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Rolling bearings — Thrust bearings — Geometrical product specifications (GPS) and tolerance values

Roulements — Butées — Spécification géométrique des produits (GPS) et valeurs de tolérance

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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 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).

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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 4, *Rolling bearings*, Subcommittee SC 4, *Rolling bearings - Vocabulary, boundary dimensions and geometrical product specifications*.

This fifth edition cancels and replaces the fourth edition (ISO 199:2014), which has been technically revised.

The main changes are as follows:

— symbols have been revised and the symbol list amended; in particular, the symbol for assembled bearing height has been revised;

— Annex A, B, C and D (in ISO 199:2014) have been deleted.

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.

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Introduction

This document is a machine element geometry standard as defined in the geometrical product specification system (GPS system) presented in matrix model of ISO 14638[6].

The fundamental rules of ISO GPS given in ISO 8015 apply to this document and the default decision rules given in ISO 14253-1[4] apply to specifications made in accordance with this document, unless otherwise indicated.

The connection between functional requirements, measuring technique, and measuring uncertainty is always intended to be considered. For measurement uncertainty, it is intended that ISO 14253-2[5] be considered.

This document uses most of the existing symbols associated with rolling bearings because they are well established in the market. In some cases, new terms are derived from the full GPS definition. The definitions of the established terms and symbols are necessarily changed according to the GPS rules. These changes of terms, definitions and symbols for geometrical product specifications (GPS) to define characteristics and tolerances of rolling bearing components and assemblies are given in ISO 22872 and incorporated in this document.

The representation of symbols, tolerance values, limits of size, deviation limits and limit values derived from GPS indications according to, for example, ISO 1101 and ISO 14405-1, including indications in tables and graphical descriptions, have been revised and implemented in accordance with the principles of ISO 22872.

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Rolling bearings — Thrust bearings — Geometrical product specifications (GPS) and tolerance values

1 Scope

This document specifies dimensional characteristics, deviation limits from nominal values, and tolerance values to define the interface (except chamfers) of thrust rolling bearings. Nominal boundary dimensions are defined in ISO 104[1].

This document is not applicable to certain thrust bearings (e.g. thrust needle roller bearings) or for particular fields of application (e.g. special thrust precision bearings). Tolerances for such bearings are given in the relevant International Standards.

Chamfer dimension limits are given in ISO 582[3].

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 1101:2017, *Geometrical product specifications (GPS) — Geometrical tolerancing — Tolerances of form, orientation, location and run-out*

ISO 5593, *Rolling bearings — Vocabulary*

ISO 8015, *Geometrical product specifications (GPS) — Fundamentals — Concepts, principles and rules*

ISO 14405-1:2016, *Geometrical product specifications (GPS) — Dimensional tolerancing — Part 1: Linear sizes*

ISO/TS 17863:2013, *Geometrical product specification (GPS) — Tolerancing of moveable assemblies*

ISO 22872, *Rolling bearings — Geometrical product specifications (GPS) — Vocabulary and representation of symbols*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 1101, ISO 5593, ISO 14405-1, ISO/TS 17863 and ISO 22872 apply.

ISO and IEC maintain terminology 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 Symbols

4.1 Symbols for physical quantities

Symbols in Table 1 represent physical quantities in the GPS environment and may sometimes be applied to more than one physical quantity.

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