INTERNATIONAL STANDARD ISO 839/II

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

Milling machine arbors with 7/24 tapers — Part II : Accessories

Arbres porte-fraises au cône 7/24 — Partie II : Équipements

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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.

International Standard ISO 839/II was developed by Technical Committee ISO/TC 29, *Small tools*, and was circulated to the member bodies in April 1976.

It has been approved by the member bodies of the following countries:

Australia	India	Romania
Austria	Israel	South Africa, Rep. of
Belgium	Italy	Spain
Czechoslovakia	Japan	Switzerland
France	Korea, Rep. of	Turkey
Germany	Mexico	United Kingdom
Hungary	Poland	U.S.S.R.

No member body expressed disapproval of the document.

This International Standard cancels and replaces sub-clauses 3.2 and 4.2 of ISO Recommendation R 839-1968, of which it constitutes a technical revision.

Printed in Switzerland

Milling machine arbors with 7/24 tapers — Part II : Accessories

0 INTRODUCTION

During the prepatory work on ISO/R 839-1968, it was found that it was impossible to unify milling machine arbors and their accessories in a manner which would be satisfactory to countries using the metric system and to those using the inch system. The ISO Recommendation therefore standardized two completely distinct series of accessories. There was thus no interchangeability between these two series, based respectively on the metric and the inch series of ISO 240.

This International Standard retains metric series only, this series being regarded as the only one recommended for the future. Nevertheless, the inch series is given in an annex.

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies the recommended manufacturing dimensions for milling machine accessories : spacing collars, bearing collars and clamping nuts.

Milling machine arbors with 7/24 tapers are specified in ISO 839/I.

2 REFERENCES

ISO 240, *Milling cutters — Interchangeability dimensions for cutter arbors or cutter mandrels — Metric series and inch series.*

ISO/R 272, *Hexagon bolts and nuts — Widths across flats, heights of heads, thicknesses of nuts — Metric series.*

ISO 297, 7/24 *tapers for tool shanks.*

ISO 839/I, *Milling machine arbors with 7/24 tapers — Part I : Dimensions.*

3 CHOICE OF DIMENSIONS

The dimensions retained are those corresponding to the most commonly used diameters of milling machine arbors, i.e. the values of ISO 240 from 16 to 100 mm (omitting 19 mm and 70 mm).

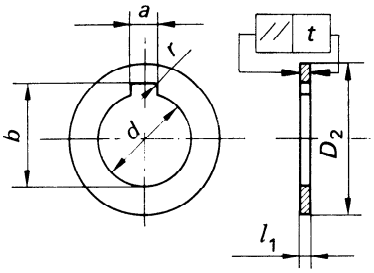
Bearing collars are specified only for arbors with useful lengths l greater than 160 mm, as shorter arbors are usually intended for work which does not entail mounting on the machine with a steady (working in air) or, as a result, the use of a bearing collar.

NOTE — This International Standard will be supplemented further by more precise specifications regarding tolerances.

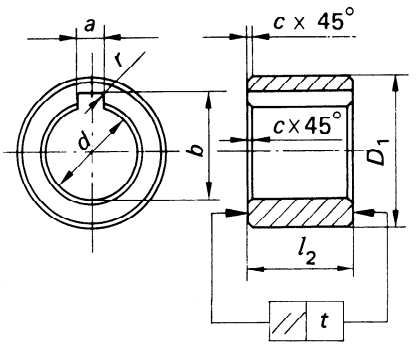
4 DIMENSIONS

4.1 Spacing collars

Punched collar
for $d \leqslant 60$ mm



Machined collar



NOTE — For long collars, a recess may be provided, of diameter equal to $d + 1$ and of length equal to $\frac{l_2}{2}$.

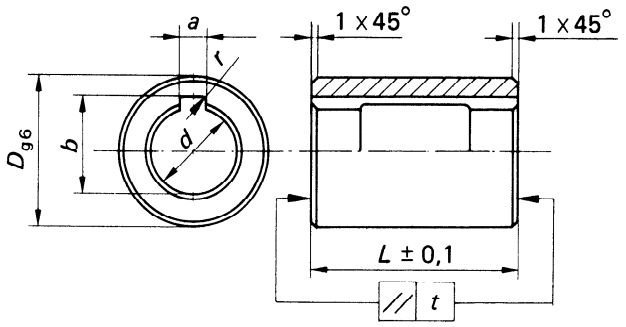
Values in millimetres

d	C11	**16**	**22**	**27**	**32**	**40**	**50**	**60**	**80**	**100**
D_1	h11	27	34	41	47	55	69	84	109	134
D_2	h11	26	33	40	46	54	68	83	–	–
a	C11	4	6	7	8	10	12	14	18	25
b		17,7	24,1	29,8	34,8	43,5	53,5	64,2	85,5	107,0
		$^{+0,1}_{0}$				$^{+0,2}_{0}$				
r	max.	0,6	1	1,2	1,2	1,2	1,6	1,6	2	2,5
c		0,4	0,4	0,4	0,6	0,6	0,6	0,6	1	1
l_1		(0,03) – (0,04) – 0,05 – 0,1 – 0,2 – 0,3 – 0,6 – 1								–
l_2	± 0,1	2 – 3 – 6								
		10								
		–								(12) (13) (16)
		20								
		30								
		–	60							
		–	100							
Parallelism of faces, t		0,004					0,005			0,006

The dimensions in parentheses should be avoided as far as possible.

In the case of punched collars, the periphery, the bore and the key seating should be carefully deburred.

4.2 Bearing collars

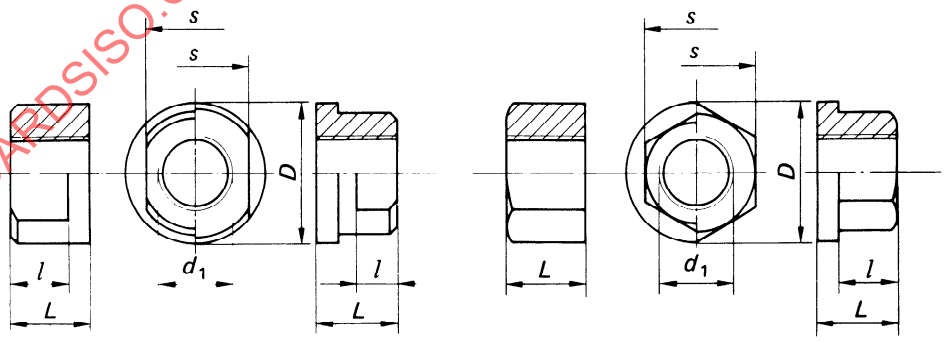


NOTE — Dimensions of recess, if any, shall be : diameter equal to $d + 1$, length equal to $\frac{L}{2}$.

Values in millimetres

d H7	*a* C11	*b*		*r* max.	*D* 42	*L* 60	*D* 48	*L* 70	*D* 56	*L* 80	*D* 70	*L* 100	*D* 85	*L* 120	*D* 110	*L* 140	*D* 140	*L* 160
16	4	17,7	+ 0,1 0	0,6	X		X		X									
22	6	24,1		1,0	X		X		X		X							
27	7	29,8		1,2	X		X		X		X		X					
32	8	34,8					X		X		X		X					
40	10	43,5							X		X		X					
50	12	53,5	+ 0,2 0	1,6							X		X		X			
60	14	64,2													X			
80	18	85,5		2,0											X			
100	25	107,0		2,5													X	
Parallelism of faces, *t*					0,004						0,005				0,006			

4.3 Clamping nuts



Values in millimetres

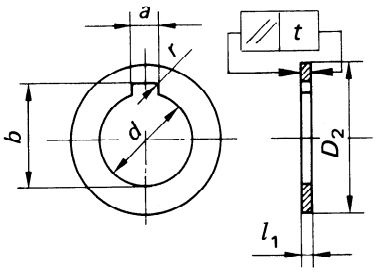
For arbor *d*	**16**	**22**	**27**	**32**	**40**	**50**	**60**	**80**	**100**
d_1	M 16 x 1,5	M 20 x 2	M 24 x 2	M 27 x 2	M 33 x 2	M 39 x 3	M 45 x 3	M 56 x 4	M 68 x 4
D ≈	27	34	41	47	55	69	84	109	134
L	1 to 1,25 d_1								
s	It is essential that values of standard widths across flats be used (see ISO/R 272)								
l	> thickness of appropriate spanner (see ISO/R 272)								

ANNEX

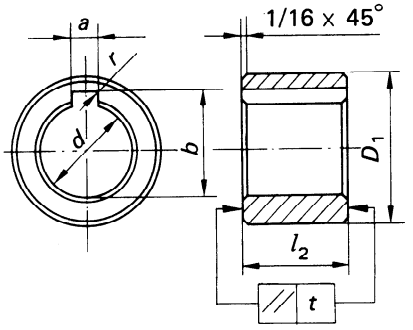
DIMENSIONS IN INCHES

A.1 Spacing collars

Punched collar



Machined collar



NOTE — For long collars, a recess may be provided, of diameter equal to $d + 1$ and of length equal to $\frac{l_2}{2}$.

d	+ 0.003 + 0.002	**0.625**	**0.750**	**1.000**	**1.250**	**1.500**	**2.000**	**2.500**
D_1	− 0.010 − 0.020	1.125	1.250	1.625	1.875	2.125	2.750	3.375
D_2	max.	1.115	1.240	1.615	1.865	2.115	2.740	3.365
	min.	0.900	1.115	1.490	1.740	1.990	2.615	3.240
a	C11	0.125	0.125	0.250	0.312	0.375	0.500	0.625
b	+ 0,015 0	0.698	0.822	1.104	1.385	1.666	2.198	2.733
r	max.	0.031	0.031	0.047	0.062	0.062	0.062	0.062
l_1	+ 0.000 2 0	0.002 – 0.003 – 0.004 – 0.005 – 0.006 – 0.008 – 0.010 – 0.015 – 0.020 – 0.025						
l_2		0.25 – 0.5 – 0.75 – 1 – 2						
					3			
						4		
Parallelism of faces, t		0.000 2						

In the case of punched collars, the periphery, the bore and the key seating should be carefully deburred.