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**Tool holders with cylindrical shank —**

Part 1:

**Cylindrical shank, location bore —  
Technical delivery conditions**

*Porte-outil à queue cylindrique —*

*Partie 1: Queue cylindrique, alésage de réception — Conditions  
techniques de livraison*

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Published in Switzerland

## 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 10889-1 was prepared by Technical Committee ISO/TC 29, *Small tools*.

This second edition cancels and replaces the first edition (ISO 10889-1:1997), Table 2 of which has been technically revised.

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 1: Cylindrical shank, location bore — Technical delivery conditions

### 1 Scope

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

This part of ISO 10889 specifies the interchangeability dimensions of the cylindrical shank and location bore, and the dimensions related to data medium. It also specifies the technical delivery conditions of the tool holders.

### 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 1629, *Rubber and latices — Nomenclature*

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

ISO 13715, *Technical drawings — Edges of undefined shape — Vocabulary and indications*

### 3 Cylindrical shank

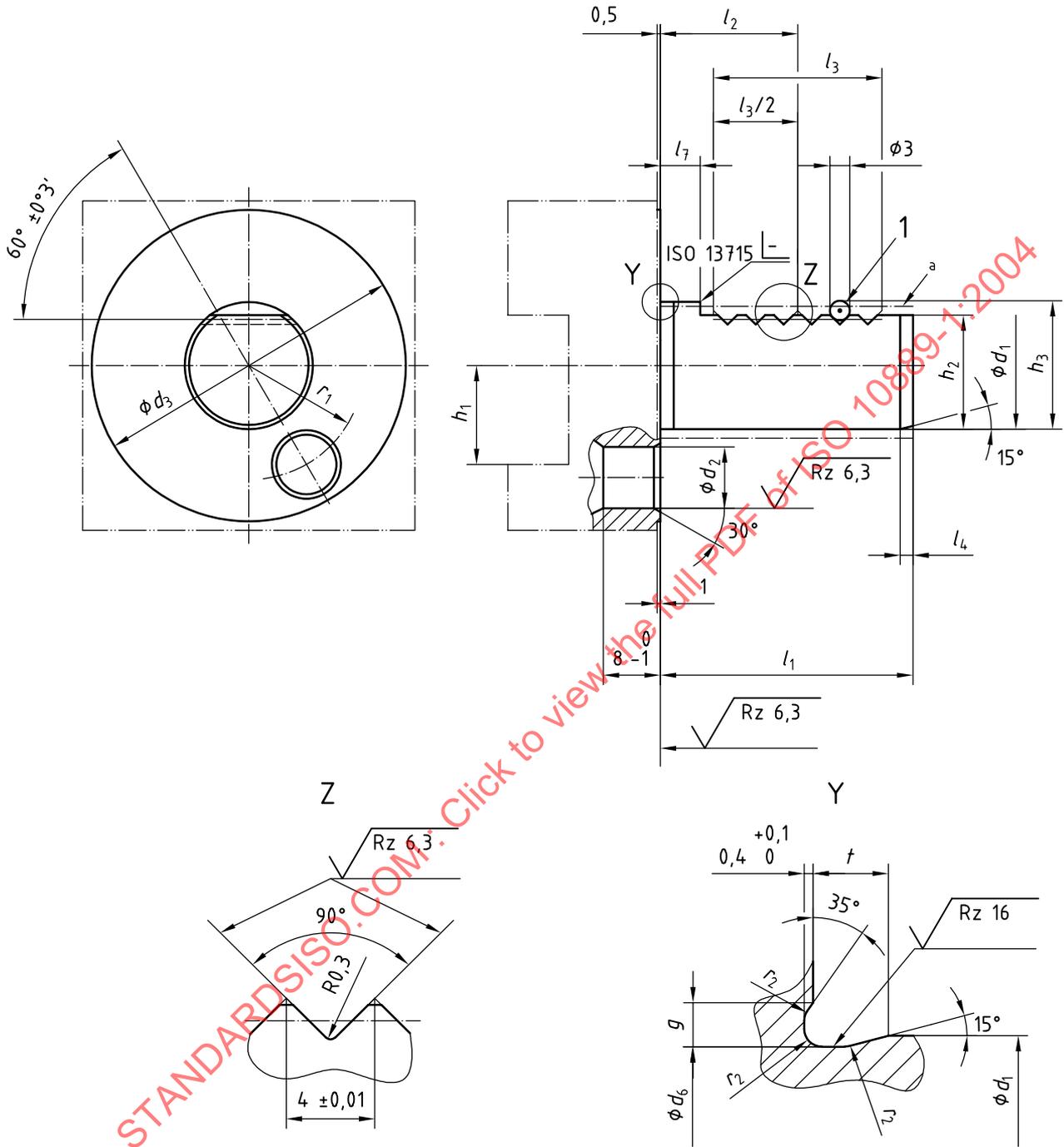
#### 3.1 Dimensions

The dimensions of the cylindrical shank are shown in Figure 1 and given in Table 1, the geometrical tolerances are shown in Figure 2.

Unspecified details shall be chosen appropriately.

General tolerances: ISO 2768-m.

Dimensions in millimetres,  
surface roughness in micrometres



**Key**

- 1 measuring roll, tolerance  $\pm 0,01$  mm
- a See 6.3.2.

**Figure 1 — Cylindrical shank of tool holder**

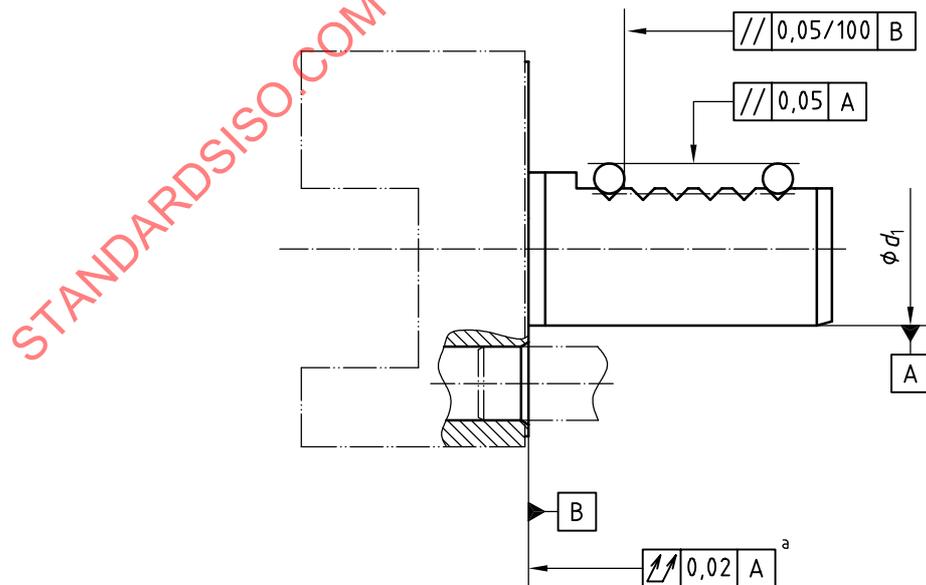
Table 1 — Dimensions of cylindrical shank

Dimensions in millimetres

$d_1$	$l_1$	$d_2$		$d_3$	$d_6$	$f$	$g$	$h_1$	$h_2$	$h_3$	$l_2$
h6	$\pm 0,3$	nom.	tol.		$\begin{matrix} 0 \\ -0,1 \end{matrix}$			max.	$\pm 0,1$	$\pm 0,1$	$\pm 0,05$
16	32	8	H6	40	15,4	2	1,7	12	15	16,92	12,7
20	40	10		50	19,1	2,4	2	16	18	19,92	21,7
25	48	10		58	24,1	2,4	2	16	23,5	25,42	21,7
30	55	14	H8	68	29,1	2,4	2	20	27	28,92	29,7
40	63	14		83	38,7	3,7	2,8	25	36	37,92	29,7
50	78	16		98	48,7	3,7	2,8	32	45	46,92	35,7
60	94	16		123	58,7	4,3	3,7	32	55	56,92	43,7
80	124	20		158	78,7	4,3	3,7	40	72	73,92	59,7

$d_1$	$l_3$	$l_4$	$l_7$	$r_1$	$r_2$	O-ring
h6	min.	$\begin{matrix} +1 \\ 0 \end{matrix}$		$\pm 0,02$		
16	16	2	3,5	14,5	0,6	15 × 1,5
20	24	2	7	18	0,8	18,77 × 1,78
25	24	2	7	21	0,8	23,52 × 1,78
30	40	2	7	25	0,8	28,3 × 1,78
40	40	3	7	32	1,2	37,77 × 2,62
50	48	3	8	37	1,2	47,29 × 2,62
60	56	4	10	48	1,6	56,74 × 3,53
80	80	4	10	65	1,6	75,79 × 3,53

Dimensions in millimetres



<sup>a</sup> Non-convex.

Figure 2 — Cylindrical shank — Geometrical tolerances

### 3.2 Designation

A cylindrical shank in accordance with this part of ISO 10889 shall be designated by

- a) "Cylindrical shank",
- b) reference to this part of ISO 10889, i.e. ISO 10889-1,
- c) nominal diameter,  $d_1$ , in millimetres,
- d) nominal length,  $l_1$ , in millimetres.

EXAMPLE A cylindrical shank with a nominal diameter  $d_1 = 40$  mm and a nominal length  $l_1 = 63$  mm is designated as follows:

**Cylindrical shank ISO 10889-1 - 40 × 63**

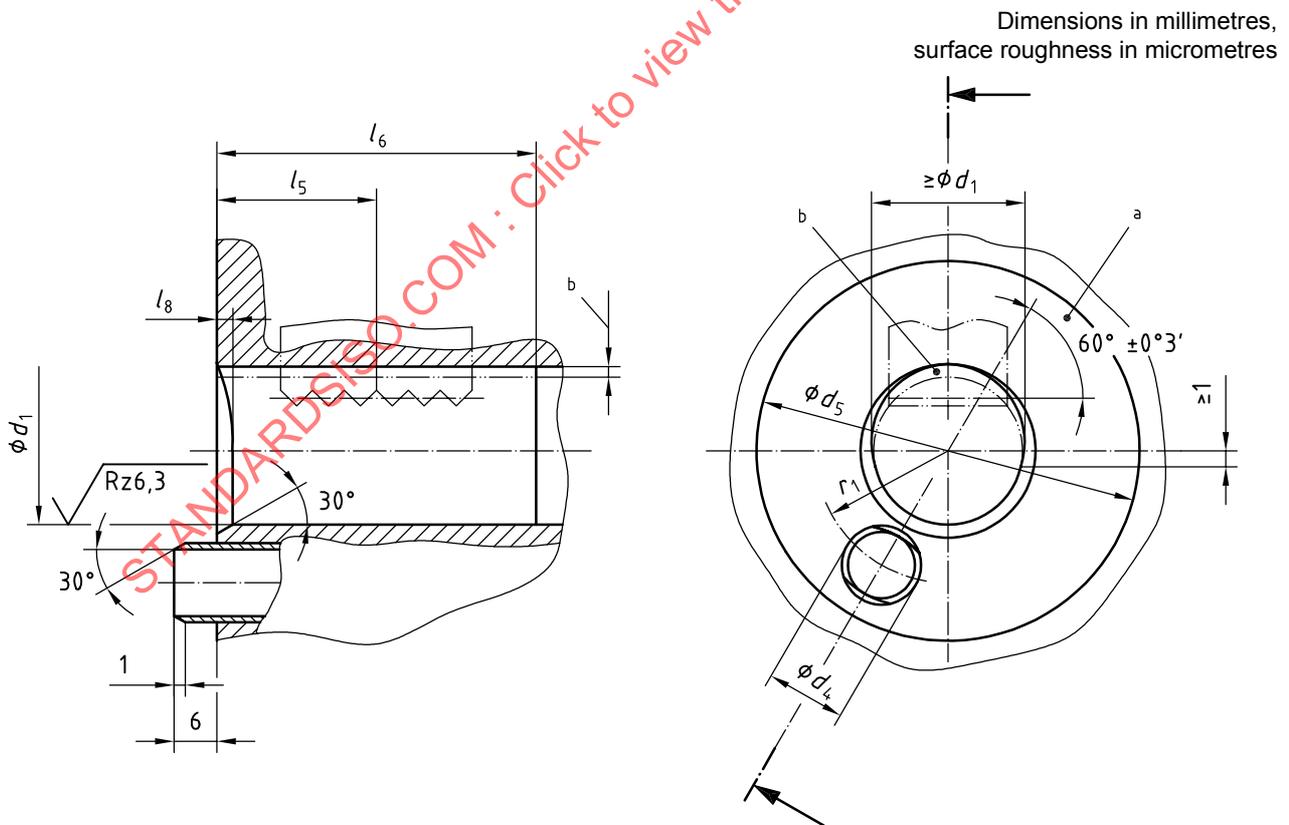
## 4 Location bore

### 4.1 Dimensions

The dimensions of the location bore are shown in Figure 3 and given in Table 2, the geometrical tolerances are shown in Figure 4.

Unspecified details shall be chosen appropriately.

General tolerances: ISO 2768-m.



- a Contact surface.
- b Clearance.

**Figure 3 — Location bore**

Table 2 — Dimensions of the location bore

Dimensions in millimetres

$d_1$	$d_4$		$d_5$	$l_5$	$l_6$	$l_8$	$r_1$
	nom.	tol.					
H6			min.	$\pm 0,05$			$\pm 0,02$
16	8	f6	42	13	32	2,1	14,5
20	10		52	22	40	2,5	18
25	10		60	22	48	2,5	21
30	13,95	$\pm 0,02$	70	30	55	2,5	25
40	13,95		85	30	63	4	32
50	15,9		100	36	78	4	37
60	15,9		125	44	94	6	48
80	19,9		160	60	124	6	65

Dimensions in millimetres

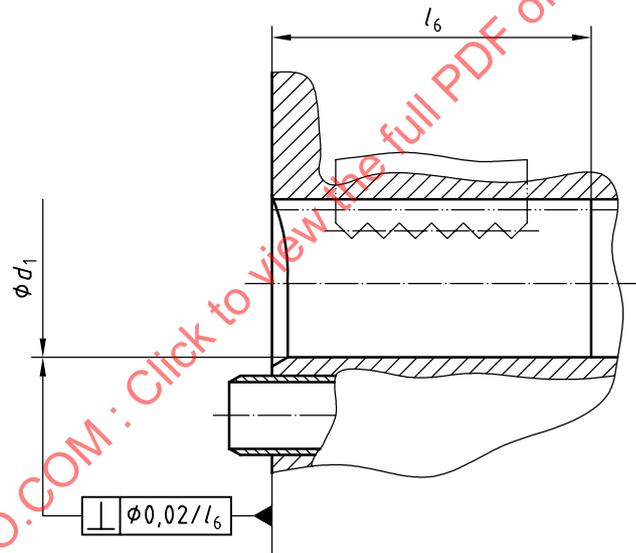


Figure 4 — Location bore — Geometrical tolerances

## 4.2 Designation

A location bore in accordance with this part of ISO 10889 shall be designated by

- “Location bore”,
- reference to this part of ISO 10889, i.e. ISO 10889-1,
- nominal diameter,  $d_1$ , in millimetres.

EXAMPLE A location bore with a nominal diameter  $d_1 = 40$  mm is designated as follows:

**Location bore ISO 10889-1 - 40**

5 Tool holder with data medium

Dimensions related to the data medium are shown in Figure 5 and given in Tables 3 and 4.

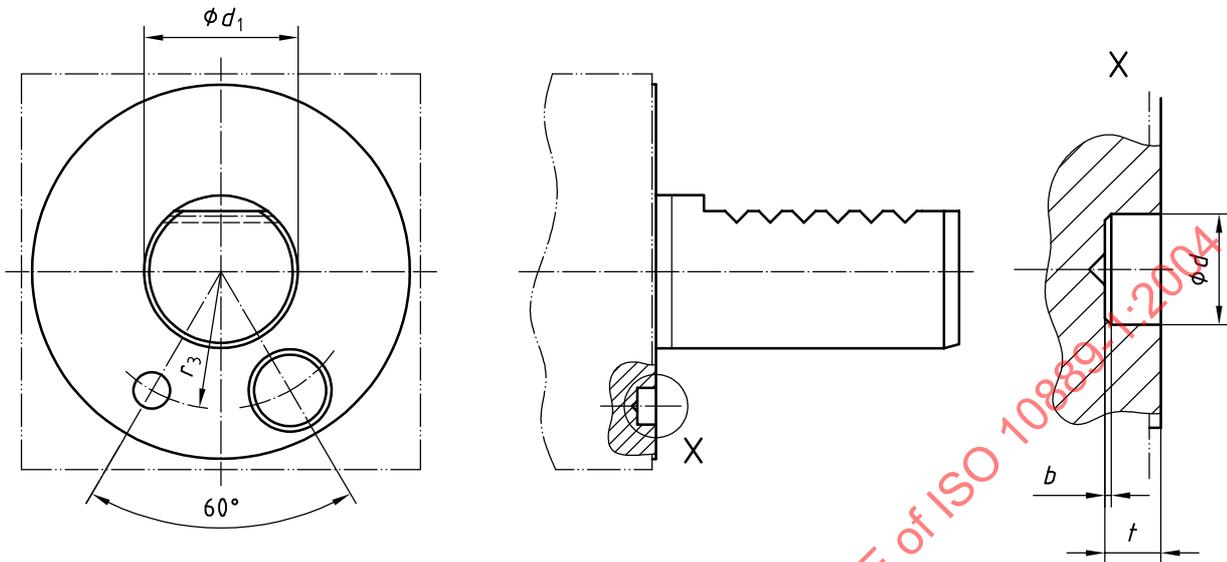


Figure 5 — Fitting position of the data medium

Table 3 — Fitting dimensions of the data medium

Dimensions in millimetres

$b_{\max}$	$0,3 \times 45^\circ$ or R 0,3 <sup>a</sup>
$d$	$10^{+0,09}_0$
$t$	$4,6^{+0,2}_0$
<sup>a</sup>	At the manufacturer's discretion.

Table 4 — Dimensions of the fitting position of the data medium

Dimensions in millimetres

$d_1$	20	25	30	40	50	60	80
$r_3 \pm 0,1$	18	21	25	32	37	48	65

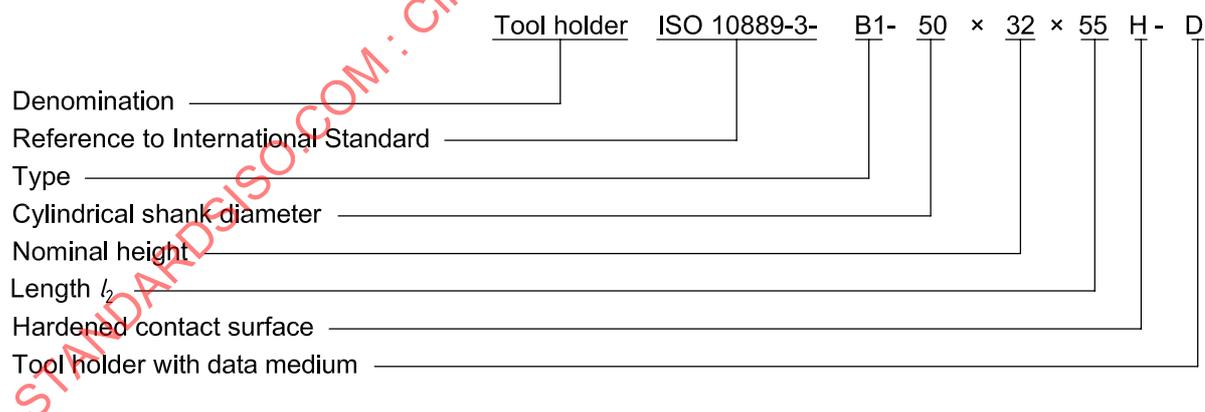
## 6 Technical delivery conditions

### 6.1 Designation

A tool holder for machine tools in accordance with this part of ISO 10889 shall be designated by

- a) "Tool holder",
- b) reference to the corresponding part of ISO 10889 (ISO 10889-2 to ISO 10889-7),
- c) a dash,
- d) its type,
- e) a dash,
- f) the cylindrical shank diameter  $d_1$ , in millimetres;
- g) a multiplication sign, ×,
- h) nominal height  $h_1$ , in millimetres, or characteristic dimensions for the location bore of the tool holder,
- i) a multiplication sign, ×,
- j) for type B tool holders, dimension  $l_2$ , in millimetres,
- k) for tool holders with hardened contact surface, the letter H,
- l) for tool holders with data medium, a dash and the letter D.

EXAMPLE



### 6.2 Material

The material of the cylindrical shank and tool holder is at the discretion of the manufacturer. The tensile strength of the material shall be at least 900 N/mm<sup>2</sup>.

The material of the O-rings shall be FPM in accordance with ISO 1629.