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(JBIA)

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

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In the event of any doubts arising as to the contents,
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Foreword

This translation has been made based on the original Japanese Industrial Standard established by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee according to the proposal for establishment of Japanese Industrial Standard submitted by The Japan Bearing Industry Association (JBIA) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law.

Consequently, JIS B 1520:1995 has been withdrawn and replaced with this Standard.

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JIS B 1520 series consists of the following 2 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

Rolling bearings — Internal clearance — Part 1 : Radial internal clearance for radial bearings

Introduction

This Japanese Industrial Standard has been prepared based on the first edition of ISO 5753-1 published in 2009 with some modifications of the technical contents according to the actual situation in Japan.

The portions given dotted underlines are the matters in which the contents of the corresponding International Standard have been modified. A list of modifications with the explanations is given in Annex JB.

1 Scope

This Standard specifies the radial internal clearance for the following types of rolling bearings (hereafter referred to as "bearings").

- Deep groove ball bearings (except those for insert bearings)
- Double-row self-aligning ball bearings
- Cylindrical roller bearings
- Machined ring needle roller bearings
- Toroidal roller bearings (shown in Annex JA for reference)
- Double-row self-aligning roller bearings

The radial internal clearance values specified in this Standard shall apply to five types of bearings with cylindrical bore (except the toroidal roller bearings) shown above and three types of bearings with tapered bore (double-row self-aligning ball bearings, cylindrical roller bearings and double-row self-aligning roller bearings).

The radial internal clearance values of deep groove ball bearings shall also apply to the filling slot ball bearings of radial contact bearings. The radial internal clearance values of insert bearings are specified in JIS B 1558.

NOTE : The International Standard corresponding to this Standard and the symbol of degree of correspondence are as follows.

ISO 5753-1 : 2009 *Rolling bearings — Internal clearance — Part 1 : Radial internal clearance for radial bearings* (MOD)

In addition, symbols which denote the degree of correspondence in the contents between the relevant International Standard and JIS are IDT (identical), MOD (modified), and NEQ (not equivalent) according to ISO/IEC Guide 21-1.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. The most recent editions of the standards (including amendments) indicated below shall be applied.

JIS B 0104 *Rolling bearings — Vocabulary*

NOTE : Corresponding International Standard : ISO 5593 *Rolling bearings — Vocabulary* (MOD)

JIS B 0124 *Rolling bearings — Symbols for quantities*

NOTE : Corresponding International Standard : ISO 15241 *Rolling bearings — Symbols for quantities* (MOD)

JIS B 1515-1 *Rolling bearings — Tolerances — Part 1 : Terms and definitions*

NOTE : Corresponding International Standard : ISO 1132-1 *Rolling bearings — Tolerances — Part 1 : Terms and definitions* (IDT)

JIS B 1558 *Rolling bearings—Insert bearings and eccentric locking collars*

NOTE : Corresponding International Standard : ISO 9628 *Rolling bearings — Insert bearings and eccentric locking collars — Boundary dimensions and tolerances* (MOD)

3 Terms and definitions

For the purpose of this Standard, the terms and definitions given in JIS B 0104 and JIS B 1515-1, and the following apply.

3.1 radial internal clearance

arithmetical mean of the radial distances through which one of the rings may be displaced relative to the other, from one eccentric extreme position to the diametrically opposite extreme position, in different angular directions and 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 eccentric position of the rings in relation to each other, their relative axial positions, and the position of the rolling elements relative to the raceways, shall be such that one ring has actually assumed the extreme eccentric position in relation to the other ring.

(See 8.1.1 of JIS B 1515-1.)

3.2 toroidal roller bearing

single-row self-aligning roller bearing having convex rollers as rolling elements with raceway radii in axial plane of both outer and inner rings larger than the half the outer ring raceway diameter in radial plane