

Third edition
2001-11-15

AMENDMENT 1
2013-08-15

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

**AMENDMENT 1: Tolerances for shaft
raceway**

iTeh STANDARD PREVIEW
(standards.iteh.ai)

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

<https://standards.iteh.ai/en/standards/iso-1206-2001/iso-1206-2001-amd-1-2013>
AMENDEMENT 1: Tolérances du chemin de roulement de l'arbre
[acbbe83cdd6c/iso-1206-2001-amd-1-2013](https://standards.iteh.ai/en/standards/iso-1206-2001/iso-1206-2001-amd-1-2013)



Reference number
ISO 1206:2001/Amd.1:2013(E)

© ISO 2013

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[ISO 1206:2001/Amd 1:2013](https://standards.iteh.ai/catalog/standards/sist/49c17157-d863-416c-a62f-acbce83cdd6c/iso-1206-2001-amd-1-2013)

<https://standards.iteh.ai/catalog/standards/sist/49c17157-d863-416c-a62f-acbce83cdd6c/iso-1206-2001-amd-1-2013>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2013

All rights reserved. Unless otherwise specified, 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
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

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.

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. 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. 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.

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

ITEH STANDARD PREVIEW
(standards.iteh.ai)

[ISO 1206:2001/Amd 1:2013](https://standards.iteh.ai/catalog/standards/sist/49c17157-d863-416c-a62f-acbce83cdd6c/iso-1206-2001-amd-1-2013)

<https://standards.iteh.ai/catalog/standards/sist/49c17157-d863-416c-a62f-acbce83cdd6c/iso-1206-2001-amd-1-2013>

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[ISO 1206:2001/Amd 1:2013](https://standards.iteh.ai/catalog/standards/sist/49c17157-d863-416c-a62f-acbce83cdd6c/iso-1206-2001-amd-1-2013)

<https://standards.iteh.ai/catalog/standards/sist/49c17157-d863-416c-a62f-acbce83cdd6c/iso-1206-2001-amd-1-2013>

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

AMENDMENT 1: Tolerances for shaft raceway

Page 1, Scope

Add the following sentence at the end of the scope: “Recommended values for the tolerances for shaft raceways for needle roller bearings without inner ring are given in Annex A.”

Page 8, Clause 7

Insert the following new Annex A after Clause 7.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[ISO 1206:2001/Amd 1:2013](https://standards.iteh.ai/catalog/standards/sist/49c17157-d863-416c-a62f-acbce83cdd6c/iso-1206-2001-amd-1-2013)

<https://standards.iteh.ai/catalog/standards/sist/49c17157-d863-416c-a62f-acbce83cdd6c/iso-1206-2001-amd-1-2013>

Annex A (informative)

Tolerances for shaft raceways for needle roller bearings without inner ring

A.1 General

Proper function of needle roller bearings without inner rings depends on the shaft raceway supplied by the user. This annex shows suggested tolerances for shaft raceway.

Table values are informative only. In all cases, users should check the installed bearing clearance.

A.2 Raceway hardness and case-hardened depth

The shaft raceway is hardened and finish ground; surface hardness is minimum 670 HV (58 HRC).

In the case of using case hardening bearing steel, case-hardened depth of raceway is minimum of 0,3 mm to 0,8 mm, depending on bearing size, rolling element diameter, shaft heat treatment method and load condition. If in doubt, consult the bearing manufacturer for specific advice. Case-hardened depth should be in accordance with ISO 2639:2002, 3.1.

A.3 Tolerances for shaft raceways ISO 1206:2001/Amd 1:2013

Table A.1 shows suggested tolerances for shaft raceways for needle roller bearings without inner ring.

Table A.1 — Tolerances for shaft raceways for needle roller bearings without inner ring

| Shaft raceway tolerances for needle roller bearings without inner ring ^a | | | | | |
|--|--------|---|------------------------------------|-------------------------|---|
| Bore diameter of needle roller complement F_w mm | | Deviation of shaft raceway diameter from F_w^b | Surface roughness μm | Roundness ^{cd} | Variation of mean diameter ^d |
| > | \leq | | | | |
| 6 | 80 | h5 [Ⓔ] | Ra 0,2 (Rz 1) | IT3 | IT3 |
| 80 | 200 | g5 [Ⓔ] | | | |
| 200 | 400 | f6 [Ⓔ] | | | |
| <p>^a The limit deviation relating to the tolerance class and the value of the standard grades are given in ISO 286-1 and ISO 286-2.</p> <p>^b Tolerance classes apply with housing tolerances of H7 to K7; for tighter housing tolerance classes, check bearing clearance.</p> <p>^c Roundness is measured using the least squares centre (LSC) method according to ISO 4291 and ISO 1101.</p> <p>^d If cylindricity is used instead of variation of mean diameter, tolerance values for cylindricity can be different from the values of variation of mean diameter. If in doubt consult the bearing manufacturer for specific advice. Cylindricity should be in accordance with ISO 1101.</p> | | | | | |

ISO 1206:2001/Amd 1:2013
<https://standards.iteh.ai/catalog/standards/sist/49c17157-d863-416c-a62f-acbce83cdd6c/iso-1206-2001-amd-1-2013>

Page 9, Bibliography

Add the following five references after Reference [1]:

- [2] ISO 286-1, *Geometrical product specifications (GPS) — ISO code system for tolerances on linear sizes — Part 1: Basis of tolerances, deviations and fits*
- [3] ISO 286-2, *Geometrical product specifications (GPS) — ISO code system for tolerances on linear sizes — Part 2: Tables of standard tolerance classes and limit deviations for holes and shafts*
- [4] ISO 1101, *Geometrical product specifications (GPS) — Geometrical tolerancing — Tolerances of form, orientation, location and run-out*
- [5] ISO 2639:2002, *Steels — Determination and verification of the depth of carburized and hardened cases*
- [6] ISO 4291, *Methods for the assessment of departure from roundness — Measurement of variations in radius*

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[ISO 1206:2001/Amd 1:2013](https://standards.iteh.ai/catalog/standards/sist/49c17157-d863-416c-a62f-acbce83cdd6c/iso-1206-2001-amd-1-2013)

<https://standards.iteh.ai/catalog/standards/sist/49c17157-d863-416c-a62f-acbce83cdd6c/iso-1206-2001-amd-1-2013>