

B7210SP P4



Technical sheet of B7210SP P4

What are the Benefits of choosing B7210SP P4 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.

Type :	Precision spindle bearings	
Model :	B7210SP P4	
Main demensions :	50 mm × 90 mm × 20 mm	Bore Dia × Outside Dia × Width Dia
M kg:	0.46	Mass
HS Code :	8482103000	Bearing customs code
d mm:	50	inner ring diameter
D mm:	90	Outer ring diameter
B(T) mm:	20	Overall Width

Detailed parameters and installation dimensions:

Part Number: B7210SP P4 Deutsche Kugellager Fabrik

Technical description (SP P4): SP=Special Precision Class For Machine Tool Bearings: Dimensional Accuracy Approximately To P5, Running Accuracy Approximately To P4. P4=Dimensional & Running Accuracy To ISO

Tolerance Class 4 (More Accurate Than P5)-Abec.7.

Bearing Type: Angular Contact Ball Bearings, Single Row

Bearing Size (metric): Inner dia. (d): 50 mm X Outer dia. (D): 90 mm X Width (B): 20 mm or Size: 50 mm * 90 mm * 20 mm

Original Equipment Manufacture(OEM NO.): B7210SP P4

Seals Type: No Seal

Cage Design: P (Plastic Molded Cage)

Precision Rating: P4 (Higher than P5 Precision class)

Contact Angle: Standard Contact Angle

Pairing: No pairing

Axial internal clearance: No Preload

Type of lubrication: Standard class lubrication

What are the applications of the B7210SP P4 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 Precision spindle bearings?

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 B7210SP P4 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 B7210SP P4 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

Whatsapp/Mob.: +86 15906428604