
Cutter arbors with tenon drive —
Part 1:
Dimensions of Morse taper

Mandrins porte-fraise à entraînement par tenons —
Partie 1: Dimensions des cônes Morse



Reference number
ISO 3937-1:2008(E)

© ISO 2008

PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.



COPYRIGHT PROTECTED DOCUMENT

© ISO 2008

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

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 3937-1 was prepared by Technical Committee ISO/TC 29, *Small tools*, Subcommittee SC 2, *High speed steel cutting tools and their attachments*.

This first edition of ISO 3937-1, together with ISO 3937-2, cancels and replaces ISO 3937:1985, which has been technically revised.

ISO 3937 consists of the following parts, under the general title *Cutter arbors with tenon drive*:

- *Part 1: Dimensions of Morse taper*
- *Part 2: Dimensions of 7/24 taper*
- *Part 3: Dimensions of hollow taper interface with flange contact surface*

Cutter arbors with tenon drive —

Part 1: Dimensions of Morse taper

1 Scope

This part of ISO 3937 specifies the dimensions of cutter arbors with tenon drive and with Morse tapers.

The interchangeability dimensions of the milling cutter bearing on the cutter arbor are in conformity with ISO 2780.

The dimensions of the retaining screw used are specified in ISO 2780.

Morse tapers are in conformance with ISO 296 and ISO 5413.

2 Normative references

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

ISO 296, *Machine tools — Self-holding tapers for tool shanks*

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

ISO 2768-2, *General tolerances — Part 2: Geometrical tolerances for features without individual tolerance indications*

ISO 2780, *Milling cutters with tenon drive — Interchangeability dimensions for cutter arbors — Metric series*

ISO 5413, *Machine tools — Positive drive of Morse tapers*

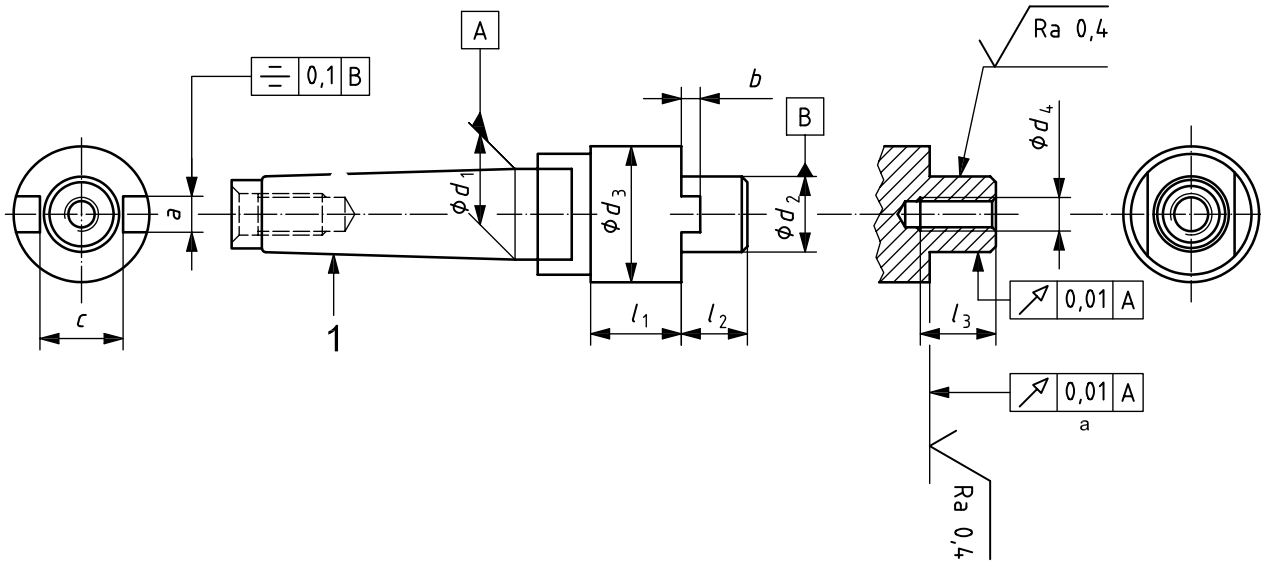
3 Dimensions

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 and of tolerance class “mk” in accordance with ISO 2768-2.

3.2 Arbors with Morse taper shanks

The dimensions of arbors with Morse taper shanks are shown in Figure 1 and given in Table 1.



Key

1 Morse taper in accordance with ISO 296 and ISO 5413

a Not convex.

NOTE This diagram is schematic and is not intended to specify a given design.

Figure 1 — Arbors with Morse taper shanks

Table 1 — Arbors with Morse taper shanks

Morse taper No.	d_1	d_2	d_3	d_4	l_1	l_2	l_3	a	b	c
		h6	min.			$\begin{matrix} 0 \\ -1 \end{matrix}$	$\begin{matrix} +2 \\ 0 \end{matrix}$	h11	h11	min.
2	17,78	16	32	M8	25	17	20	8	5	17
		22	40	M10	25	19	22	10	5,6	22,5
3	23,825	16	32	M8	25	17	20	8	5	17
		22	40	M10	25	19	22	10	5,6	22,5
		27	48	M12	25	21	26	12	6,3	28,5
4	31,267	16	32	M8	25	17	20	8	5	17
		22	40	M10	25	19	22	10	5,6	22,5
		27	48	M12	25	21	26	12	6,3	28,5
		32	58	M16	40	24	30	14	7	33,5
		40	70	M20	40	27	34	16	8	44,5
5	44,399	22	40	M10	40	19	22	10	5,6	22,5
		27	48	M12	40	21	26	12	6,3	28,5
		32	58	M16	40	24	30	14	7	33,5
		40	70	M20	40	27	34	16	8	44,5
		50	90	M24	40	30	40	18	9	55

4 Material

The material is left to the manufacturer's discretion, but the tensile strength shall be at least 800 N/mm².

Hardness shall be 56 (+4) HRC.

© ISO 2008. All rights reserved

Bibliography

- [1] ISO 8015, *Technical drawings — Fundamental tolerancing principle*

ICS 25.060.20

Price based on 4 pages