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Rolling bearings — Needle roller bearings, dimension series 48, 49 and 69 — Boundary dimensions and tolerances

Roulements — Roulements à aiguilles, séries de dimensions 48, 49 et 69 — Dimensions d'encombrement et tolérances

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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 3.

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 International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 1206 was prepared by Technical Committee ISO/TC 4, *Rolling bearings*, Subcommittee SC 5, *Needle roller bearings*.

This third edition cancels and replaces the second edition (ISO 1206;1982), which has been technically revised.

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Rolling bearings — Needle roller bearings, dimension series 48, 49 and 69 — Boundary dimensions and tolerances

1 Scope

This International Standard specifies the boundary dimensions and normal class tolerances for needle roller bearings of dimension series 48, 49 and 69 as given in ISO 15. These series apply to complete needle roller bearings and to bearings without inner ring.

This International Standard does not apply to drawn cup needle roller bearings.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 582:1995, Rolling bearings — Chamfer dimensions Maximum values

ISO 1132-1:2000, Rolling bearings — Tolerances <u>ISO Part (12) Ter</u>ms and definitions https://standards.iteh.ai/catalog/standards/sist/5bc4db6d-b76c-4246-9631-ISO 5593:1997, Rolling bearings — Vocabulaty 90cbaa1c/iso-1206-2001

ISO 5753:1991, Rolling bearings - Radial internal clearance

ISO 15241:2001, Rolling bearings - Symbols for quantities

3 Terms and definitions

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

4 Symbols

For the purposes of this International Standard the symbols given in ISO 15241 and the following apply.

The symbols (except those for tolerances) shown in Figures 1 and 2, and the values given in Tables 1 to 6 denote nominal dimensions unless specified otherwise.

- B inner ring width
- C outer ring width
- d bore diameter
- D outside diameter
- $F_{\rm w}$ bore diameter of needle roller complement
- $F_{\rm ws\ min}$ smallest single bore diameter of needle roller complement¹⁾
- K_{ea} radial runout of outer ring of assembled bearing
- K_{ia} radial runout of inner ring of assembled bearing
- r chamfer dimension

 V_{Dmp}

- $r_{s min}$ smallest single chamfer dimension TANDARD PREVIEW
- V_{Bs} variation of inner ring width

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 V_{Cs} variation of outer ring width

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V_{dmp} variation of mean borterdiameterds.iteh.ai/catalog/standards/sist/5bc4db6d-b76c-4246-9631a52190cbaa1c/iso-1206-2001

variation of mean outside diameter

- Δ_{Bs} deviation of a single inner ring width
- Δ_{Cs} deviation of a single outer ring width
- Δ_{dmp} deviation of mean bore diameter in a single plane
- $\Delta_{D \mathrm{mp}}$ deviation of mean outside diameter in a single plane

¹⁾ The smallest single bore diameter of the needle roller complement is the diameter of the cylinder which, when placed in the needle roller complement bore, results in zero radial clearance in at least one radial direction.



NOTE Needle roller bearings can be equipped with or without cage, with one row or two rows of needle roller and with or without lubrication groove and lubrication holes in the outer ring.





NOTE Needle roller bearings can be equipped with or without cage, with one row or two rows of needle roller and with or without lubrication groove and lubrication holes in the outer ring.

Figure 2 — Needle roller bearing without inner ring

5 Boundary dimensions

Boundary dimensions for dimension series 48, 49 and 69 are given in Tables 1, 2 and 3, respectively.

			Dimensions	in millimetres		
Complete bearings and bearings without inner ring						
d	$F_{\sf w}$	D	B and C	$r_{ m s\ min}$ a		
110	120	140	30	1		
120	130	150	30	1		
130	145	165	35	1,1		
140	155	175	35	1,1		
150	165	190	40	1,1		
160	175	200	40	1,1		
170	185	215	45	1,1		
180	195	225	45	1,1		
190	210	240	50	1,5		
200	220	250		1,5		
11 ei		DAKD	PREV	IE W		
220	(340an	dards.i	teh50ai)	1,5		
240	265	300	60	2		
260	285	ISO 3206:200	<u>1</u> 60	2		
http://standa	rds.itegozi/catal	og/standgods/sis	t/5bc4666d-b7	5c-424 <mark>2</mark> -9631-		
300	330 330	0cbaa1c/1so-12 380	06-2001 80	2,1		
320	350	400	80	2,1		
340	370	420	80	2,1		
360	390	440	80	2,1		
^a Maximum chamfer dimensions are given in ISO 582.						

Table 1 — Dimension series 48

			Dimensions	in millimetres
Comp	lete bearings	and bearings	s without inne	er ring
d	$F_{\sf w}$	D	$B \ {\rm and} \ C$	$r_{ m s\ min}$ a
5	7	13	10	0,15
6	8	15	10	0,15
7	9	17	10	0,15
8	10	19	11	0,2
9	12	20	11	0,3
10	14	22	13	0,3
12	16	24	13	0,3
15	20	28	13	0,3
17	22	30	13	0,3
20	25	37	17	0,3
22	28	39	17	0,3
25	30	42	17	0,3
28	32	45	17	0,3
i ³⁰ eh	ST ³⁵ NI	DARD]	PREVI	E W ⁷³
32	(stand	ards.ite	²⁰ (h.ai)	0,6
35	42	55	20	0,6
40	$48 \frac{18}{1000}$	<u>O 12062001</u>	$\frac{22}{1000}$	0,6
45	. iten.a/catalog/s 52 a52190cl	baa1c/180-1206	-2001 22	4240-9051- 0,6
50	58	72	22	0,6
55	63	80	25	1
60	68	85	25	1
65	72	90	25	1
70	80	100	30	1
75	85	105	30	1
80	90	110	30	1
85	100	120	35	1,1
90	105	125	35	1,1
95	110	130	35	1,1
100	115	140	40	1,1
110	125	150	40	1,1
120	135	165	45	1.1
130	150	180	50	1.5
140	160	190	50	1.5
a Maximum (chamfer dimen	sions are dive	n in ISO 582.	,-

Table 2 — Dimension series 49