ISO/FDIS_12164-3:2023(ed.3)

ISO-<u>/</u>TC-_29/SC 9

Secretariat:-DIN

Date: 2023-03-21

Hollow taper interface with flange contact surface —

Part 3:

Shanks of types-T, TA and U

iTeh Standards (https://standards.iteh.ai) Document Preview

<u>Interfaces à cône creux-face —</u>

Partie 3: Queues de type T, TA, et U

ISO 12164-3:2023

https://standards.iteh.ai/catalog/standards/iso/2955a015-3a17-459b-86dc-745a9f8b1968/iso-12164-3-2023

FDIS stage

© ISO 2023

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO Copyright Office copyright office CP 56-401 • Ch. de Blandonnet 8 CH-12111214 Vernier, Geneva 20 Phone: + 41 22 749 01 11

Fax: + 41 22 749 09 47

EmailE-mail: copyright@iso.org Website: www.iso.orgwww.iso.org

Published in Switzerland-

iTeh Standards (https://standards.iteh.ai) Document Preview

ISO 12164-3:2023

Contents Foreword Part 3: Shanks of types T, TA and U... Scope ... 2 Normative references..... Terms and definitions..... Hollow taper shanks, types and dimensions 4 4.1 General 4.2 Hollow taper shank of type T... 4.3 Hollow taper shank of type TA... 4.4 Hollow taper shank of type U..... 4.5 Dimensions... 5 Balancing..... 6 Design 6.1 HSK sizes and types..... 6.2 Medium-transfer units..... 6.3 Clamping forces ... 6.4 Material and heat treatment..... 7 Designation... Annex A (informative) Clamping forces for shanks of types T, TA and U... Annex B (informative) Hollow taper shank of type U with medium-transfer unit. Annex C (informative) Overview of all different types of shanks. Bibliography Foreword 6 Scope 7 2 Normative references 7 Terms and definitions 7 4 Hollow taper shanks, types and dimensions 7 4.1 General 7 4.2 Hollow taper shank of type T 8 4.3 Hollow taper shank of type TA 11 4.4 Hollow taper shank of type U 11 4.5 Dimensions 13 Balancing 18 Design 18 6.1 HSK sizes and types 18 6.2 Medium-transfer units 19 6.3 Medium-transfer units can be applied according to ISO 22402-1. Clamping forces

6.4 Material and heat treatment 19

7 Designation 19

Annex A (informative) Clamping forces for shanks of types T, TA and U 20

Annex B (informative) Hollow taper shank of type U with medium-transfer unit 21

Annex C (informative) Overview of all different types of shanks 22

Bibliography 23

iTeh Standards (https://standards.iteh.ai) Document Preview

ISO 12164-3:2023

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part-1. In particular, the different approval criteria needed for the different types of ISO documents document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part-2 (see www.iso.org/directives). 2 (see www.iso.org/directives).

Attention is drawn ISO draws attention to the possibility that some of the elements implementation of this document may be involve the subjectuse of (a) patent(s). ISO takes no position concerning the evidence validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation one-picture nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 29, Small tools, Subcommittee SC 9, Tools with defined cutting edges, holding tools, cutting items, adaptive items and interfaces.

This third edition cancels and replaces the second edition (ISO 12164-3:2014), which has been technically revised.

The main changes are as follows:

- new hollow taper shank of type TA with peripherally grooved flange collar for automatic todle change added, with similar geometry as type A;
- <u>some</u> editorial changes.

A list of all parts of the ISO 12164 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

iTeh Standards (https://standards.iteh.ai) Document Preview

ISO 12164-3:2023

Hollow taper interface with flange contact surface — _

Part 3: Shanks of types-T, TA and U

1 Scope

This document specifies the dimensions for hollow taper shanks with flange contact surface (HSK). These shanks are the male part of the interface to the machine tools (e.-g. milling/drilling, turning and grinding machines).

This document specifies three types of shanks:

- type<u>T</u> has a peripherally grooved flange for automatic tool change in turning machines with a gripper for HSK type T;
- type TA has a peripherally grooved flange for automatic tool change in milling machines, enabled (designed) for turning, with a gripper for HSK type A or AB;
- type U has no peripheral groove flange and is designed for manual tool change in turning machines.

HSK types T and TA can also be changed manually via radial access bore holes in the hollow shank taper.

2 Normative references

There are no normative references in this document

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 individua tolerance indications

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminologicalterminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at https://www.iso.org/obp
- IEC Electropedia: available at https://www.electropedia.org/

4 Hollow taper shanks, types and dimensions

4.1 General

All dimensions of the different hollow taper shank sizes with flange contact surface (also called "HSK" or "HSK shank" in this document) are specified in Figure 1 for type T, Figure 2 for type U. Table 1 provides the parameters of all types and sizes.

Preferred zones for balancing measures are specified in Clause 5. Clause 5.

Clamping forces for HSK shanks of types T, TA and U see Annex A. are provided in Annex A.

Hollow taper shanks of types U with medium - transfer unit see Annex B. are provided in Annex B.

Overview An overview of all different types of shanks see Annex C. are provided in Annex C.

Tolerancing of form, orientation, location and run-out is in accordance withcorrespond to ISO 1101. Dimensions and tolerances of cones are in accordance withaccording to ISO 3040. Tolerances not specified shall be of tolerance class "m" in accordance with ISO 2768-1.

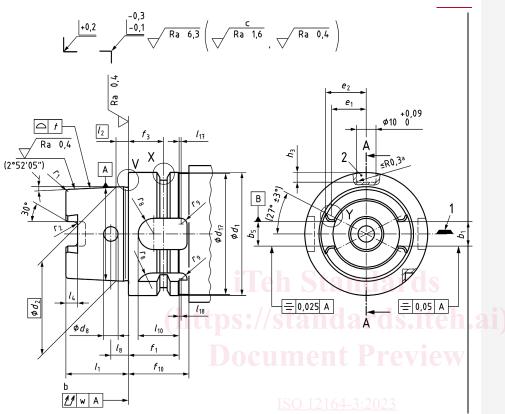
4.2 Hollow taper shank of type T

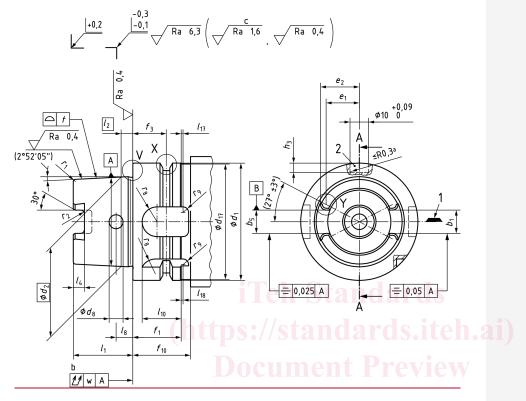
Figure 1 and Table 1 show all general parameters and values of the different HSK-T sizes

In case of balancing bore holes at the HSK shank flange, mechanical restrictions of known automatic tool changing systems shall be taken into account.

iTeh Standards (https://standards.iteh.ai) Document Preview

ISO 12164-3:2023





a) HSK-<u>-</u>T main and side view