
**Rolling bearings — Radial bearings —
Boundary dimensions, general plan**

*Roulements — Roulements radiaux — Dimensions d'encombrement,
plan général*

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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.

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 15 was prepared by Technical Committee ISO/TC 4, *Rolling bearings*.

This third edition cancels and replaces the second edition (ISO 15:1998), of which it constitutes a minor revision, mainly to update references and terminology.

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Introduction

The object of the general plan (this International Standard) is to restrict the number of radial bearing sizes enough to ensure economic production, yet to provide a sufficient number of sizes to satisfy present and future needs of bearing users.

These needs are comprehensive and varying. Therefore, the general plan needs to embrace a wide range of numerically determined sizes and proportions and can even be extended according to the guidelines given in Annex A.

Tapered roller bearings, insert bearings and some types of needle roller bearings and instrument precision bearings standardized by ISO do not conform to this International Standard because the dimensions given are not found to be optimal for the bearings in question.

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Rolling bearings — Radial bearings — Boundary dimensions, general plan

1 Scope

This International Standard specifies preferred boundary dimensions for radial bearings of the diameter series 7, 8, 9, 0, 1, 2, 3 and 4.

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 464, *Rolling bearings — Radial bearings with locating snap ring — Dimensions and tolerances*

ISO 582, *Rolling bearings — Chamfer dimensions — Maximum values*

ISO 5593, *Rolling bearings — Vocabulary*

ISO 12043, *Rolling bearings — Single-row cylindrical roller bearings — Chamfer dimensions for loose rib and non-rib sides*
<https://standards.iteh.ai/catalog/standards/sist/960955c0-500e-428e-9cc3-9ba8b8fd80db/iso-15-2011>

ISO 12044, *Rolling bearings — Single-row angular contact ball bearings — Chamfer dimensions for outer ring non-thrust side*

ISO 15241, *Rolling bearings — Symbols for quantities*

3 Terms and definitions

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

4 Symbols

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

The symbols shown in Figure 1 and given in Tables 1 to 8 denote nominal dimensions, unless specified otherwise.

B	bearing width
D	bearing outside diameter
d	bearing bore diameter
r	chamfer dimension
$r_{s \min}$	smallest single chamfer dimension

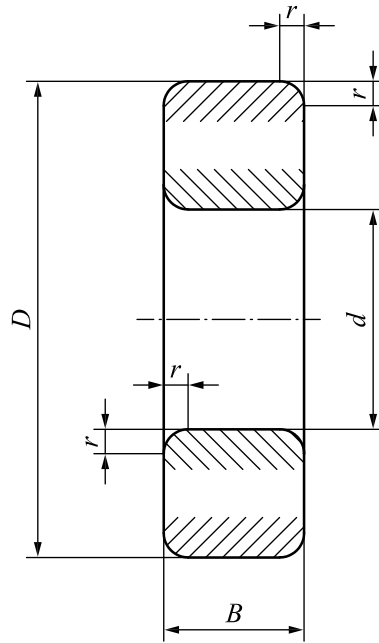


Figure 1 — Radial bearing

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5 Boundary dimensions

Boundary dimensions for radial bearings of the diameter series 7, 8, 9, 0, 1, 2, 3 and 4 are given in Tables 1 to 8.

The chamfer dimensions given in Tables 1 to 8 do not always apply to:
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- the groove side of bearing rings with snap ring groove; these are specified in ISO 464;
- the loose rib and the non-rib sides of cylindrical roller bearing rings; the exceptions are specified in ISO 12043;
- the non-thrust side of angular contact bearing outer rings; these are specified in ISO 12044.

Chamfer dimension, r , applies at the corners indicated in Figure 1 and is specified with $r_{s\ min}$ in Tables 1 to 8.

The chamfer dimensions for inner rings of bearings with tapered bore may be smaller than those shown in Tables 1 to 8.

The corresponding largest single chamfer dimensions to the $r_{s\ min}$ dimensions in Tables 1 to 8 are given in ISO 582.

Table 1 — Diameter series 7

Dimensions in millimetres

<i>d</i>	<i>D</i>	Dimension series				<i>r</i> _s min
		17	27	37	47	
		<i>B</i>				
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
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 — Diameter series 8

Dimensions in millimetres

d	D	Dimension series								
		08	18	28	38	48	58	68	08	18 to 68
		B							r's min	
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
100	125	9	13	16	19	25	34	45	0,3	1
105	130	9	13	16	19	25	34	45	0,3	1
110	140	10	16	19	23	30	40	54	0,6	1
120	150	10	16	19	23	30	40	54	0,6	1
130	165	11	18	22	26	35	46	63	0,6	1,1
140	175	11	18	22	26	35	46	63	0,6	1,1
150	190	13	20	24	30	40	54	71	0,6	1,1
160	200	13	20	24	30	40	54	71	0,6	1,1
170	215	14	22	27	34	45	60	80	0,6	1,1
180	225	14	22	27	34	45	60	80	0,6	1,1

Table 2 (continued)

Dimensions in millimetres

<i>d</i>	<i>D</i>	Dimension series								
		08	18	28	38	48	58	68	08	18 to 68
		<i>B</i>							<i>r</i> 's min	
190	240	16	24	30	37	50	67	90	1	1,5
200	250	16	24	30	37	50	67	90	1	1,5
220	270	16	24	30	37	50	67	90	1	1,5
240	300	19	28	36	45	60	80	109	1	2
260	320	19	28	36	45	60	80	109	1	2
280	350	22	33	42	52	69	95	125	1,1	2
300	380	25	38	48	60	80	109	145	1,5	2,1
320	400	25	38	48	60	80	109	145	1,5	2,1
340	420	25	38	48	60	80	109	145	1,5	2,1
360	440	25	38	48	60	80	109	145	1,5	2,1
380	480	31	46	60	75	100	136	180	2	2,1
400	500	31	46	60	75	100	136	180	2	2,1
420	520	31	46	60	75	100	136	180	2	2,1
440	540	31	46	60	75	100	136	180	2	2,1
460	580	37	56	72	90	118	160	218	2,1	3
480	600	37	56	72	90	118	160	218	2,1	3
500	620	37	56	72	90	118	160	218	2,1	3
530	650	37	56	72	90	118	160	218	2,1	3
560	680	37	56	72	90	118	160	218	2,1	3
600	730	42	60	78	98	128	175	236	3	3
630	780	48	69	88	112	150	200	272	3	4
670	820	48	69	88	112	150	200	272	3	4
710	870	50	74	95	118	160	218	290	4	4
750	920	54	78	100	128	170	230	308	4	5
800	980	57	82	106	136	180	243	325	4	5
850	1 030	57	82	106	136	180	243	325	4	5
900	1 090	60	85	112	140	190	258	345	5	5
950	1 150	63	90	118	150	200	272	355	5	5
1 000	1 220	71	100	128	165	218	300	400	5	6
1 060	1 280	71	100	128	165	218	300	400	5	6
1 120	1 360	78	106	140	180	243	325	438	5	6
1 180	1 420	78	106	140	180	243	325	438	5	6
1 250	1 500	80	112	145	185	250	335	450	6	6
1 320	1 600	88	122	165	206	280	375	500	6	6
1 400	1 700	95	132	175	224	300	400	545	6	7,5
1 500	1 820	—	140	185	243	315	—	—	—	7,5
1 600	1 950	—	155	200	265	345	—	—	—	7,5
1 700	2 060	—	160	206	272	355	—	—	—	7,5
1 800	2 180	—	165	218	290	375	—	—	—	9,5
1 900	2 300	—	175	230	300	400	—	—	—	9,5
2 000	2 430	—	190	250	325	425	—	—	—	9,5