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

**Part 3:
Dimensions of shanks for stationary tools**

Interfaces à cône creux-face —

Partie 3: Dimensions des queues pour outils non rotatifs
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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 12164-3 was prepared by Technical Committee ISO/TC 29, *Small tools*.

ISO 12164 consists of the following parts, under the general title *Hollow taper interface with flange contact surface*:

— *Part 1: Shanks — Dimensions*

— *Part 2: Receivers — Dimensions*

— *Part 3: Dimensions of shanks for stationary tools*

— *Part 4: Dimensions of receivers for stationary tools*

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Hollow taper interface with flange contact surface —

Part 3: Dimensions of shanks for stationary tools

1 Scope

This part of ISO 12164 specifies dimensions for hollow taper shanks with flange contact surface (HSK) to be applied to machine tools (e.g. turning machines, turning-mill machines). A range of shank sizes is specified.

This part of ISO 12164 specifies the shank of type T. It incorporates a grooved flange to enable automatic tool exchange. The tools may also be exchanged manually via a hole in the shank taper.

The torque is transmitted at the tail end of the shank through keys as well as friction.

2 Normative references

The following referenced documents are indispensable for the application 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, *Technical drawings — Dimensioning and tolerancing — Cones*

3 Dimensions

3.1 General

Dimensions of hollow taper shanks with flange contact surface for stationary tools, type T, are specified in Figure 1, Table 1, Annex A and Annex B. Details not specified in Figure 1 shall be chosen expediently. Tolerancing of form, orientation, location and run-out is in accordance with ISO 1101. Dimensioning and tolerancing of cones are in accordance with ISO 3040. Tolerances not specified shall be of tolerance class «m» in accordance with ISO 2768-1.

3.2 Hollow taper shank, type T

The dimensions of hollow taper shanks, type T, shall be in conformance with Figure 1, Table 1 and Annex A.

Dimensions in millimetres
Surface roughness values in micrometres

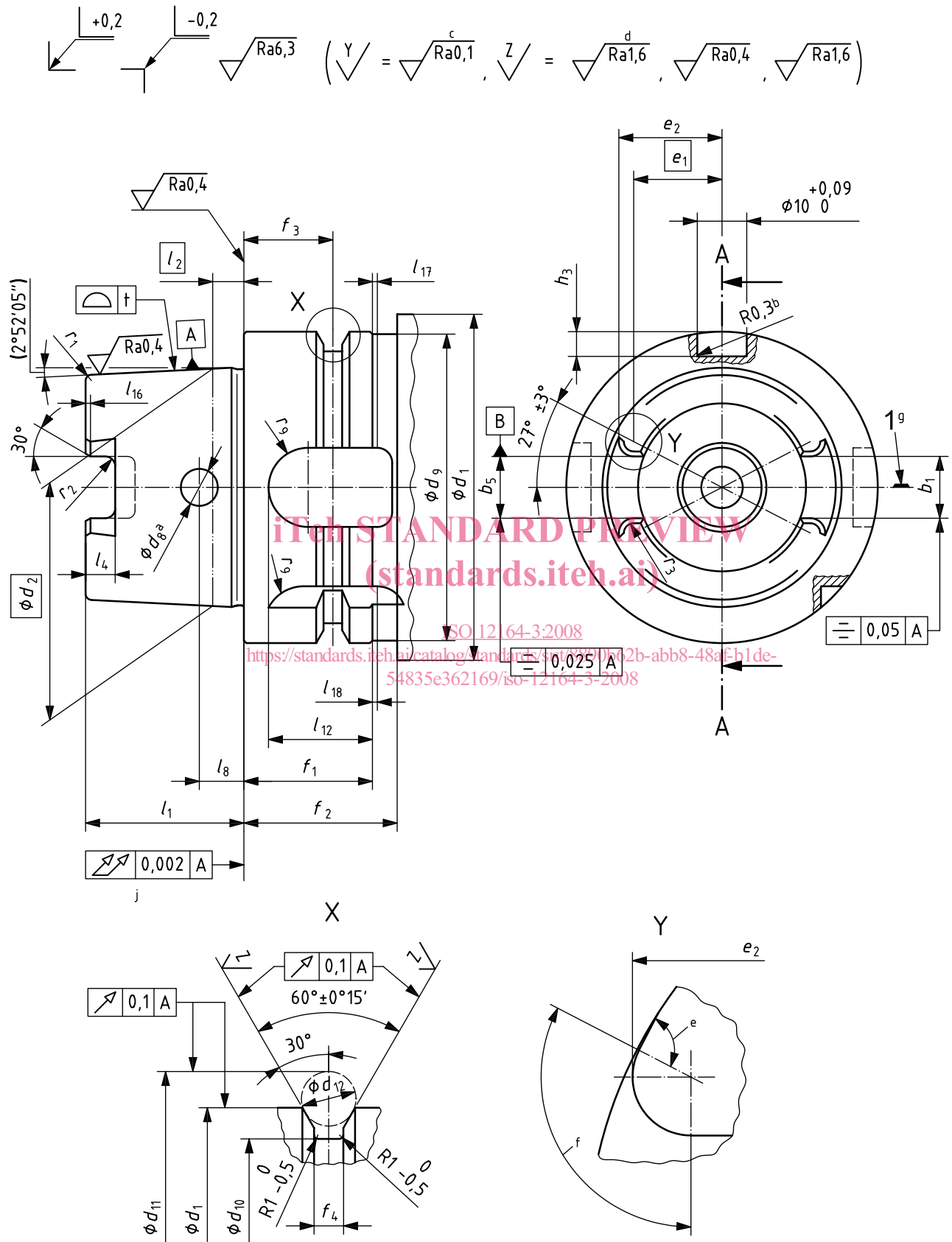


Figure 1 (continued)

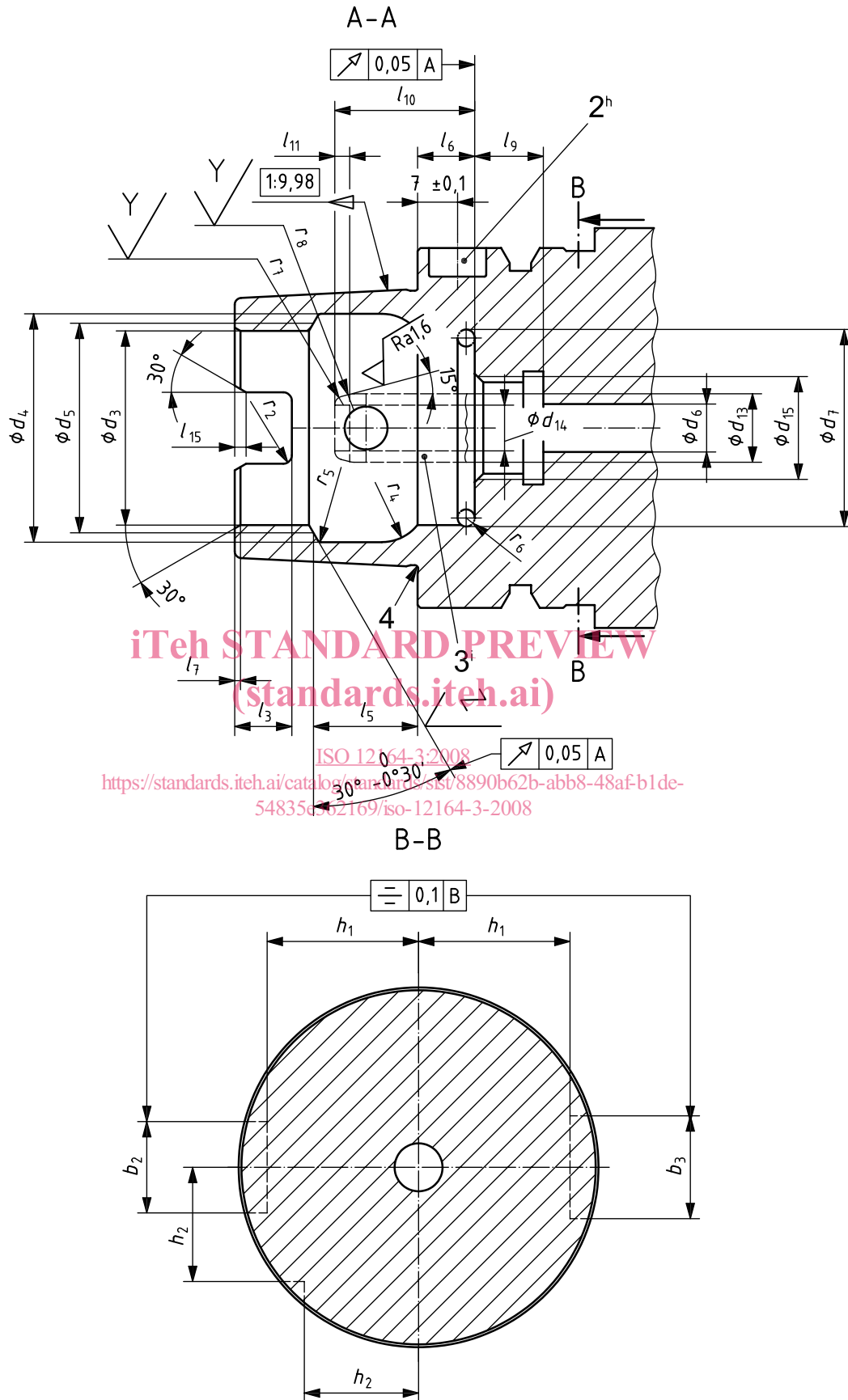


Figure 1 (continued)

Key

- 1 cutting edge
- 2 data chip hole
- 3 lubrication pipe
- 4 groove (see Annex A)
- a Outer edge 0,5 × 45° min. chamfer.
- b Or 0,3 × 45°.
- c Polished.
- d Fine turning.
- e 90° = run-out.
- f Area of r_3 .
- g Position of the cutting edge for right-hand tools with single cutting edge.
- h Optional.
- i Lubrication pipe shall be sealed, self-centred and shall allow an angular movement of $\pm 1^\circ$ with a low displacement force.
- j Not convex.

Figure 1 — Dimensions for hollow taper shanks with flange contact surface

Table 1 — Dimensions
iTeh STANDARD PREVIEW Dimensions in millimetres

Nominal size	32	40	50	63	80	100	125	160
b_1 ^{+0,04} / _{-0,04}	7,05	8,05	10,54	12,54	16,04	20,02	25,02	30,02
b_2 H10	7	9	12	16	18	20	25	32
b_3 H10	9	11	14	18	20	22	28	36
b_5	6,932	7,932	10,425	12,425	15,93	19,91	24,915	29,915
tol.	^{+0,03} / ₀		^{+0,035} / ₀			^{+0,04} / ₀		
d_1 h10	32	40	50	63	80	100	125	160
d_2	24,007	30,007	38,009	48,010	60,012	75,013	95,016	120,016
d_3 H10	17	21	26	34	42	53	67	85
d_4 H11	20,5	25,5	32	40	50	63	80	100
d_5	19	23	29	37	46	58	73	92
d_6 max.	4,2	5	6,8	8,4	10,2	12	14	16
d_7 ⁰ / _{-0,1}	17,4	21,8	26,6	34,5	42,5	53,8	—	—
d_8	4	4,6	6	7,5	8,5	12	—	—
d_9 max.	31	39	49	62	79	99	124	159
d_{10} ⁰ / _{-0,1}	26,5	34,8	43	55	70	92	117	152
d_{11} ⁰ / _{-0,1}	37	45	59,3	72,3	88,8	109,75	134,75	169,75

Table 1 (continued)

Dimensions in millimetres

Nominal size	32	40	50	63	80	100	125	160
d_{12}	4	4	7	7	7	7	7	7
d_{13} f8	6	8	10	12	14	16	18	20
d_{14}	3,5	5	6,4	8	10	12	14	16
d_{15}	M10 × 1	M12 × 1	M16 × 1	M18 × 1	M20 × 1,5	M24 × 1,5	M30 × 1,5	M35 × 1,5
e_1	8,82	11	13,88	17,99	21,94	27,37	35,37	44,32
e_2 $\begin{smallmatrix} 0 \\ -0,05 \end{smallmatrix}$	10,2	12,88	16,26	20,87	25,82	32,25	41,25	52,2
f_1 $\begin{smallmatrix} 0 \\ -0,1 \end{smallmatrix}$	20	20	26	26	26	29	29	31
f_2 min.	23	23	30	30	30	34	34	36
f_3 $\pm 0,1$	16	16	18	18	18	20	20	22
f_4 $\begin{smallmatrix} +0,15 \\ 0 \end{smallmatrix}$	2	2	3,75	3,75	3,75	3,75	3,75	3,75
h_1 $\begin{smallmatrix} 0 \\ -0,2 \end{smallmatrix}$	13	17	21	26,5	34	44	55,5	72
h_2 $\begin{smallmatrix} 0 \\ -0,3 \end{smallmatrix}$	9,5	12	15,5	20	25	31,5	39,5	50
h_3 $\begin{smallmatrix} +0,2 \\ 0 \end{smallmatrix}$	5,4	5,2	5,1	5,0	4,9	4,9	4,8	4,8
l_1 $\begin{smallmatrix} 0 \\ -0,2 \end{smallmatrix}$	16	20	25	32	40	50	63	80
l_2	3,2	4	5	6,3	8	10	12,5	16
l_3 $\begin{smallmatrix} +0,2 \\ 0 \end{smallmatrix}$	5	6	7,5	10	12	15	19	23
l_4 $\begin{smallmatrix} +0,2 \\ 0 \end{smallmatrix}$	3	3,5	4,5	6	8	10	12	16
l_5 JS10	8,92	11,42	14,13	18,13	22,85	28,56	36,27	45,98
l_6 $\begin{smallmatrix} 0 \\ -0,1 \end{smallmatrix}$	8	8	10	10	12,5	12,5	16	16
l_7 $\begin{smallmatrix} +0,3 \\ 0 \end{smallmatrix}$	0,8	0,8	1	1	1,5	1,5	2	2
l_8 $\pm 0,1$	5	6	7,5	9	12	15	—	—
l_9 $\begin{smallmatrix} 0 \\ -0,3 \end{smallmatrix}$	6	8	10	12	14	16	18	20
l_{10}	20	21,5	23	24,5	26	28	30	32
l_{11}	2,5	2,5	3	3	3	3	3,5	3,5
l_{12}	12	12	19	21	22	24	24	24
l_{15} $\begin{smallmatrix} +0,3 \\ 0 \end{smallmatrix}$	1,5	1,5	2	2	2,5	2,5	3,5	3,5
l_{16} $\begin{smallmatrix} +0,3 \\ 0 \end{smallmatrix}$	0,8	0,8	1	1	1,5	1,5	2	2