



Image may differ from product. See specification for details.

22211 EK

Spherical roller bearing with tapered bore and relubrication features

Spherical roller bearings can accommodate heavy loads in both directions. They are self-aligning and accommodate misalignment and shaft deflections, with virtually no increase in friction or temperature. The design includes features to facilitate relubrication. The bearings can be used in a modular system, including housings, sleeves and nuts.

- Accommodate misalignment
- High load carrying capacity
- Relubrication features
- Low friction and long service life
- Increased wear resistance

Overview

Dimensions

Bore diameter	2.1654 in
Outside diameter	3.937 in
Width	0.9843 in

Performance

Basic dynamic load rating	29 000 lbf
Basic static load rating	28 551 lbf
Reference speed	6 300 r/min
Limiting speed	8 500 r/min
SKF performance class	SKF Explorer

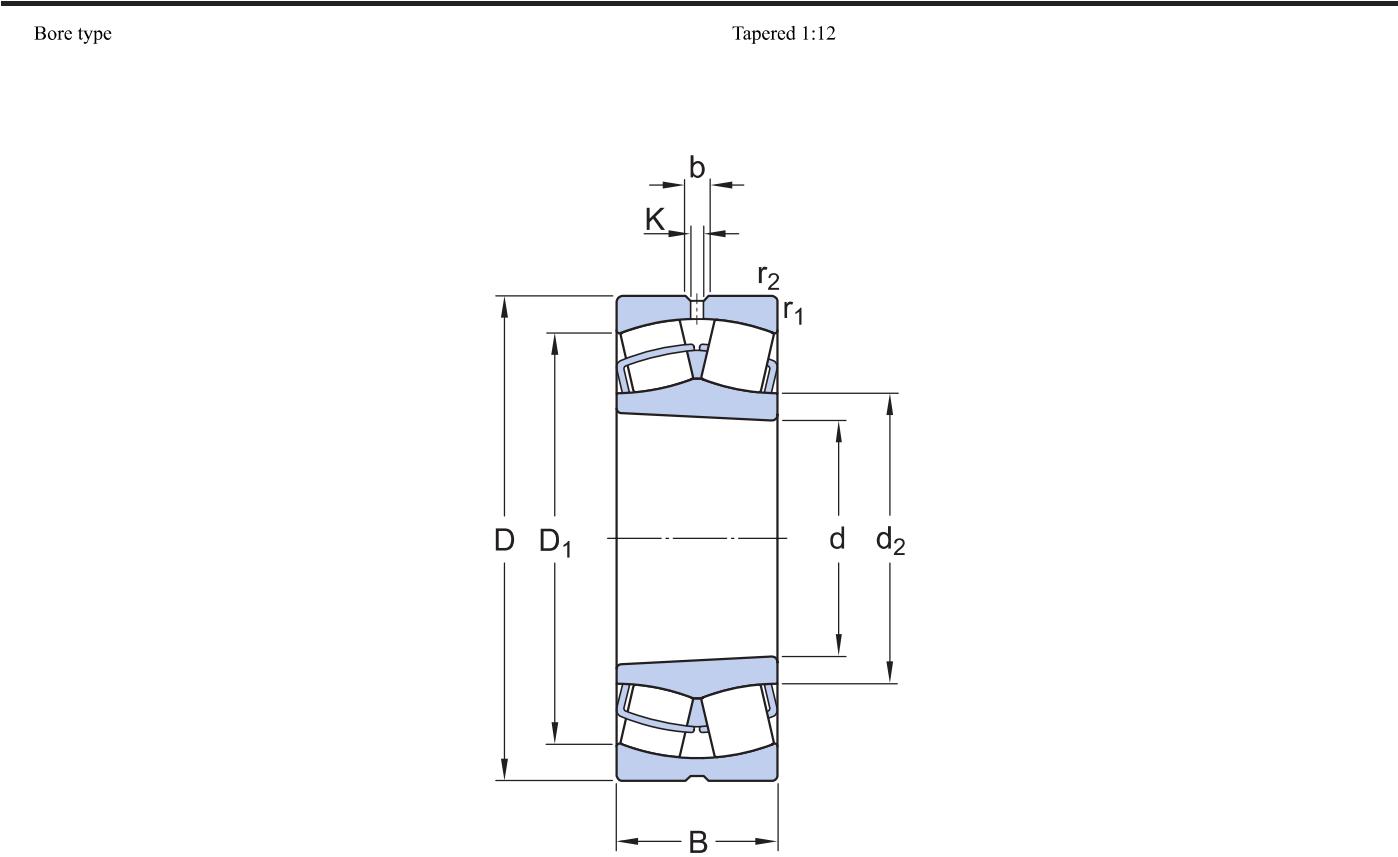
Properties

Number of rows	2
Locating feature, bearing outer ring	Without
Bore type	Tapered 1:12
Cage	Sheet metal
Radial internal clearance	CN
Tolerance class for dimensions	Normal
Tolerance class for run-out	P5
Sealing	Without
Lubricant	None
Relubrication feature	With
Indicative carbon footprint for new product	6.36 lb CO ₂ e

Logistics

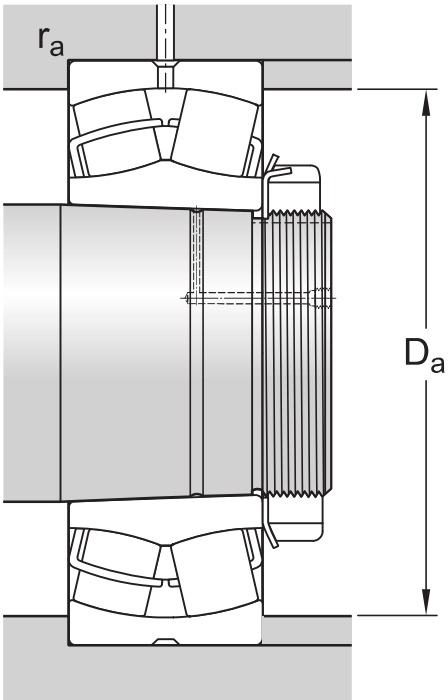
Product net weight	1.77 lb
eClass code	23-05-09-11
UNSPSC code	31171510

Technical specification



Dimensions

d	2.1654 in	Bore diameter
t _{Δdmp}	0 – 30 μm	Deviation limits of mid-range bore diameter
t _{ΔSL}	0 – 30 μm	Deviation limits of tapered slope
D	3.937 in	Outside diameter
t _{ΔDmp}	-15 – 0 μm	Deviation limits of mid-range outside diameter
B	0.9843 in	Width
t _{ΔBs}	-60 – 0 μm	Deviation limits of ring width
d ₂	≈ 2.5709 in	Shoulder diameter of inner ring
D ₁	≈ 3.4646 in	Shoulder/recess diameter of outer ring
b	0.2362 in	Width of lubrication groove
K	0.1181 in	Diameter of lubrication hole
r _{1,2}	min. 0.0591 in	Chamfer dimension
	Normal	ISO tolerance class for dimensions



Abutment dimensions

D_a	max. 3.5827 in	Diameter of housing abutment
r_a	max. 0.0591 in	Radius of fillet

Calculation data

SKF performance class		SKF Explorer
Basic dynamic load rating	C	29 000 lbf
Basic static load rating	C_0	28 551 lbf
Fatigue load limit	P_u	3 147 lbf
Reference speed		6 300 r/min
Limiting speed		8 500 r/min
Limiting value	e	0.24
Calculation factor	Y_1	2.8
Calculation factor	Y_2	4.2
Calculation factor	Y_0	2.8

Tolerances of run-out

Range of section height at inner ring of assembled bearing	t _{Kia}	5 µm
Maximum run-out of inner ring side face to the bore	t _{Sd}	8 µm
Range of section height at outer ring of assembled bearing	t _{Kea}	10 µm
Perpendicularity of outer ring outside surface	t _{SD}	4.5 µm
ISO tolerance class for geometrical tolerances		P5

Radial internal clearance

Minimum initial clearance	0.0022 in
Maximum initial clearance	0.003 in

Mounting information

Recommended tightening angle for lock nut	α	115 °
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Tolerances and clearances

GENERAL BEARING SPECIFICATIONS

- Tolerances: Normal, P6, P5, tapered bore 1:12, tapered bore 1:30
- Radial internal clearance: cylindrical bore, tapered bore

BEARING INTERFACES

- Seat tolerances for standard conditions
- Tolerances and resultant fit

Compatible products

Recommended product

Withdrawal sleeve, basic design, ISO standards	AHX 311
Adapter sleeve with KM lock nut and MB lock washer, metric dimensions	H 311
Adapter sleeve with KMFE lock nut, metric dimensions	H 311 E
Adapter sleeve with KM lock nut and MB lock washer, metric dimensions with inch bore	HA 311
Adapter sleeve	HA 311 E
Adapter sleeve with KM lock nut and MB lock washer, metric dimensions with inch bore	HE 311 B
Adapter sleeve	HE 311 BE
Adapter sleeve with AN or N lock nut and W lock washer, inch dimensions	SNW 11X1.15/16

More Information

Product details	Engineering information	Tools
Designs and variants	Principles of rolling bearing selection	SimPro Quick
General bearing specifications	General bearing knowledge	SKF Product select - Select and evaluate bearing
Loads	Bearing selection process	SKF Product select - Combine housing with bearing
Temperature limits	Bearing failure and how to prevent it	LubeSelect for SKF greases
Permissible speed		Drive-up Method Program
Design considerations		Heater selection tool
Mounting		Oil Injection Method Program
Designation system		Tool and Accessory Selector for sleeves and shafts



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