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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 12764-2019

**Rolling bearings - Needle roller bearings with drawn cup and
without inner ring - Boundary dimensions, geometrical product
specifications (GPS) and tolerance values**

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1 --- the nominal diameter of the shaft d_1 (= F_w);

2 --- Nominal diameter D_1 (= D) of bearing housing hole;

5 --- or R_{zmax1} ;

6 --- or R_{zmax4} .

Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard replaces GB/T 12764-2009 "Dimensions and tolerances of needle roller bearings without inner rings and drawn outer rings for rolling bearings", and

Compared with GB/T 12764-2009, the main technical changes are as follows.

--- Added the term "constraint diameter" (see Chapter 3);

--- Applied product geometric technical specifications, revised some symbols and their meanings, and revised drawing annotations (see Chapter 4,.2009 Edition)

(Chapter 4, figure 1);

--- Added description of the upper and lower limits of $C1s$, $C2s$, rs (see 6.3.2, 6.3.3);

--- Removed the measurement method of the minimum single inner diameter of the needle overall (see Chapter 7 of the.2009 edition).

This standard uses the translation method equivalent to ISO 3245..2015 "Rolling bearings needle roller bearings without inner ring drawn outer ring dimensions, production

Geometrical Technical Specifications (GPS) and Tolerances.

The Chinese documents that have a consistent correspondence with the international documents referenced normatively in this standard are as follows.

- GB/T 4199-2003 Tolerance definition of rolling bearings (ISO 1132-1..2000, MOD)
- GB/T 6930-2002 Vocabulary for rolling bearings (ISO 5593..1997, IDT)
- GB/T 7811-2015 Rolling bearing parameter symbols (ISO 15241..2012, IDT)
- GB/T 16892-1997 Notation of non-rigid parts of shape and position tolerance (equiv ISO 10579..1993)

This standard is proposed by China Machinery Industry Federation.

This standard is under the jurisdiction of the National Rolling Bearing Standardization Technical Committee (SAC/TC98).

This standard was drafted. Luoyang Bearing Research Institute Co., Ltd., Suzhou Bearing Factory Co., Ltd., Schaeffler (China) Co., Ltd., Jiangxi

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Introduction

This standard is the geometric elements of mechanical parts specified in the product geometric technical specification (GPS) system (see ISO 14638 [9] matrix model).

standard.

Unless otherwise specified, the basic principles of ISO /GPS given in ISO 8015 [6] are applicable to this standard, and given in ISO 14253-1 [7]

The default principles apply to technical specifications based on this standard.

The relationship between functional requirements and measurement methods and measurement uncertainty is recommended to be considered. The traditional measurement methods are in ISO 1132-2 [4].

A description is given, and measurement uncertainty is recommended to focus on ISO 14253-2 [8].

Rolling bearings needle roller bearings without inner ring and drawn outer ring

Dimensions, product geometric technical specifications (GPS), and

Tolerance value

1 Scope

This standard specifies the outer dimensions, preferred dimensions, and minimum chamfer dimensions of needle roller bearings without drawn inner ring. Sealing type is also specified

Thickness of the closed end of drawn cup needle roller bearings.

In addition, this standard also specifies the overall inner diameter tolerance of the needle roller and the tolerance of the outer ring width of the stamping.

See Appendix A for tolerances of shaft raceways and housing bores.

2 Normative references

The following documents are essential for the application of this document. For dated references, only the dated version applies to this article

Pieces. For undated references, the latest version (including all amendments) applies to this document.

ISO 1132-1 Rolling Bearing Tolerances Part 1. Terms and Definitions
(Rollingbearings-Tolerances-Part 1.

Termsanddefinitions)

ISO 5593 rolling bearing vocabulary (Rollingbearings-Vocabulary)

ISO 10579 Geometrical Product Specification (GPS) Dimensions and Tolerances for Non-Rigid Parts [Geometricalproductspecifica-
tions (GPS) -Dimensioningandtolerancing-Non-rigidparts]

ISO 14405-1 Geometrical Product Specifications (GPS) Dimensional Tolerances Part 1. Linear Dimensions [Geometricalproduct
specifications (GPS) -Dimensionaltolerancing-Part 1. Linearsizes]

ISO 15241 rolling bearing parameter symbols
(Rollingbearings-Symbolsforphysicalquantities)

ISO /T S17863 Product Geometric Technical Specification (GPS) Geometric Tolerance of Moving Components [Geometricalproductspecifica-
tion (GPS) -Geometricaltolerancingofmoveableassemblies]

3 terms and definitions

The terms and definitions defined in ISO 1132-1, ISO 5593, and ISO 14405-1, as well as the following terms, apply to this document.

3.1

Constraint diameter

D1c

The diameter of the element under constraints when evaluating the deltaFws characteristic.

Note. The restraint diameter is the same as the ring gauge diameter in ISO 1132-2 [4].

4 symbols

The symbols given in ISO 15241 and the following apply to this document.

The explanation of the symbols is consistent with the GPS terminology. The technical specifications of the dimensions are explained in Table 1 and Figure 1.

Figure 1 gives an example of the dimensions of needle roller bearings. See Table 1 for the meaning of the symbols used in the figure.

The tolerance value related to the characteristic is expressed by t plus the characteristic symbol, such as. tdeltaCs.

The default ISO size specification operation set in this standard is consistent with ISO 14405-1, that is, the two-point size is valid.

Table 1 Nominal size symbols, characteristic symbols and specification modifiers

Nominal size and

Distance symbol a

Attribute Symbol Specification Modifier b Description

C Nominal width of stamped outer ring

deltaCs

The smallest outer dimension of the outer ring width and the nominal size

deviation

C1 Nominal thickness of stamped outer ring end

C1s

Single thickness of stamped outer ring end

(Minimum external size)

C2 Nominal thickness of flat bottom stamped outer ring

C2s