



BSD 50100 CGA Super-precision single direction angular contact thrust ball bearing

Super-precision single direction angular contact thrust ball bearing

These super-precision ball bearings offer very high running accuracy and are well suited for screw drive applications. They are also beneficial in other applications, where safe radial and axial support is required, together with extremely precise axial guidance of the shaft. They provide a high degree of axial stiffness and can accommodate heavy axial loads in one direction, high speeds and rapid accelerations.

- Very high running accuracy
- High axial stiffness
- High axial load carrying capacity in one direction
- Universally matchable
- Well suited for screw drive applications

Overview

Dimensions

Bore diameter	50 mm
Outside diameter	100 mm
Height	20 mm
Contact angle	62 °

Performance

Basic dynamic load rating	67 kN
Basic static load rating	193 kN
Attainable speed for grease lubrication	5 600 r/min
Attainable speed for oil-air lubrication	6 700 r/min

Properties

Axial load capability	Single-direction
Number of rows	1
Locating feature, bearing outer ring	None
Cage	Non-metallic
Tolerance class	Special
Material, bearing	Bearing steel
Coating	Without
Sealing	Without
Relubrication feature	Without

Technical Specification

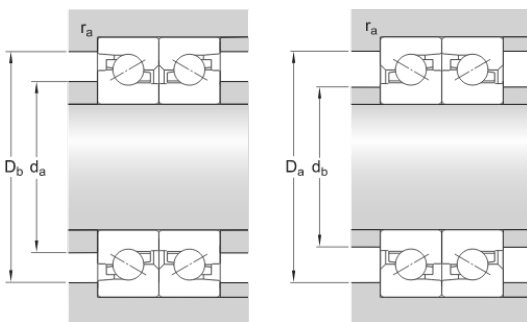


Dimensions

d	50 mm	Bore diameter
D	100 mm	Outside diameter
H	20 mm	Height
d ₁	66.9 mm	Shoulder diameter
d ₂	77 mm	Shoulder diameter
D ₁	77.1 mm	Shoulder/recess diameter
D ₂	87.76 mm	Shoulder/recess diameter
r _{1,2}	min. 1.5 mm	Chamfer dimension
a	82 mm	Distance to pressure point

Abutment dimensions

d _a	min. 65 mm	Diameter of shaft abutment
d _b	min. 65 mm	Diameter of shaft abutment
D _a	max. 90.5 mm	Diameter of housing abutment
D _b	max. 90.5 mm	Diameter of housing abutment
r _a	max. 1.5 mm	Radius of housing fillet



Calculation data

Basic dynamic load rating	C	67 kN
Basic static load rating	C ₀	193 kN
Fatigue load limit	P _u	7.2 kN
Attainable speed for grease lubrication		5 600 r/min
Attainable speed for oil-air lubrication		6 700 r/min
Contact angle	α	62 °

Preload		6 200 N
Frictional moment		0.52 N·m
Axial stiffness for preload A (sets of two brgs back-to-back or face-to-face)		1 550 N/μm
Maximum axial load carrying capacity	F_a	max. 107 kN
Reference grease quantity	G_{ref}	6.5 cm ³

Mass

Mass bearing		0.71 kg
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