



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

## 7015 CDGA/P4A

Super-precision, high-capacity, universally matchable single row angular contact ball bearing

These super-precision, high-capacity, single row angular contact ball bearings accommodate radial and axial loads acting simultaneously, where the axial load acts in one direction only. They are designed to accommodate heavy loads at relatively high speeds under low to moderate operating temperatures. Being universally matchable, they can be used together in

arrangements to provide effective load sharing, within a predetermined preload range, without the use of shims or similar devices.

- Very high running accuracy
- Very high load carrying capacity
- Relatively high speed and stiffness
- Universally matchable

Overview

Dimensions

Bore diameter	75 mm
Outside diameter	115 mm
Width	20 mm
Contact angle	15 °

Performance

Basic dynamic load rating	52.7 kN
Basic static load rating	49 kN
Note	Refer to catalogue data or contact SKF for the attainable speeds

Properties

Contact type	Normal contact (two-point contact)
Number of rows	1
Ring type	One-piece inner and outer rings
Design	High-capacity D
Universal matching bearing	Yes, back-to-back (<>), face-to-face (><) or tandem (>>)
Matched arrangement	No
Matched condition (axial clearance/ preload)	Measuring load, class A
Tolerance class	P4A
Material, bearing	Bearing steel
Coating	Without
Sealing	Without
Lubricant	None

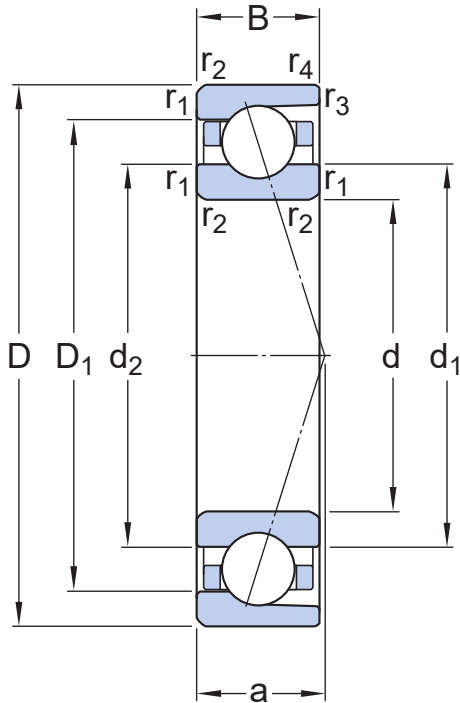
Logistics

Product net weight	0.617 kg
eClass code	23-05-08-04
UNSPSC code	31171531

Technical specification

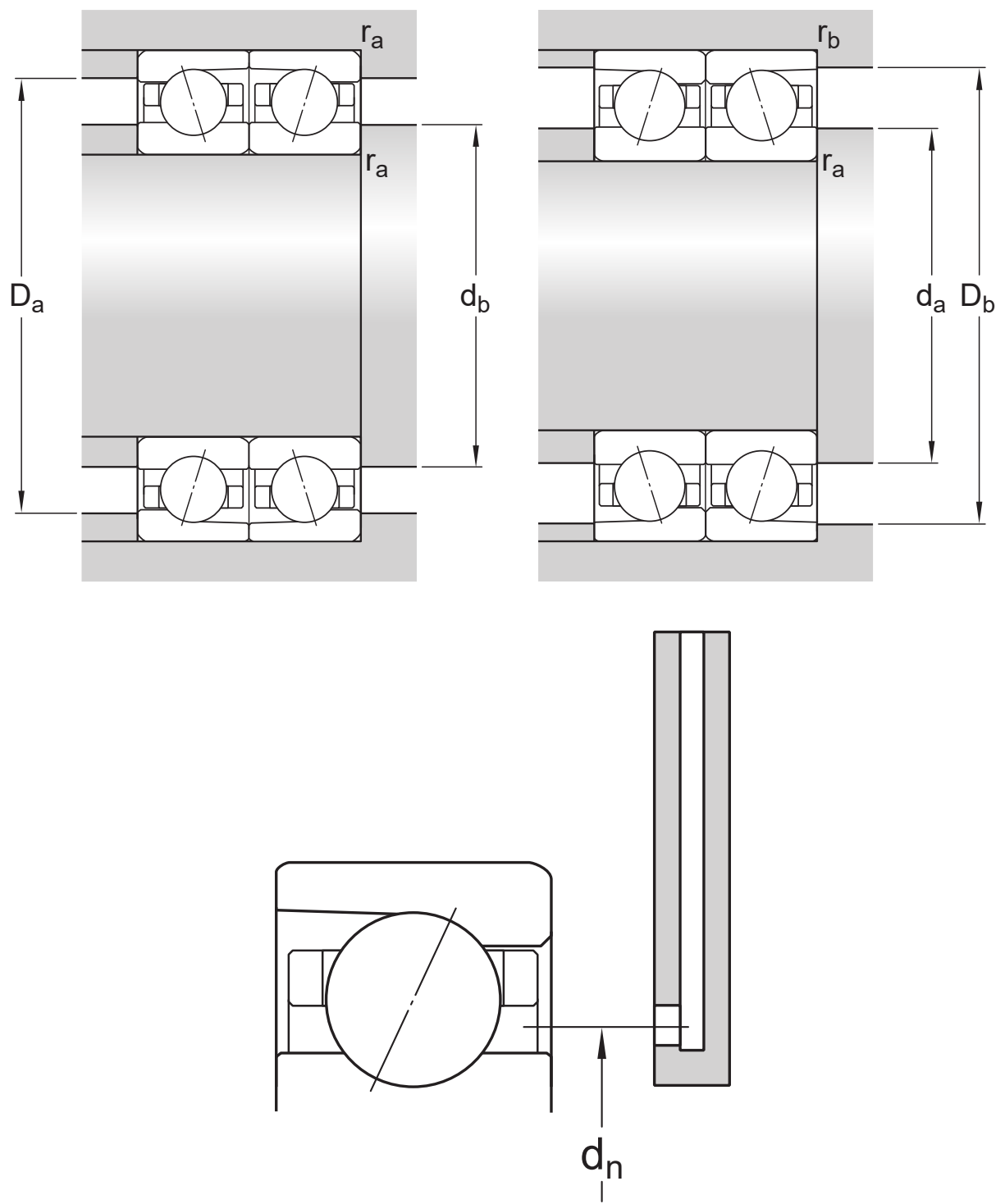
Universal matching bearing(s)

Yes, back-to-back (<>), face-to-face (><) or tandem (>>)



Dimensions

d	75 mm	Bore diameter
D	115 mm	Outside diameter
B	20 mm	Width
d <sub>1</sub>	87.3 mm	Shoulder diameter of inner ring (large side face)
d <sub>2</sub>	87.3 mm	Shoulder diameter of inner ring (small side face)
D <sub>1</sub>	102.7 mm	Shoulder diameter of outer 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
a	22.8 mm	Distance from side face to pressure point



Abutment dimensions

$d_a$	min. 81 mm	Diameter of shaft abutment
$d_b$	min. 81 mm	Diameter of shaft abutment
$D_a$	max. 109 mm	Diameter of housing abutment
$D_b$	max. 111 mm	Diameter of housing abutment

$r_a$	max. 1 mm	Radius of fillet
$r_b$	max. 0.6 mm	Radius of fillet
$d_n$	90 mm	Position of oil nozzle

## Calculation data

Basic dynamic load rating	$C$	52.7 kN
Basic static load rating	$C_0$	49 kN
Fatigue load limit	$P_u$	2.08 kN
Attainable speeds		Refer to catalogue data or contact SKF for the attainable speeds
Contact angle	$\alpha$	15 °
Ball diameter	$D_w$	12.7 mm
Number of rows	$i$	1
Number of balls (per bearing)	$z$	20
Reference grease quantity (per bearing)	$G_{ref}$	8.4 cm <sup>3</sup>

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

Preload class		A
Preload when unmounted	$G$	200 N
Axial stiffness		84 N/μm

## CORRECTION FACTORS FOR PRELOAD CALCULATION

Correction factor dependent on bearing series and size	$f$	1.14
Correction factor dependent on contact angle	$f_1$	1
Correction factor, preload class A	$f_{2A}$	1
Correction factor for hybrid bearings	$f_{HC}$	1

## FACTORS FOR EQUIVALENT BEARING LOAD CALCULATION

Calculation factor for equivalent loads	$f_0$	15.7
Additional factors for equivalent loads		Refer to Notes 1 and 2 below

Tolerances and clearances

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.



More Information

<div> Product details</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> Engineering information</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> Tools</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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