

ICS 21.100.20

CCS J 11



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

GB/T 25761-2010

**Rolling bearings - Combined needle roller bearings with
angular contact ball bearings - Boundary dimensions**

滚动轴承 滚针和角接触球组合轴承 外形尺寸

Issued on: December 23, 2010

Implemented on: June 1, 2011

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine;
Standardization Administration of the PRC**

Table of Contents

- 1 Scope
- 2 Normative references
- 3 Terms and definitions
- 4 Symbols (see Figures 1 and 2)
- 5 Structural types
 - 5.1 Needle roller with angular contact ball combined bearing
 - 5.2 Needle roller with three-point contact ball combined bearing
- 6 Boundary dimensions

Foreword

This standard was proposed by the China Machinery Industry Federation.

This standard is under the jurisdiction of the National Technical Committee on Rolling Bearings of Standardization Administration of China (SAC/TC 98).

1 Scope

The dimension standard for the combined bearing that carries a radial load on needle rollers and an axial load on balls in the same housing bore. Designers of machine tool spindles, gearboxes and clutch mechanisms often need both kinds of capacity in one place but have no room for two separate bearings, and the answer the industry settled on is a single unit whose needle roller row takes the radial load while an angular contact ball row alongside it takes the thrust. That unit is only useful if its outside diameter, bore, width and chamfers are the same wherever it is bought, because the housing and the shaft are machined before the bearing arrives. This standard fixes those boundary dimensions for the two structural types built to that principle, the needle roller with angular contact ball type and the needle roller with three-point contact ball type, and it applies to the design and the selection of combined bearings. It defines the symbols used in the figures and the tables - the width of the combined bearing, the total width across the two half inner rings, the outside diameter, the bore and the chamfer dimensions - and gives them in a single table of designations. Bearing manufacturers and the machine designers who specify them are the ones who use it; the terms come from the Chinese vocabulary standard for rolling bearings and the maximum chamfer dimensions from the Chinese chamfer standard.

This standard specifies the boundary dimensions of combined needle roller bearings with angular contact ball bearings (hereinafter referred to as combined bearings).

This standard applies to the design and the type selection of combined bearings.

2 Normative references

The provisions of the following documents become provisions of this standard through being referred to in this standard. For dated references, subsequent amendments (excluding corrections) or revisions do not apply to this standard; however, the parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions. For undated references, the latest edition applies to this standard.

GB/T 274-2000 Rolling bearings - Chamfer dimensions - Maximum values (idt ISO 582:1995).

GB/T 6930-2002 Rolling bearings - Vocabulary (ISO 5593:1997, IDT).

3 Terms and definitions

The terms and definitions established in GB/T 6930-2002 apply to this standard.

4 Symbols (see Figures 1 and 2)

The following symbols apply to this standard. Unless otherwise stated, the symbols shown in the figures and the numerical values given in the tables are nominal dimensions.

B: width of the combined bearing. B1: total width of the two half inner rings of the combined bearing. D: outside diameter of the combined bearing. d: bore diameter of the combined bearing. r: chamfer dimension. $r_{s\min}$: minimum single chamfer dimension.

5.1 Needle roller with angular contact ball combined bearing

The structural type of the combined needle roller bearing with angular contact ball bearing is shown in Figure 1, the NKIA 0000 type: a needle roller row and an angular contact ball row side by side between a common outer ring and the inner ring, with the chamfers marked at each corner.

5.2 Needle roller with three-point contact ball combined bearing

The structural type of the combined needle roller bearing with three-point contact ball bearing is shown in Figure 2, the NKIB 0000 type, in which the ball row runs on a split inner ring so that the overall width B1 across the two half inner rings exceeds the width B of the outer ring.

6 Boundary dimensions

The boundary dimensions of the combined bearings are as specified in Table 1. The table pairs each NKIA designation with its NKIB counterpart and gives, for each, the bore

diameter, the outside diameter, the width, the total width across the two half inner rings and the minimum single chamfer dimension, in millimetres; a footnote refers the corresponding maximum chamfer dimensions to GB/T 274-2000. The values themselves are in the standard.

chinastandards.org · PREVIEW