanks of types A, AB and EB can also be changed manually.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 1101, *Geometrical product specifications (GPS) — Geometrical tolerancing — Tolerances of form, orientation, location and run-out*

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

ISO 3040, *Geometrical product specifications (GPS) — Dimensioning and tolerancing — Cones*

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

4 Receivers for hollow taper shanks, types and dimensions

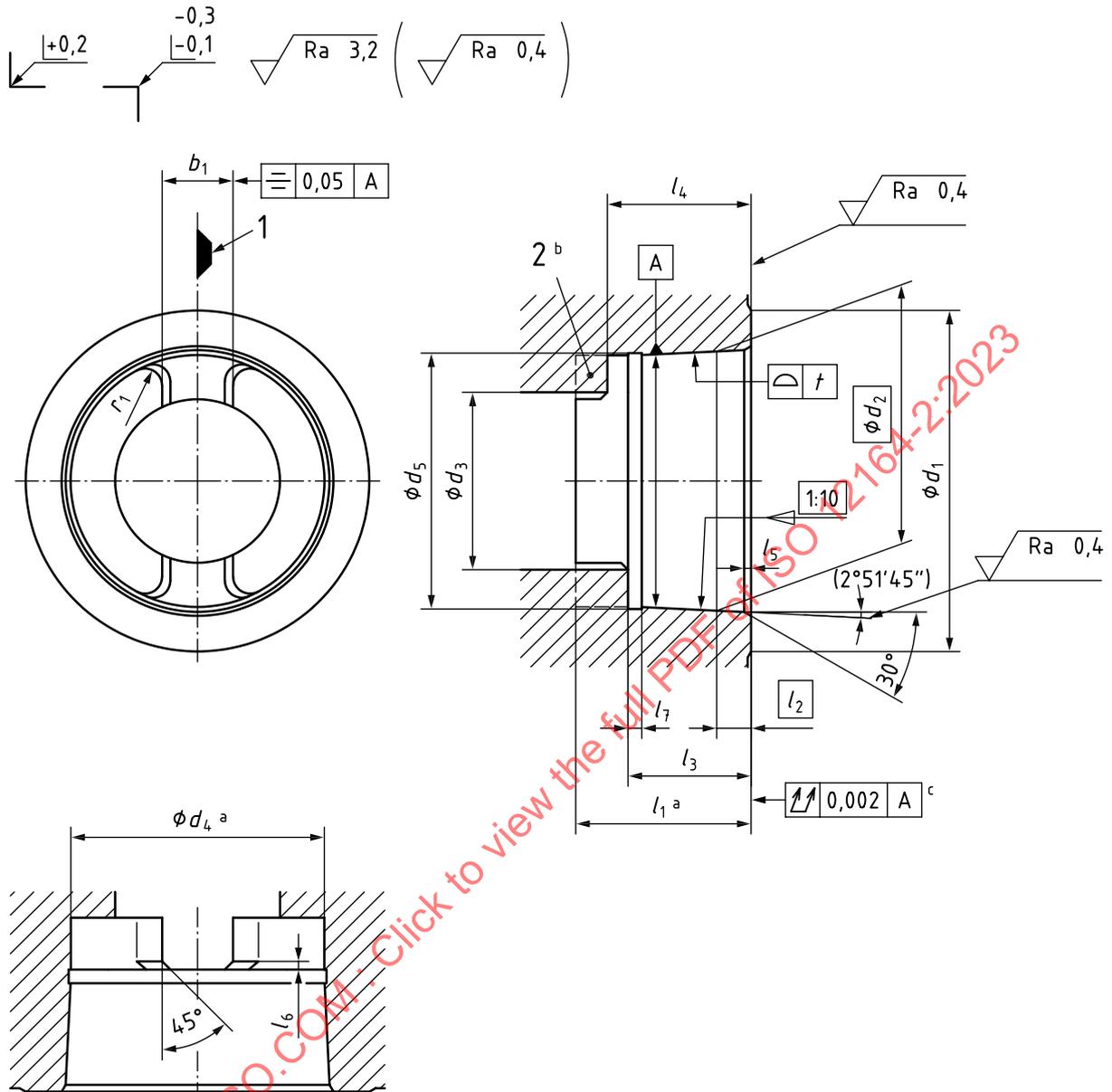
4.1 General

Dimensions of receivers of types A, C and E for hollow taper shanks with flange contact surfaces of types A, AB, C, CB and EB are specified in [Figures 1 to 3](#) and in [Table 1](#). Details not specified shall be chosen expediently. Tolerances of form, orientation, location and run-out shall correspond to ISO 1101. Dimensions and tolerances of cones shall be in accordance with ISO 3040. Tolerances not specified shall be of tolerance class “m” in accordance with ISO 2768-1. Recommendations for use and application are provided in [Annex A](#).

4.2 Receiver of type A for hollow taper shanks of types A and AB

The dimensions of a receiver for hollow taper shanks of types A and AB shall be in accordance with [Figure 1](#) and [Table 1](#).

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Key

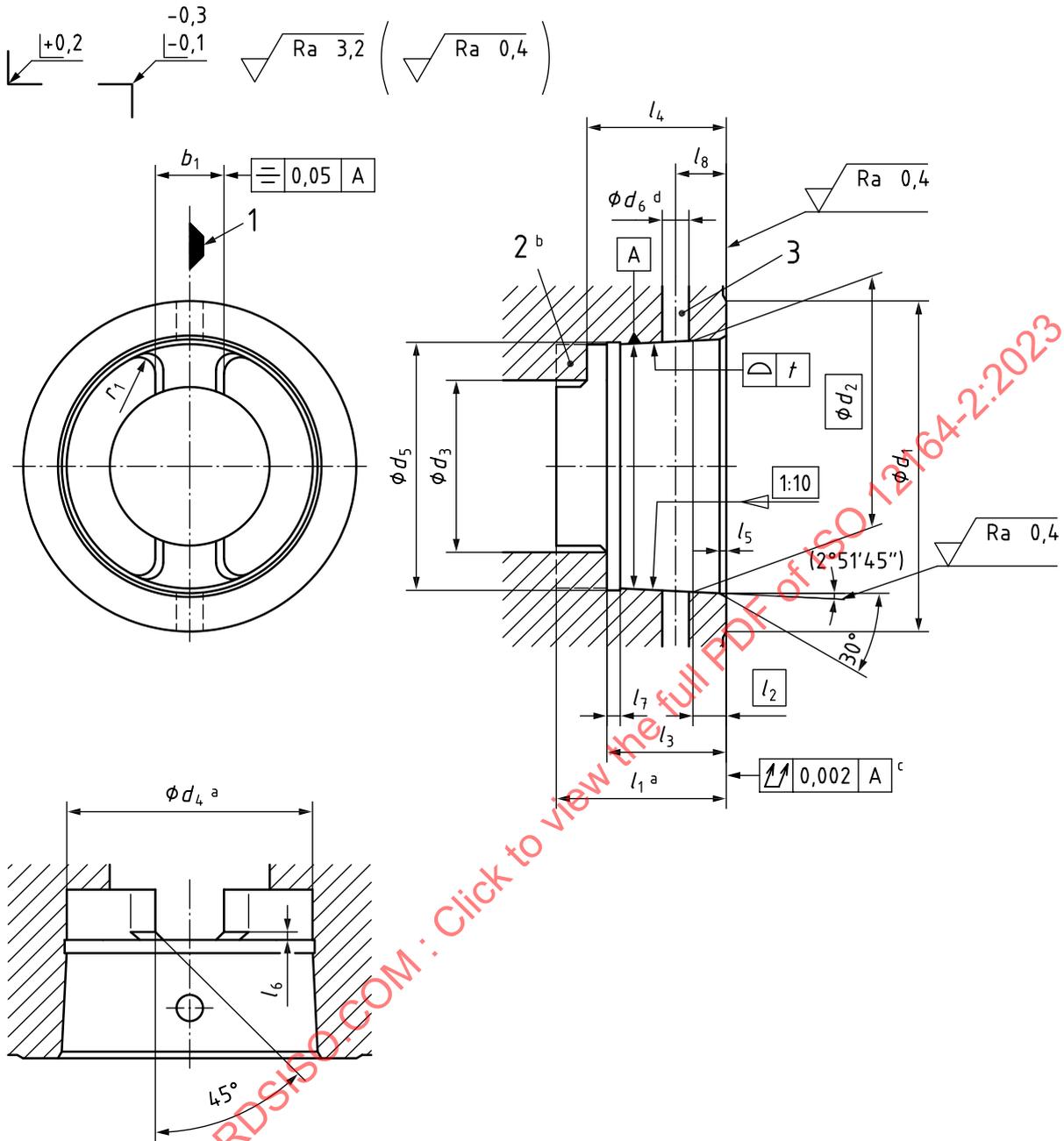
- 1 position of the cutting edge for right hand tools with single cutting edge
- 2 tenon block
- a With inserted tenon blocks, the taper may extend over the total depth l_1 .
- b Tenon blocks, either integrated or inserted.
- c Not convex.

Figure 1 — Receiver of type A for hollow taper shanks of types A and AB

NOTE HSK shanks of types C and CB can be inserted manually into spindles with automatic tool change.

4.3 Receiver of type C for hollow taper shanks of types C and CB

The dimensions of a receiver for hollow taper shanks of types C and CB shall be in accordance with [Figure 2](#) and [Table 1](#).



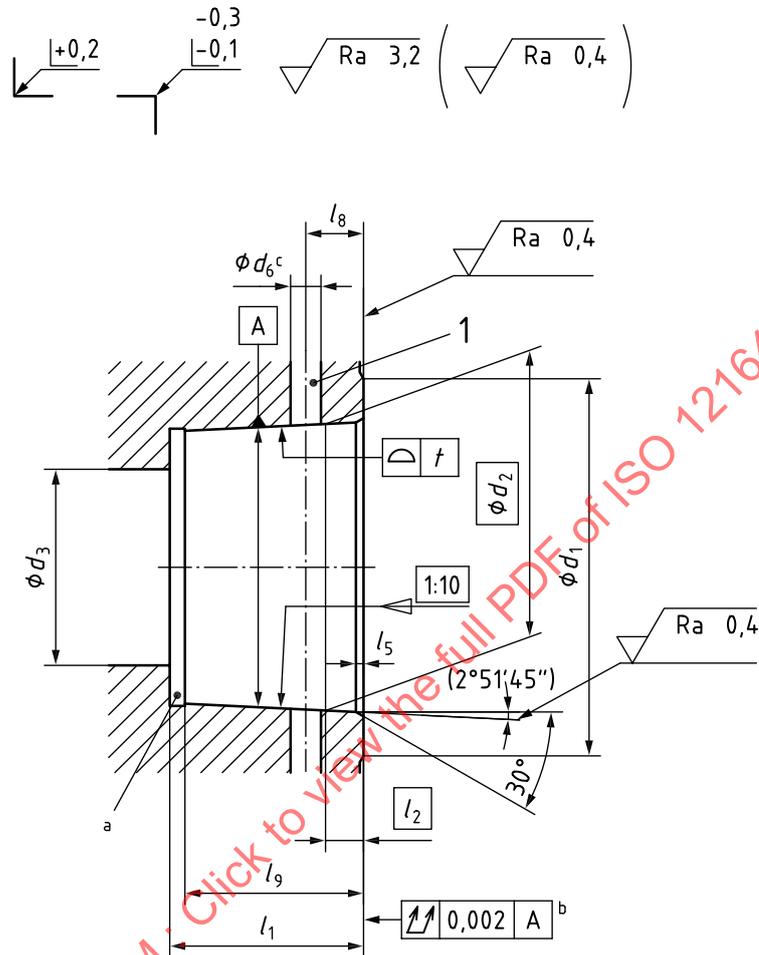
Key

- 1 position of the cutting edge for right hand tools with single cutting edge
- 2 tenon block
- 3 bore hole for manual clamping
- a With inserted tenon blocks, the taper may extend over the total depth l_1 .
- b Tenon blocks, alternatively integrated or inserted.
- c Not convex.
- d Inside edge min. 0,5 mm × 45° chamfer.

Figure 2 — Receiver of type C for hollow taper shanks of types C and CB

4.4 Receiver of type E for hollow taper shanks of type EB

The dimensions of a receiver for hollow taper shanks of type EB shall be in accordance with [Figure 3](#) and [Table 1](#).



Key

- 1 hole for manual tool change (optional)
- a Relief groove to be chosen by manufacturer.
- b Not convex.
- c Inside edge min. 0,5 mm × 45° chamfer.

NOTE Manual tool change via radial hole is difficult in case of slipping, for example, due to torque overload as tenon blocks are missing.

Figure 3 — Receiver of type E for hollow taper shanks of type EB

4.5 Dimensions

The dimensions of receivers for hollow taper shanks of types A, AB, C, CB and EB defined in this document shall be in accordance with [Table 1](#).

Table 1 — Receivers for hollow taper shanks, dimensions

Dimensions in millimetres

Nominal size	20	25	32	40	50	63	80	100	125	160	HSK-type ^d	
b_1	$\pm 0,05$	-	5,8	6,8	7,8	10,3	12,3	15,8	19,78	24,78	29,78	A, C
d_1	min.	20	25	32	40	50	63	80	100	125	160	A, C, E
d_2		15,198	18,998	23,998	29,998	37,998	47,998	59,997	74,997	94,996	119,995	A, C, E
d_3^a		-	14	17	21	26	34	42	53	67	85	A, C, E
d_4^b	$\begin{matrix} +0,1 \\ 0 \end{matrix}$	-	18,46	23,28	29,06	36,85	46,53	58,1	72,6	92,05	116,1	A, C
d_5	$\begin{matrix} +0,2 \\ 0 \end{matrix}$	-	18,8	23,8	29,6	37,5	47,2	58,8	73,4	93	118	A, C
d_6		-	3,7	4	4,6	6	7,5	8,5	12	14,5	17	C
l_1^b	$\begin{matrix} +0,2 \\ 0 \end{matrix}$	10,5	13,5	16,5	20,5	25,5	33	41	51	64	81	A, C, E
l_2		2	2,5	3,2	4	5	6,3	8	10	12,5	16	A, C, E
l_3	$\begin{matrix} +0,2 \\ 0 \end{matrix}$	-	9,4	11,4	14,4	17,9	22,4	28,4	35,4	44,4	57,4	A, C
l_4	$\begin{matrix} +0,2 \\ 0 \end{matrix}$	10	11,4	13,4	16,9	20,9	26,4	32,4	40,4	51,4	64,4	A, C
l_5		0,5	0,6	0,8	0,8	1	1	1,5	1,5	2	2	A, C, E
l_6	$\begin{matrix} +0,1 \\ 0 \end{matrix}$	-	0,6	1	1	1,5	1,5	2	2	2,5	2,5	A, C
l_7	$\begin{matrix} +0,3 \\ 0 \end{matrix}$	-	1,5	2	2	2	2,5	3	3	4	4	A, C
l_8	$\pm 0,1$	-	4	5	6	7,5	9	12	15	18,5	25	C
l_9		9,3	12,2	15,1	18,8	23,6	30,3	-	-	-	-	E
	tol	$\begin{matrix} +0,7 \\ 0 \end{matrix}$	$\begin{matrix} +0,8 \\ 0 \end{matrix}$	$\begin{matrix} +0,9 \\ 0 \end{matrix}$	$\begin{matrix} +1,2 \\ 0 \end{matrix}$	$\begin{matrix} +1,4 \\ 0 \end{matrix}$	$\begin{matrix} +1,7 \\ 0 \end{matrix}$	-	-	-	-	
r_1^c	$\begin{matrix} 0 \\ -0,05 \end{matrix}$	-	1,25	1,5	2	2,5	3	4	5	6	8	A, C
t		0,001	0,001	0,001 5	0,001 5	0,002	0,002	0,002 5	0,003	0,003 5	0,003 5	A, C, E

^a Depending on the clamping system.

^b See key ϕ in [Figure 1](#).

^c r_1 tangent to b_1 and d_4 .

^d Validity for A, C and/or E also means valid for AB, CB and/or EB.

5 Design

5.1 HSK sizes and types

Table 2 shows the range of preferred sizes of receivers for hollow taper shanks described in this document.

Table 2 — Sizes and types

Nominal size	20	25	32	40	50	63	80	100	125	160
HSK-A	-	X	X	X	X	X	X	X	X	X
HSK-C	-	X	X	X	X	X	X	X	o	o
HSK-E	X	X	X	X	X	X	o	o	o	o
X preferred o applicable - not defined										

5.2 Material and heat treatment

HSK receivers shall be made from either tempering or case hardening steel with a minimum core strength of 800 N/mm² and a minimum surface hardness of 50 HRC after hardening, tempering and finish grinding.

6 Designation

A receiver for hollow taper shanks (HSK) in accordance with this document shall be designated by:

- "Receiver ISO 12164-2 HSK";
- A, C or E;
- nominal size, in millimetres (e.g. 63).

EXAMPLE 1 A receiver of type A for hollow taper shanks (HSK) of type AB, nominal size 63, is designated as follows:

Receiver ISO 12164-2 — HSK-A 63

EXAMPLE 2 A receiver of type C for hollow taper shanks (HSK) of Type CB, nominal size 50, is designated as follows:

Receiver ISO 12164-2 — HSK-C 50

EXAMPLE 3 A receiver of type E for hollow taper shanks (HSK) of type EB, nominal size 32 is designated as follows:

Receiver ISO 12164-2 — HSK-E 32