
End mills and slot drills —

Part 3:

Milling cutters with 7/24 taper shanks

Fraises cylindriques 2 tailles et fraises à rainurer —

Partie 3: Fraises à queue cône 7/24

iTeh STANDARD PREVIEW
(standards.iteh.ai)

ISO 1641-3:2003

<https://standards.iteh.ai/catalog/standards/sist/95e954af-b430-410b-a426-8bd7cd80c751/iso-1641-3-2003>



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.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

ISO 1641-3:2003

<https://standards.iteh.ai/catalog/standards/sist/95e954af-b430-410b-a426-8bd7cd80c751/iso-1641-3-2003>

© ISO 2003

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 1641-3 was prepared by Technical Committee ISO/TC 29, *Small tools*, Subcommittee SC 2, *Drills, reamers, milling cutters and milling machine accessories*.

This second edition cancels and replaces the first edition (ISO 1641-3:1978), which has technically revised, in particular by the inclusion of 7/24 taper shanks for automatic changers.

ISO 1641 consists of the following parts, under the general title *End mills and slot drills*:

- *Part 1: Milling cutters with cylindrical shanks*
- *Part 2: Milling cutters with Morse taper shanks*
- *Part 3: Milling cutters with 7/24 taper shanks*

iTeh STANDARD PREVIEW
(standards.iteh.ai)

ISO 1641-3:2003

<https://standards.iteh.ai/catalog/standards/sist/95e954af-b430-410b-a426-8bd7cd80c751/iso-1641-3-2003>

End mills and slot drills —

Part 3: Milling cutters with 7/24 taper shanks

1 Scope

This part of ISO 1641 specifies the general dimensions of the following milling cutters with 7/24 taper shanks:

- end mills, flat-ended or ball-nosed — standard series and long series (manual changers);
- slot drills — short series and standard series (manual changers);
- end mills, flat-ended — standard series and long series (automatic changers).

Characteristics of 7/24 taper are in accordance with ISO 297 for manual changers and ISO 7388-1 for automatic changers.

NOTE These same milling cutters with cylindrical shanks are dealt with in ISO 1641-1, and those with Morse taper shank having a tapped hole in ISO 1641-2.

[ISO 1641-3:2003](https://standards.iteh.ai/catalog/standards/sist/95e954af-b430-410b-a426-8bd7cd80c751/iso-1641-3-2003)

<https://standards.iteh.ai/catalog/standards/sist/95e954af-b430-410b-a426-8bd7cd80c751/iso-1641-3-2003>

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 297, *7/24 Tapers for tool shanks for manual changing*

ISO 7388-1, *Tool shanks with 7/24 taper for automatic tool changers — Part 1: Shanks Nos. 40, 45 and 50 — Dimensions*

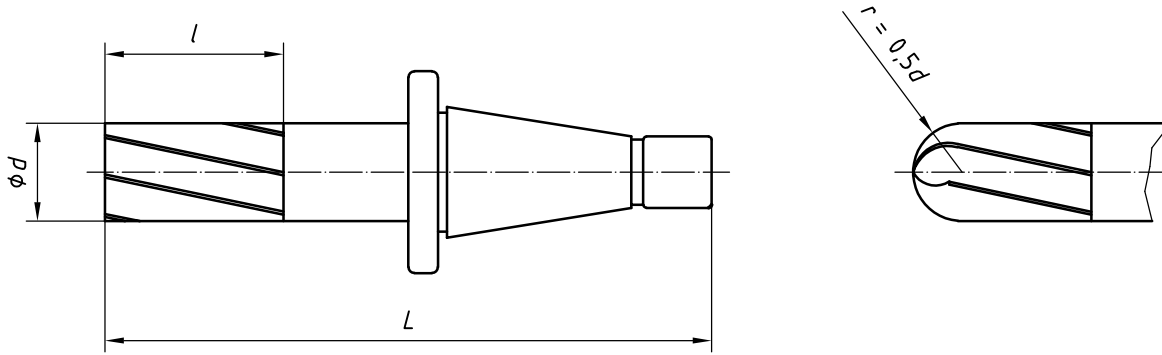
3 Dimensions

3.1 7/24 taper shanks for manual changers

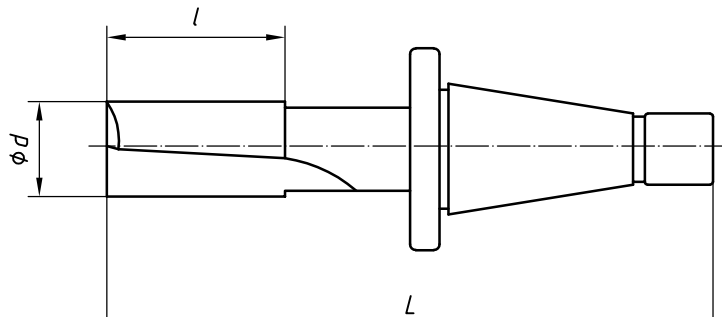
For hemispherical-ended mills and flat-ended end mills, the standard series and long series, given in Table 1, according to the cutting length, l , shall be used.

For slot drills, the short series and standard series, given in Table 1, according to the cutting length, l , shall be used.

See Figure 1, Table 1 and Table 2.



a) Flat-ended and ball-nosed end mills



b) Slot drill

iTeH STANDARD PREVIEW
(standards.iteh.ai)

Figure 1 — Milling cutters with 7/24 taper shanks

ISO 1641-3:2003

Table 1
<https://standards.iteh.ai/catalog/standards/sist/95e954af-b430-410b-a426-8bd7cd80c751/iso-1641-3-2003>

Dimensions in millimetres

Range of diameters d	Recommended diameters d		Length l			Length L			7/24 taper No.		
			Short series	Normal series	Long series	Short series	Normal series	Long series			
$23,6 < d \leq 30$	24 and 25	28	26	45	90	131	150	195	30		
$30 < d \leq 37,5$			32	36	32	53	106	137		158	211
$37,5 < d \leq 47,5$	40	45			38	63	125	167	188	241	45
								173	198	260	40
$47,5 < d \leq 60$	50	56	45	75	150	180	210	285	40		
						193	218	280	45		
						200	230	305	45		
$60 < d \leq 75$	63	71	53	90	180	222	252	327	50		
						208	245	335	45		
$75 < d \leq 95$	80	—	63	106	212	230	267	357	50		
						240	283	389			

The values L and l have been so chosen that the length difference ($L - l$) remains constant whatever the series, short, standard or long (see Table 2).

Table 2

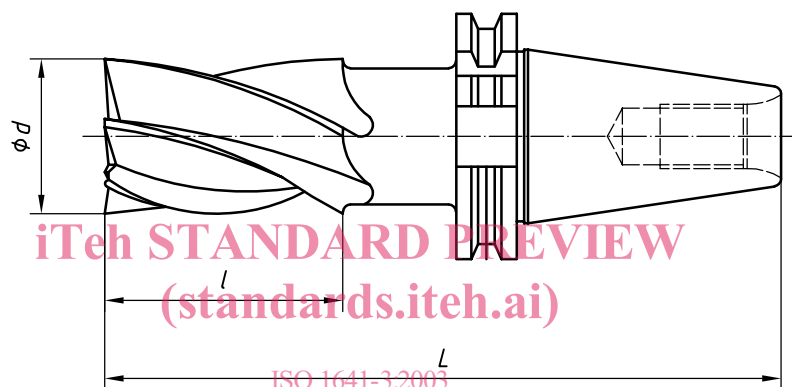
Dimensions in millimetres

7/24 taper No.	30	40	45	50
$L - l$	105	135	155	177

3.2 7/24 taper shanks for automatic changers

For flat-ended end mills, the standard series and long series, given in Table 3, according to the cutting length, l , shall be used.

See Figure 2, Table 3 and Table 4.



<https://standards.iteh.ai/catalog/standards/sist/95e954af-b430-410b-a426-8817-8817-8817-8817>
Figure 2 — Milling cutters with 7/24 taper shanks for automatic changers

Table 3

Dimensions in millimetres

Range of diameters d	Recommended diameters d		Length l		Length L		7/24 taper No.
			Normal series	Long series	Normal series	Long series	
$30 < d \leq 37,5$	32	36	53	106	171	224	40
$37,5 < d \leq 47,5$	40	45	63	125	181	243	40
					219	281	50
$47,5 < d \leq 60$	50	56	75	150	193	268	40
					231	306	50
$60 < d \leq 75$	63	71	90	180	246	336	50
$75 < d \leq 85$	80	—	106	212	262	368	50

The values L and l have been so chosen that the length difference ($L - l$) remains constant whatever the series, short, standard or long (see Table 4).

Table 4

Dimensions in millimetres

Cone 7/24 No.	40	50
$L - l$	118	156

4 Tolerances

Tolerances on cutting diameters, d , shall be as follows:

- js 14 for end mills;
- e8 for slot drills.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

ISO 1641-3:2003

<https://standards.iteh.ai/catalog/standards/sist/95e954af-b430-410b-a426-8bd7cd80c751/iso-1641-3-2003>

Bibliography

- [1] ISO 1641-1:2003, *End mills and slot drills — Part 1: Milling cutters with cylindrical shanks*
- [2] ISO 1641-2: 1978, *End mills and slot drills — Part 2: Milling cutters with Morse taper shanks*
- [3] ISO 11529-1:1998, *Milling cutters — Designation — Part 1: Shank type end mills of solid or tipped design*

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[ISO 1641-3:2003](https://standards.iteh.ai/catalog/standards/sist/95e954af-b430-410b-a426-8bd7cd80c751/iso-1641-3-2003)

<https://standards.iteh.ai/catalog/standards/sist/95e954af-b430-410b-a426-8bd7cd80c751/iso-1641-3-2003>