



Image may differ from product. See technical specification for details.

## NN 3020 KTN9/SP

### Super-precision double row cylindrical roller bearing with tapered bore

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

## Overview

## Dimensions

|                  |        |
|------------------|--------|
| Bore diameter    | 100 mm |
| Outside diameter | 150 mm |
| Width            | 37 mm  |

## Performance

|                                          |             |
|------------------------------------------|-------------|
| Basic dynamic load rating                | 151 kN      |
| Basic static load rating                 | 250 kN      |
| Attainable speed for grease lubrication  | 5 600 r/min |
| Attainable speed for oil-air lubrication | 6 300 r/min |

## Properties

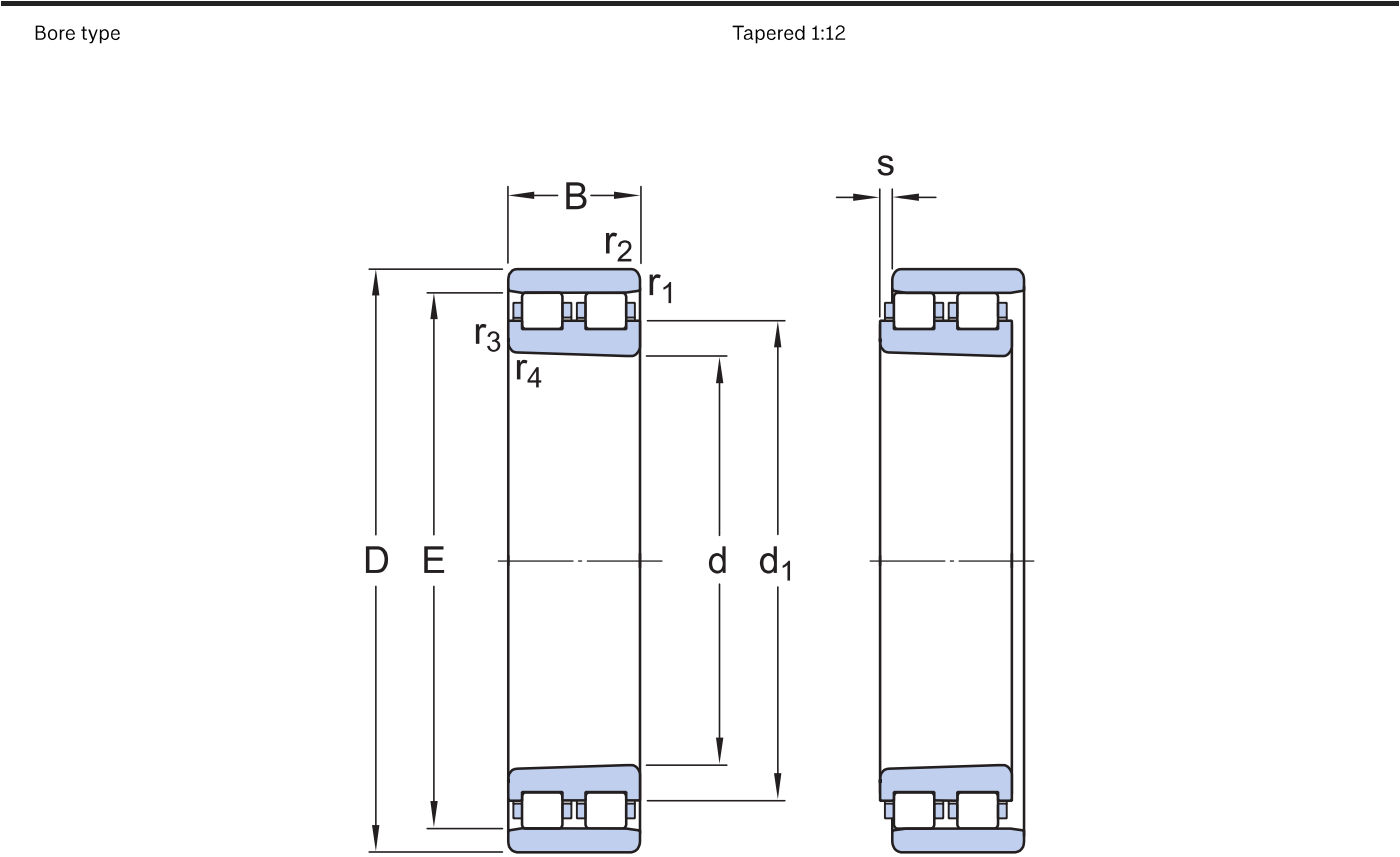
|                               |                  |
|-------------------------------|------------------|
| Bearing part                  | Complete bearing |
| Number of rows                | 2                |
| Bore type                     | Tapered 1:12     |
| Cage                          | Non-metallic     |
| 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         | Without          |

## Logistics

|                    |             |
|--------------------|-------------|
| Product net weight | 2.1 kg      |
| eClass code        | 23-05-09-01 |
| UNSPSC code        | 31171505    |

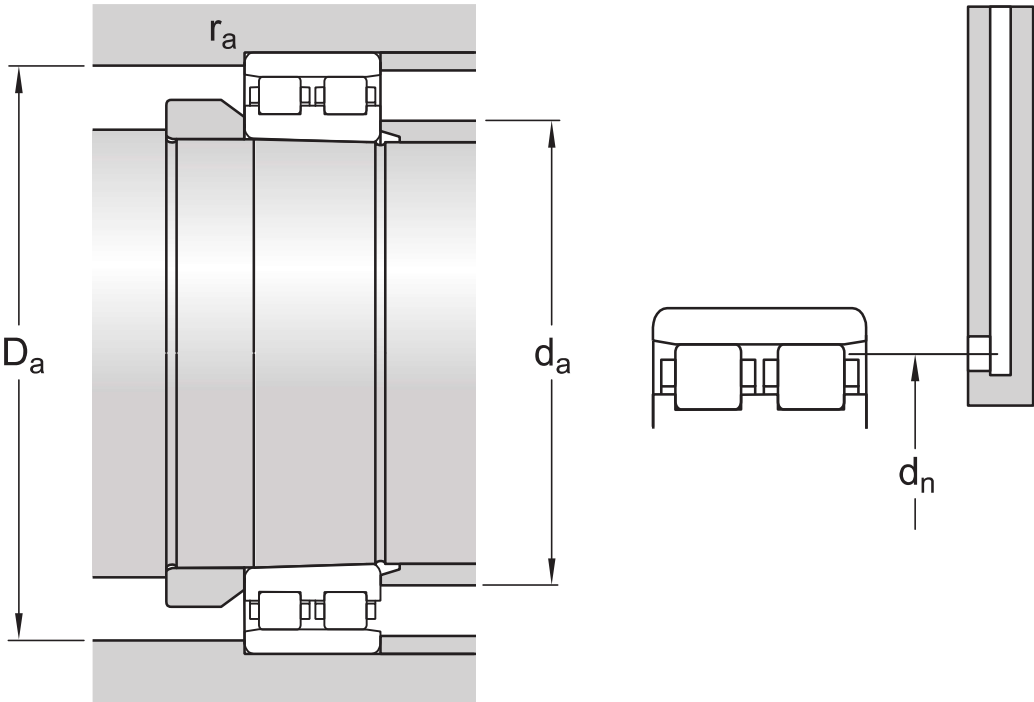


Technical specification



Dimensions

|                  |             |                                                                                                         |
|------------------|-------------|---------------------------------------------------------------------------------------------------------|
| d                | 100 mm      | Bore diameter                                                                                           |
| D                | 150 mm      | Outside diameter                                                                                        |
| B                | 37 mm       | Width                                                                                                   |
| d <sub>1</sub>   | 119.4 mm    | Shoulder diameter inner ring (NN design)                                                                |
| E                | 137 mm      | Raceway diameter outer ring (NN design)                                                                 |
| r <sub>1,2</sub> | min. 1.5 mm | Chamfer dimension outer ring                                                                            |
| r <sub>3,4</sub> | min. 1 mm   | Chamfer dimension inner ring (bearing with tapered bore)                                                |
| s                | max. 2 mm   | Permissible axial displacement from the normal position of one bearing ring relative to the other (all) |



Abutment dimensions

|       |             |                                                       |
|-------|-------------|-------------------------------------------------------|
| $d_a$ | min. 108 mm | Abutment diameter shaft                               |
| $D_a$ | min. 139 mm | Abutment diameter housing                             |
| $D_a$ | max. 142 mm | Abutment diameter housing                             |
| $r_a$ | max. 1.5 mm | Fillet radius                                         |
| $d_n$ | 135.2 mm    | Oil nozzle position (not for variants with TNHA cage) |

Calculation data

|                                           |           |                      |
|-------------------------------------------|-----------|----------------------|
| Basic dynamic load rating                 | C         | 151 kN               |
| Basic static load rating                  | $C_0$     | 250 kN               |
| Fatigue load limit                        | $P_u$     | 29 kN                |
| Attainable speed for grease lubrication   |           | 5 600 r/min          |
| Attainable speed for oil-air lubrication  |           | 6 300 r/min          |
| Reference grease quantity                 | $G_{ref}$ | 11.9 cm <sup>3</sup> |
| Static radial stiffness (guideline value) |           | 2 350 N/μm           |

## Tolerances and clearances

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### PRODUCT DETAILS

- [Tolerances: SP, UP, SP and UP for 1:12 tapered bore](#)
- [Radial internal clearance: table](#)

## PRINCIPLES OF BEARING SELECTION AND APPLICATION

- [Chamfer dimensions](#)
- [Seat tolerances for standard conditions: shafts, housings](#)
- Values for ISO tolerance classes: [shafts](#), [housings](#)
- Speed dependent initial grease fill → [Initial grease fill](#)



More Information

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                     |
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| <div> <b>Product details</b></div> <div><div><a href="#">Designs and variants</a></div><div><a href="#">General bearing specifications</a></div><div><a href="#">Preload, clearance, and stiffness</a></div><div><a href="#">Loads</a></div><div><a href="#">Attainable speeds</a></div><div><a href="#">Design considerations</a></div><div><a href="#">Mounting</a></div><div><a href="#">Designation system</a></div></div> | <div> <b>Engineering information</b></div> <div><div><a href="#">Principles of bearing selection and application</a></div><div><a href="#">General bearing knowledge</a></div><div><a href="#">Bearing selection process</a></div><div><a href="#">Bearing failure and how to prevent it</a></div></div> | <div> <b>Tools</b></div> <div><div><a href="#">SimPro Quick</a></div><div><a href="#">SimPro Spindle</a></div><div><a href="#">Bearing Frequency Calculator</a></div><div><a href="#">LubeSelect for SKF greases</a></div><div><a href="#">Heater selection tool</a></div></div> |
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