

# 71922 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    | 110 mm |
| Outside diameter | 150 mm |
| Width            | 20 mm  |
| Contact angle    | 15 °   |

### Performance

|                           |                                       |
|---------------------------|---------------------------------------|
| Basic dynamic load rating | 62.4 kN                               |
| Basic static load rating  | 72 kN                                 |
| Note                      | 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          |

# Technical Specification

Universal matching bearing(s)

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



## Dimensions

|                  |             |   |
|------------------|-------------|---|
| d                | 110 mm      | Bore diameter                                     |
| D                | 150 mm      | Outside diameter                                  |
| B                | 20 mm       | Width   |
| d <sub>1</sub>   | 122.3 mm    | Shoulder diameter of inner ring (large side face) |
| d <sub>2</sub>   | 122.3 mm    | Shoulder diameter of inner ring (small side face) |
| D <sub>1</sub>   | 137.7 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                | 27.5 mm     | Distance from side face to pressure point         |

## Abutment dimensions

|                |             |                              |
|----------------|-------------|------------------------------|
| d <sub>a</sub> | min. 116 mm | Diameter of shaft abutment   |
| d <sub>b</sub> | min. 116 mm | Diameter of shaft abutment   |
| D <sub>a</sub> | max. 144 mm | Diameter of housing abutment |
| D <sub>b</sub> | max. 146 mm | Diameter of housing abutment |
| r <sub>a</sub> | max. 1 mm   | Radius of fillet             |
| r <sub>b</sub> | max. 0.6 mm | Radius of fillet             |
| d <sub>n</sub> | 125.6 mm    | Position of oil nozzle       |





## Calculation data

|   |                                       |                      |
|---|---------------------------------------|----------------------|
| Basic dynamic load rating               | C                                     | 62.4 kN              |
| Basic static load rating                | $C_0$                                 | 72 kN                |
| Fatigue load limit                      | $P_u$                                 | 2.7 kN               |
| Attainable speeds                       | 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                                     | 28                   |
| Reference grease quantity (per bearing) | $G_{ref}$                             | 11.4 cm <sup>3</sup> |

## Preload and stiffness (back-to-back, face-to-face)

|                        |   |                |
|------------------------|---|----------------|
| Preload class          |   | A              |
| Preload when unmounted | G | 230 N          |
| Axial stiffness        |   | 113 N/ $\mu$ m |

## Correction factors for preload calculation

|  |          |      |
|--|----------|------|
| Correction factor dependent on bearing series and size | f        | 1.26 |
| 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 | $f_0$ | 16.5 |
|---|-------|------|

|   |                              |  |
|---|------------------------------|--|
| Additional factors for equivalent loads | Refer to Notes 1 and 2 below |  |
|---|------------------------------|--|

### Mass

|      |         |
|------|---------|
| Mass | 0.86 kg |
|------|---------|

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