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**Machine tools — Connecting dimensions  
of spindle noses and work holding  
chucks —**

**Part 2:  
Camlock type**

**iTeh STANDARD PREVIEW**  
*Machines-outils — Dimensions d'assemblage des nez de broches et  
des mandrins porte-pièces —*  
**(standards.iteh.ai)**  
*Partie 2: Type Camlock*

ISO 702-2:2007

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Published in Switzerland

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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 702-2 was prepared by Technical Committee ISO/TC 39, *Machine tools*, Subcommittee SC 8, *Work holding spindles and chucks*.

This second edition cancels and replaces the first edition (ISO 702-2:1975), of which all the clauses, tables and figures have been technically revised. (standards.iteh.ai)

ISO 702 consists of the following parts, under the general title *Machine tools — Connecting dimensions of spindle noses and work holding chucks*:

- Part 1: *Conical connection*
- Part 2: *Camlock type*
- Part 3: *Bayonet type*
- Part 4: *Cylindrical connection*

# Machine tools — Connecting dimensions of spindle noses and work holding chucks —

## Part 2: Camlock type

### 1 Scope

This part of ISO 702 specifies the sizes for interchangeability of cylindrical spindle noses and corresponding connecting faces of face plates or work holding chucks.

NOTE The “conical connection”, “bayonet type” and “cylindrical connection” are dealt with in ISO 702-1, ISO 702-3 and ISO 702-4, respectively.

### 2 Interchangeability

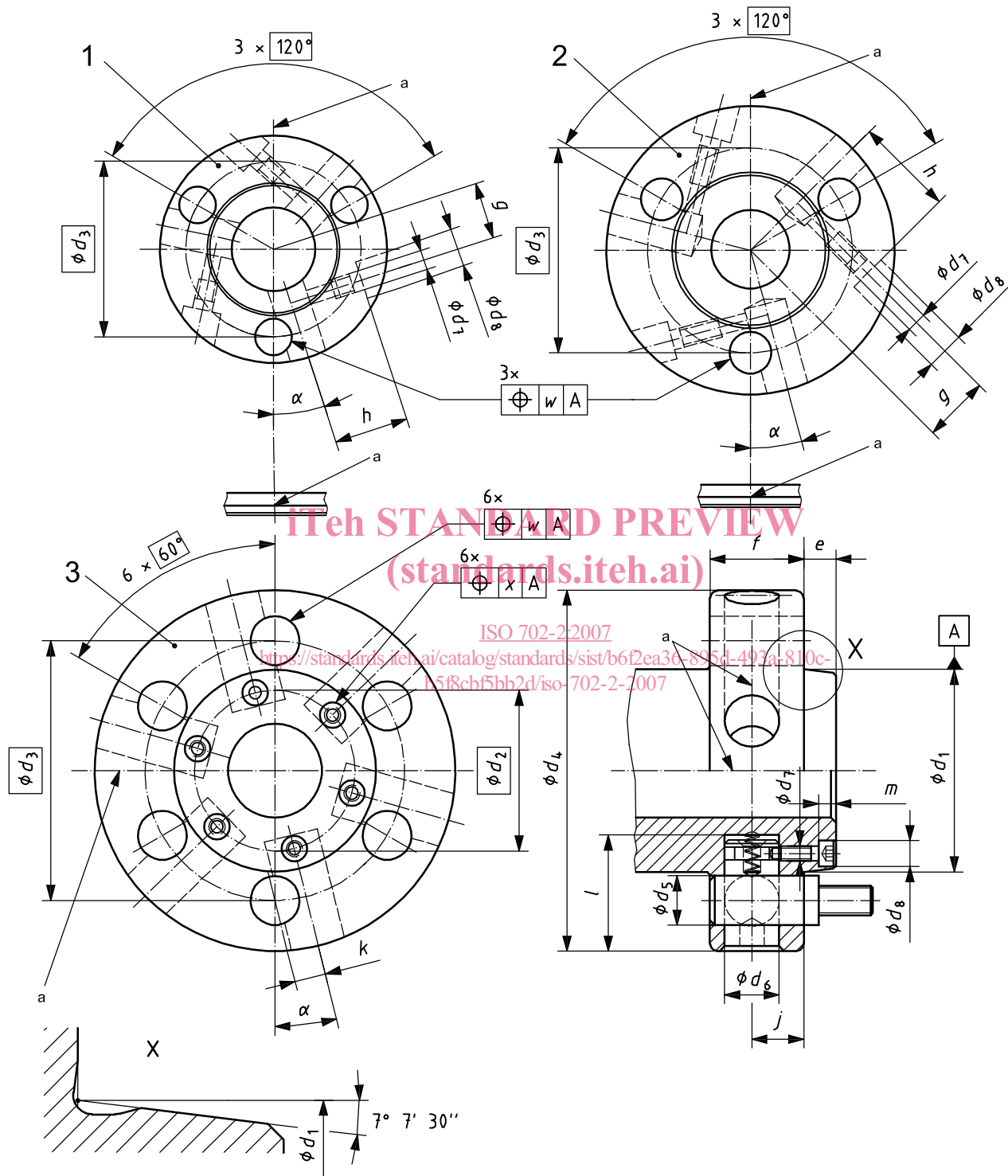
In this part of ISO 702, all the dimensions and tolerances are expressed in millimetres.

Although internal mounting components and assembly screws are not respectively interchangeable, as they may conform with either the metric or inch series, there is complete interchangeability between metric spindle noses and face plates in inches and vice versa.

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### 3 Sizes for interchangeability

#### 3.1 Spindle noses



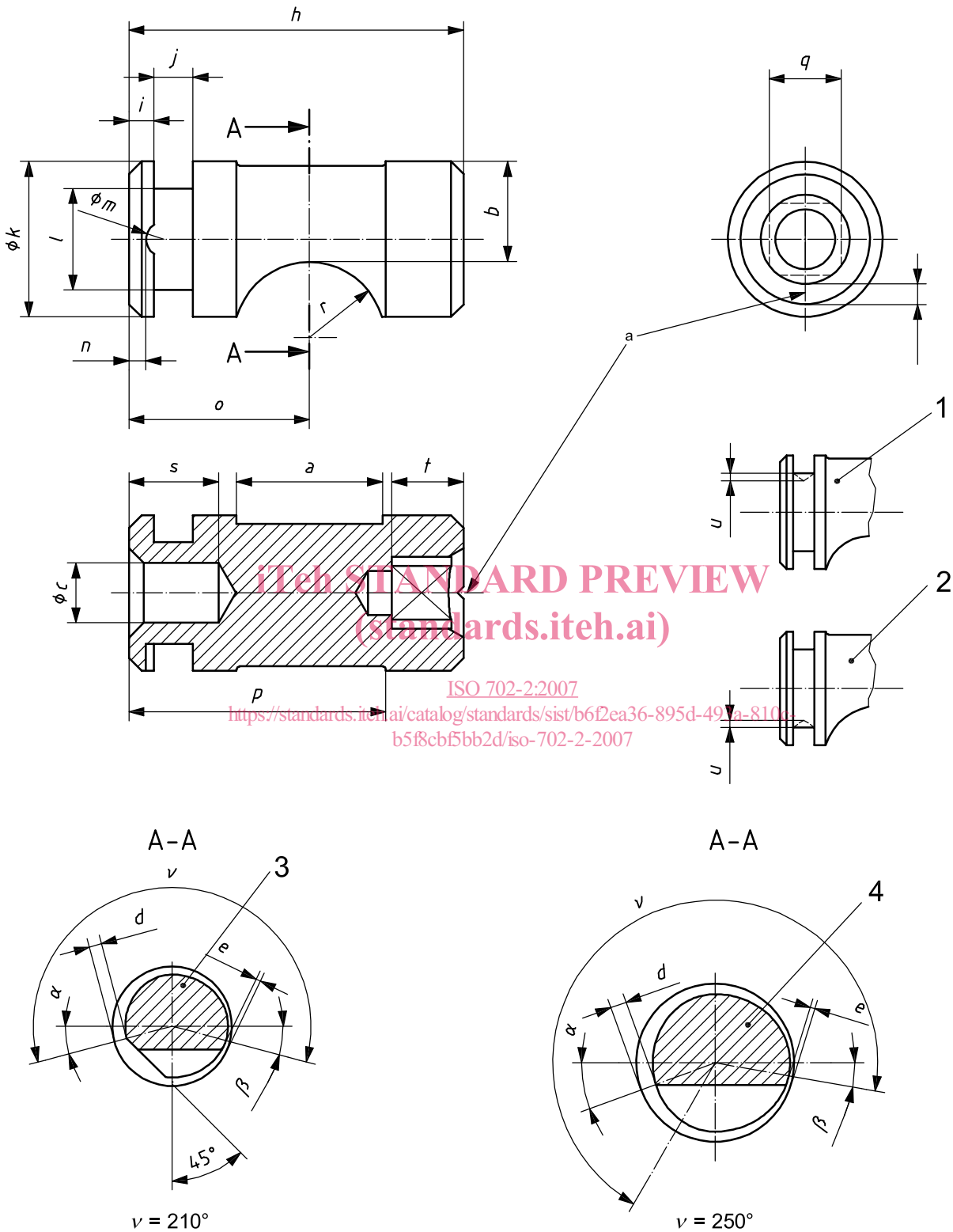
- Key**
- 1 size No. 3
  - 2 size No. 4
  - 3 size Nos. 5 to 20
  - a Reference line.

Figure 1 — Spindle noses

Table 1 — Dimensions of spindle noses

Dimension	Size No.								
	3	4	5	6	8	11	15	20	
$d_1$	nom.	53,975	63,513	82,563	106,375	139,719	196,869	285,775	412,775
	tol.	+0,008 0	+0,008 0	+0,010 0	+0,010 0	+0,012 0	+0,014 0	+0,01 0	+0,020 0
$d_2$				65	82	114	172	258	380
$d_3$		70,6	82,6	104,8	133,4	171,4	235,0	330,2	463,6
$d_4$		92	117	146	181	225	298	403	546
$d_5$	+0,05 0	15,1	16,7	19,8	23,0	26,2	31,0	35,7	42,1
$d_6$	H8	19	19	22	26	29	32	35	42
$d_7$		M8	M8	M6	M8	M8	M8	M10	M10
$d_8$		15,5	15,5	10,5	13,5	13,5	13,5	16,5	16,5
$e$		11	11	13	14	16	18	19	21
$f$	min.	32	34	38	45	50	60	70	82
$g$	$\pm 0,05$	22,6	27,0						
$h$	$\pm 0,2$	30	40						
$j$		17,5	17,5	20,6	23,8	27,0	31,8	36,5	42,9
$k$	$\pm 0,1$	11,1	11,1	13,5	15,9	18,25	21,45	24,6	28,6
$l$	+0,2 0	27,5	36	46	57	64	75	84	94
$m$				7	9	9	11	11	
$w$		0,1	0,15	0,15	0,15	0,15	0,15	0,15	0,15
$x$		0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2
$\alpha$		18° 18,6'	15° 36'	14° 55'	13° 46'	12° 18'	10° 30'	8° 35'	7° 05'
NOTE	General tolerance for untoleranced dimensions: $\pm 0,4$ mm.								

3.2 Cams



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Key

- 1 size No. 3
- 2 size No. 4
- a Reference line.

Figure 2 — Cams



Table 2 — Dimensions of cams

Dimension	Size No.							
	3	4	5	6	8	11	15	20
<i>a</i> min.	13	17	22	25	28	32	37	43
<i>b</i> $\begin{matrix} 0 \\ -0,2 \end{matrix}$	13,4	11,9	14,2	16,7	18,9	21,2	23,5	27,8
<i>c</i>			7	10	10	10	10	10
<i>d</i> $\begin{matrix} +0,3 \\ 0 \end{matrix}$	1,65	1,60	1,45	2,56	2,46	2,44	2,35	3,10
<i>e</i> $\begin{matrix} +0,1 \\ 0 \end{matrix}$	0,15	0,15	0	0,45	0,36	0,28	0,20	0,50
<i>h</i> $\begin{matrix} 0 \\ -0,1 \end{matrix}$	26,5	35	45	56	63	73	82	92
<i>i</i> $\pm 0,1$	2,2	2,2	3,0	4,2	5,3	8,7	6,0	6,0
<i>j</i>	$3,6 \pm 0,05$	$3,6 \pm 0,05$	$5,0 \pm 0,1$	$6,5 \pm 0,1$	$6,5 \pm 0,1$	$6,5 \pm 0,1$	$8,5 \pm 0,1$	$8,5 \pm 0,1$
<i>k</i> e8	19	19	22	26	29	32	35	42
<i>l</i>	$13 \pm 0,2$	$13 \pm 0,2$	14	17	21	24	27	33
<i>m</i> $\pm 0,05$			4,5	6	6	6	8	8
<i>n</i> $\pm 0,1$			2,0	2,85	3,95	7,35	5,2	5,2
<i>o</i> $\pm 0,2$	14,9	16,7	22,4	30,2	33,2	39,5	43,6	48,4
<i>p</i>	21,4	26,5	35,0	43,0	49,0	59,0	62,0	69,0
<i>q</i> D12	8	10	11	12	14	17	17	22
<i>r</i>	7,5	9,5	11,1	12,7	14,2	16,7	19,0	22,2
<i>s</i>			13	15	15	15	15	15
<i>t</i>	8	9	11	12	14	16	16	20
<i>u</i>	1,2	1,2						
Slope on <i>v</i> <sup>a</sup>	1,60	1,90	1,90	2,64	2,64	2,64	2,64	3,18
$\beta$	15°	10°	10°	10°	10°	15°	15°	15°
$\alpha$	15°	15°	15°	20°	20°	20°	20°	20°
NOTE General tolerance for untoleranced dimensions: $\pm 0,4$ mm.								
<sup>a</sup> See tolerance on dimensions <i>d</i> and <i>e</i> .								