
**Polygonal taper interface with flange
contact surface —**

**Part 2:
Dimensions and designation of receivers**

Interfaces à cône polygonal avec face d'appui —

Partie 2: Dimensions et désignation des nez de broche
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ISO 26623-2:2008

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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.

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.

ISO 26623-2 was prepared by Technical Committee ISO/TC 29, *Small tools*.

ISO 26623 consists of the following parts, under the general title *Polygonal taper interface with flange contact surface*:

- Part 1: *Dimensions and designation of shanks*
- Part 2: *Dimensions and designation of receivers*

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Introduction

The International Organization for Standardization (ISO) draws attention to the fact that it is claimed that compliance with this document may involve the use of a patent concerning the modular taper with ball track system.

ISO takes no position concerning the evidence, validity and scope of this patent right.

The holder of this patent right has assured ISO that he/she is willing to waive the exercise of this patent right throughout the world. In this respect, the statement of the holder of this patent right is registered with ISO. Information may be obtained from:

ISO Central Secretariat
International Organization for Standardization (ISO)
1, chemin de la Voie-Creuse, Case postale 56
CH-1211 Geneva 20, Switzerland

Attention is drawn to the possibility that some of the elements in this document may be the subject of patent rights other than that identified above. ISO shall not be held responsible for identifying any or all such patent rights.

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Polygonal taper interface with flange contact surface —

Part 2: Dimensions and designation of receivers

1 Scope

This part of ISO 26623 specifies the dimensions for a polygonal taper interface with flange contact surface: polygon-receivers 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 receiver sizes is specified.

The torque is transmitted by form lock (polygon).

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*

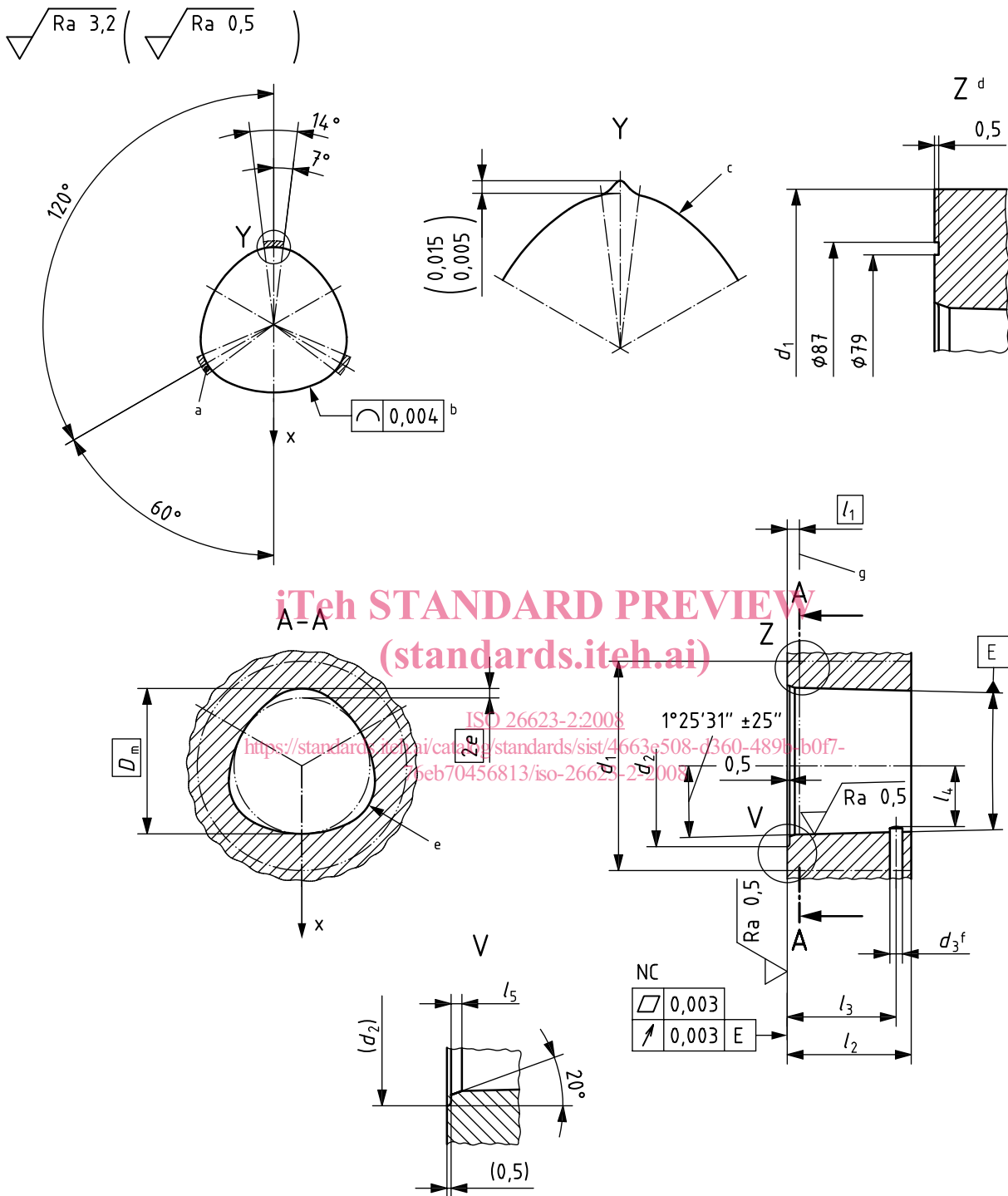
3 Dimensions

3.1 General

Tolerancing of linear and angular dimensions not specified shall be of tolerance class “m” in accordance with ISO 2768-1.

3.2 Polygon-receiver

The dimensions of polygon-receivers are shown in Figure 1 and given in Table 1.



- a Form of profile from actual ground curve = $\begin{matrix} +0,015 \\ +0,005 \end{matrix}$ (sectioned areas).
- b Theoretical polygon curve.
- c Actual ground curve.
- d Valid for size 80X only.
- e Polygon curve.
- b Position pin: the style of the position pin may have a different design than in this figure. In some cases, the position pin may be omitted.
- g Gauge line.

Figure 1 — Polygon-receiver

Table 1 — Polygon-receiver dimensions

Dimensions in millimetres

Nominal size	32	40	50	63	80	80X
d_1 min.	32	40	50	63	80	100
d_2	25,2	31,6	39,2	48,5	60,8	60,8
d_3	2	2,5	3	4	5	5
D_m	22	28	35	44	55	55
e	0,7	0,9	1,12	1,4	2	2
l_1	2,3	2,3	2,8	2,8	2,8	2,8
l_2 $\pm 0,1$	18,4	23,4	29,4	37,4	47,4	47,4
l_3 $\pm 0,2$	16,5	21	26	33,5	43	43
l_4	$9,4 \pm 0,1$	$11,5 \pm ,2$	$14,5 \pm 0,2$	$18,5 \pm 0,2$	$22,8 \pm 0,2$	$22,8 \pm 0,2$
l_5 $\pm 0,1$	1	1	1,4	1,4	1,4	1,4

4 Clamping force

The clamping system shall provide sufficient clamping force to ensure contact of the shank flange with the face of the receiver, as well as seating the taper by elastic deformation. The torque transmitting capacity of the interface is substantially determined by the size of the clamping force.

A guide to clamping forces for polygon-receivers is given in Annex A.

5 Designation

A polygon-receiver in accordance with this part of ISO 26623 shall be designated as follows:

- "Polygon-receiver";
- reference to this part of ISO 26623 (i.e. "ISO 26623-2");
- designation symbol "PSC";
- nominal size, in millimetres.

EXAMPLE Designation of a polygon-receiver of nominal size 32 mm:

Polygon-receiver ISO 26623-2 - PSC 32

Annex A (informative)

Recommendations for use and application

A.1 Clamping system

The clamping system should be specified by the manufacturer of the receiver or machine tool spindle.

A.2 Clamping forces

Variations of taper shank and receiver size within the specified limits of tolerances will cause the portion of the clamping force acting on the flange surface to vary. The flange contact surface is decisive for the stiffness of the polygon taper surface. However, the clamping forces given in Table A.1 will ensure that the portion of acting on the flange surface is never less than 80 % of the total.

Table A.1 — Range of clamping forces

Nominal size	32	40	50	63	80	80X
Clamping force, kN	15	20	25	30	40	40
<p>Lower clamping forces can be sufficient when operational loads are low (e.g. cutting and feed forces in finish machining). Conversely, higher clamping forces can be required when high operational loads are encountered (e.g. cutting and feed forces in heavy machining).</p>						

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A.3 Information about speeds and torques

The manufacturer should provide information regarding permissible speeds and torque-transmitting capacities.

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