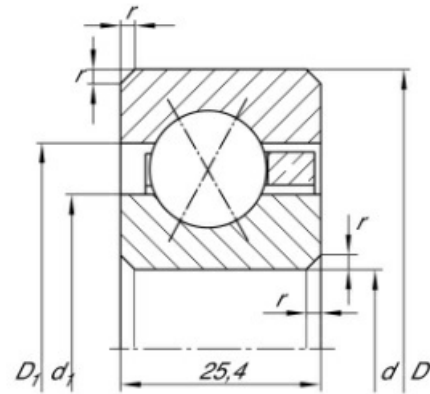


CSXG250

Four point, Thin section ball bearing CSXG



Technical sheet of CSXG250

What are the Benefits of choosing CSXG250 bearings?

- **Composite Load Capacity:** Utilizing a Gothic arched raceway design, the steel balls and raceways form four-point contact, enabling simultaneous bearing of radial loads, bidirectional axial loads, and overturning moments.
- **Space Saving:** One four-point contact bearing can replace a pair of back-to-back angular contact ball bearings; the axial width is equivalent to only one set of bearings, significantly saving space.
- **Lightweight Design:** A thin-walled structure with a constant cross-sectional dimension results in a weight approximately 5% that of a standard bearing of the same inner diameter.
- **High Operational Precision:** Smooth operation and low frictional torque improve robot motion stability by over 10%.
- **Sealing Options:** Embedded seals are available to prevent grease leakage and contaminant ingress, extending service life.

Type :	Thin section four-point contact ball bearings	
Model :	CSXG250	
Main demensions :	635 mm × 685.5 mm × 25.4 mm	Bore Dia × Outside Dia × Width Dia
M kg:	8.83	Mass
d mm:	635	inner ring diameter
D mm:	685.5	Outer ring diameter

B(T) mm:	25.4	Overall Width
Cr kN:	95.886	Radial dynamic load rating
C_{0r} kN:	298.984	Radial static load rating
Oil r/min:	321	Limiting speed

Detailed parameters and installation dimensions:

Part Number	CSXG250
Units	Inch
Design	CS = Thin Section Series
Dynamic Radial Capacity - C _r	95886 N 21555 lbf
Static Radial Capacity - C _{0r}	298984 N 67211 lbf
Shaft diameter	635 mm 25.0000 inch
Contact type	X = 4 Point Contact
CROSS SECTION (section x width)	G = 25.4 x 25.4 mm
Series	CSXG
Dimension - D ₁	667 mm 26.2598 inch
Dimension - d ₁	653.9 mm 25.7440 inch
Dimension - r(min)	2 mm 0.0787 inch
Balls Material	AISI 52100 steel
Surface hardnesses	inner and outer rings(-58 +4 HRC), balls(-62 +4 HRC)
Cage	Solid brass (snap cage)
Ball Diameter	1/2 "
Cross Section Size	1"
Temperature - T(min)	-30 °C
Temperature - T(max)	120 °C
Bore Type	Cylindrical Bore
Ring Material	AISI 52100 steel
Dimension Inside - d φ	635 mm 25.0000 inch
Dimension Outside - D φ	685.5 mm 26.9881 inch
Dimension Width - B	25.4 mm 1.0000 inch
Rows NO.	One
Load	RADIAL(Poor), AXIAL(Good), MOMENT(Excellent)
Accuracy class	PL1
Manufacturer Part Code	CSXG 250
Bearing Type	Four point, Thin section ball bearing CSXG
Bearing Mass - m	8.83 kg 19.4666 lb
RIC	PL1
logistical code	HLE
Speed ratings (oil) - n _G	321 min ⁻¹
Seal	Open
Contact angle - α	30 °
Lubricant	No

What are the applications of the CSXG250 bearing?

- **Industrial Robots:** Robot waist, elbow, and wrist joints achieve compact layout and high-precision smooth movement, significantly improving motion stability.
- **Medical Equipment:** CT scanners, X-ray equipment, surgical robots; low friction and low noise improve imaging quality and operational comfort.
- **Semiconductor Equipment:** Vacuum handling robot joints; low exhaust, corrosion resistance, suitable for vacuum clean environments.
- **Optics and Precision Instruments:** Camera pan-tilt units, astronomical instruments, optical scanning equipment; lightweight design ensures precise pointing.
- **Aerospace and Communications:** Satellite communication equipment, radar systems, antenna bases; high reliability meets stringent requirements.

How should choose the right model for a Thin section four-point contact ball bearings?

Type Selection: Choose according to load type—C type (deep groove ball) for radial loads; A type (angular contact) for unidirectional axial loads; X type (four-point contact) for torque or bidirectional axial loads.

Accuracy Class: Select ABEC grade (e.g., ABEC 1, 5, 7) according to equipment requirements. Higher accuracy results in smoother operation.

Size Determination: Determine the cross-sectional dimensions and bore diameter based on installation space constraints. Thin-walled bearings offer advantages such as thin cross-section and light weight.

Match Tolerances: Slight interference fit (e.g., J5, K6) is typically selected for rotating rings, while clearance fit (e.g., H7) is selected for stationary rings to avoid excessive preload.

What is the mounting procedure for CSXG250 bearings?

Cleaning Inspection: Clean the bearing and mounting area in a clean environment, checking the shaft and housing bore dimensions, roundness, and for burrs.

Lubrication: Apply an appropriate amount of lubricant (grease or oil). For unsealed bearings, remove the rust-preventive oil first.

Installation: Apply pressure evenly using a special sleeve, pressing only onto the interference fit rings; for large interference fits, hot fitting ($\leq 120^{\circ}\text{C}$) or cold fitting can be used.

Securing Inspection: Secure with end caps or nuts, ensuring the pressing surfaces are parallel; manually rotate to check flexibility and operating noise.

Preload Adjustment (if required): When using angular contact pairs, adjust the preload to the specified value by grinding the spacers or shims.

Special Note for mounting CSXG250 bearings?

Do not strike: Directly striking the bearing is strictly prohibited. Use a specialized tool to apply pressure evenly.

Sensitive fit: Thin-walled bearings are extremely sensitive to fit precision. Excessive interference fit can lead to loss of clearance, overheating, and seizing.

Clean environment: Maintain a clean and dust-free operating environment. Wear gloves to prevent corrosion from sweat.

Sealed bearings: Bearings with seals are pre-lubricated at the factory and should not be cleaned before installation.

Rust-proof storage: Store in an environment with a temperature of approximately 20°C and humidity $\leq 65\%$. Avoid direct contact with the ground.

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