
**Cutter arbors with parallel key and tenon
drive —**

Part 2:

**Dimensions and designation of tool
holders with hollow taper interface with
flange contact surface**

Mandrins porte-fraise à entraînement par clavette et tenon —

*Partie 2: Dimensions et désignation des porte-outils avec interface à
cône creux-face*

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Foreword

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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 10649-2 was prepared by Technical Committee ISO/TC 29, *Small tools*, Subcommittee SC 2, *High speed steel cutting tools and their attachments*.

ISO 10649 consists of the following parts, under the general title *Cutter arbors with parallel key and tenon drive*:

- *Part 1: General dimensions*
- *Part 2: Dimensions and designation of tool holders with hollow taper interface with flange contact surface*
- *Part 3: Dimensions and designation of tool holders with 7/24 taper for automatic tool changers*
- *Part 4: Dimensions and designation of tool holders with 7/24 taper without automatic tool changers*

The dimensions and designations of tool holders with polygonal taper interface with flange contact surface will form the subject of a part 5 and the dimensions and designations of tool holders with modular taper interface with ball track system will form the subject of a part 6.

Introduction

The aim of ISO 10649 (all parts) is to specify the main dimensions for tool holders for this type of interface, and prevent the risk of collision when exchanging the assembled tool within the machine tools.

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Cutter arbors with parallel key and tenon drive —

Part 2:

Dimensions and designation of tool holders with hollow taper interface with flange contact surface

1 Scope

This part of ISO 10649 specifies the dimensions of cutter arbors with parallel key and tenon drive with hollow taper interface (HSK) with flange contact surface.

Hollow taper interface with flange contact surface are according to ISO 12164-1.

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 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 10643, *Dimensions of accessories for cutter arbors with parallel key and tenon drive*

ISO 10649-1, *Cutter arbors with parallel key and tenon drive — Part 1: General dimensions*

ISO 12164-1, *Hollow taper interface with flange contact surface — Part 1: Shanks — Dimensions*

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 class “K” in accordance with ISO 2768-2.

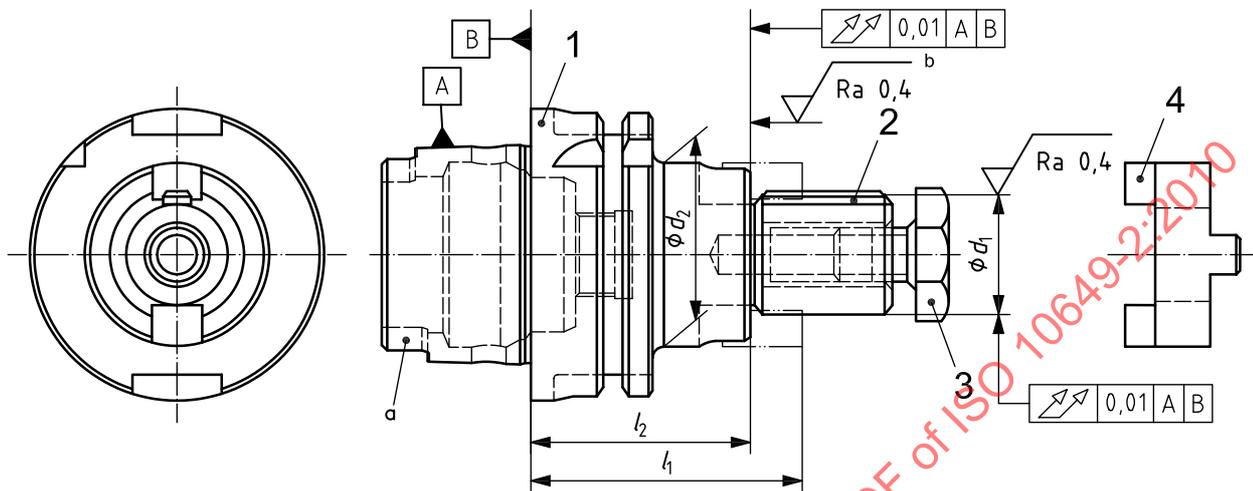
The interchangeability dimensions of the milling cutter bearing on the cutter arbors shall be in accordance with ISO 2780.

The dimensions of the tool interface for arbors with parallel key and tenon drive shall be in accordance with dimensions given in ISO 10649-1.

The figures are schematic and are not intended to specify a given design; only the given dimension shall be met.

3.2 Dimensions of cutter arbors with parallel key and tenon drive with hollow taper interface

The dimensions for cutter arbors with parallel key and tenon drive with hollow taper interface with flange contact surface shall be in accordance with the dimensions shown in Figure 1 and given in Table 1.



Key

- 1 tool holder with HSK
- 2 parallel key in accordance with ISO 10643
- 3 cutter retaining screw in accordance with ISO 10643
- 4 clutch drive ring in accordance with ISO 10643
- a Hollow taper interface (HSK) in accordance with ISO 12164-1.
- b Not convex.

Figure 1 — Cutter arbors with parallel key and tenon drive and with hollow taper interface

Table 1 — Dimensions

HSK nominal size	32			40			50			63			80			100										
	16	22	27	16	22	27	16	22	27	32	16	22	27	32	40	16	22	27	32	40	50					
d_1	16	22	27	16	22	27	16	22	27	32	16	22	27	32	40	16	22	27	32	40	16	22	27	32	40	50
l_1	55	55	65	50	55	65	50	55	65	65	60	60	60	65	70	60	60	60	60	70	60	60	60	60	70	80
l_2	45	43	53	40	43	53	40	43	53	51	50	48	48	51	56	50	48	48	46	56	50	48	48	46	56	64

4 Material

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

The surface hardness shall be (56 + 4) HRC in the area of the taper surface and the surfaces of the spigot. The hardness depth is left to the manufacturer's discretion.