

## 7011CDGB/PA9A



### Technical sheet of 7011CDGB/PA9A

#### What are the Benefits of choosing 7011CDGB/PA9A bearings?

- **High simultaneous load-bearing capacity:** Capable of simultaneously withstanding combined radial and axial loads and operating at high speeds.
- **High speed limit:** Optimized contact angle and cage design suitable for ultra-high-speed operation (e.g., machine tool spindles).
- **Rigidity and precision:** Provides extremely high rotational accuracy and system rigidity, ensuring precision in machining or operation.
- **Preload adjustment:** Precise preload adjustment is possible through paired installation (back-to-back/face-to-face), eliminating backlash and improving system stability.
- **Versatile design:** Offers different contact angles (e.g., 15°, 25°) to accommodate different speeds and load requirements.

<b>Type :</b>	Angular contact ball bearings, super-precision	
<b>Model :</b>	<a href="#">7011CDGB/PA9A</a>	
<b>Main demensions :</b>	55 mm × 90 mm × 18 mm	Bore Dia × Outside Dia × Width Dia
<b>M kg:</b>	0.37	Mass
<b>HS Code :</b>	8482103000	Bearing customs code
<b>d mm:</b>	55	inner ring diameter
<b>D mm:</b>	90	Outer ring diameter
<b>B(T) mm:</b>	18	Overall Width

#### Detailed parameters and installation dimensions:

Part Number: 7011CDGB/PA9A

Technical description (CDGB/PA9A): CD=15° Contact Angle. GB=Bearing For Paired Installation In Random Order; When Arranged Back-To-Back Or Face-To-Face There Will Be A Moderate Preload. PA9A=(P2)=Precision, Accuracy To Abma Class Abec-9.

The equivalents designations: 7316571157689

Bearing Type: Angular Contact Ball Bearings, Single Row

Original Equipment Manufacture(OEM NO.): 7011CDGB/PA9A

Seals Type: No Seal

Cage Design: TB (Hard Fiber Cage)

Precision Rating: 9 - ABEC.9 Tolerances

Contact Angle: 15 Degrees

Pairing: G (Universal Pairing)

Axial internal clearance: GB - Medium Preload

Type of lubrication: Standard class lubrication

## What are the applications of the 7011CDGB/PA9A bearing?

- **Machine tool manufacturing (spindles, grinding heads):** Achieve extremely high speeds and machining accuracy, improving surface quality and production efficiency.
- **Aerospace (accessory gearboxes, gyroscopes):** Maintain high reliability and long lifespan during high-speed operation, adapting to harsh environments.
- **Precision instruments (measuring equipment, optical instruments):** Provide extremely low vibration and smooth operation, ensuring measurement accuracy.
- **High-speed motors (electric spindles, permanent magnet motors):** Support ultra-high speed operation, reducing temperature rise and power consumption.
- **Semiconductor equipment (wafer dicing machines, lithography machines):** Ensure micron-level positioning accuracy and long-term stability, improving yield.
- **Medical devices (CT scanners, surgical robots):** Achieve quiet and smooth rotation, meeting medical safety standards.
- **Robotics (joint reducers):** Improve joint response speed and repeatability, enhancing dynamic performance.

## How should choose the right model for a Angular contact ball bearings, super-precision?

### Direction Selection

High-speed priority: Select small contact angles (15°/18°), such as SKF's E/B/A design or NSK's ROBUST series.

Heavy-duty/high-rigidity priority: Select large contact angles (25° and above), such as SKF's D design or NSK's TAC-F series.

### Parameter Selection

Size series: Ultra-light 718, Extra-light 719, Light and narrow 70, Heavy-duty 72.

Internal design: Correspond to the high-speed or heavy-duty optimization code of each brand.

Material: Ceramic balls (hybrid ceramic bearings) can significantly improve high-speed performance.

### Accuracy and Combination Selection

Accuracy: Machine tool spindles generally select ISO P4 grade (ABEC 7 grade) or higher.

Matching: DB (back-to-back) has good rigidity; DF (face-to-face) has good thermal conductivity; DT

(tandem) can withstand unidirectional heavy loads.

Preload: Select light, medium, or heavy-duty according to the load; universal matching models are more convenient.

## What is the mounting procedure for 7011CDGB/PA9A bearings?

**Cleaning and Inspection:** Clean the bearing in a dust-free environment. After a rough wash to remove contaminants, perform a fine wash until the bearing feels smooth and responsive to the touch. Simultaneously check the accuracy of the mating surfaces of the shaft and bearing housing.

**Measurement and Fitting:** Precisely measure the bearing's inner and outer diameters. Mark the corresponding positions on the shaft and housing bores for alignment during assembly to compensate for any deviations.

**Installation and Positioning:** Apply pressure evenly using a specialized tool, focusing only on the interference fit rings. If heat fitting is used, tighten the inner ring during cooling to prevent clearance from affecting the preload.

**Preload Adjustment:** When installing in pairs, ensure the parallelism of the inner and outer spacers is  $\leq 1\mu\text{m}$ . Adjust the preload force to the specified value by grinding the spacers.

**Lubrication Inspection:** Add the specified amount of grease or oil mist lubricant. After installation, manually rotate the bearing to check its flexibility and operating noise.

## Special Note for mounting 7011CDGB/PA9A bearings?

**Clean Environment:** Operation must be performed in a dust-free cleanroom with humidity  $\leq 65\%$  to prevent dust and impurities from affecting accuracy.

**No Striking:** Direct striking of the bearings is strictly prohibited. Special tools must be used, and force must be applied evenly.

**Matching Marks:** Bearings used in pairs are not interchangeable. Installation must strictly follow the factory matching marks.

**Rust-Proof Storage:** Long-term storage requires regular rust-proofing treatment. Maintain ventilation and avoid corrosive gases.

**Tradebearing(TBS):** <https://en.tradebearings.com/>

Email: [admin@tradebearings.com](mailto:admin@tradebearings.com)  
Whatsapp/Mob.: +86 15906428604