

ISO/TC 29/SC 9

Secretariat: DIN

Voting begins on:
2020-08-27

Voting terminates on:
2020-10-22

Polygonal taper interface with flange contact surface —

Part 1: Dimensions and designation of shanks

Interfaces à cône polygonal avec face d'appui —

Partie 1: Dimensions et désignation des queues

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Published in Switzerland

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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 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).

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For an explanation of the voluntary 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 26623-1:2014, which has been technically revised.

The main changes compared to the previous edition are as follows:

- size 80X is removed;
- Figure 1 is divided in 6 figures to achieve better readability;
- internal design is changed to fit medium-transfer unit referenced (ISO 22402-2);
- information about medium-transfer unit is added;
- dimensions for dynamical balancing by design when used are added in [Annex A](#);

A list of all parts in the ISO 26623 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.

Polygonal taper interface with flange contact surface —

Part 1: Dimensions and designation of shanks

1 Scope

This document specifies dimensions for polygonal taper interfaces with flange contact surface — polygon shanks for automatic and manual tool exchange to be applied on machine tools (e. g. turning machines, drilling machines, milling machines and turn/milling centres as well as grinding machines). A range of shank sizes is specified.

These shanks incorporate a grooved flange to enable automatic tool exchange. The clamping can be realized by a circular groove using clamping segments or internal screw threads using centre-bolts.

The torque is transmitted by form lock (polygon).

2 Normative references

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 965-2, *ISO general purpose metric screw threads — Tolerances — Part 2: Limits of sizes for general purpose external and internal screw threads — Medium quality*

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 22402-2, *Medium-transfer units for tool interfaces — Part 2: Transfer units for polygonal taper interfaces in accordance with ISO 26623*

3 Terms and definitions

No terms and definitions are listed in this document.

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

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

4 Polygonal taper interface with flange contact surface

4.1 General

Tolerances for linear dimensions for features without individual tolerance indications shall be of tolerance class “m” in accordance with ISO 2768-1 and geometrical tolerances for features without individual tolerance indications shall be of tolerance class “K” in accordance with ISO 2768-2.

Tolerances for threads where tolerance is not stated shall be in accordance with ISO 965-2.

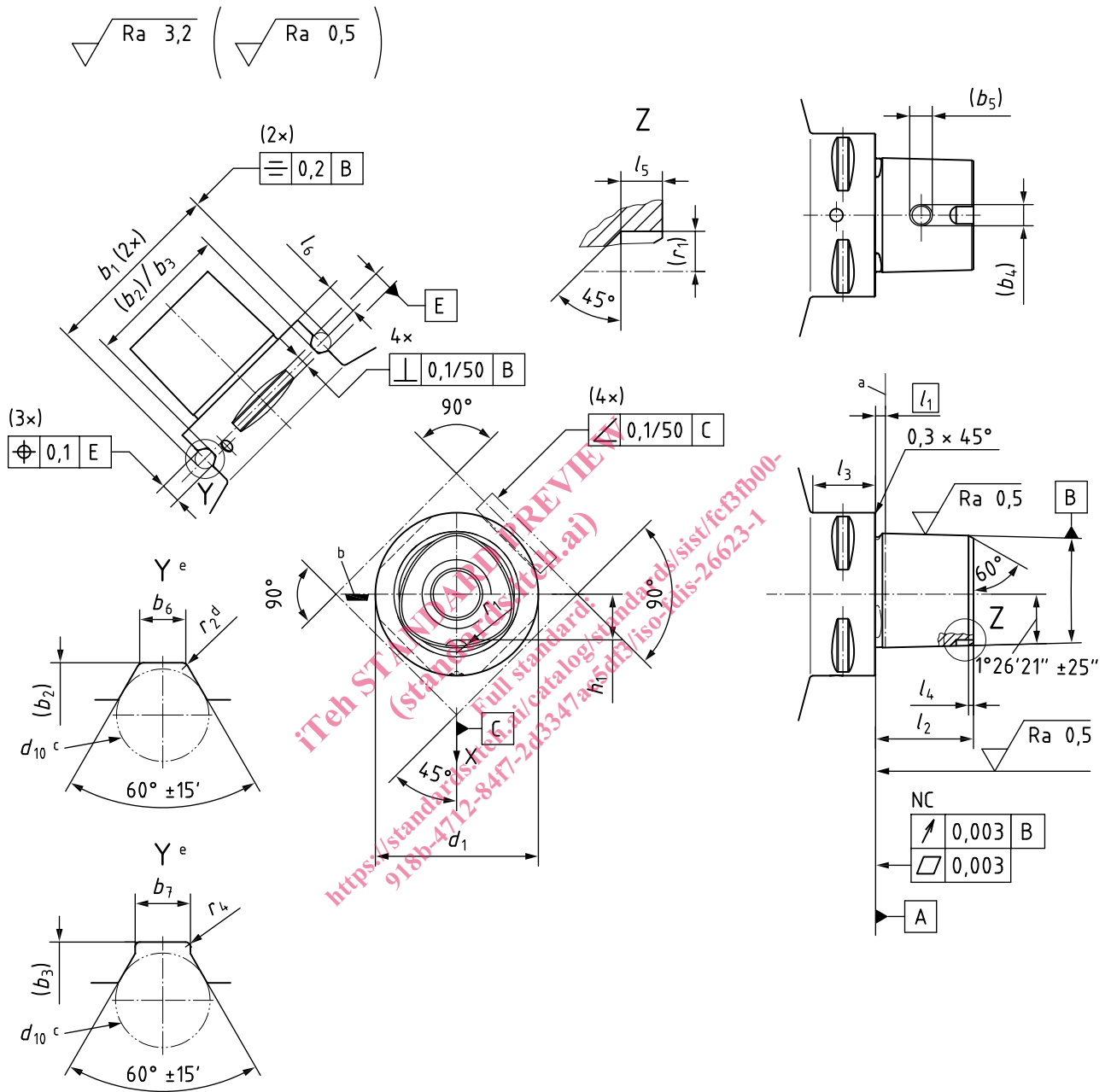
4.2 Polygon shanks

The dimensions of polygon shanks shall be in conformance with [Figure 1](#) to [Figure 7](#) and [Table 1](#). [Figure 6](#) only applies if chip hole bore is used.

NOTE Additional recommendations for use and application (i.e. dynamical balancing by design) are given in [Annex A](#). Only in cases where stationary tools need extra room for clamping devices or coolant supply, dimensions specified in [Annex B](#) are valid.

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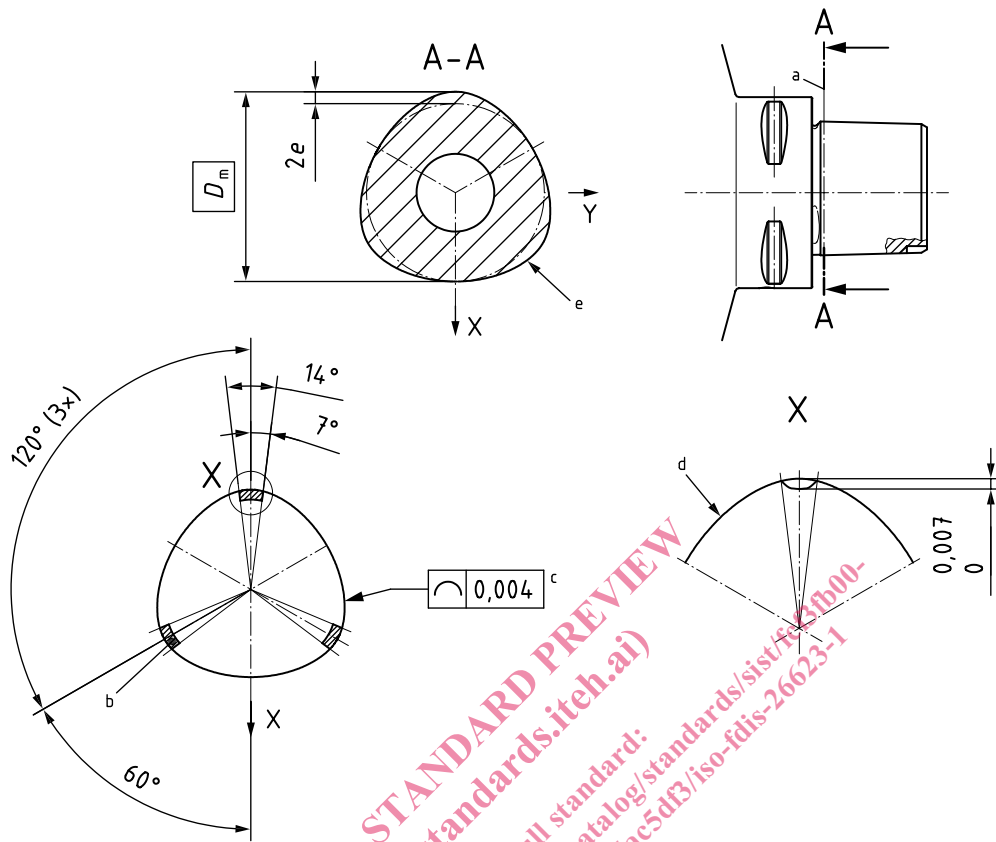
Surface roughness in micrometres
Dimensions in millimetres



- a Gauge line.
- b Position of the cutting edge for right hand tools with single cutting edge.
- c Gauge pin.
- d r_2 or f_1 as alternative.
- e Detail Y shows the two alternatives.

Figure 1 — External dimensions of polygon shanks

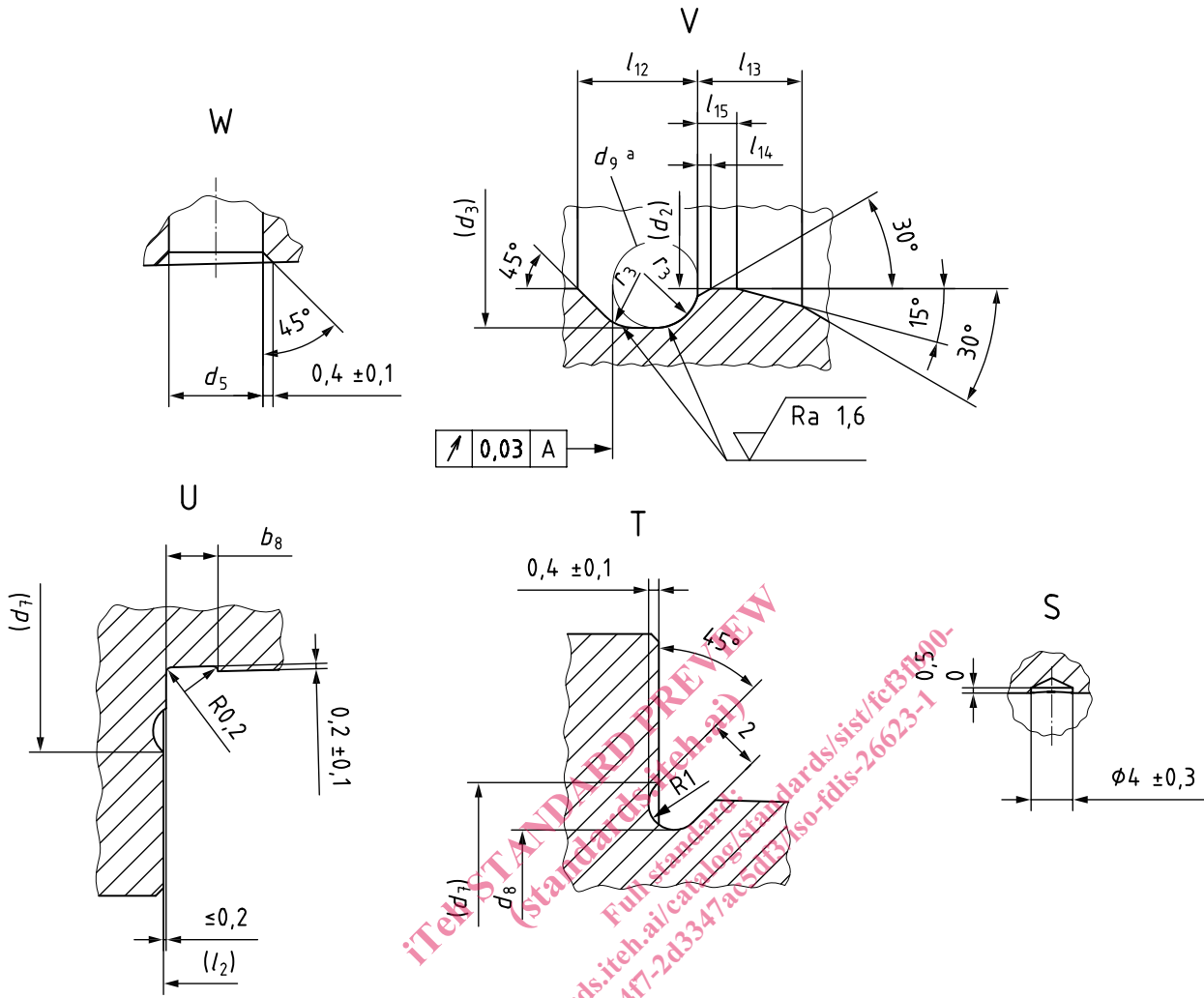
Dimensions in millimetres



Key

- a Gauge line.
- b Form of profile from actual ground curve = $\begin{matrix} +0 \\ -0,007 \end{matrix}$ X Polygon curve according to [Figure 7](#).
- c Theoretical polygon curve. X x-axis for theoretical polygon curve according to [Figure 7](#)
- d Actual ground curve. Y y-axis for theoretical polygon curve according to [Figure 7](#)

Figure 2 — Shape of polygon shanks



^a Gauge ball.

NOTE An overview and the location of details S, T, U, V and W are shown in [Figure 3](#).

Figure 4 — Dimensions of polygon shanks (details S, T, U, V and W)