

DRAFT INTERNATIONAL STANDARD

ISO/DIS 3030

ISO/TC 4/SC 5

Secretariat: AFNOR

Voting begins on:
2018-03-20

Voting terminates on:
2018-06-12

Rolling bearings — Radial needle roller and cage assemblies — Boundary dimensions, geometrical product specifications (GPS) and tolerance values

Roulements — Cages à aiguilles radiales — Dimensions d'encombrement, spécification géométrique des produits (GPS) et valeurs de tolérance

ICS: 21.100.20

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[ISO/DIS 3030](https://standards.iteh.ai/catalog/standards/sist/600c7e05-b283-4af1-830f-1fb4de29c437/iso-dis-3030)

<https://standards.iteh.ai/catalog/standards/sist/600c7e05-b283-4af1-830f-1fb4de29c437/iso-dis-3030>

THIS DOCUMENT IS A DRAFT CIRCULATED FOR COMMENT AND APPROVAL. IT IS THEREFORE SUBJECT TO CHANGE AND MAY NOT BE REFERRED TO AS AN INTERNATIONAL STANDARD UNTIL PUBLISHED AS SUCH.

IN ADDITION TO THEIR EVALUATION AS BEING ACCEPTABLE FOR INDUSTRIAL, TECHNOLOGICAL, COMMERCIAL AND USER PURPOSES, DRAFT INTERNATIONAL STANDARDS MAY ON OCCASION HAVE TO BE CONSIDERED IN THE LIGHT OF THEIR POTENTIAL TO BECOME STANDARDS TO WHICH REFERENCE MAY BE MADE IN NATIONAL REGULATIONS.

RECIPIENTS OF THIS DRAFT ARE INVITED TO SUBMIT, WITH THEIR COMMENTS, NOTIFICATION OF ANY RELEVANT PATENT RIGHTS OF WHICH THEY ARE AWARE AND TO PROVIDE SUPPORTING DOCUMENTATION.

This document is circulated as received from the committee secretariat.



Reference number
ISO/DIS 3030:2018(E)

© ISO 2018

iTeh STANDARD PREVIEW
(standards.iteh.ai)

ISO/DIS 3030

<https://standards.iteh.ai/catalog/standards/sist/600c7e05-b283-4af1-830f-1fb4de29c437/iso-dis-3030>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2018

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Published in Switzerland

Contents

	Page
Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Symbols	1
5 Dimensions	2
6 Tolerances	4
6.1 General	4
6.2 Tolerances for the needle roller	5
6.3 Tolerance for the cage width	5
7 Functional gauging and gauge dimensions	5
Annex A (informative) Tolerances for shaft raceway, housing raceway and raceway widths	6
Bibliography	8

iTeh STANDARD PREVIEW (standards.iteh.ai)

[ISO/DIS 3030](https://standards.iteh.ai/catalog/standards/sist/600c7e05-b283-4af1-830f-1fb4de29c437/iso-dis-3030)

<https://standards.iteh.ai/catalog/standards/sist/600c7e05-b283-4af1-830f-1fb4de29c437/iso-dis-3030>

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing Documents 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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html. (standards.iteh.ai)

The committee responsible for this document is ISO/TC 4, *Rolling bearings*, Subcommittee SC 5, *Needle, cylindrical and spherical roller bearings*. ISO/DIS 3030

<https://standards.iteh.ai/catalog/standards/sist/600c7e05-b283-4af1-830f-111d29d11750/iso-3030>

This fourth edition cancels and replaces the third edition (ISO 3030:2011), which has been technically revised with the following changes:

- implemented geometrical product specifications (GPS).

Introduction

This document is a machine element geometry standard as defined in the geometrical product specification system (GPS system) as presented in matrix model of ISO 14638.[12]

The fundamental rules of ISO/GPS given in ISO 8015[7] apply to this document and the default decision rules given in ISO 14253-1[9] apply to specifications made in accordance with this Document, unless otherwise indicated.

The connection between functional requirements, measuring technique and measuring uncertainty is always intended to be considered. The traditionally used measuring technique is described in ISO 1132-2. For measurement uncertainty, it is intended that ISO 14253-2[10] be considered.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[ISO/DIS 3030](https://standards.iteh.ai/catalog/standards/sist/600c7e05-b283-4af1-830f-1fb4de29c437/iso-dis-3030)

<https://standards.iteh.ai/catalog/standards/sist/600c7e05-b283-4af1-830f-1fb4de29c437/iso-dis-3030>

iTeh STANDARD PREVIEW
(standards.iteh.ai)

ISO/DIS 3030

<https://standards.iteh.ai/catalog/standards/sist/600c7e05-b283-4af1-830f-1fb4de29c437/iso-dis-3030>

Rolling bearings — Radial needle roller and cage assemblies — Boundary dimensions, geometrical product specifications (GPS) and tolerance values

1 Scope

This document specifies the boundary dimensions for radial needle roller and cage assemblies.

In addition, it gives the tolerances for the cage width and method of functional gauging of bore diameter of needle roller complement.

Informative values for the tolerances of shaft raceway, housing raceway and raceway widths are given in [Annex A](#).

2 Normative references

The following documents are referenced in the text in such a way that some or all of their content constitutes requirements 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 1132-2:2001, *Rolling bearings — Tolerances — Part 2: Measuring and gauging principles and methods*

ISO 3096, *Rolling bearings — Needle rollers — Dimensions and tolerances*

[ISO/DIS 3030](#)

3 Terms and definitions

<https://standards.iteh.ai/catalog/standards/sist/600c7e05-b283-4af1-830f-1fb4de29c437/iso-dis-3030>

For the purposes of this document, the terms and definitions given in ISO 1132-1,^[4] ISO 5593^[6], ISO 14405-1^[11] apply.

4 Symbols

To express that the ISO/GPS system, ISO 8015^[7] is applied, the dimensional and geometrical characteristics shall be included in the technical product documentation (for example, on the drawing).

The dimensional and geometrical specifications, associated to these characteristics are described in Table 1 and Figure 1.

Descriptions for symbols are in accordance with GPS terminology.

A tolerance value associated to a characteristic is symbolised by t followed by the symbol for the characteristic, for example $t_{\Delta B_s}$.

In this document, the ISO default specification operator for size is in accordance with

ISO 14405-1^[11] i.e. the two-point size is valid.

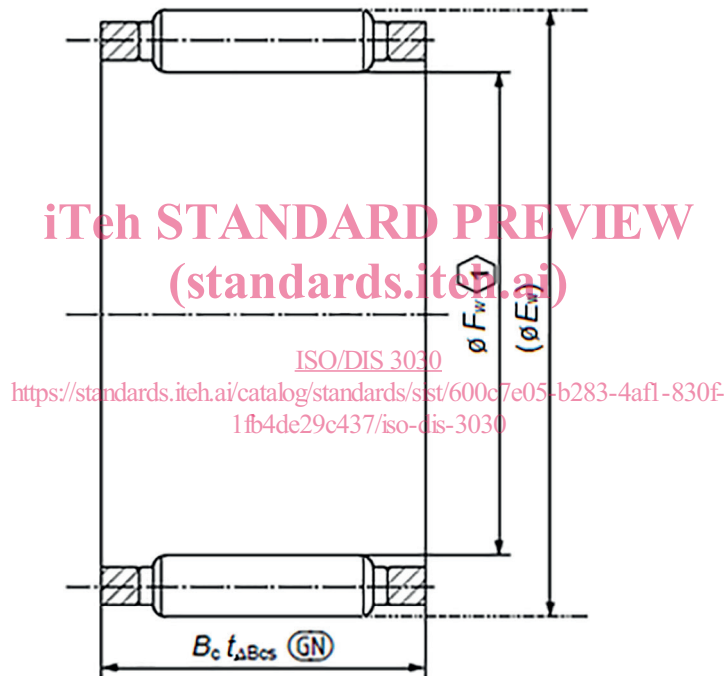
Table 1 — Symbols for nominal sizes, characteristics and specification modifiers

Symbol for nominal size ^a	Symbol for characteristic	GPS symbol and specification modifier ^b	Description ^c
B_c			nominal cage width
	ΔB_{cs}	(GN)	deviation of minimum circumscribed size of cage width from its nominal size
E_w			nominal circumscribed diameter of needle roller complement
F_w			nominal inscribed diameter of needle roller complement

^a Symbols as defined in ISO 15241[13] except for the format used.

^b Symbols as defined in ISO 14405-1.[11]

^c description based on ISO 14405-1.[11]



Key



= valid in constraint condition by fitting into a ring gage having a diameter according to Table 5 for any rotation, in a coaxial direction

NOTE Radial needle roller and cage assemblies can also be with two rows of needle roller or split-type.

Figure 1 — Radial needle roller and cage assembly

5 Dimensions

The general plan of nominal boundary dimensions of needle roller and cage assemblies is given in Table 2 and Table 3.

Table 2 — Diameter series 1C and 2C

Dimensions in millimetres

F_w	Diameter series 1C								Diameter series 2C							
	E_w	B_c							E_w	B_c						
		Dimension series								Dimension series						
		11C	21C	31C	41C	51C	61C	71C		12C	22C	32C	42C	52C	62C	72C
4	7	6	8	10	—	—	—	—	—	—	—	—	—	—	—	—
5	8	6	8	10	13	—	—	—	9	8	10	13	—	—	—	—
6	9	6	8	10	13	15	—	—	10	8	10	13	15	—	—	—
7	10	6	8	10	13	15	17	—	11	8	10	13	15	17	—	—
8	11	6	8	10	13	15	17	—	12	8	10	13	15	17	20	—
9	12	6	8	10	13	15	17	—	13	8	10	13	15	17	20	—
10	13	6	8	10	13	15	17	—	14	8	10	13	15	17	20	—
12	15	6	8	10	13	15	17	—	16	8	10	13	15	17	20	—
14	18	8	10	13	15	17	20	23	19	10	13	15	17	20	23	27
15	19	8	10	13	15	17	20	23	20	10	13	15	17	20	23	27
16	20	8	10	13	15	17	20	23	21	10	13	15	17	20	23	27
17	21	8	10	13	15	17	20	23	22	10	13	15	17	20	23	27
18	22	8	10	13	15	17	20	23	23	10	13	15	17	20	23	27
20	24	8	10	13	15	17	20	23	25	10	13	15	17	20	23	27
22	26	8	10	13	15	17	20	23	27	10	13	15	17	20	23	27
25	29	8	10	13	15	17	20	23	30	10	13	15	17	20	23	27
28	33	10	13	15	17	20	23	27	34	12	15	17	20	25	30	35
30	35	10	13	15	17	20	23	27	36	12	15	17	20	25	30	35
32	37	10	13	15	17	20	23	27	38	12	15	17	20	25	30	35
35	40	10	13	15	17	20	23	27	41	12	15	17	20	25	30	35
38	43	10	13	15	17	20	23	27	44	12	15	17	20	25	30	35
40	45	10	13	15	17	20	23	27	46	12	15	17	20	25	30	35
42	47	10	13	15	17	20	23	27	48	12	15	17	20	25	30	35
45	50	10	13	15	17	20	23	27	51	12	15	17	20	25	30	35
50	55	10	13	15	17	20	23	27	56	12	15	17	20	25	30	35
55	61	12	15	17	20	25	30	35	62	16	20	25	30	35	40	—
60	66	12	15	17	20	25	30	35	67	16	20	25	30	35	40	—
65	71	12	15	17	20	25	30	35	72	16	20	25	30	35	40	—
70	76	12	15	17	20	25	30	35	77	16	20	25	30	35	40	—
75	81	12	15	17	20	25	30	35	82	16	20	25	30	35	40	—
80	86	12	15	17	20	25	30	35	87	16	20	25	30	35	40	—
85	92	16	20	25	30	35	40	—	93	20	25	30	35	40	45	—
90	97	16	20	25	30	35	40	—	98	20	25	30	35	40	45	—
95	102	16	20	25	30	35	40	—	103	20	25	30	35	40	45	—
100	107	16	20	25	30	35	40	—	108	20	25	30	35	40	45	—