INTERNATIONAL STANDARD

ISO 10889-1

First edition
1997-12-15

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

Reference number
ISO 10889-1:1997(E)

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.

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.

International Standard ISO 10889-1 was prepared by Technical Commitee ISO/TC 29, *Small tools*.

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*

International Organization for Standardization
Case postale 56 • CH-1211 Genève 20 • Switzerland
Internet central@iso.ch
X.400 c=ch; a=400net; p=iso; o=isocs; s=central

Printed in Switzerland

Tool holders with cylindrical shank —

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

1 Scope

ISO 10889 applies 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 standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 10889. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 10889 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 1629:1995, *Rubber and latices — Nomenclature.*

ISO 2768-1:1989, *General tolerances — Part 1: Tolerances for linear and angular dimensions without individual tolerance indications.*

3 Cylindrical shank

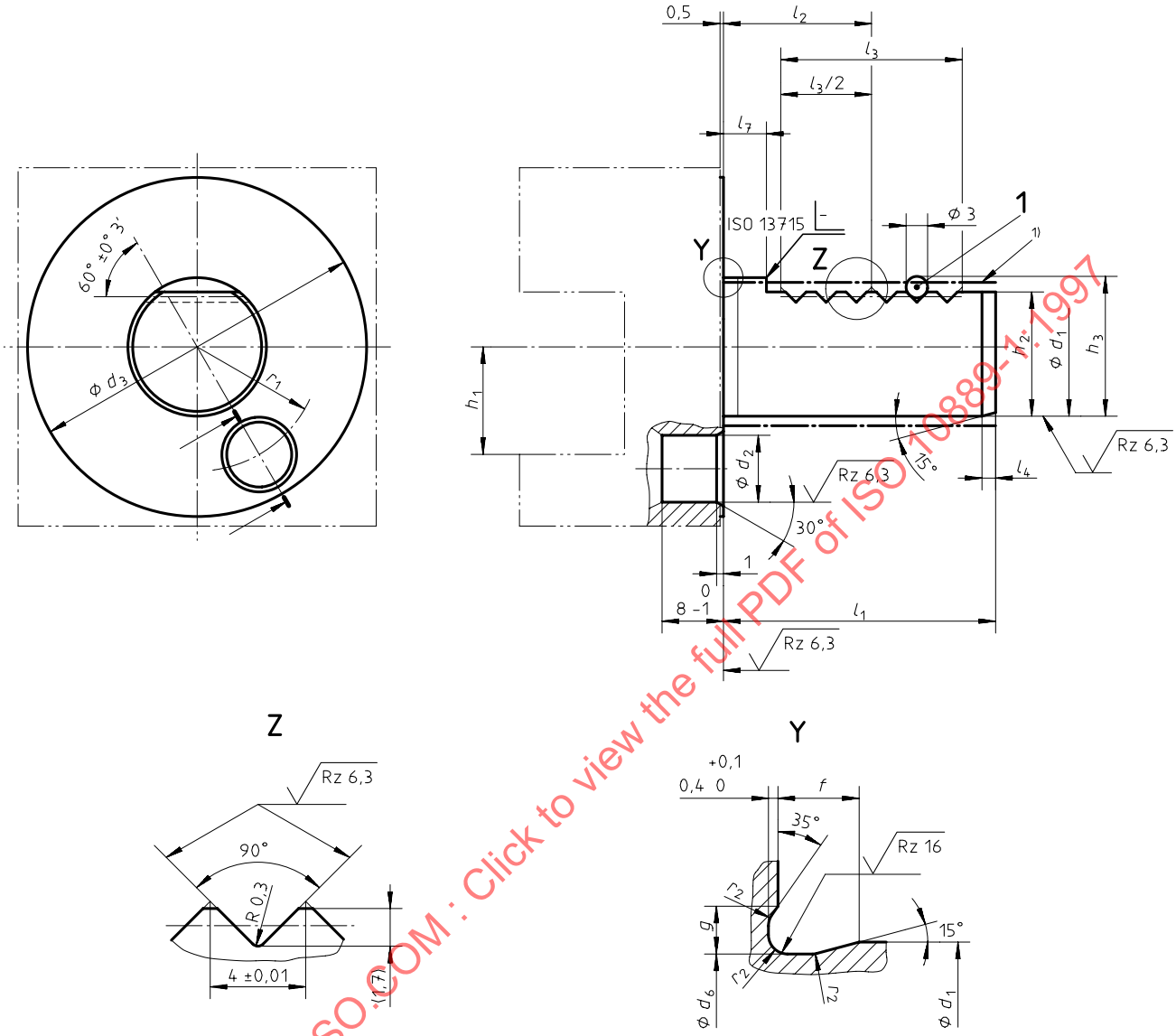
3.1 Dimensions

The dimensions of 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 2768-1 - m

Dimensions in millimetres,
surface roughness in micrometres



Key

1 Measuring roll, tolerance ± 0,01 mm

1) See 6.3.2.

Figure 1 — Cylindrical shank of tool holder

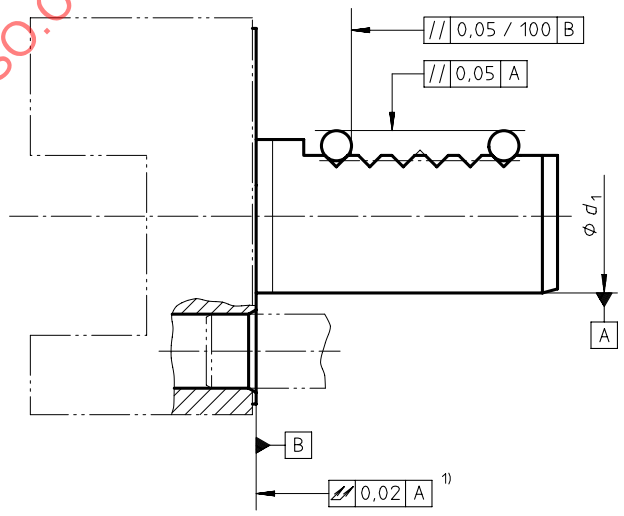
Table 1 — Dimensions of cylindrical shank

Dimensions in millimetres

d_1 h6	l_1 ± 0,3	d_2 nom.	d_2 tol.	d_3	d_6 0 / – 0,1	f	g	h_1 max.	h_2 ± 0,1	h_3 ± 0,1	l_2 ± 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 h6	l_3 min.	l_4 +1 / 0	l_7	r_1 ± 0,02	r_2	**O-ring**
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



1) 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

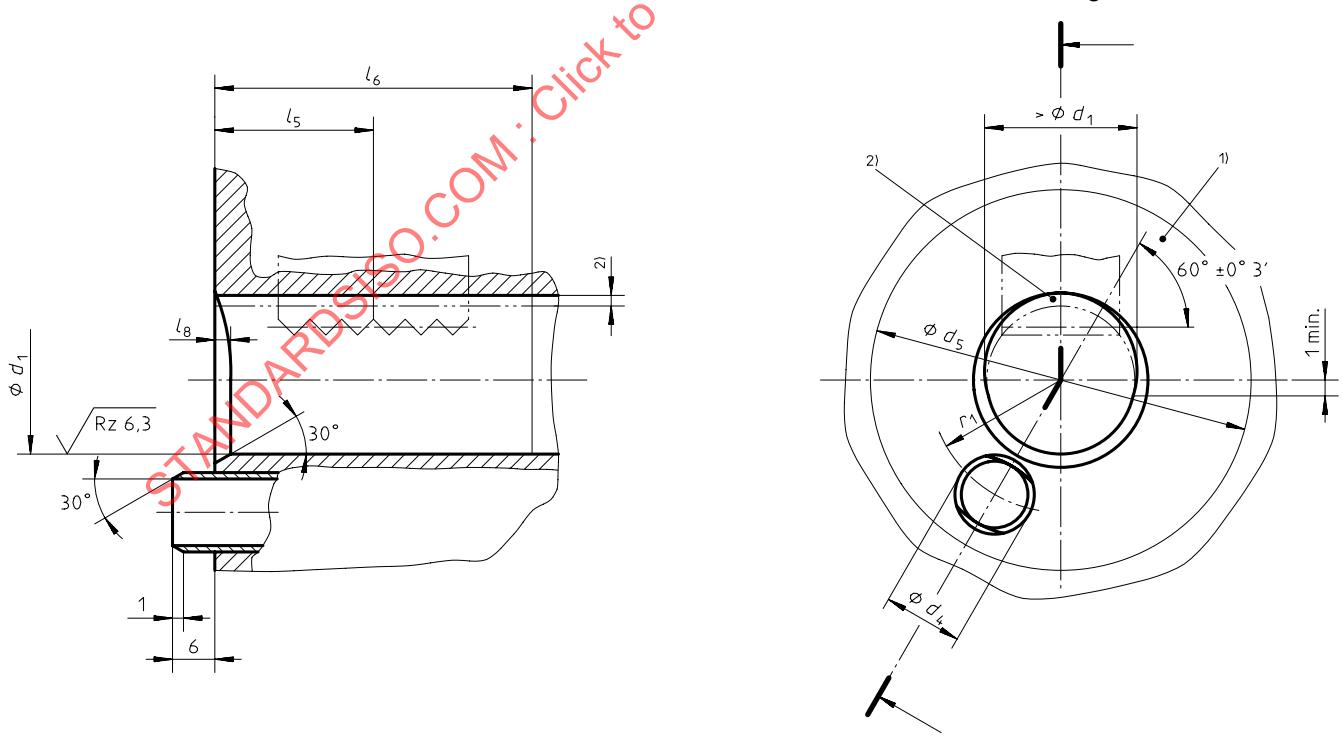
4.1 Dimensions

The dimensions of 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 2768-1 - m

Dimensions in millimetres,
surface roughness in micrometres



1) Contact surface
2) Clearance

Figure 3 — Location bore

Table 2 — Dimensions of the location bore

Dimensions in millimetres

d_1 H6	d_4 nom.	d_4 tol.	d_5 min.	l_5 ± 0,05	l_6	l_8	r_1 ± 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	± 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	50	124	6	65

Dimensions in millimetres

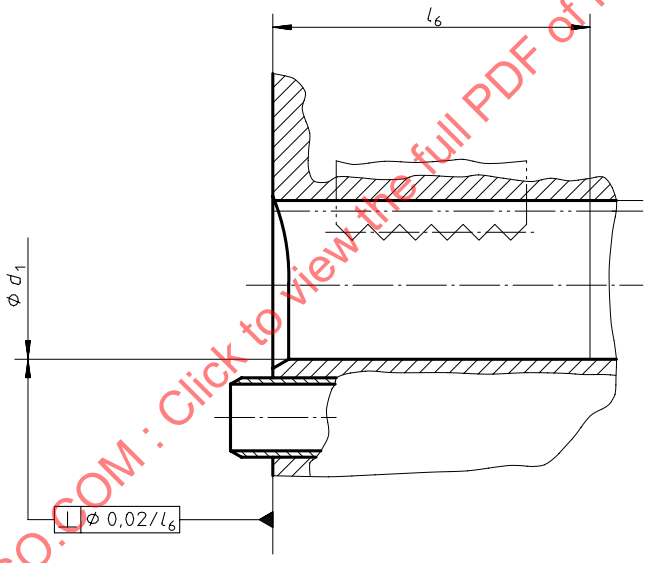


Figure 4 — Location bore — Geometrical tolerances

4.2 Designation

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

a) "Location bore";
b) reference to this part of ISO 10889, i.e. ISO 10889-1;
c) nominal diameter.

EXAMPLE

A location bore with 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 data medium are shown in figure 5 and given in tables 3 and 4.

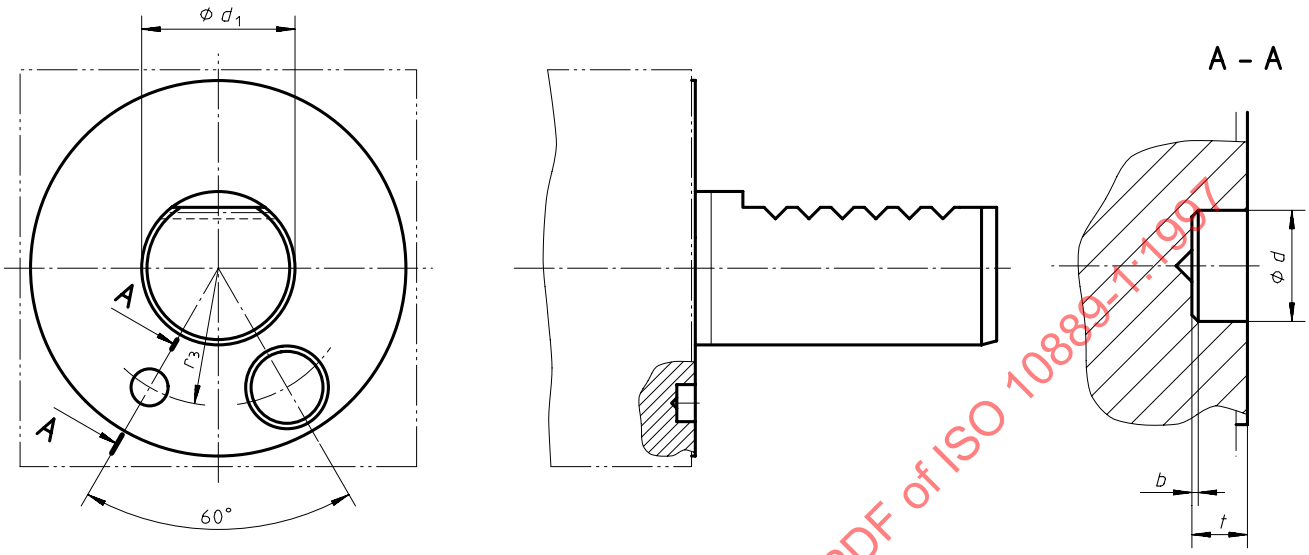


Figure 5 — Fitting position of the data medium

Table 3 — Fitting dimensions of the data medium

Dimensions in millimetres

b_{max}	0,3 × 45° or R 0,3 [1)]
d	$10^{+0,09}_{0}$
t	$4,6^{+0,2}_{0}$
1) 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	± 0,1	18	21	25	32	37	48	65

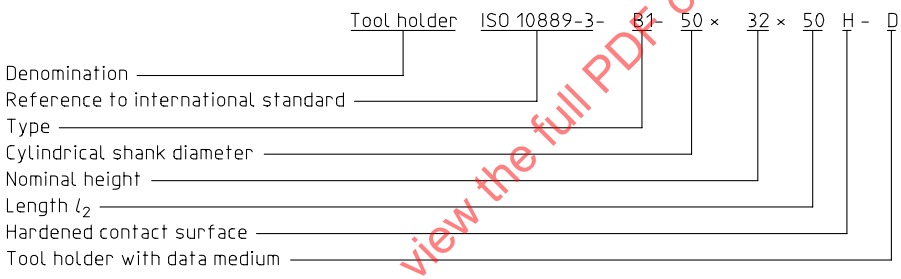
6 Technical delivery conditions

6.1 Designation

A tool holder for machine tools in accordance with this 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) dash;
d) type;
e) dash;
f) cylindrical shank diameter d_1, in millimetres;
g) multiplication sign, x;
h) nominal height h_1, in millimetres, or characteristic dimensions for the location bore of the tool holder;
i) multiplication sign, x;
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

Material of 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^2.

Material of O-rings: FPM in accordance with ISO 1629.

6.3 Design

6.3.1 Normal design

Normal design are tool holders without data medium and without hardened contact surface.

6.3.2 Surface

The surface hardness of hardened cylindrical shank , is (56 $^{+4}_{0}$) HRC, and the depth of hardening is at least 0,5 mm.

6.4 Scope of delivery

The scope of delivery of tool holders does not include O-rings. In case O-rings are included in the scope of delivery, it shall be mentioned in the designation (O for O-rings).