INTERNATIONAL STANDARD

ISO 5753-2

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Rolling bearings — Internal clearance —

Part 2: Axial internal clearance for four-point-contact ball bearings

Roulements — Jeu interne —

Partie 2: Jeu interne axial pour roulements à billes à quatre points de contact

Reference number
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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 5753-2 was prepared by Technical Committee ISO/TC 4, *Rolling bearings*, Subcommittee SC 4, *Tolerances*.

ISO 5753 consists of the following parts, under the general title *Rolling bearings — Internal clearance*:

— *Part 1: Radial internal clearance for radial bearings*

— *Part 2: Axial internal clearance for four-point-contact ball bearings*

Introduction

Four-point-contact ball bearings are radial single-row angular contact ball bearings with raceways that are designed to support axial loads in both directions.

The axial clearance values apply to bearings supporting pure axial load in both directions, which are not mounted or preloaded and are not being subjected to any external load (i.e. with no measuring load being applied).

Depending on the design of the bearing and verification method, some dispersion of the results of measurements can be experienced due to verification uncertainties. Manufacturers and users are expected to take this into consideration.

Rolling bearings — Internal clearance —

Part 2:
Axial internal clearance for four-point-contact ball bearings

1 Scope

This part of ISO 5753 specifies values of axial internal clearance for four-point-contact ball bearings with contact angle of 35°.

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 1132-1:2000, *Rolling bearings — Tolerances — Part 1: Terms and definitions*

ISO 5593, *Rolling bearings — Vocabulary*

ISO 15241, *Rolling bearings — Symbols for quantities*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 1132-1, ISO 5593 and the following apply.

NOTE For the convenience of users of this part of ISO 5753, the following definitions are reproduced.

3.1
axial internal clearance
G_a
⟨bearing capable of taking axial load in both directions, non-preloaded⟩ arithmetical mean of the axial distances through which one of the rings may be displaced relative to the other, from one axial extreme position to the opposite extreme position, without being subjected to any external load

NOTE 1 The mean value includes displacements with the rings in different angular positions relative to each other and with the set of rolling elements in different angular positions in relation to the rings.

NOTE 2 For a measurement to be valid, at each limiting axial position of the rings in relation to each other, their relative radial position, and the position of the rolling elements relative to the raceways, shall be such that the one ring has actually assumed the extreme axial position in relation to the other ring.

[ISO 1132-1:2000, definition 8.2.1]

3.2
four-point-contact ball bearing
single-row angular contact ball bearing in which, when under purely radial load, each loaded ball makes contact with each of the two raceways at two points

NOTE 1 Under pure axial load on the bearing, each ball makes contact with each raceway at one point only.

NOTE 2 This bearing is used as a thrust bearing even though its nominal contact angle is generally less than 45°.

NOTE 3 Adapted from ISO 5593:1997, definition 01.05.09.

4 Symbols

For the purposes of this document, the symbols given in ISO 15241 and the following apply.

The symbols (except those for clearance values) and the values given in Table 1 denote nominal dimensions, unless specified otherwise.

d bore diameter of inner ring

G_a axial internal clearance

α contact angle

5 Axial internal clearance for four-point-contact ball bearings

The axial internal clearance values for four-point-contact ball bearings, with bore diameter of inner ring up to and including 1 000 mm, are given in Table 1.