



NNU 4944

BK/SPW33 Super-precision double row cylindrical roller bearing with tapered bore and lubrication feature

Super-precision double row cylindrical roller bearings in the NNU 49 series are designed to accommodate heavy radial loads and high speeds, while providing a high degree of stiffness. Having three flanges on the outer ring and no flanges on the inner ring, the bearings can accommodate axial displacement in both directions. The separable design simplifies mounting and dismounting, particularly when load conditions require both rings to have an interference fit. The tapered bore enables accurate adjustment of clearance or preload during mounting.

- High radial load carrying capacity
- Very high rigidity and high running accuracy
- Minimize noise, vibration and heat generation
- Accommodate axial displacement in both directions
- Lubrication feature
- Thin section enabling compact application design

Overview

Dimensions

Bore diameter	220 mm
Outside diameter	300 mm
Width	80 mm

Performance

Basic dynamic load rating	512 kN
Basic static load rating	1 140 kN
Attainable speed for grease lubrication	2 400 r/min
Attainable speed for oil-air lubrication	2 800 r/min

Properties

Bearing part	Complete bearing
Number of rows	2
Bore type	Tapered 1:12
Cage	Machined metal
Design	NNU
Number of flanges, outer ring	3
Number of flanges, inner ring	0

Loose flange	None
Radial internal clearance	C1
Tolerance class	Class SP (SP)
Material, bearing	Bearing steel
Coating	Without
Sealing	Without
Lubricant	None
Relubrication feature	Annular groove and lubrication holes

Technical Specification

Bore type

Tapered 1:12



Dimensions

d	220 mm	Bore diameter
D	300 mm	Outside diameter
B	80 mm	Width
D ₁	272.2 mm	Shoulder diameter outer ring (NNU design)
F	245 mm	Raceway diameter inner ring (NNU design)
b	11.1 mm	Width annular lubrication groove at outer ring
K	3 mm	Diameter lubrication hole (outer ring)
r _{1,2}	min. 2.1 mm	Chamfer dimension outer ring
r _{3,4}	min. 1.1 mm	Chamfer dimension inner ring (bearing with tapered bore)
s	max. 3.7 mm	Permissible axial displacement from the normal position of one bearing ring relative to the other (all)

Abutment dimensions

d _a	min. 231 mm	Abutment diameter shaft
d _a	max. 242 mm	Abutment diameter shaft (NNU design)
D _a	max. 289 mm	Abutment diameter housing



r_a	max. 2 mm	Fillet radius
d_n	247 mm	Oil nozzle position (not for variants with TNHA cage)

Calculation data

Basic dynamic load rating	C	512 kN
Basic static load rating	C_0	1 140 kN
Fatigue load limit	P_u	114 kN
Attainable speed for grease lubrication		2 400 r/min
Attainable speed for oil-air lubrication		2 800 r/min
Reference grease quantity	G_{ref}	150 cm ³
Static radial stiffness (guideline value)		5 990 N/ μ m

Mass

Mass bearing	16.5 kg
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