**SKF®**

# 71906 ACEGA/P4A

## Super-precision, high-speed, E design, universally matchable single row angular contact ball bearing

These super-precision, high-speed, E design, 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 for high-speed operation and, compared to SKF B design high-speed bearings, have a slightly higher speed capability and can accommodate heavier loads. 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.

• 15° or 25° contact angle

• Very high running accuracy

• Accommodate very high speeds

• Universally matchable

## Overview

### Dimensions

| | |
|---|---|
| Bore diameter | 1.181 in |
| Outside diameter | 1.85 in |
| Width | 0.354 in |

### Performance

| | |
|---|---|
| Basic dynamic load rating | 1 214 lbf |
| Basic static load rating | 686 lbf |

### Properties

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

# Technical Specification
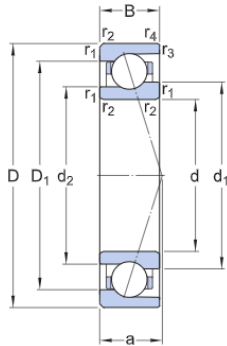
## Dimensions

| | | |
|---|---|---|
| d | 1.181 in | Bore diameter |
| D | 1.85 in | Outside diameter |
| B | 0.354 in | Width |
| $d_1$ | 1.409 in | Shoulder diameter of inner ring (large side face) |
| $d_2$ | 1.354 in | Shoulder diameter of inner ring (small side face) |
| $D_1$ | 1.63 in | Shoulder diameter of outer ring (large side face) |
| $r_{1,2}$ | min. 0.012 in | Chamfer dimension (large side face) |
| $r_{3,4}$ | min. 0.006 in | Chamfer dimension (small side face) |
| a | 0.531 in | Distance from side face to pressure point |

## Abutment dimensions
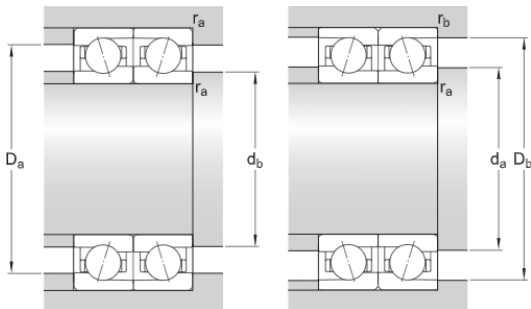
| | | |
|---|---|---|
| $d_a$ | min. 1.26 in | Diameter of shaft abutment |
| $d_b$ | min. 1.26 in | Diameter of shaft abutment |
| $D_a$ | max. 1.772 in | Diameter of housing abutment |
| $D_b$ | max. 1.819 in | Diameter of housing abutment |
| $r_a$ | max. 0.012 in | Radius of fillet |
| $r_b$ | max. 0.006 in | Radius of fillet |
| $d_n$ | 1.449 in | Position of oil nozzle |
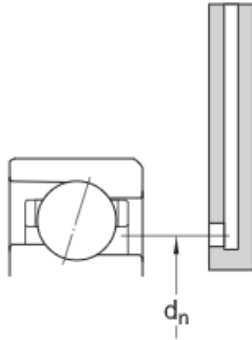
## Calculation data

| | | | |
|---|---|---|---|
| Basic dynamic load rating | C | 1 214 | lbf |
| Basic static load rating | $C_0$ | 686 | lbf |
| Fatigue load limit | $P_u$ | 29 | lbf |
| Contact angle | α | 25 | ° |
| Ball diameter | $D_w$ | 0.187 | in |
| Number of balls | z | 18 | |
| Reference grease quantity | $G_{ref}$ | 0.03661 | in |

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

| | | | |
|---|---|---|---|
| Preload class A | $G_A$ | 11 | lbf |
| Axial stiffness for preload A (sets of two brgs back-to-back or face-to-face) | | 314 058.093 | lbf/in |

## Calculation factors

| | | |
|---|---|---|
| Correction factor dependent on bearing series and size | f | 1.08 |
| Correction factor dependent on contact angle | $f_1$ | 0.99 |
| Correction factor, preload class A | $f_{2A}$ | 1 |
| Correction factor for hybrid bearings | $f_{HC}$ | 1 |
| Limiting value | e | 0.68 |
| Axial load factor (single, tandem) | $Y_1$ | 0 |
| Axial load factor (single, tandem) | $Y_2$ | 0.87 |
| Axial load factor (single, tandem) | $Y_0$ | 0.38 |

| | | |
|---|---|---|
| Radial load factor (single, tandem) | $X_1$ | 1 |
| Radial load factor (single, tandem) | $X_2$ | 0.41 |
| Radial load factor (single, tandem) | $X_0$ | 0.5 |
| Axial load factor (back-to-back, face-to-face) | $Y_1$ | 0.92 |
| Axial load factor (back-to-back, face-to-face) | $Y_2$ | 1.41 |
| Axial load factor (back-to-back, face-to-face) | $Y_0$ | 0.76 |
| Radial load factor (back-to-back, face-to-face) | $X_1$ | 1 |
| Radial load factor (back-to-back, face-to-face) | $X_2$ | 0.67 |
| Radial load factor (back-to-back, face-to-face) | $X_0$ | 1 |

## Mass

| | | |
|---|---|---|
| Mass | 0.11 | lb |

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