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(JBIA)

**Rolling bearings—Boundary
dimensions—Part 1: Radial
bearings**

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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 Industrial Association (JBIA) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law.

Consequently, **JIS B 1512:2000** has been withdrawn and partially replaced with this Standard.

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JIS B 1512 series consists of the following 6 parts under the general title “*Rolling bearings—Boundary dimensions*”:

Part 1: Radial bearings

Part 2: Thrust bearings

Part 3: Tapered roller bearings

Part 4: Flange dimensions of radial ball bearings with flanged outer ring

Part 5: Chamfer dimensions for loose rib and non-rib sides of single-row cylindrical roller bearings

Part 6: Chamfer dimensions for outer ring non-thrust side of single-row angular contact ball bearings

Rolling bearings—Boundary dimensions— Part 1: Radial bearings

Introduction

This Japanese Industrial Standard has been prepared based on the second edition of **ISO 15** published in 1998, with some modifications of the technical contents such as addition of normative references that are not given in the said International Standard.

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

1 Scope

This Standard lays down boundary dimensions for radial bearings (hereafter referred to as “bearings”), which do not include tapered roller bearings, insert bearings and some types of needle roller bearings, and instrument precision bearings.

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

ISO 15:1998 *Rolling bearings—Radial bearings—Boundary dimensions, general plan* (MOD)

The symbols which denote the degree of correspondence in the contents between **JIS** and the corresponding International Standard 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*

JIS B 0124 *Rolling bearings—Symbols for quantities*

JIS B 1509 *Rolling bearings—Radial bearings with locating snap ring—Dimensions and tolerances*

NOTE : Corresponding International Standard: ISO 464:1995 *Rolling bearings—Radial bearings with locating snap ring—Dimensions and tolerances* (IDT)

JIS B 1512-5 *Rolling bearings—Boundary dimensions—Part 5: Chamfer dimensions for loose rib and non-rib sides of single-row cylindrical roller bearings*

NOTE : Corresponding International Standard: ISO 12043:2007 *Rolling bearings—Single-row cylindrical roller bearings—Chamfer dimensions for loose rib and non-rib sides* (IDT)

JIS B 1512-6 *Rolling bearings—Boundary dimensions—Part 6: Chamfer dimensions for outer ring non-thrust side of single-row angular contact ball bearings*

NOTE : Corresponding International Standard: ISO 12044:1995 *Rolling bearings—Single-row angular contact ball bearings—Chamfer dimensions for outer ring non-thrust side* (MOD)

JIS B 1514-3 *Rolling bearings—Tolerances of bearings—Part 3: Chamfer dimensions—Maximum values*

NOTE : Corresponding International Standard: ISO 582:1995 *Rolling bearings—Chamfer dimensions—Maximum values* (IDT)

3 Terms and definitions

For the purpose of this Standard, the terms and definitions given in **JIS B 0104** apply.

4 Quantity symbols

For the purpose of this Standard, the quantity symbols given in **JIS B 0124** and the following apply.

B : bearing width

D : outside diameter

d : bore diameter

r : chamfer dimension for inner or outer ring

$r_{s\min}$: smallest single chamfer dimension for inner or outer ring

The quantity symbols in figure 1 and the values in table 1 to table 8 denote nominal dimensions unless otherwise specified.

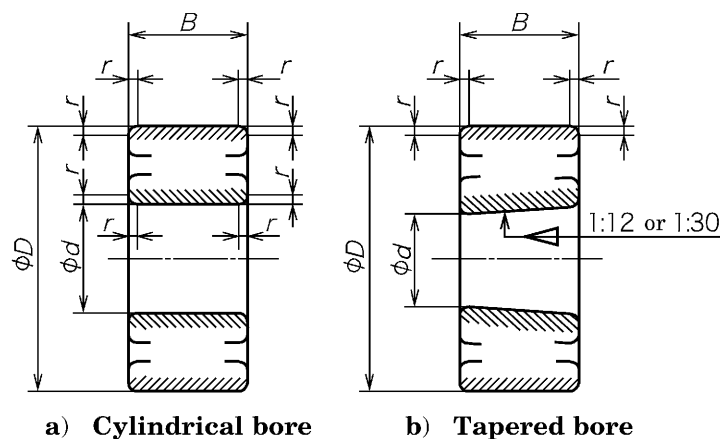


Figure 1 Radial bearings

5 Boundary dimensions

Boundary dimensions of diameter series 7, 8, 9, 0, 1, 2, 3 and 4 shall be as given in table 1 to table 8.

The chamfer dimensions given in table 1 to table 8 do not always apply to:

- the groove side of bearing rings with snap ring groove—these are shown in **JIS B 1509**;
- the loose rib and the non-rib sides of cylindrical roller bearing rings—these are shown in **JIS B 1512-5**;
- the non-thrust side of angular contact bearing outer rings—these are shown in **JIS B 1512-6**.

The corresponding largest single chamfer dimensions to the $r_{s\ min}$ dimensions in table 1 to table 8 are given in **JIS B 1514-3**. The chamfer dimensions only apply to positions indicated with r in the figure and are specified by the smallest single chamfer dimensions $r_{s\ min}$. The chamfer dimensions for inner rings of bearings with tapered bore may be smaller than those shown in table 1 to table 8.

NOTE : The general rules for extension of boundary dimensions that are not numerically determined in this Standard are described in Annex A.

Table 1 Boundary dimensions of diameter series 7

Unit: mm

d	D	B				r_s min
		Dimension series				
		17	27	37	47	
0.6	2	0.8	—	—	—	0.05
1	2.5	1	—	—	—	0.05
1.5	3	1	—	1.8	—	0.05
2	4	1.2	—	2	—	0.05
2.5	5	1.5	1.8	2.3	—	0.08
3	6	2	2.5	3	—	0.08
4	7	2	2.5	3	—	0.08
5	8	2	2.5	3	—	0.08
6	10	2.5	3	3.5	—	0.1
7	11	2.5	3	3.5	—	0.1
8	12	2.5	—	3.5	—	0.1
9	14	3	—	4.5	—	0.1
10	15	3	—	4.5	—	0.1
12	18	4	—	5	—	0.2
15	21	4	—	5	—	0.2
17	23	4	—	5	—	0.2
20	27	4	—	5	7	0.2
22	30	4	—	5	7	0.2
25	32	4	—	5	7	0.2
28	35	4	—	5	7	0.2
30	37	4	—	5	7	0.2
32	40	4	—	6	8	0.2
35	44	5	—	7	9	0.3
40	50	6	—	8	10	0.3
45	55	6	—	8	10	0.3
50	62	6	—	10	12	0.3
55	68	7	—	10	13	0.3
60	75	7	—	12	15	0.3
65	80	7	—	12	15	0.3
70	85	7	—	12	15	0.3
75	90	7	—	12	15	0.3
80	95	7	—	12	15	0.3
85	105	10	—	15	—	0.6
90	110	10	—	15	—	0.6
95	115	10	—	15	—	0.6

Table 1 (concluded)

Unit: mm

d	D	B				r_s min
		Dimension series				
		17	27	37	47	
100	120	10	—	15	—	0.6
105	125	10	—	15	—	0.6
110	135	13	—	19	—	1
120	145	13	—	19	—	1
130	160	16	—	23	—	1
140	170	16	—	23	—	1
150	180	16	—	23	—	1
160	190	16	—	23	—	1
170	200	16	—	23	—	1
180	215	18	—	26	—	1.1
190	230	20	—	30	—	1.1
200	240	20	—	30	—	1.1

Table 2 Boundary dimensions of diameter series 8

Unit: mm

<i>d</i>	<i>D</i>	<i>B</i>							<i>r</i> 's min	
		Dimension series								
		08	18	28	38	48	58	68	08	18 to 68
0.6	2.5	—	1	—	1.4	—	—	—	—	0.05
1	3	—	1	—	1.5	—	—	—	—	0.05
1.5	4	—	1.2	—	2	—	—	—	—	0.05
2	5	—	1.5	—	2.3	—	—	—	—	0.08
2.5	6	—	1.8	—	2.6	—	—	—	—	0.08
3	7	—	2	—	3	—	—	—	—	0.1
4	9	—	2.5	3.5	4	—	—	—	—	0.1
5	11	—	3	4	5	—	—	—	—	0.15
6	13	—	3.5	5	6	—	—	—	—	0.15
7	14	—	3.5	5	6	—	—	—	—	0.15
8	16	—	4	5	6	8	—	—	—	0.2
9	17	—	4	5	6	8	—	—	—	0.2
10	19	—	5	6	7	9	—	—	—	0.3
12	21	—	5	6	7	9	—	—	—	0.3
15	24	—	5	6	7	9	—	—	—	0.3
17	26	—	5	6	7	9	—	—	—	0.3
20	32	4	7	8	10	12	16	22	0.3	0.3
22	34	4	7	—	10	—	16	22	0.3	0.3
25	37	4	7	8	10	12	16	22	0.3	0.3
28	40	4	7	—	10	—	16	22	0.3	0.3
30	42	4	7	8	10	12	16	22	0.3	0.3
32	44	4	7	—	10	—	16	22	0.3	0.3
35	47	4	7	8	10	12	16	22	0.3	0.3
40	52	4	7	8	10	12	16	22	0.3	0.3
45	58	4	7	8	10	13	18	23	0.3	0.3
50	65	5	7	10	12	15	20	27	0.3	0.3
55	72	7	9	11	13	17	23	30	0.3	0.3
60	78	7	10	12	14	18	24	32	0.3	0.3
65	85	7	10	13	15	20	27	36	0.3	0.6
70	90	8	10	13	15	20	27	36	0.3	0.6
75	95	8	10	13	15	20	27	36	0.3	0.6
80	100	8	10	13	15	20	27	36	0.3	0.6
85	110	9	13	16	19	25	34	45	0.3	1
90	115	9	13	16	19	25	34	45	0.3	1
95	120	9	13	16	19	25	34	45	0.3	1