INTERNATIONAL STANDARD

ISO 10889-1

Second edition
2004-11-15

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 10889-1:2004(E)

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Foreword

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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*

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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.

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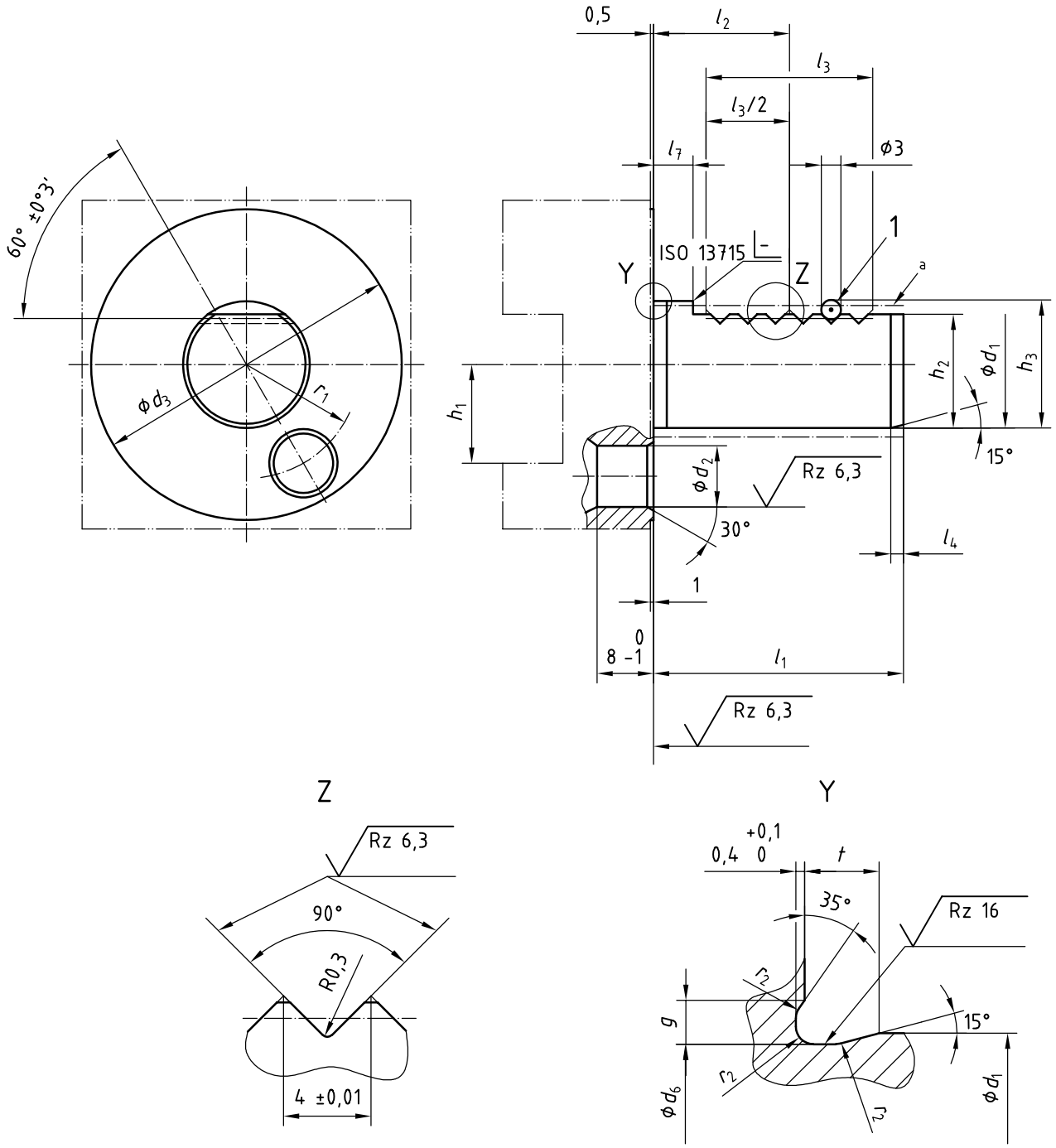
Dimensions in millimetres,
surface roughness in micrometres



Key

1 measuring roll, tolerance ± 0,01 mm

a See 6.3.2.

Figure 1 — Cylindrical shank of tool holder

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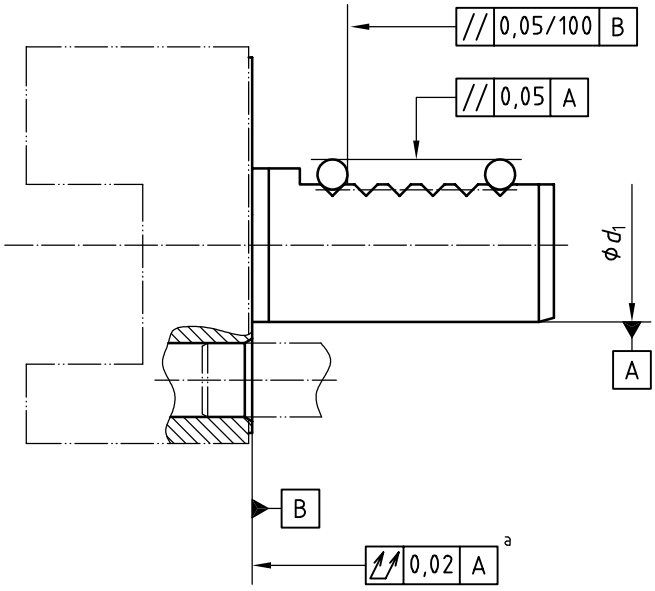
Table 1 — Dimensions of cylindrical shank

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



a Non-convex.

Figure 2 — Cylindrical shank — Geometrical tolerances

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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

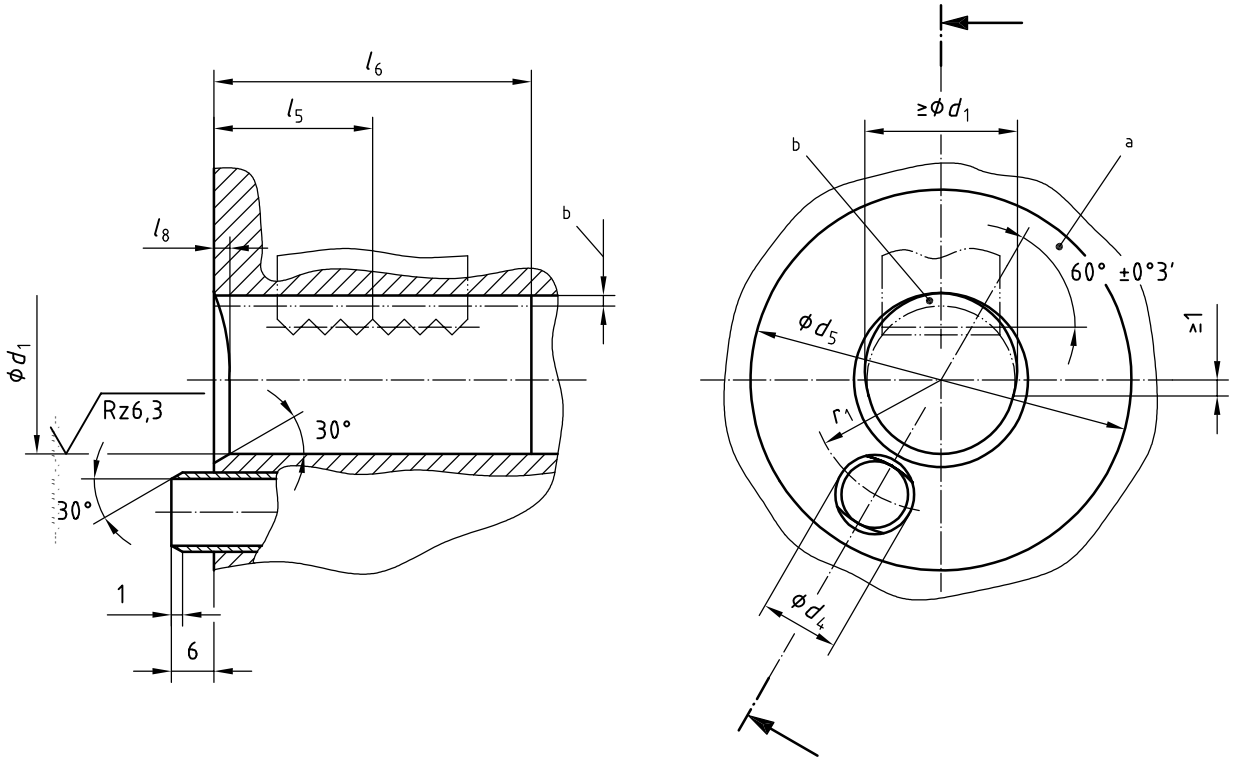
4.1 Dimensions

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.

Dimensions in millimetres,
surface roughness in micrometres



a Contact surface.

b Clearance.

Figure 3 — Location bore

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Table 2 — Dimensions of the location bore

Dimensions in millimetres

d_1	d_4		d_5	l_5	l_6	l_8	r_1
H6	nom.	tol.	min.	± 0,05			± 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	60	124	6	65

Dimensions in millimetres

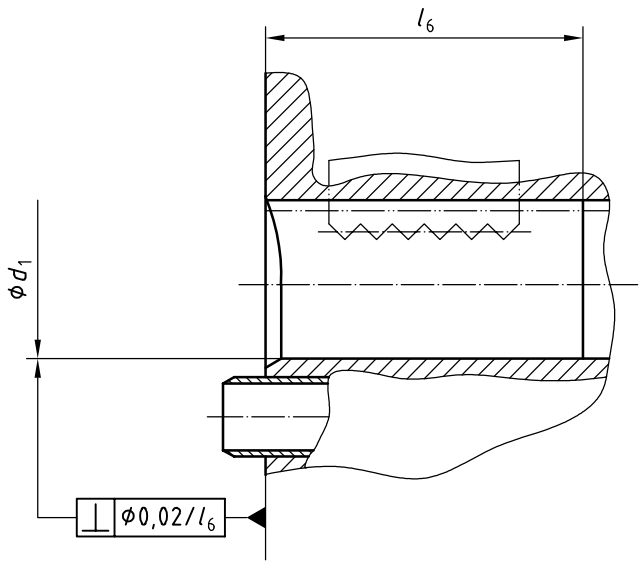

Figure 4 — Location bore — Geometrical tolerances

4.2 Designation

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

a) “Location bore”,

b) reference to this part of ISO 10889, i.e. ISO 10889-1,

c) 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

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5 Tool holder with data medium

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

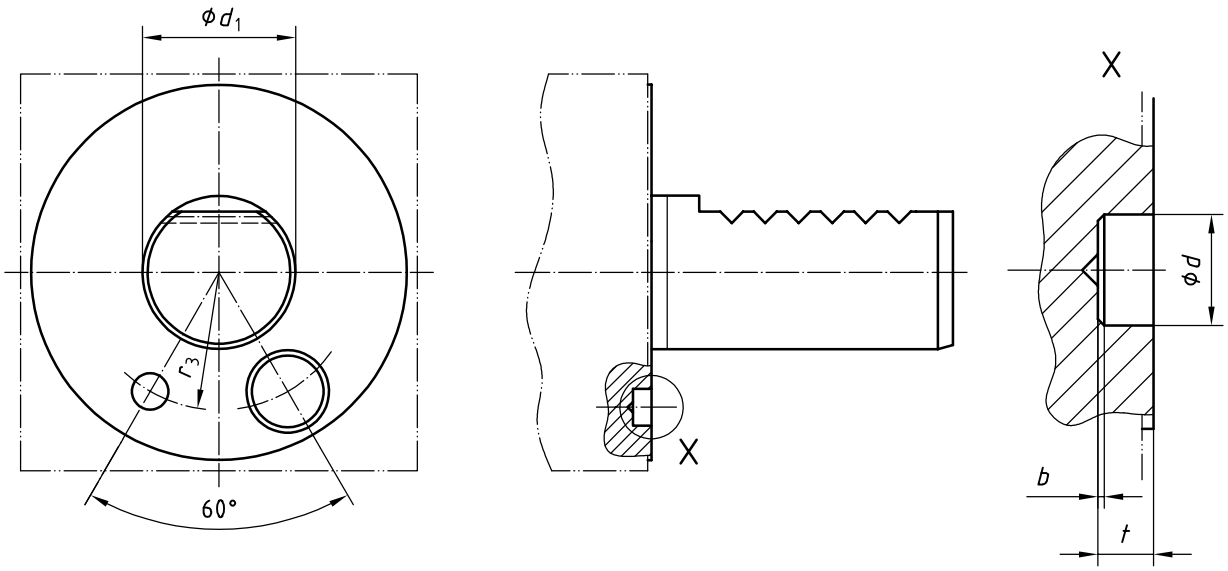

Figure 5 — Fitting position of the data medium

Table 3 — Fitting dimensions of the data medium

Dimensions in millimetres

b_{max}	0,3 × 45° or R 0,3[a]
d	$10^{+0,09}_{0}$
t	$4,6^{+0,2}_{0}$
[a] 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

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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,

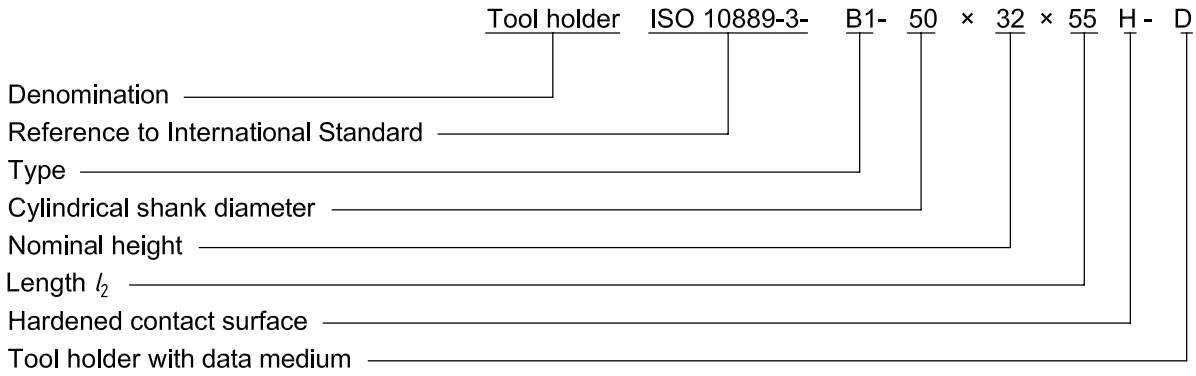
i) a multiplication sign, ×,

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^2.

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

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6.3 Design

6.3.1 Normal design

Of normal design are those tool holders without data medium and without a hardened contact surface.

6.3.2 Surface

The surface hardness of the 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 generally include O-rings. However, where O-rings are included in the scope of delivery, it shall be mentioned in the designation (O for O-rings).

EXAMPLE A tool holder with cylindrical seat type E1 (ISO 10889-6) with nominal diameter d_1 = 40 mm, location bore diameter d_2 = 25 mm and O-ring is designated as follows:

Tool holder ISO 10889-6 - E1 - 40 × 25 - O

6.5 Marking

Tool holders with cylindrical shank in accordance with the International Standard series ISO 10889 shall be marked indelibly with:

a) the reference to the corresponding part of ISO 10889;

b) the characteristic dimensions in accordance with the standard designation examples;

c) the manufacturer's name or trademark.

Additional marking is at the discretion of the manufacturer or shall be subject to agreement.

The type of marking is at the discretion of the manufacturer; it shall not impede the clamping and functioning of the tool.

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