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Milling cutters with tenon drive — Interchangeability dimensions with cutter arbors — Metric series

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FOREWORD

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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 2780 was drawn up by Technical Committee ISO/TC 29, *Small tools.*

It was approved in July 1972 by the Member Bodies of the following countries :

Austria	Israel	Sweden
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Czechoslovakia	Japan	Thailand
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India	Spain	

No Member Body expressed disaproval of the document.

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Milling cutters with tenon drive — Interchangeability dimensions with cutter arbors — Metric series

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies the dimensions for interchangeability between milling cutters with tenon drive and the cutter seating of cutter arbors.

It applies only to milling cutters of the metric series.

It gives the interchangeability dimensions

— of the milling cutter;

— of the cutter seating on the arbor;

— of the retaining bolt of the cutter on the cutter arbor.

It includes in an Appendix, and for guidance, an abstract from ISO/R 240.

2 REFERENCES

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

ISO/R 724, *ISO general purpose metric screw threads — Basic dimensions.*

ISO 2586, *Shell end mills with plain bore and tenon drive — Metric series.*

3 DIMENSIONS

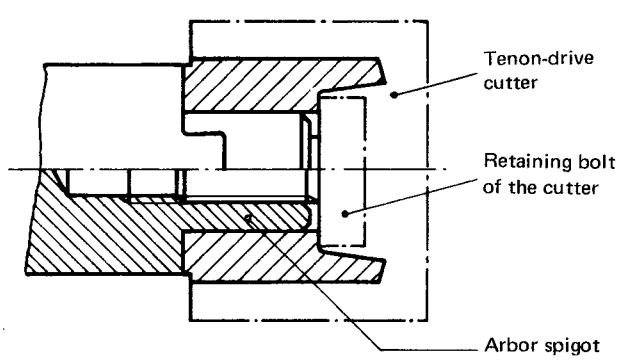
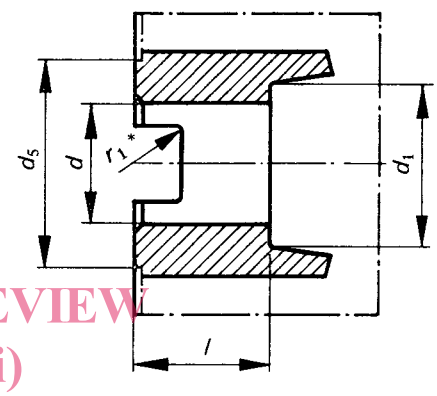


FIGURE 1 — **General arrangement**

3.1 Interchangeability dimensions of the cutter



* For dimension r_1, see Appendix.

FIGURE 2 — **Cutter**

TABLE 1

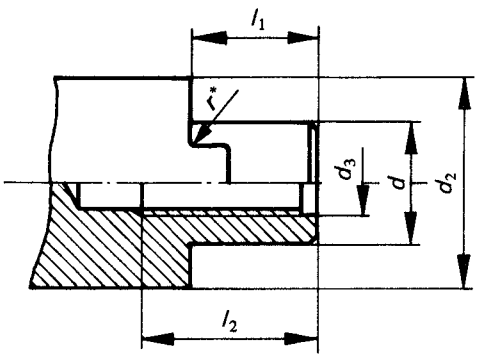
Dimensions in millimetres

d H7	l min.	d_1 min.	d_s [1] min.
16	18	22	33
22	20	30	41
27	22	38	49
32	25	45	59
40	28	56	71
50	31	67	91

1) Optional relief of the rear face.

The tenon seatings shall be in accordance with the metric series of ISO/R 240 (see Appendix).

3.2 Interchangeability dimensions of the seating of the cutter on the arbor



*For dimension r, see Appendix.

FIGURE 3 – **Arbor spigot**

3.3 Interchangeability dimensions of the retaining bolt of the cutter to the cutter arbor

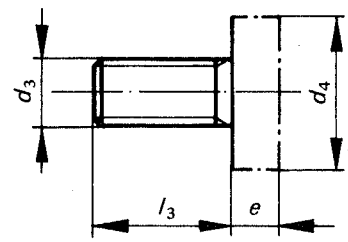


FIGURE 4 – **Retaining bolt**

TABLE 2

Dimensions in millimetres

d h6	l_1 max.	d_2 min.	d_3	l_2
16	17	32	M 8	22
22	19	40	M10	28
27	21	48	M12	32
32	24	58	M16	36
40	27	70	M20	45
50	30	90	M24	50

TABLE 3

Dimensions in millimetres

d [1)]	d_3	l_3 min.	d_4 max.	e
16	M 8	16	20	6
22	M10	18	28	7
27	M12	22	35	8
32	M16	26	42	9
40	M20	30	52	10
50	M24	36	63	10

1) Nominal diameter of spigot

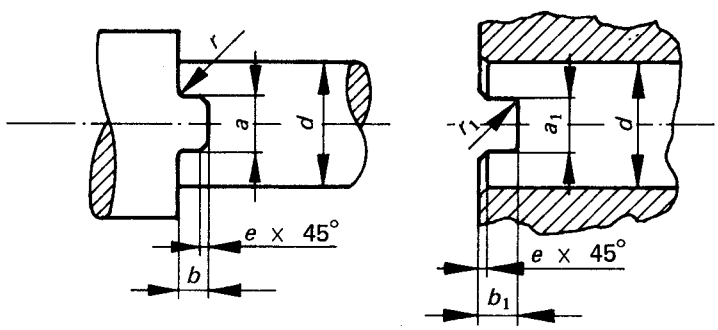
The tenon seatings shall be in accordance with the metric series of ISO/R 240 (see Appendix).

The shape of the retaining screw head is left to the manufacturer's discretion, only the overall dimensions d_4 and e having to be respected.

APPENDIX

To make the task of the user of this International Standard easier, reproduced below for information are the interchangeability dimensions given for the metric series in ISO/R 240; only the latter document is valid as concerns these dimensions.

Tenon drive



Dimensions in millimetres

d	Arbor			Cutter			e		z[1]
	a	b	r max.	a_1	b_1	r_1 max.	Dimension	Tolerance	
16	8	5,0	0,6	8,4	5,6	1,0	0,6	+ 0,2 0	0,100
22	10	5,6		10,4	6,3	1,2			
27	12	6,3	0,8	12,4	7,0		0,8		
32	14	7,0		14,4	8,0	1,6			
40	16	8,0	1,0	16,4	9,0	2,0	1,0	+ 0,3 0	
50	18	9,0		18,4	10,0				

1) + z = maximum permissible deviation between the axial plane of the tenon and the axis of the arbor of diameter d.