



Image may differ from product. See specification for details.

## 21311 E

### Spherical roller bearing with 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	4.7244 in
Width	1.1417 in

Performance

Basic dynamic load rating	35 745 lbf
Basic static load rating	37 318 lbf
Reference speed	5 600 r/min
Limiting speed	7 500 r/min
SKF performance class	SKF Explorer

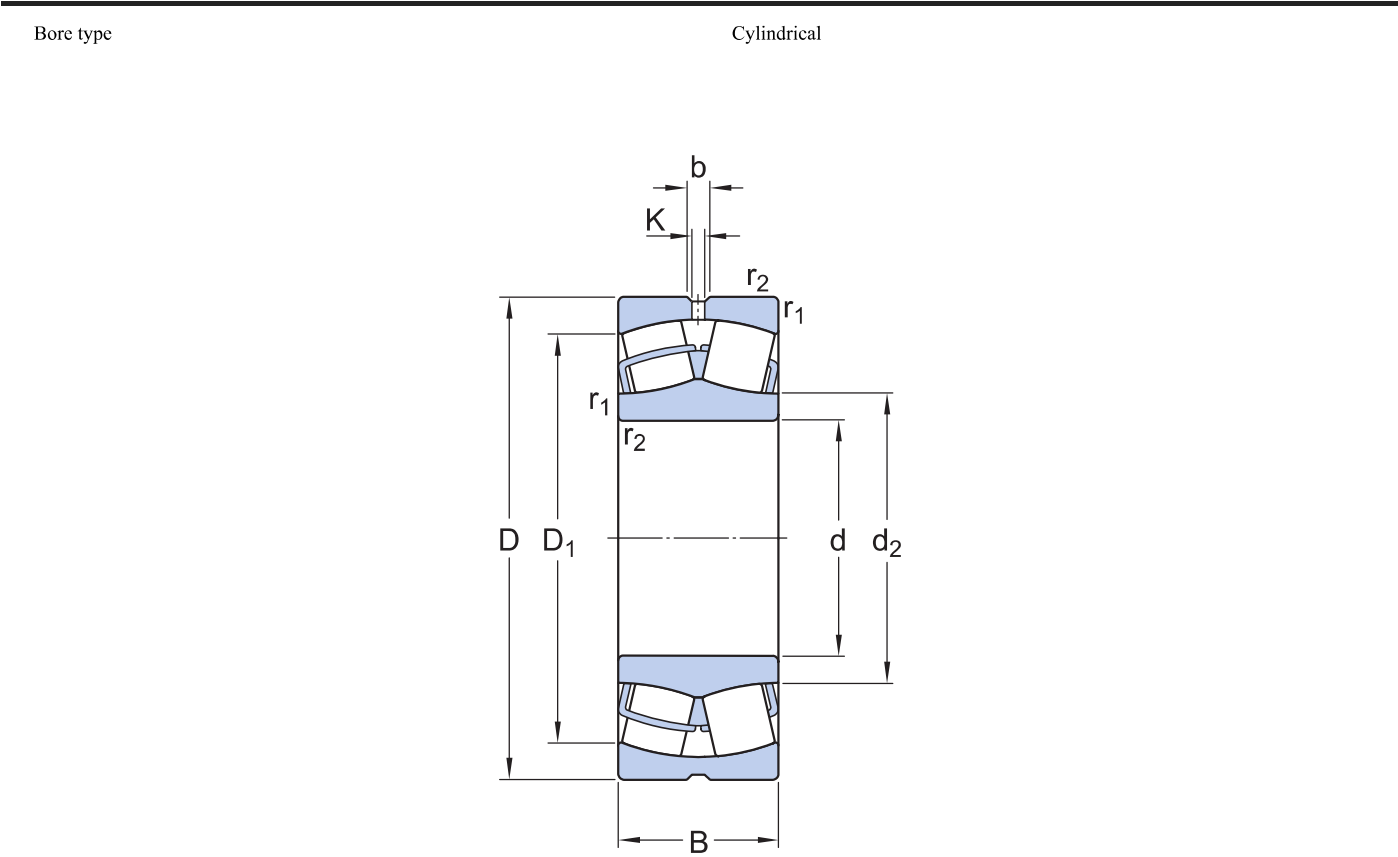
Properties

Number of rows	2
Locating feature, bearing outer ring	Without
Bore type	Cylindrical
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	13.2 lb CO <sub>2</sub> e

Logistics

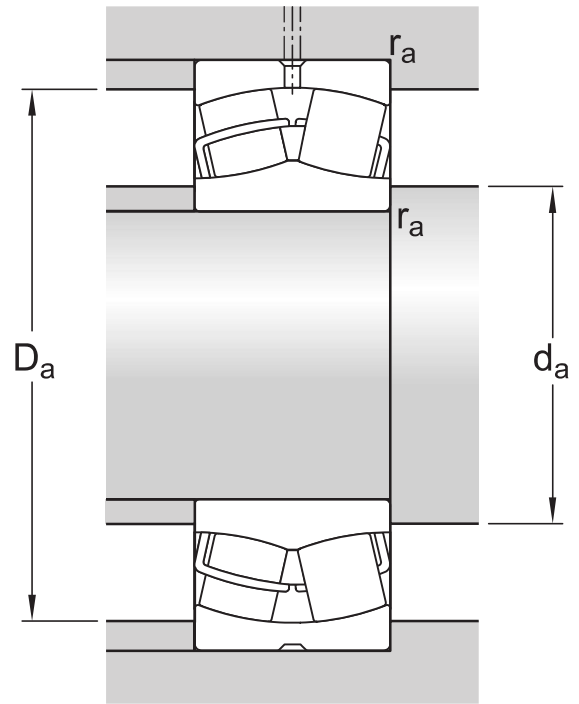
Product net weight	3.67 lb
eClass code	23-05-09-11
UNSPSC code	31171510

Technical specification



Dimensions

d	2.1654 in	Bore diameter
$t_{\Delta dmp}$	-15 – 0 $\mu\text{m}$	Deviation limits of mid-range bore diameter
D	4.7244 in	Outside diameter
$t_{\Delta Dmp}$	-15 – 0 $\mu\text{m}$	Deviation limits of mid-range outside diameter
B	1.1417 in	Width
$t_{\Delta Bs}$	-60 – 0 $\mu\text{m}$	Deviation limits of ring width
$d_2$	$\approx 2.8622$ in	Shoulder diameter of inner ring
$D_1$	$\approx 3.7874$ 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. 0.0787 in	Chamfer dimension
	Normal	ISO tolerance class for dimensions



Abutment dimensions

d <sub>a</sub>	min. 2.5984 in	Diameter of shaft abutment
D <sub>a</sub>	max. 4.2913 in	Diameter of housing abutment
r <sub>a</sub>	max. 0.0787 in	Radius of fillet

Calculation data

SKF performance class		SKF Explorer
Basic dynamic load rating	C	35 745 lbf
Basic static load rating	C <sub>0</sub>	37 318 lbf
Fatigue load limit	P <sub>u</sub>	4 181 lbf
Reference speed		5 600 r/min
Limiting speed		7 500 r/min
Limiting value	e	0.24
Calculation factor	Y <sub>1</sub>	2.8
Calculation factor	Y <sub>2</sub>	4.2
Calculation factor	Y <sub>0</sub>	2.8

Tolerances of run-out

Range of section height at inner ring of assembled bearing	t <sub>Kia</sub>	5 μm
Maximum run-out of inner ring side face to the bore	t <sub>Sd</sub>	8 μm
Range of section height at outer ring of assembled bearing	t <sub>Kea</sub>	10 μm
Perpendicularity of outer ring outside surface	t <sub>SD</sub>	4,5 μm
ISO tolerance class for geometrical tolerances		P5

Radial internal clearance

Minimum initial clearance	0.0016 in
Maximum initial clearance	0.0026 in

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



More Information

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



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