



# NN 3022

## KTN9/SPW33 Super-precision double row cylindrical roller bearing with tapered bore and lubrication feature

### 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	110 mm
Outside diameter	170 mm
Width	45 mm

### Performance

Basic dynamic load rating	220 kN
Basic static load rating	360 kN
Attainable speed for grease lubrication	5 000 r/min
Attainable speed for oil-air lubrication	5 600 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

inner ring	
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	110 mm	Bore diameter
D	170 mm	Outside diameter
B	45 mm	Width
$d_1$	132.6 mm	Shoulder diameter inner ring (NN design)
E	155 mm	Raceway diameter outer ring (NN design)
b	5.5 mm	Width annular lubrication groove at outer ring
K	3 mm	Diameter lubrication hole (outer ring)
$r_{1,2}$	min. 2 mm	Chamfer dimension outer ring
$r_{3,4}$	min. 1.1 mm	Chamfer dimension inner ring (bearing with tapered bore)
s	max. 3 mm	Permissible axial displacement from the normal position of one bearing ring relative to the other (all)

## Abutment dimensions

$d_a$	min. 120 mm	Abutment diameter shaft
$D_a$	min. 157 mm	Abutment diameter housing
$D_a$	max. 160 mm	Abutment diameter housing



$r_a$	max. 2 mm	Fillet radius
$d_n$	153 mm	Oil nozzle position (not for variants with TNHA cage)

## Calculation data

Basic dynamic load rating	C	220 kN
Basic static load rating	$C_0$	360 kN
Fatigue load limit	$P_u$	41.5 kN
Attainable speed for grease lubrication		5 000 r/min
Attainable speed for oil-air lubrication		5 600 r/min
Reference grease quantity	$G_{ref}$	20.2 cm <sup>3</sup>
Static radial stiffness (guideline value)		2 470 N/ $\mu$ m

## Mass

Mass bearing	3.38 kg
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