NN 3013 KTN/SPW33Super-precision double row cylindrical roller bearing with tapered bore and lubrication feature

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

Super-precision double row cylindrical roller bearings in the NN 30 series provide a unique balance between load carrying capacity, rigidity and speed. Having three flanges on the inner ring and no flanges on the outer 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.

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

Overview

Dimensions

Bore diameter	65 mm
Outside diameter	100 mm
Width	26 mm

Performance

Basic dynamic load rating	76.5 kN
Basic static load rating	116 kN
Attainable speed for grease lubrication	9 000 r/min
Attainable speed for oil-air lubrication	10 000 r/min

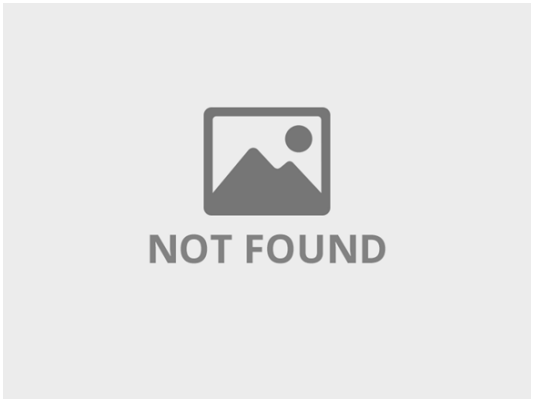
Properties

Bearing part	Complete bearing
Number of rows	2
Bore type	Tapered 1:12
Cage	Non-metallic
Design	NN
Number of flanges, outer ring	0
Number of flanges, inner ring	3

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

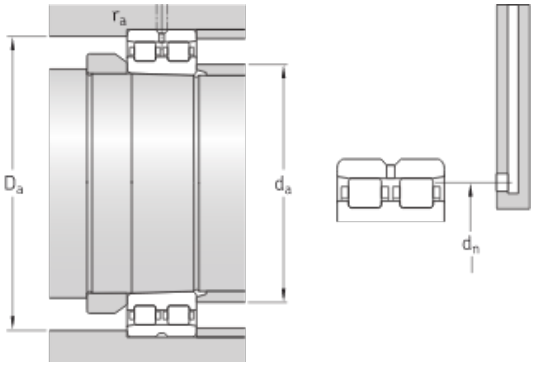


Dimensions

d	65 mm	Bore diameter
D	100 mm	Outside diameter
B	26 mm	Width
d_1	78.2 mm	Shoulder diameter inner ring (NN design)
E	91 mm	Raceway diameter outer ring (NN design)
b	3.8 mm	Width annular lubrication groove at outer ring
K	2 mm	Diameter lubrication hole (outer ring)
$r_{1,2}$	min. 1.1 mm	Chamfer dimension outer ring
$r_{3,4}$	min. 0.6 mm	Chamfer dimension inner ring (bearing with tapered bore)
s	max. 1.5 mm	Permissible axial displacement from the normal position of one bearing ring relative to the other (all)

Abutment dimensions

d_a	min. 71.5 mm	Abutment diameter shaft
D_a	min. 92 mm	Abutment diameter housing
D_a	max. 93.5 mm	Abutment diameter housing



r_a	max. 1 mm	Fillet radius
d_n	89.7 mm	Oil nozzle position (not for variants with TNHA cage)

Calculation data

Basic dynamic load rating	C	76.5 kN
Basic static load rating	C_0	116 kN
Fatigue load limit	P_u	13.7 kN
Attainable speed for grease lubrication		9 000 r/min
Attainable speed for oil-air lubrication		10 000 r/min
Reference grease quantity	G_{ref}	4.1 cm^3
Static radial stiffness (guideline value)		1 450 N/µm

Mass

Mass bearing	0.7 kg

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