

ICS 21.100.20

CCS J 11



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

GB/T 305-2019

**Rolling bearings - Snap ring grooves and snap rings for radial
bearings - Dimensions, geometrical product specifications
(GPS) and tolerance values**

Issued on: October 18, 2019

Implemented on: May 1, 2020

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

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1 Scope

This standard specifies compliance with size series 18, size series 19 and diameter series 0, diameter series 2, and diameter series 3 in ISO 15 [1].

And diameter series 4 (except size series 00, size series 82, size series 83).

The chamfer size on the side of the stop groove, and the size and tolerance of the stop ring.

This standard is applicable to stop grooves and stop rings for axial positioning of radial bearings for design, inspection and acceptance by users.

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 582 Rolling bearing chamfer size maximum
(Rollingbearings-Chamferdimensions-Maximumval-ues)

ISO 1101 Geometrical Product Specifications (GPS) Geometric Tolerances Shape, Orientation, Position, and Runout Tolerance products specifications (GPS)
-Geometrical tolerancing-Tolerances of form, orientation, location and run-out]

ISO 5593 rolling bearing vocabulary (Rolling bearings-Vocabulary)

ISO 14405-1 Geometrical Product Specifications (GPS) Dimensional Tolerances Part 1. Linear Dimensions [Geometrical product specifications (GPS) -Dimensional tolerancing-Part 1. Linear sizes]

ISO 15241 rolling bearing parameter symbols
(Rolling bearings-Symbols for physical quantities)

3 terms and definitions

The terms and definitions defined in ISO 1101, ISO 5593 and ISO 14405-1 apply to this document.

4 symbols

The symbols are shown in Figures 1 to 3 and Table 1.

In order to indicate that the product geometric technical specification (GPS) system is applied, the product technical file (as shown in the figure) should include dimensions and geometric characteristics. versus Dimensions and geometric specifications related to these characteristics are described in Table 1.

The tolerance value related to the characteristic is expressed by t plus the characteristic symbol, such as. t_{Δ} as.

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

In Tables 2 to 5, Tables A.1, A.2, B.1 and B.2, the symbols U and L are specified as follows.

U --- upper limit deviation;

L --- lower limit deviation.

Appendix E gives an example of actual pattern annotation.

Figure 1 Stop ring

Figure 2 Stop ring after installation

Note. "UZ" see ISO 1101..2012, 10.2.

Figure 3 Stop groove and chamfer

Table 1 Nominal size symbols, characteristic symbols and specification modifiers

Nominal size symbol (Size and distance)

Characteristic symbol a GPS symbols and specifications Modifiers b, c Description d a Nominal positioning distance of stop groove delta as Position of the end face of the stop groove with a distance "a" relative to the second reference B The second benchmark B is bound by the first benchmark A b Nominal width of stop groove delta bs Deviation of two-point size of stop groove width from nominal size D bearing nominal outside diameter D1 Nominal diameter of stop groove bottom delta D1s Deviation of the two-point size of the bottom diameter of the stop groove from the nominal size D2 Nominal outer diameter of stop ring after installation D3 Nominal inner diameter of stop ring before installation delta D3s The deviation of the two-point size of the inner diameter of the stop ring before installation e Stop ring profile nominal height delta e In any longitudinal section containing the axis of the outer surface of the stop ring Deviation of minimum external dimension of stop ring section height from nominal dimension f Nominal thickness of stop ring delta f Deviation of two-point size of stop ring thickness from nominal size g Nominal opening width of stop ring after installation r0 Nominal fillet radius of stop groove bottom r0smax Maximum single fillet radius at the bottom of the stop groove r1 Nominal chamfer size of outer ring on one side of stop groove r1smin Minimum single chamfer size of outer ring on one side of stop groove

Note. See Figure 3 for the complete GPS labeling.

a Except for the format, follow the symbols defined in ISO 15241.

b According to the symbols defined in ISO 1101 and ISO 14405-1.

c The specification modifier "" should not be marked on the drawing because the two-point size is the default size specification modifier.

d The description is based on ISO 1101 and ISO 14405-1.

5 Stop groove size, chamfer size and tolerance values

Dimension series 18, size series 19 radial bearing's stop groove dimensions, chamfer dimensions and tolerance values are as specified in Table 2; diameter series 0, Radial bearings in diameter series 2, diameter series 3 and diameter series 4 are in accordance with the provisions of Table 3.

The chamfer size "r1" is applicable to the chamfer shown in Fig. 3, and is specified as "r1smin" in Tables 2 and 3.

Table 2 Stop groove dimensions, chamfer dimensions and tolerance values for radial series 18 and 19 series radial bearings in millimeters

D D1 tdelta D1s UL Size series a tdelta as a tdelta as tdelta bs UL r0smax Size series

r1smina 30 28.7 0 -0.3--1.3 0.15 0.95 0.25 0 0.25-0.3 32 30.7 0 -0.3 1.3 0.15--0.95 0.25 0
 0.25 0.3-34 32.7 0 -0.3 1.3 0.15--0.95 0.25 0 0.25 0.3-37 35.7 0 -0.3 1.3 0.15 1.7 0.15 0.95
 0.25 0 0.25 0.3 0.3 39 37.7 0 -0.3--1.7 0.15 0.95 0.25 0 0.25-0.3 40 38.7 0 -0.3 1.3
 0.15--0.95 0.25 0 0.25 0.3-42 40.7 0 -0.3 1.3 0.15 1.7 0.15 0.95 0.25 0 0.25 0.3 0.3 44 42.7
 0 -0.3 1.3 0.15--0.95 0.25 0 0.25 0.3-45 43.7 0 -0.3--1.7 0.15 0.95 0.25 0 0.25-0.3 47 45.7 0
 -0.3 1.3 0.15 1.7 0.15 0.95 0.25 0 0.25 0.3 0.3 52 50.7 0 -0.3 1.3 0.15 1.7 0.15 0.95 0.25 0
 0.25 0.3 0.5 55 53.7 0 -0.3--1.7 0.15 0.95 0.25 0 0.25-0.5 58 56.7 0 -0.3 1.3 0.15--0.95 0.25
 0 0.25 0.3-62 60.7 0 -0.4--1.7 0.15 0.95 0.25 0 0.25-0.5 65 63.7 0 -0.4 1.3 0.15--0.95 0.25 0
 0.25 0.3-68 66.7 0 -0.4--1.7 0.15 0.95 0.25 0 0.25-0.5 72 70.7 0 -0.4 1.7 0.15 1.7 0.15 0.95
 0.25 0 0.25 0.3 0.5 78 76.2 0 -0.4 1.7 0.15--1.3 0.3 0 0.4 0.3-80 77.9 0 -0.4--2.1 0.2 1.3 0.3
 0 0.4-0.5 85 82.9 0 -0.4 1.7 0.15 2.1 0.2 1.3 0.3 0 0.4 0.5 0.5 90 87.9 0 -0.4 1.7 0.15 2.1 0.2
 1.3 0.3 0 0.4 0.5 0.5 95 92.9 0 -0.4 1.7 0.15--1.3 0.3 0 0.4 0.5-100 97.9 0 -0.4 1.7 0.15 2.5
 0.2 1.3 0.3 0 0.4 0.5 0.5 105 102.6 0 -0.5--2.5 0.2 1.3 0.3 0 0.4-0.5 110 107.6 0 -0.5 2.1 0.2
 2.5 0.2 1.3 0.3 0 0.4 0.5 0.5 115 112.6 0 -0.5 2.1 0.2--1.3 0.3 0 0.4 0.5-120 117.6 0 -0.5 2.1
 0.2 3.3 0.2 1.3 0.3 0 0.4 0.5 0.5 125 122.6 0 -0.5 2.1 0.2 3.3 0.2 1.3 0.3 0 0.4 0.5 0.5 130
 127.6 0 -0.5 2.1 0.2 3.3 0.2 1.3 0.3 0 0.4 0.5 0.5 140 137.6 0 -0.5 2.5 0.2 3.3 0.2 1.9 0.3 0
 0.6 0.5 0.5 145 142.6 0 -0.5--3.3 0.2 1.9 0.3 0 0.6-0.5

Table 2 (continued) Units are mm

D D1 tdelta D1s UL Size series a tdelta as a tdelta as tdelta bs UL r0smax Size series
 r1smina 150 147.6 0 -0.5 2.5 0.2 3.3 0.2 1.9 0.3 0 0.6 0.5 0.5 165 161.8 0 -0.5 3.3 0.2 3.7
 0.2 1.9 0.3 0 0.6 0.5 0.5 175 171.8 0 -0.5 3.3 0.2--1.9 0.3 0 0.6 0.5-180 176.8 0 -0.5--3.7
 0.2 1.9 0.3 0 0.6-0.5 190 186.8 0 -0.5 3.3 0.2 3.7 0.2 1.9 0.3 0 0.6 0.5 0.5 200 196.8 0 -0.5
 3.3 0.2--1.9 0.3 0 0.6 0.5-a The corresponding maximum chamfer size is in accordance with
 ISO 582.

Table 3 Stop groove dimensions, chamfer dimensions, and tolerance values for radial series 0, diameter series 2, diameter series 3, and diameter series 4 radial bearings

In millimeters D D1 tdelta D1s UL Diameter series 0 2, 3 and 4 a tdelta as a tdelta as tdelta
 bs UL r0smax Diameter series r1smina 30 28.17 0 -0.26--2.06 0.16 1.35 0.3 0 0.4-0.5 0.5
 0.5 32 30.15 0 -0.25 2.06 0.16 2.06 0.16 1.35 0.3 0 0.4 0.3 0.5-0.5 35 33.17 0 -0.25 2.06
 0.16 2.06 0.16 1.35 0.3 0 0.4 0.3 0.5 0.5-37 34.77 0 -0.25--2.06 0.16 1.35 0.3 0 0.4--0.5 0.5
 40 38.1 0 -0.25--2.06 0.16 1.35 0.3 0 0.4-0.5--42 39.75 0 -0.25 2.06 0.16 2.06 0.16 1.35 0.3
 0 0.4 0.5-0.5 0.5 44 41.75 0 -0.25 2.06 0.16--1.35 0.3 0 0.4 0.5---47 44.6 0 -0.25 2.06 0.16
 2.46 0.15 1.35 0.3 0 0.4 0.5 0.5 0.5-50 47.6 0 -0.25--2.46 0.15 1.35 0.3 0 0.4-0.5--52 49.73
 0 -0.25 2.06 0.16 2.46 0.15 1.35 0.3 0 0.4 0.5 0.5 0.5 55 52.6 0 -0.25 2.08 0.2--1.35 0.3
 0 0.4 0.5---56 53.6 0 -0.25--2.46 0.15 1.35 0.3 0 0.4--0.5-58 55.6 0 -0.25 2.08 0.2 2.46 0.15
 1.35 0.3 0 0.4 0.5 0.5--62 59.61 0 -0.5 2.08 0.2 3.28 0.21 1.9 0.3 0 0.6 0.5 0.5 0.5 65
 62.6 0 -0.5--3.28 0.21 1.9 0.3 0 0.6-0.5--68 64.82 0 -0.51 2.49 0.2 3.28 0.21 1.9 0.3 0 0.6
 0.5-0.5-72 68.81 0 -0.51--3.28 0.21 1.9 0.3 0 0.6-0.5 0.5 0.5

Table 3 (continued) Units are mm