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**Collets for tool holders with taper  
ratio 1:10 — Collets, holders, nuts**

*Pinces de serrage pour mandrins à conicité 1:10 — Pinces, mandrins  
à pince, écrous de serrage*

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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 documents 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](http://www.iso.org/directives)).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT), see the following URL: [Foreword — Supplementary information](#).

The committee responsible for this document is ISO/TC 29, *Small tools*, Subcommittee SC 2, *Holding tools, adaptive items and interfaces*.

This second edition cancels and replaces the first edition (ISO 10897:1996), of which it constitutes a minor revision with the addition of [Annex B](#), showing the relationship between the symbols in this International Standard and the symbols in the ISO 13399 series.

# Collets for tool holders with taper ratio 1:10 — Collets, holders, nuts

## 1 Scope

This International Standard specifies the dimensions, materials and manufacturing requirements, and designation of collets for tools with cylindrical shanks and their corresponding holders and nuts. For non-standardized clamping devices, such as clamping devices specified in drawings, these holders can be agreed upon between customer and supplier.

Form A applies where a clamping range of H10 is sufficient.

Form B can be used for any application without lateral cutting load.

[Annex A](#) specifies the values for AT3 tolerance and AT4 tolerance.

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

ISO 10897:2016

<https://standards.iteh.ai/catalog/standards/sist/cc768c3d-0254-4ea8-9036-a08d309d5bb3/iso-10897-2016>

## 3 Dimensions

### 3.1 General

All dimensions and tolerances are given in millimetres. Tolerances not specified shall be of tolerance class “m” in accordance with ISO 2768-1.

### 3.2 Collet

The dimensions of the collet shall be in accordance with the dimensions shown in [Figure 1](#) and [Figure 2](#) and given in [Table 1](#).

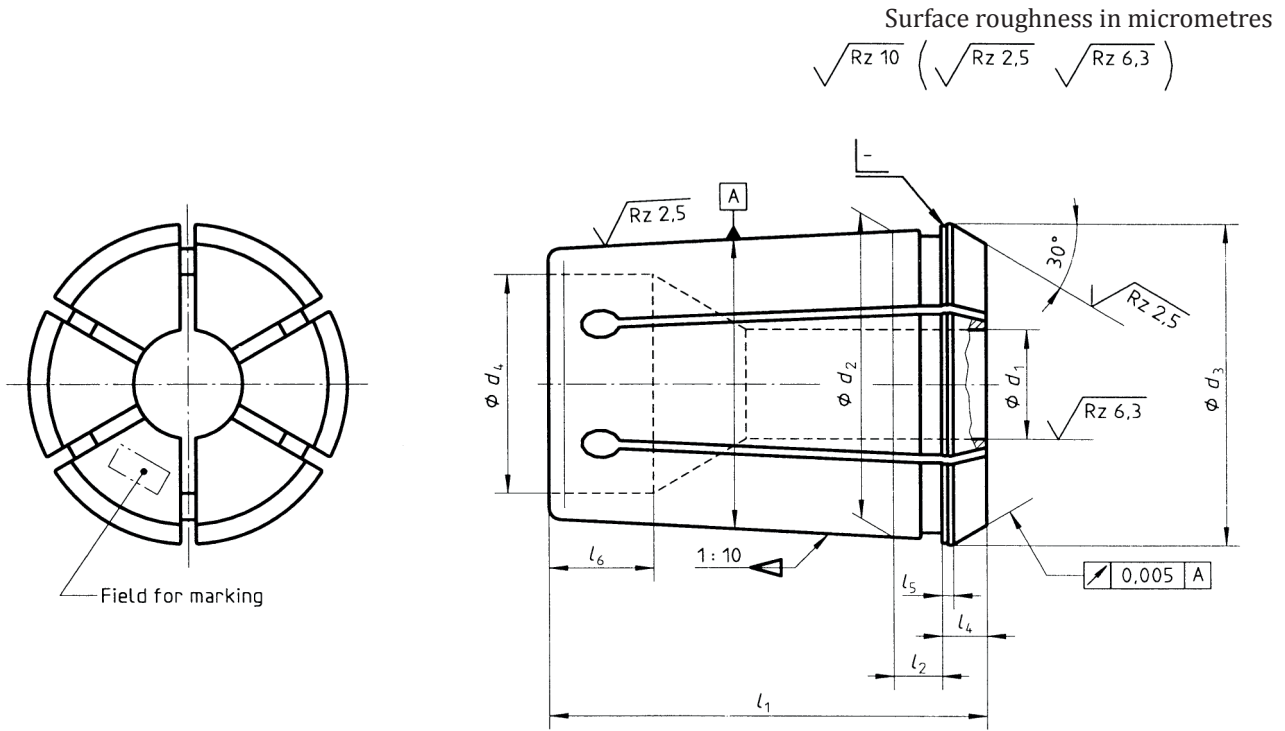


Figure 1 — Collet form A, unilaterally slotted, with short clamping bore for cylindrical shanks  
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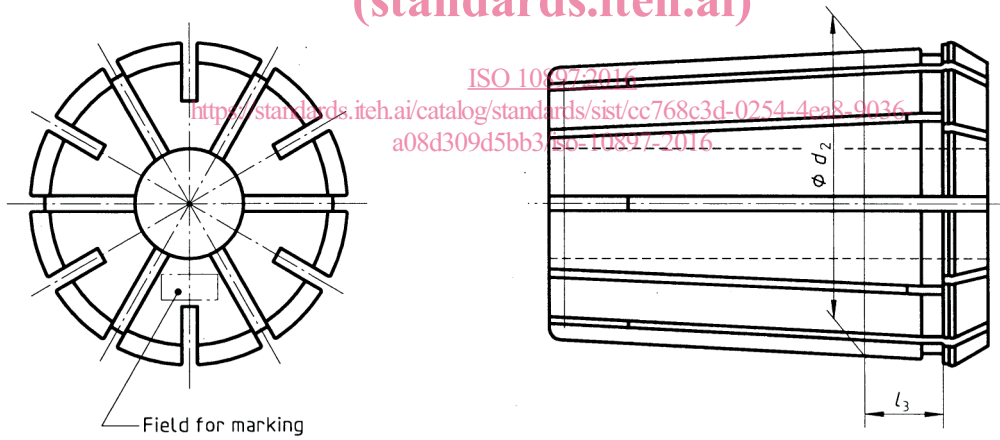


Figure 2 — Collet form B, bilaterally slotted, with continuous clamping bore for cylindrical shanks

Table 1 — Collet dimensions

Nominal size	$d_1$ H7				$d_2$	$d_3$ 0 -0,5	$d_4$ +0,1 0	$l_1$	$l_2$	$l_3$	$l_4$	$l_5$	$l_6$ $\pm 0,2$
	Form A <sup>a</sup>		Form B <sup>b</sup>										
	from (incl.)	up to (incl.)	from (incl.)	up to (incl.)									
6	1	6	—	—	10,0	11,5	7	21	4	—	3,5	0,5	6
8	1	8	—	—	12,65	14,5	8,8	26	4,5	—	4	0,8	7
10	1	10	—	—	15,15	17,2	10,2	30	4,5	—	4,5	0,8	6,5
12	1	12	—	—	17,75	19,8	12,3	34	4,5	—	5	1,1	8
16	2	16	5	16	22,65	25,5	16,1	40	5,5	9,5	5,5	1,2	10
20	2	20	6	20	27,4	29,8	20,3	45	6	10	6	1,35	10
25	2	25	6	25	32,9	35,05	25,1	52	6	10	6	1,4	11
32	4	32	10	32	41,3	43,7	32,1	60	7	11	6	1,45	12
40	6	29,5	30	40	49,7	52,2	39,5	68	8	12	6	1,45	13,5
50	8	29,5	30	50	61,1	63,8	49,5	80	9	13	7	1,55	17

a For clamping range H10.  
 b For clamping range  $\begin{matrix} 0 \\ -0,5 \end{matrix}$ .

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3.3 Holder

The dimensions of the holder shall be in accordance with the dimensions shown in Figure 3 and given in Table 2.

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Surface roughness in micrometres

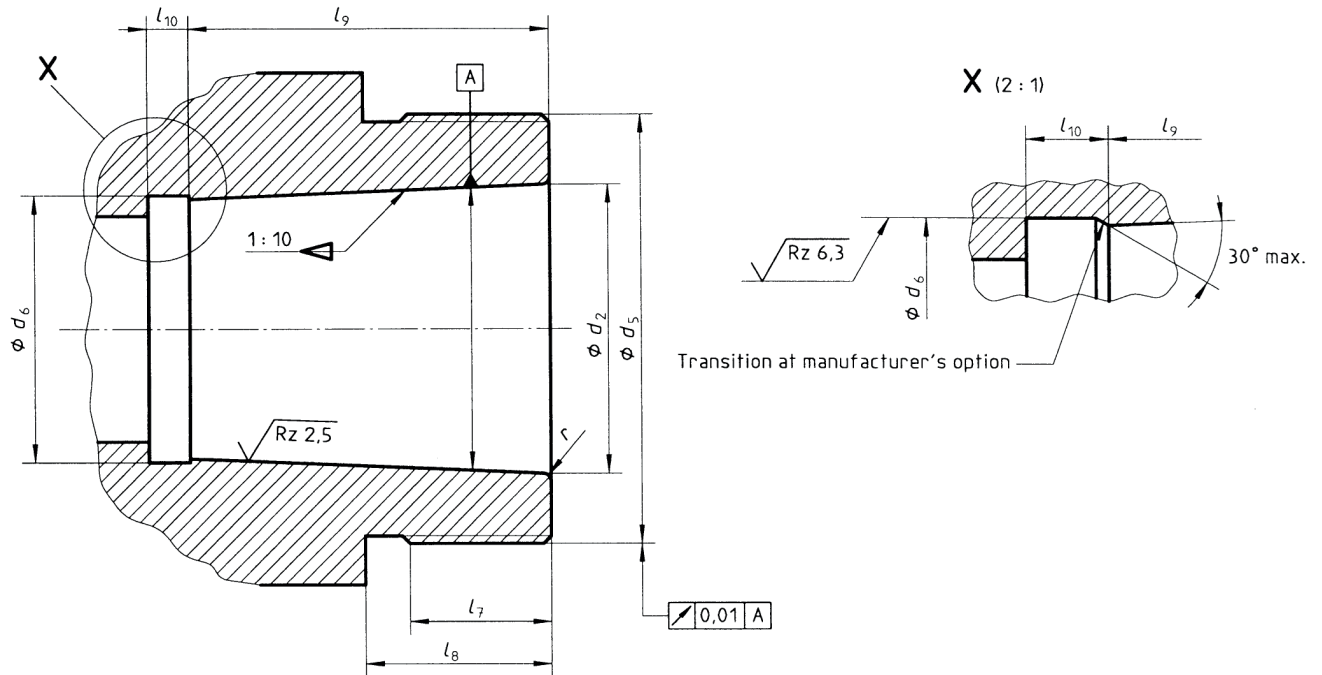


Figure 3 — Holder form C

Table 2 — Holder dimensions

Nominal size		6	8	10	12	16	20	25	32	40	50
$d_2$	H7	10	12,65	15,15	17,75	22,65	27,4	32,9	41,3	49,7	61,1
$d_5$	6g	M14×1	M20×1,5	M22×1,5	M27×1,5	M33×1,5	M42×2	M48×2	M60×2,5	M68×2,5	M80×2,5
$d_6$	$\begin{matrix} +0,5 \\ 0 \end{matrix}$	8,5	10,8	12,9	15,1	19,6	23,9	28,7	36,4	44,1	54,5
$l_7$		8	10	10	11	15	16	18	21	24	27
$l_8$		11	15	15	16	18	22	24	27	30	33
$l_9$		16	20	24	28	32	36	43	51	59	69
$l_{10}$	min.	3	3	4	4	5	5	5	6	6	6
$r$		0,5	0,5	0,6	0,6	1	1	1	1,6	1,6	1,6

### 3.4 Nut

The dimensions of the nut shall be in accordance with the dimensions shown in [Figure 4](#) and given in [Table 3](#).

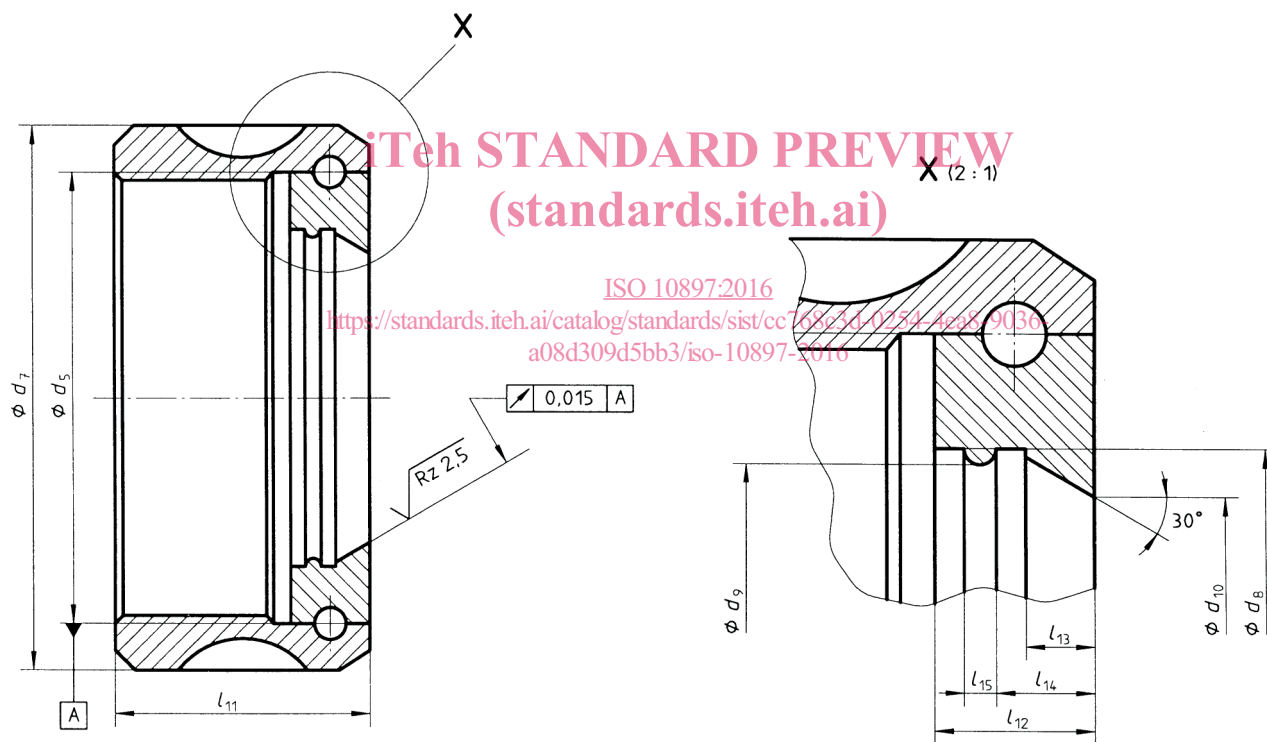


Figure 4 — Nut form D



Table 3 — Nut dimensions

Nominal size		6	8	10	12	16	20	25	32	40	50
$d_5$	H6	M14×1	M20×1,5	M22×1,5	M27×1,5	M33×1,5	M42×2	M48×2	M60×2,5	M68×2,5	M80×2,5
$d_7$		18	26	30	35	43	50	60	72	85	100
$d_8$	$\begin{matrix} +0,1 \\ 0 \end{matrix}$	11,6	15,1	18	20,3	25,8	30,2	35,6	44,3	53,1	64,7
$d_9$	$\begin{matrix} +0,1 \\ 0 \end{matrix}$	10,9	13,85	16,4	19,0	24,6	28,7	33,8	42,5	51,0	62,6
$d_{10}$		7,7	10,7	12,8	15,2	20,2	24,1	29,7	38,5	46,6	57
$l_{11}$		14	19	19	20	24	28	30	33,5	37	43
$l_{12}$		5,2	5,75	6,05	6,75	9	10	10,5	10,5	11	13
$l_{13}$		2,5	2,5	2,8	3	4	4,5	4,5	4,5	4,5	5
$l_{14}$	$\begin{matrix} +0,1 \\ 0 \end{matrix}$	4	4,25	4,55	5,25	5,65	6,35	6,3	6,3	7	8,25
$l_{15}$	$\begin{matrix} +0,05 \\ 0 \end{matrix}$	1,2	1,5	1,5	1,5	1,5	1,5	2	2	2	2,5

### 3.5 Collet run-out tolerances

Table 4 specifies collet run-out tolerances. These tolerances shall be checked as shown in Figure 5 by the introduction of a test mandrel into the collet.

The diameter of the test mandrel is the nominal diameter of the collet. For the test mandrel, the following specifications apply:

- diameter tolerance: H6; <https://standards.iteh.ai/catalog/standards/sist/cc768c3d-0254-4ea8-9036-a08d309d5bb3/iso-10897-2016>
- cylindricity: 0,002 mm;
- parallelism: 0,002 mm;
- roundness: 0,002 mm;
- surface without longitudinal marks;
- maximum surface roughness  $R_z = 4 \mu\text{m}$ ;
- surface hardness:  $(58 \begin{matrix} +3 \\ 0 \end{matrix})$  HRC.