



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

## 7012 CD/P4ADBA

**Matched set of two super-precision, high-capacity, D design, single row angular contact ball bearings**

These matched sets of two super-precision, high-capacity, D design, single row angular contact ball bearings are available in a variety of arrangements. They are designed for high-load capacity and relatively high speed operation and, compared to the equivalent SKF B and E design high-speed bearings, are best suited for heavier loads.

- Very high running accuracy
- Very high load carrying capacity

## Overview

## Dimensions

Bore diameter	60 mm
Outside diameter	95 mm
Width	36 mm
Contact angle	15 °

## Performance

Basic dynamic load rating	66.3 kN
Basic static load rating	69.5 kN
Note	Refer to catalogue data or contact SKF for the attainable speeds

## Properties

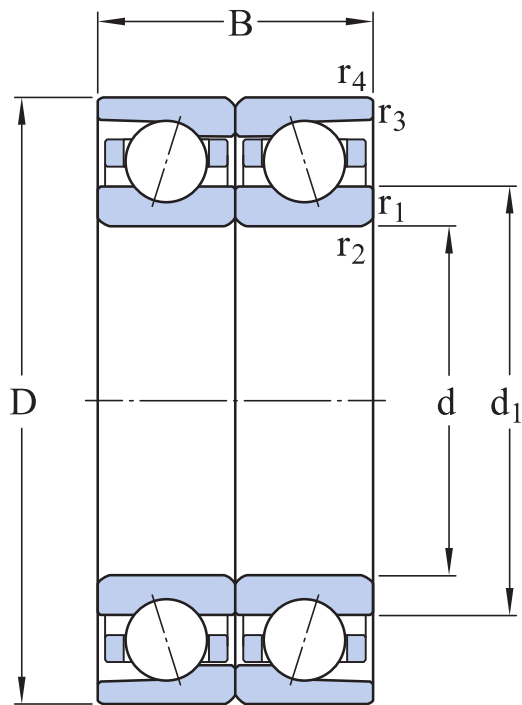
Contact type	Normal contact (two-point contact)
Number of rows	2
Ring type	One-piece inner and outer rings
Design	High-capacity D
Universal matching bearing	No
Matched arrangement	Back-to-back <>
Number of bearings in matched set	2
Matched condition (axial clearance/ preload)	Extra light preload
Tolerance class	P4A
Material, bearing	Bearing steel
Coating	Without
Sealing	Without
Lubricant	None

## Logistics

Product net weight	0.791 kg
eClass code	23-05-08-04
UNSPSC code	31171531

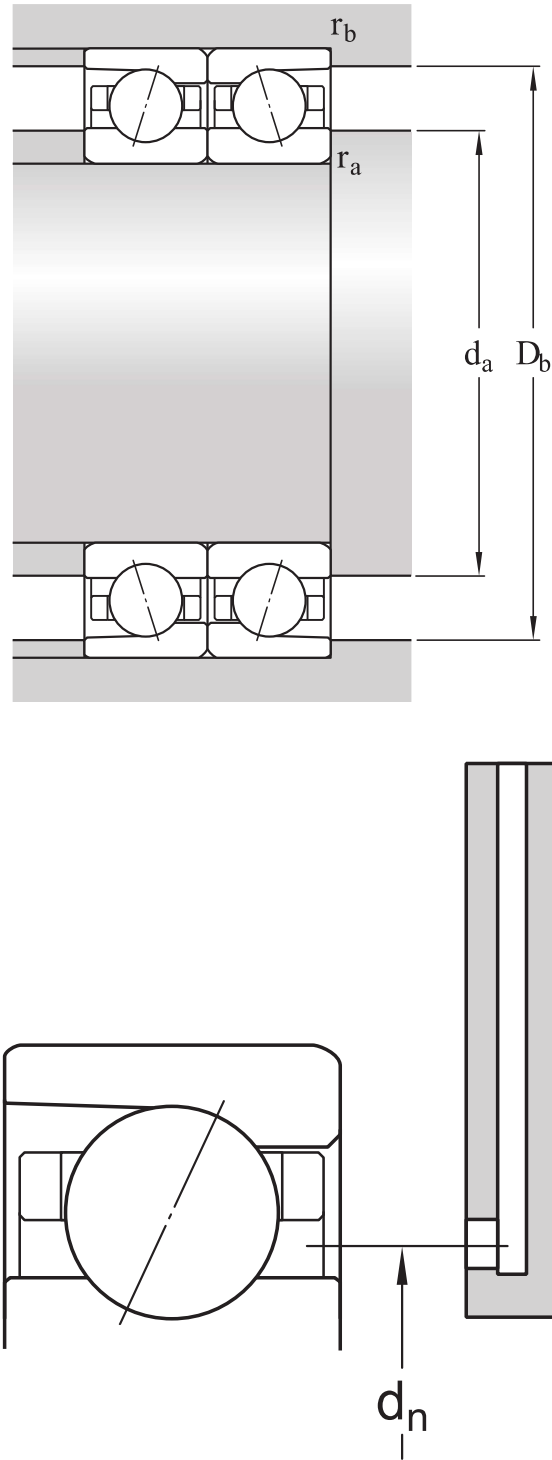
Technical specification

Universal matching bearing(s)	No
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Dimensions

d	60 mm	Bore diameter
D	95 mm	Outside diameter
B	36 mm	Width
d <sub>1</sub>	70.8 mm	Shoulder diameter of inner ring (large side face)
r <sub>1,2</sub>	min. 1.1 mm	Chamfer dimension
r <sub>3,4</sub>	min. 0.6 mm	Chamfer dimension



Abutment dimensions

$d_a$	min. 66 mm	Diameter of shaft abutment
$D_b$	max. 91.8 mm	Diameter of housing abutment
$r_a$	max. 1 mm	Radius of fillet
$r_b$	max. 0.6 mm	Radius of fillet
$d_n$	73.1 mm	Position of oil nozzle

## Calculation data

Basic dynamic load rating	C	66.3 kN
Basic static load rating	C <sub>0</sub>	69.5 kN
Fatigue load limit	P <sub>u</sub>	3 kN
Attainable speed for grease lubrication		To be calculated: Single bearing (14000) x speed reduction factor (see table below)
Attainable speed for oil-air lubrication		To be calculated: Single bearing (22000) x speed reduction factor (see table below)
Contact angle	α	15 °
Ball diameter	D <sub>w</sub>	11.112 mm
Number of rows	i	2
Number of balls (per bearing)	z	19
Reference grease quantity (per bearing)	G <sub>ref</sub>	5.4 cm <sup>3</sup>

## PRELOAD AND STIFFNESS (BACK-TO-BACK, FACE-TO-FACE)

Preload class		A
Preload	G	150 N
Axial stiffness		70 N/μm

## CORRECTION FACTORS FOR PRELOAD CALCULATION

Correction factor dependent on bearing series and size	f	1.12
Correction factor dependent on contact angle	f <sub>1</sub>	1
Correction factor, preload class A	f <sub>2A</sub>	1
Correction factor for hybrid bearings	f <sub>HC</sub>	1

## FACTORS FOR EQUIVALENT BEARING LOAD CALCULATION

Calculation factor for equivalent loads	f <sub>0</sub>	15.4
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Additional factors for equivalent loads

Refer to Notes 1 and 2 below

## Tolerances and clearances

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### GENERAL BEARING SPECIFICATIONS

- Tolerances: [P4A](#), [P4B](#), [P4](#), [PA9A](#), [P2](#)

### 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](#)
- Clamping and fitting forces: [D design](#), [E design](#), [B design](#)
- Designation suffixes H, H1, L and L1 identify variants for [direct oil-air lubrication](#).

### FACTORS FOR EQUIVALENT BEARING LOAD CALCULATION

- Note 1: [Single bearings and bearings arranged in tandem](#)
- Note 2: [Bearings paired back-to-back or face-to-face](#)

SPEED REDUCTION FACTORS FOR SPEED CALCULATION

Number of bearings	Arrangement	Designation suffix	Speed reduction factors																
			for matched sets								for bearings in the series								
			718 .. D, 719 .. E, and 70 .. E								S70 .. W	719 .. A and 70 .. A	719 .. B and 70 .. B			719 .. D, 70 .. D and 72 .. D			
			for preload class										for preload class			for preload class			
			A	L	B	M	C	F	–	–	A	B	C	A	B	C	D		
2	Back-to-back	DB	0,8	–	0,65	–	0,4	–	0,81	0,8	0,83	0,78	0,58	0,81	0,75	0,65	0,4		
	Face-to-face	DF	0,77	–	0,61	–	0,36	–	–	–	0,8	0,74	0,54	0,77	0,72	0,61	0,36		
3	Back-to-back and tandem	TBT	0,69	0,72	0,49	0,58	0,25	0,36	–	–	0,72	0,66	0,4	0,7	0,63	0,49	0,25		
	Face-to-face and tandem	TFT	0,63	0,66	0,42	0,49	0,17	0,24	–	–	0,64	0,56	0,3	0,63	0,56	0,42	0,17		
4	Tandem back-to-back	QBC	0,64	–	0,53	–	0,32	–	–	–	0,67	0,64	0,48	0,64	0,6	0,53	0,32		
	Tandem face-to-face	QFC	0,62	–	0,48	–	0,27	–	–	–	0,64	0,6	0,41	0,62	0,58	0,48	0,27		

For spring-loaded tandem sets, designation suffix DT, a speed reduction factor of 0,9 should be applied.




Compatible products

Aftermarket replacement

Matched set of two super-precision, high-capacity, D design, single row angular contact ball bearings	<a href="#">7012 CD/P4ADGA</a>
Super-precision, high-capacity, universally matchable single row angular contact ball bearing	<a href="#">2 x 7012 CDGA/P4A</a> <u>Verify quantity of bearing rows</u>



More Information

<div> <b>Product details</b></div> <div><a href="#">Designs and variants</a></div> <div><a href="#">Markings on bearings and bearing sets</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="#">Mounting</a></div> <div><a href="#">Designation system</a></div>	<div> <b>Engineering information</b></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> <b>Tools</b></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><a href="#">Super-precision manager tool</a></div>
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