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# INTERNATIONAL STANDARD 702/1

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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

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## Machine tools — Spindle noses and face plates — Sizes for interchangeability — Part I : Type A

*Machines-outils — Nez de broches et faux-plateaux — Dimensions d'interchangeabilité —  
Partie I : Type A*

First edition — 1975-08-15

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[ISO 702-1:1975](#)

[https://standards.iteh.ai/catalog/standards/sist/9d83bf8e-b861-4ee9-b691-  
eb22951f1cdb/iso-702-1-1975](https://standards.iteh.ai/catalog/standards/sist/9d83bf8e-b861-4ee9-b691-eb22951f1cdb/iso-702-1-1975)



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UDC 621.941-229.33

Ref. No. ISO 702/1-1975 (E)

**Descriptors** : machine tools, spindle noses, lathes, face plates, dimensions, interchangeability.

Price based on 5 pages

## FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. Every Member Body interested in a subject for which a Technical Committee has been set up 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.

Draft International Standards adopted by the Technical Committees are circulated to the Member Bodies for approval before their acceptance as International Standards by the ISO Council.

Prior to 1972, the results of the work of the Technical Committees were published as ISO Recommendations; these documents are now in the process of being transformed into International Standards. As part of this process, Technical Committee ISO/TC 39 has reviewed ISO Recommendation R 702 and found it technically suitable for transformation. It was decided however, to divide it into two parts. International Standard ISO 702/1 (together with ISO 702/11) therefore replaces ISO Recommendation R 702-1968 to which it is technically identical.

ISO Recommendation R 702 was approved by the Member Bodies of the following countries :

Belgium	India	Spain
Chile	Israel	Sweden
Czechoslovakia	Italy	Switzerland
Denmark	Japan	Turkey
Egypt, Arab Rep. of	Netherlands	United Kingdom
France	Poland	U.S.A.
Germany	Portugal	U.S.S.R.
Hungary	South Africa, Rep. of	

No Member Body expressed disapproval of the Recommendation.

The Member Body of the following country disapproved the transformation of ISO/R 702 into an International Standard :

United Kingdom

# Machine tools — Spindle noses and face plates — Sizes for interchangeability — Part I : Type A

## iTeh STANDARD PREVIEW (standards.iteh.ai)

### 1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies the sizes for interchangeability of type A lathe spindle noses and corresponding face plates.

<https://standards.iteh.ai/catalog/standards/sist/9d83bfae-b861-4ee9-b691-eb22951f1cdh/iso-702-1-1975>

NOTE — The “Camlock” and “bayonet” types are dealt with in parts II and III respectively.

### 2 INTERCHANGEABILITY

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

### 3 SIZES FOR INTERCHANGEABILITY

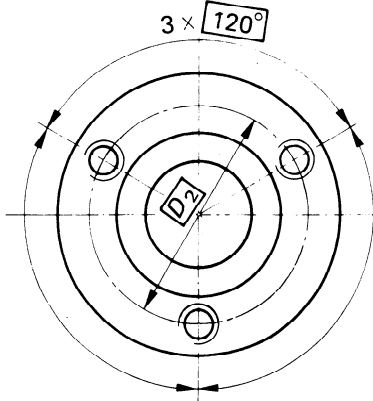
#### 3.1 Spindle noses

**Type A<sub>1</sub>** : Two bolt circles of diameter  $D_1$  and  $D_2$

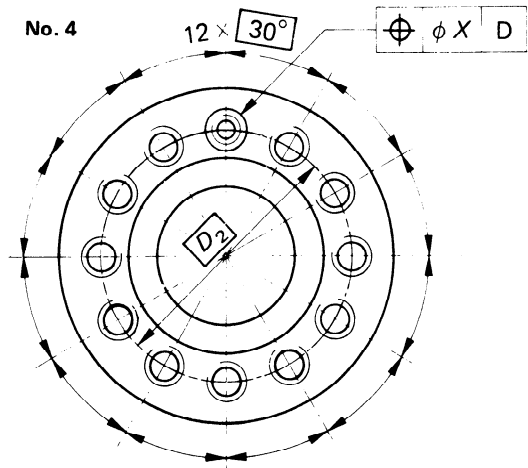
**Type A<sub>2</sub>** : One outer bolt circle of diameter  $D_2$

(Type A<sub>2</sub> for Nos. 3 and 4; types A<sub>1</sub> and A<sub>2</sub> for Nos. 5 to 28)

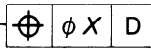
No. 3



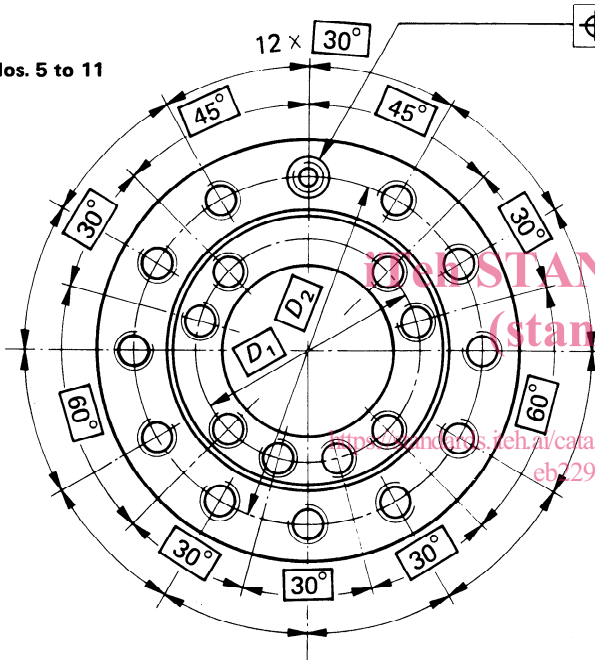
No. 4



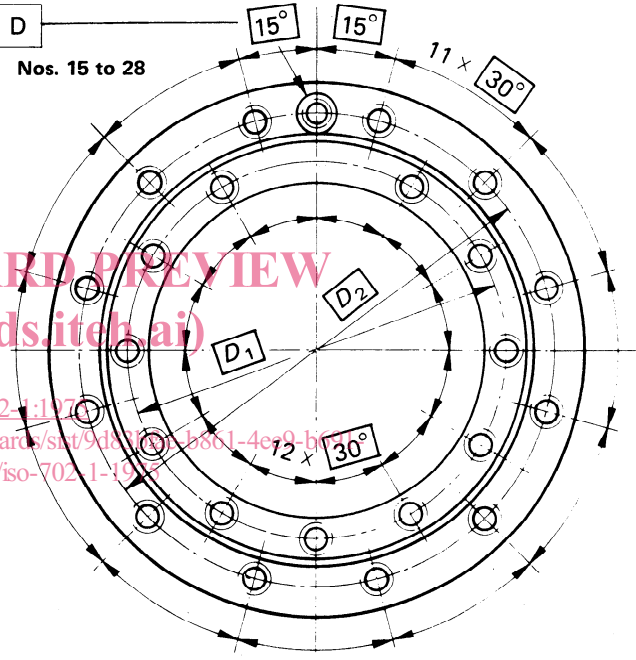
All fixing holes



Nos. 5 to 11



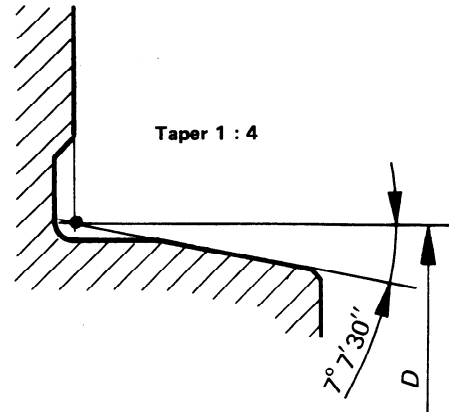
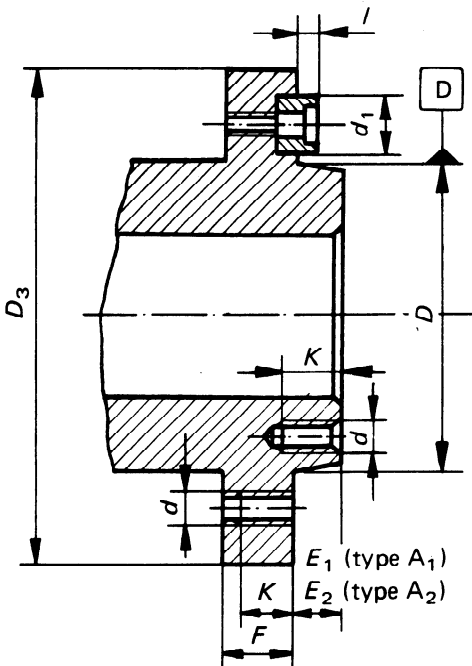
Nos. 15 to 28



STANDARD PREVIEW  
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ISO 702-1:1975

https://standards.itech.ai/catalog/standards/sist/9d833609-b861-4e79-b051-eb2951f1cdb/iso-702-1-1975



3.1.1 Sizes in millimetres

Dimension \ No.	3	4	5	6	8	11	15	20	28
<i>D</i>	53,975	63,513	82,563	106,375	139,719	196,869	285,775	412,775	584,225
tol.	+ 0,008 0	+ 0,008 0	+ 0,010 0	+ 0,010 0	+ 0,012 0	+ 0,014 0	+ 0,016 0	+ 0,020 0	+ 0,023 0
<i>D</i> <sub>1</sub>			61,90	82,6	111,1	165,1	247,6	368,3	530,2
<i>D</i> <sub>2</sub>	70,6	82,6	104,8	133,4	171,4	235	330,2	463,6	647,6
<i>D</i> <sub>3</sub>	92	108	133	165	210	280	380	520	725
<i>d</i>	M 10	M 10	M 10	M 12	M 16	M 18	M 22	M 24	M 30
<i>d</i> <sub>1</sub> H8/h8		14,25	15,9	19,05	23,8	28,6	34,9	41,3	50,8
<i>E</i> <sub>1</sub> <sup>0</sup> - 0,025 (Type A <sub>1</sub> )			14,288	15,875	17,462	19,050	20,638	22,225	25,400
<i>E</i> <sub>2</sub> (Type A <sub>2</sub> )	11	11	13	14	16	18	19	21	24
<i>F</i>	16	20	22	25	28	35	42	48	56
<i>l</i>		5	5	5	6	8	8	8	8
<i>K</i>	14	17	19	22	25	32	37	42	50
<i>W</i> and <i>X</i>	0,2	0,2	0,2	0,2	0,2	0,2	0,3	0,3	0,3

NOTE – General tolerance for untoleranced dimensions : ± 0,4 mm.

ISO 702-1:1975

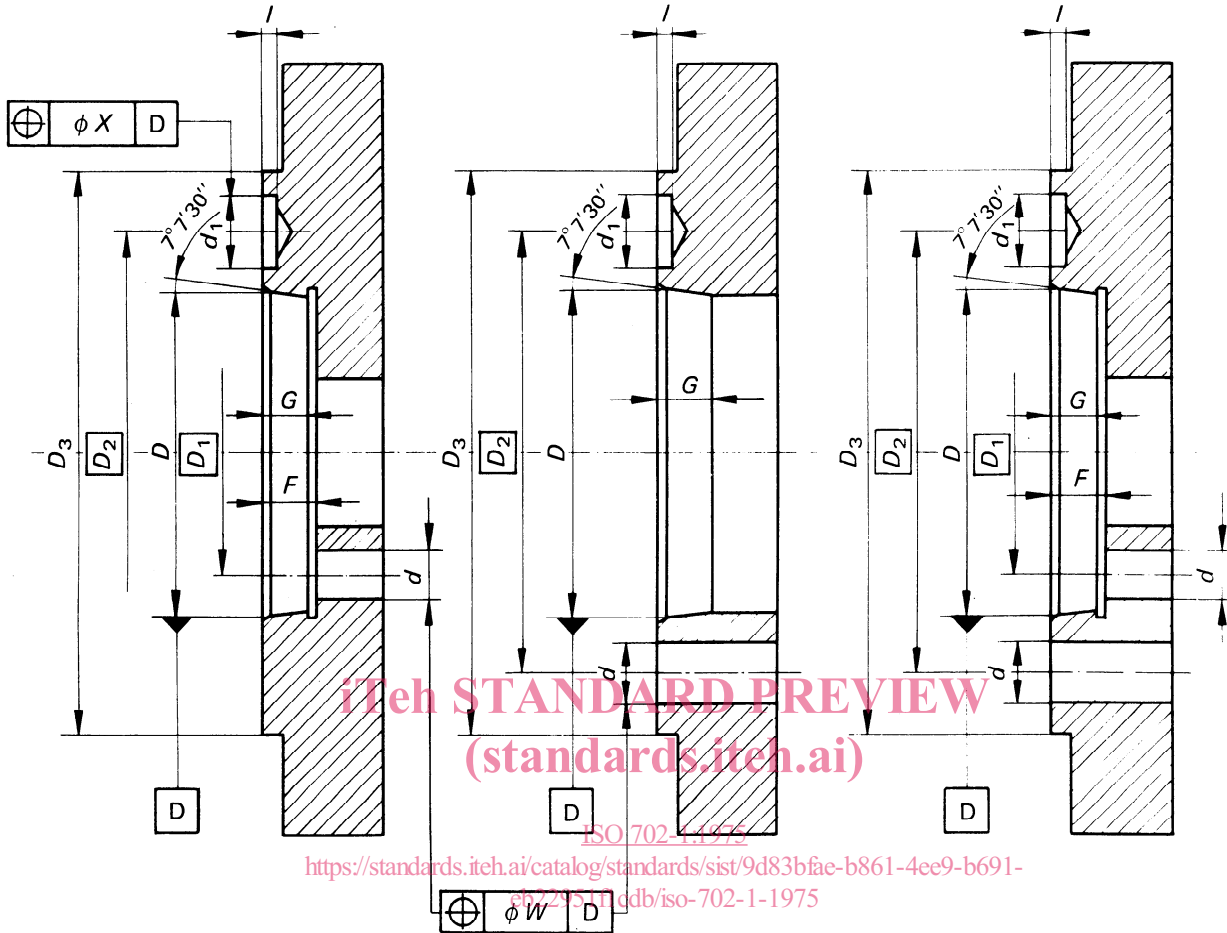
3.1.2 Sizes in inches

<https://standards.itech.ai/catalog/standards/sist/9d83bfae-b861-4ee9-b691-cb22951f1cdb/iso-702-1-1975>

Dimension \ No.	3	4	5	6	8	11	15	20	28
<i>D</i>	2.125 0	2.500 5	3.250 5	4.188 0	5.500 75	7.750 75	11.251 0	16.251 0	23.001 0
tol.	+ 0.000 25 0	+ 0.000 5 0	+ 0.000 5 0	+ 0.000 5 0	+ 0.000 5 0	+ 0.000 5 0	+ 0.001 0	+ 0.001 0	+ 0.001 0
<i>D</i> <sub>1</sub>			2.437 5	3.250	4.375	6.500	9.750	14.500	20.875
<i>D</i> <sub>2</sub>	2.782	3.250	4.125	5.250	6.750	9.250	13.000	18.250	25.500
<i>D</i> <sub>3</sub>	3 5/8	4 1/4	5 1/4	6 1/2	8 1/4	11	15	20 1/2	28 1/2
<i>d</i>	7/16-14 UNC	7/16-14 UNC	7/16-14 UNC	1/2-13 UNC	5/8-11 UNC	3/4-10 UNC	7/8-9 UNC	1-8 UNC	1 1/4-7 UNC
<i>d</i> <sub>1</sub> + 0.002 / 0 0 / -0.001		0.562 5	0.625	0.750	0.937 5	1.125	1.375	1.625	2.000
<i>E</i> <sub>1</sub> <sup>0</sup> - 0.001 (Type A <sub>1</sub> )			0.562 5	0.625	0.687 5	0.750	0.812 5	0.875	1.000
<i>E</i> <sub>2</sub> (Type A <sub>2</sub> )	7/16	7/16	1/2	9/16	5/8	11/16	3/4	13/16	15/16
<i>F</i>	5/8	3/4	7/8	1	1 1/8	1 3/8	1 5/8	1 7/8	2 1/4
<i>l</i>		3/16	3/16	3/16	1/4	5/16	5/16	5/16	5/16
<i>K</i>	9/16	11/16	3/4	7/8	1 1/16	1 1/4	1 7/16	1 5/8	2
<i>W</i>	0.012	0.012	0.012	0.012	0.012	0.016	0.016	0.016	0.016
<i>X</i>	—	0.006	0.006	0.006	0.006	0.012	0.012	0.012	0.012

NOTE – General tolerance for untoleranced dimensions : ± 1/64 in.

3.2 Face plates



Machining with inner bolt circle  
(for mounting on spindle nose **A<sub>1</sub>**  
by means of its inner bolt circle)

Machining with outer bolt circle  
(for mounting on spindle nose **A<sub>1</sub>**,  
or spindle nose **A<sub>2</sub>** by means of its  
outer bolt circle)

Machining with two bolt circles  
(for mounting either on spindle  
nose **A<sub>2</sub>**, or on spindle nose **A<sub>1</sub>**  
by means of inner or outer bolt circle)

3.2.1 Sizes in millimetres

Dimension \ No.	3	4	5	6	8	11	15	20	28
<i>D</i>	53,975	63,513	82,563	106,375	139,719	196,869	285,775	412,775	584,225
tol.	+ 0,003 - 0,005	+ 0,003 - 0,005	+ 0,004 - 0,006	+ 0,004 - 0,006	+ 0,004 - 0,008	+ 0,004 - 0,010	+ 0,004 - 0,012	+ 0,005 - 0,015	+ 0,006 - 0,017
<i>D</i> <sub>1</sub>			61,9	82,6	111,1	165,1	247,6	368,3	530,2
<i>D</i> <sub>2</sub>	70,6	82,6	104,8	133,4	171,4	235,0	330,2	463,6	647,6
<i>D</i> <sub>3</sub>	92	108	133	165	210	280	380	520	725
<i>d</i>	12	12	12	14	18	20	24	26	33
<i>d</i> <sub>1</sub> + 0,1 0		14,7	16,3	19,45	24,2	29,4	35,7	42,1	51,6
<i>E</i> <sub>1</sub> + 0,025 0 (Type A <sub>1</sub> )			14,288	15,875	17,462	19,050	20,638	22,225	25,400
<i>E</i> <sub>2</sub> min. (Type A <sub>2</sub> )*			15	16	18	20	21	23	26
<i>G</i>	10	10	12	13	14	16	17	19	22
<i>l</i>		6,5	6,5	6,5	8	10	10	10	10
<i>W</i> and <i>X</i>	0,2	0,2	0,2	0,2	0,2	0,2	0,3	0,3	0,3

\* *E*<sub>2</sub> (possibly for type A<sub>1</sub> also, if the face plate is rigid enough not to risk bending when the screws are clamped on the inner bolt circle).

NOTE – General tolerance for untoleranced dimensions : ± 0,4 mm.

3.2.2 Sizes in inches

ISO 702-1:1975  
<https://standards.iteh.ai/catalog/standards/sist/9d83bfae-b861-4ee9-b691-cb22951f1cd6/iso-702-1-1975>

Dimension \ No.	3	4	5	6	8	11	15	20	28
<i>D</i>	2.125 0	2.500 5	3.250 3	4.187 8	5.500 55	7.750 55	11.250 5	16.250 5	23.000 0
tol.	- 0.000 5 0	- 0.000 5 0	- 0.000 5 0	- 0.000 5 0	- 0.000 5 0	- 0.000 5 0	- 0.001 0	- 0.001 0	- 0.001 0
<i>D</i> <sub>1</sub>			2.437 5	3.250	4.375	6.500	9.750	14.500	20.875
<i>D</i> <sub>2</sub>	2.782	3.250	4.125	5.250	6.750	9.250	13.000	18.250	25.500
<i>D</i> <sub>3</sub>	3 5/8	4 1/4	5 1/4	6 1/2	8 1/4	11	15	20 1/2	28 1/2
<i>d</i>	15/32	15/32	15/32	17/32	21/32	51/64	59/64	1 3/64	1 19/64
<i>d</i> <sub>1</sub> + 0.004 0		0.578	0.641	0.766	0.953	1.156	1.406	1.656	2.031
<i>E</i> + 0.001 0			0.562 5	0.625	0.687 5	0.750	0.812 5	0.875	1.000
<i>G</i>	3/8	3/8	7/16	1/2	9/16	5/8	11/16	3/4	7/8
<i>l</i>		1/4	1/4	1/4	5/16	3/8	3/8	3/8	3/8
<i>W</i>	0.012	0.012	0.012	0.012	0.012	0.016	0.016	0.016	0.016
<i>X</i>	—	0.006	0.006	0.006	0.006	0.012	0.012	0.012	0.012

NOTE – General tolerance for untoleranced dimensions : ± 1/64 in.