

INTERNATIONAL  
STANDARD

**ISO**  
**582**

Third edition  
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**Rolling bearings — Chamfer  
dimensions — Maximum values**

*Roulements — Dimensions des arrondis — Valeurs maximales*

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Reference number  
ISO 582:1995(E)

## 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.

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.

International Standard ISO 582 was prepared by Technical Committee ISO/TC 4, *Rolling bearings*.

This third edition cancels and replaces the second edition (ISO 582:1979), which has been technically revised.

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## Introduction

In order to ensure that the chamfers on rolling bearings are compatible with the dimensions of parts which come into contact with the rolling bearings, values of the chamfer dimensions, of which the minimum limit is of primary interest to the bearing user and application designer, are required.

The purpose of this International Standard is to achieve interchangeability of rolling bearings, by specifying the chamfer dimensions, and to minimize the risk of incompatibility in bearing applications.

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# Rolling bearings — Chamfer dimensions — Maximum values

## 1 Scope

This International Standard specifies the maximum chamfer dimensions of metric series rolling bearings, for which boundary dimensions, including chamfer minimum dimensions, are given in other International Standards. Requirements for the maximum dimensions of the corresponding shaft and housing fillet radii are also given.

It does not apply to chamfers, for which dimensions are not specified, or for which other dimensions are specified in other International Standards.

## 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 15:1981, *Rolling bearings — Radial bearings — Boundary dimensions — General plan.*

ISO 104:1994, *Rolling bearings — Thrust bearings — Boundary dimensions, general plan.*

ISO 246:1995, *Rolling bearings — Cylindrical roller bearings, separate thrust collars — Boundary dimensions.*

ISO 355:1977, *Rolling bearings — Metric tapered roller bearings — Boundary dimensions and series designations.*

ISO 464:1995, *Rolling bearings — Radial bearings with locating snap ring — Dimensions and tolerances.*

ISO 12043:1995, *Rolling bearings — Single-row cylindrical roller bearings — Chamfer dimensions for loose-rib and non-rib sides.*

ISO 12044:1995, *Rolling bearings — Single-row angular contact ball bearings — Chamfer dimensions for outer ring non-thrust side.*

## 3 Definitions

For the purposes of this International Standard, the following definitions apply.

**3.1 radial direction chamfer dimension (of a bearing ring or washer):** The distance between the imaginary sharp ring or washer corner and the intersection of the chamfer surface and the ring or washer face.

**3.2 axial direction chamfer dimension (of a bearing ring or washer):** The distance between the imaginary sharp ring or washer corner and the intersection of the chamfer surface and the bore or outside cylindrical surface of the ring or washer.

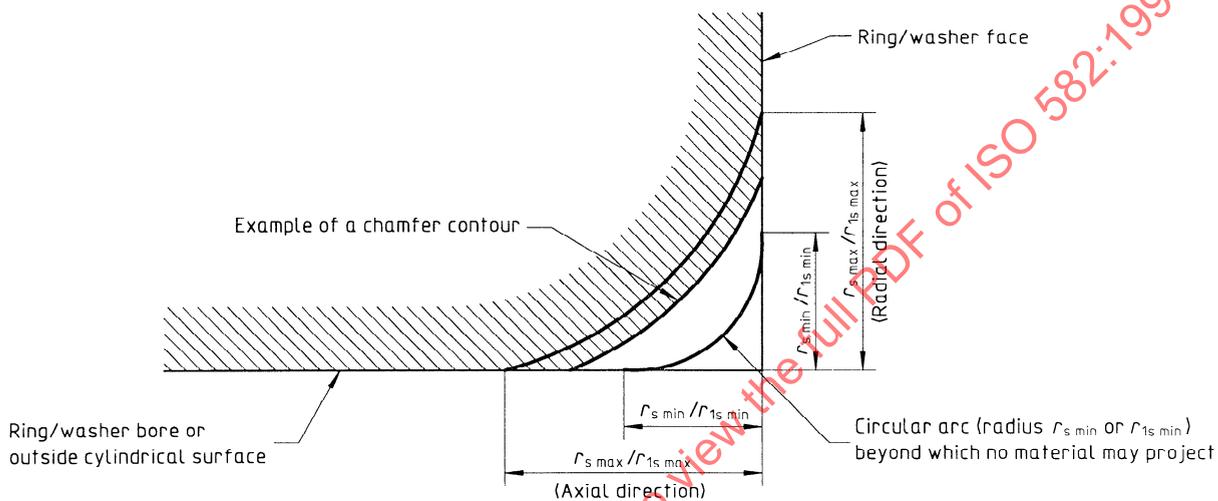
#### 4 Symbols and dimensions

See figure 1 and tables 1 to 5.

The dimensions given in tables 1 to 5 corresponding to symbols shown in figure 1 are nominal dimensions unless specified otherwise.

#### 5 Shaft and housing fillet radii

The largest permissible single shaft and housing fillet radius  $r_{as\ max}$  should not exceed the smallest permissible single chamfer dimension of the corresponding ring or washer  $r_{s\ min}$  or  $r_{1s\ min}$ .



$d$  = bore diameter

$D$  = outside diameter

$r_{s\ min}, r_{1s\ min}$  = smallest permissible single chamfer dimension of  $r_s, r_{1s}$  (single chamfer dimension)

$r_{s\ max}, r_{1s\ max}$  = largest permissible single chamfer dimension of  $r_s, r_{1s}$

$r_{as\ max}$  = largest permissible single shaft and housing fillet radius.

NOTE — The exact shape of the chamfer surface is not specified, but its contour in an axial plane shall not be allowed to project beyond the imaginary circular arc, of radius  $r_{s\ min}$  or  $r_{1s\ min}$ , tangential to the ring or washer face and the bore or outside cylindrical surface of the ring or washer.

Figure 1

**Table 1 — Radial bearings in accordance with ISO 15**

Dimensions in millimetres

$r_{s \text{ min}}^{1)}$	$d$	$r_{s \text{ max}}^{2)}$	
		Directions	
		radial	axial
0,05	—	0,1	0,2
0,08	—	0,16	0,3
0,1	—	0,2	0,4
0,15	—	0,3	0,6
0,2	—	0,5	0,8
0,3	$d \leq 40$	0,6	1
	$d > 40$	0,8	1
0,6	$d \leq 40$	1	2
	$d > 40$	1,3	2
1	$d \leq 50$	1,5	3
	$d > 50$	1,9	3
1,1	$d \leq 120$	2	3,5
	$d > 120$	2,5	4
1,5	$d \leq 120$	2,3	4
	$d > 120$	3	5
2	$d \leq 80$	3	4,5
	$80 < d \leq 220$	3,5	5
	$d > 220$	3,8	6
2,1	$d \leq 280$	4	6,5
	$d > 280$	4,5	7
2,5 <sup>3)</sup>	$d \leq 100$	3,8	6
	$100 < d \leq 280$	4,5	6
	$d > 280$	5	7
3	$d \leq 280$	5	8
	$d > 280$	5,5	8
4	—	6,5	9
5	—	8	10
6	—	10	13
7,5	—	12,5	17
9,5	—	15	19
12	—	18	24
15	—	21	30
19	—	25	38

1) See clause 5 for maximum shaft and housing fillet radii.

2) For bearings with a width of 2 mm or less the  $r_{s \text{ max}}$  values for the radial direction apply also in the axial direction.

3) This chamfer dimension is not specified in ISO 15.

**Table 2 — Radial bearings in accordance with ISO 246 and ISO 464 and in accordance with ISO 12043 for loose ribs**

Dimensions in millimetres

$r_{1s \text{ min}}^{1)}$	$d$ or $D$	$r_{1s \text{ max}}$	
		Directions	
		radial	axial
0,2	—	0,5	0,5
0,3	$d$ or $D \leq 40$	0,6	0,8
	$d$ or $D > 40$	0,8	0,8
0,5	$d$ or $D \leq 40$	1	1,5
	$d$ or $D > 40$	1,3	1,5
0,6	$d$ or $D \leq 40$	1	1,5
	$d$ or $D > 40$	1,3	1,5
1	$d$ or $D \leq 50$	1,5	2,2
	$d$ or $D > 50$	1,9	2,2
1,1	$d$ or $D \leq 120$	2	2,7
	$d$ or $D > 120$	2,5	2,7
1,5	$d$ or $D \leq 120$	2,3	3,5
	$d$ or $D > 120$	3	3,5
2	$d$ or $D \leq 80$	3	4
	$80 < d$ (or $D$ ) $\leq 220$	3,5	4
	$d$ or $D > 220$	3,8	4
2,1	$d$ or $D \leq 280$	4	4,5
	$d$ or $D > 280$	4,5	4,5
2,5 <sup>2)</sup>	$d$ or $D \leq 100$	3,8	5
	$100 < d$ (or $D$ ) $\leq 280$	4,5	5
	$d$ or $D > 280$	5	5
3	$d$ or $D \leq 280$	5	5,5
	$d$ or $D > 280$	5,5	5,5
4	—	6,5	6,5
5	—	8	8
6	—	10	10

1) See clause 5 for maximum shaft and housing fillet radii.

2) This chamfer dimension is not specified in ISO 246, ISO 464 and ISO 12043.

**Table 3 — Radial bearings in accordance with ISO 12043, inner and outer ring non-rib sides only, and with ISO 12044**

Dimensions in millimetres

$r_{1s \text{ min}}^{1)}$	$d$ or $D$	$r_{1s \text{ max}}$	
		Directions	
		radial	axial
0,1	—	0,2	0,4
0,15	—	0,3	0,6
0,2 <sup>2)</sup>	—	0,5	0,8
0,3	$d$ or $D \leq 40$	0,6	1
	$d$ or $D > 40$	0,8	1
0,6	$d$ or $D \leq 40$	1	2
	$d$ or $D > 40$	1,3	2
1	$d$ or $D \leq 50$	1,5	3
	$d$ or $D > 50$	1,9	3
1,1	$d$ or $D \leq 120$	2	3,5
	$d$ or $D > 120$	2,5	4
1,5	$d$ or $D \leq 120$	2,3	4
	$d$ or $D > 120$	3	5
2	$d$ or $D \leq 80$	3	4,5
	$80 < d$ (or $D$ ) $\leq 220$	3,5	5
	$d$ or $D > 220$	3,8	6

1) See clause 5 for maximum shaft and housing fillet radii.  
2) This chamfer dimension is not specified in ISO 12043 and ISO 12044.

**Table 4 — Tapered roller bearings in accordance with ISO 355, inner and outer ring back faces**

Dimensions in millimetres

$r_s \text{ min}^{1)}$	$d$ or $D$	$r_s \text{ max}$	
		Directions	
		radial	axial
0,3	$d$ or $D \leq 40$	0,7	1,4
	$d$ or $D > 40$	0,9	1,6
0,6	$d$ or $D \leq 40$	1,1	1,7
	$d$ or $D > 40$	1,3	2
1	$d$ or $D \leq 50$	1,6	2,5
	$d$ or $D > 50$	1,9	3
1,5	$d$ or $D \leq 120$	2,3	3
	$120 < d$ (or $D$ ) $\leq 250$	2,8	3,5
	$d$ or $D > 250$	3,5	4
2	$d$ or $D \leq 120$	2,8	4
	$120 < d$ (or $D$ ) $\leq 250$	3,5	4,5
	$d$ or $D > 250$	4	5
2,5	$d$ or $D \leq 120$	3,5	5
	$120 < d$ (or $D$ ) $\leq 250$	4	5,5
	$d$ or $D > 250$	4,5	6
3	$d$ or $D \leq 120$	4	5,5
	$120 < d$ (or $D$ ) $\leq 250$	4,5	6,5
	$250 < d$ (or $D$ ) $\leq 400$	5	7
	$d$ or $D > 400$	5,5	7,5
4	$d$ or $D \leq 120$	5	7
	$120 < d$ (or $D$ ) $\leq 250$	5,5	7,5
	$250 < d$ (or $D$ ) $\leq 400$	6	8
	$d$ or $D > 400$	6,5	8,5
5	$d$ or $D \leq 180$	6,5	8
	$d$ or $D > 180$	7,5	9
6	$d$ or $D \leq 180$	7,5	10
	$d$ or $D > 180$	9	11

1) See clause 5 for maximum shaft and housing fillet radii.

**Table 5 — Thrust bearings in accordance with ISO 104**

Dimensions in millimetres

$r_{s \text{ min}}^{1)}$ Or $r_{1s \text{ min}}^{1)}$	$r_{s \text{ max}}$ Or $r_{1s \text{ max}}$
	Radial and axial directions
0,3	0,8
0,6	1,5
1	2,2
1,1	2,7
1,5	3,5
2	4
2,1	4,5
3	5,5
4	6,5
5	8
6	10
7,5	12,5
9,5	15
12	18
15	21
19	25

NOTE — The dimensions given above refer to:

- back face/outside cylindrical surface chamfer of housing washer;
- back face/bore surface chamfer of shaft washer of single direction bearings;
- face/bore surface chamfers of central shaft washer of double direction bearings.

1) See clause 5 for maximum shaft and housing fillet radii.

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