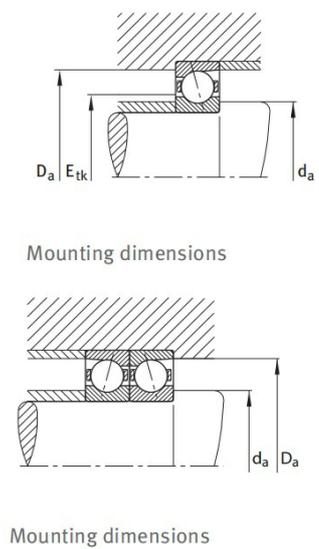
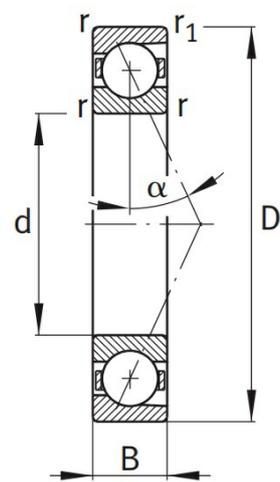
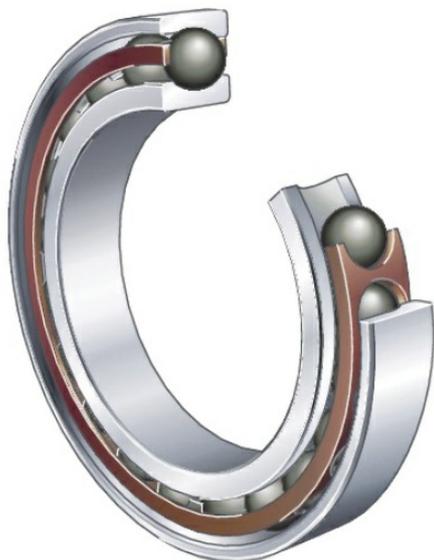


HCB7222-C-T-P4S

Super Precision Hybrid Angular Contact Ball Bearing



Technical sheet of HCB7222-C-T-P4S

Type :	Precision spindle bearings	
Model :	HCB7222-C-T-P4S	
Old Code :	HCB7222CTP4S	
Main demensions :	110 mm × 200 mm × 38 mm	Bore Dia × Outside Dia × Width Dia
M kg:	3.97	Mass
d mm:	110	inner ring diameter
D mm:	200	Outer ring diameter
B(T) mm:	38	Overall Width
Cr kN:	163.932	Radial dynamic load rating
C0r kN:	100.865	Radial static load rating
Grease r/min:	8429	Reference speed
Oil r/min:	13954	Limiting speed

Detailed parameters and installation dimensions:

Part Number	HCB7222-C-T-P4S
Design Type	HCB = Hybrid Standard bearing, Lager balls, Ceramic balls

Series	HCB72...-C-T-P4S
Contact angle - α	(C) 15 °
Dimension series	72 (Heavy series)
Reference From	FAG HCB7222-C-T-P4S
Dimension Inside - $d \phi$ (mm)	110
Dimension Outside - $D \Phi$ (mm)	200
Dimension Width - B (mm)	38
Accuracy class	P4S
Dimension - r(min.)	2.1 mm 0.083 inch
Dimension - r_1 (min.)	2.1 mm 0.083 inch
Seal	Open
Reference speed (grease) - n_B	8429 min ⁻¹
Limiting speed (oil) - n_G	13954 min ⁻¹
Mounting dimensions - d_a (h12)	126.5 mm 4.980 inch
Mounting dimensions - D_a (H12)	183.5 mm 7.224 inch
Bearing Type	Super Precision Hybrid Angular Contact Ball Bearing
Row No.	One
Bore Type	Z = Cylindrical bore
Mounting dimensions - E_{tk} (nom.)	148.7 mm 5.854 inch
Dimension Inside - $d \phi$ (inch)	4.331
Dimension Outside - $D \Phi$ (inch)	7.874
Dimension Width - B (inch)	1.496
Manufacturer Part Code	HCB7222CTP4S , HCB7222C-T-P4S
Temperature - T(min)	-30°C
Temperature - T(max)	+100°C
Units	Metric
Radial Dynamic Capacity - C_r	163932 N 36851 lbf
Bearing Mass - m	3.97 kg 8.752 lb
Cage	T = Laminated fabric, guidance on outer ring
Radial static Capacity - C_{0r}	100865 N 22674 lbf
Preload force - F_v L	556 N 124 lbf
Preload force - F_v M	1779 N 399 lbf
Preload force - F_v H	3553 N 798 lbf
Ball Material	Ceramic
Axial rigidity - c_a L	107 N/ μ m
Axial rigidity - c_a M	180 N/ μ m
Axial rigidity - c_a H	251 N/ μ m
Ring Material	GCr15SiMn
Lift-off force - K_{aE} L	1625 N 365 lbf
Lift-off force - K_{aE} M	5509 N 1238 lbf
Lift-off force - K_{aE} H	11751 N 2641 lbf

NOTE: All other trademarks are the property of their respective owners used for the purpose of compatibility description and product identification only. Tradebearings is not affiliated with, endorsed by,

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HCB7222-C-T-P4S features:

with solid outer and inner rings, ball and cage assemblies and solid window cages.

Ultimate Pursuit of Rotational Accuracy, High-Speed Performance, Rigidity, and Operational Stability

Rotational Accuracy and Low Runout: Dimensional and geometrical tolerances (such as roundness and parallelism) of the inner and outer rings and rolling elements are achieved at the sub-micron level (typically conforming to ISO P4, P2, or higher, or ABEC 7, 9 standards), ensuring extremely low radial and axial runout of the spindle or shaft system, which is the foundation for achieving high machining/measurement accuracy.

Optimized High-Speed Performance: Utilizing lightweight, high-precision ceramic balls (Si₃N₄) or top-grade steel balls reduces centrifugal force, lowering temperature rise and wear at high speeds; special cage designs (such as phenolic resin, special polymer, or machined brass cages) provide excellent guiding performance, low friction, and suitability for high speeds; internal geometry (contact angle, channel curvature) is optimized to balance temperature rise, rigidity, and lifespan at high speeds.

Superior Rigidity and Preload Stability: Typically supplied or installed in a "preloaded" state. Preload eliminates internal clearance, significantly improving the axial and radial stiffness of the system, raising the natural frequency, and suppressing vibration.

Excellent thermal stability and material properties: Utilizing specialized bearing steel (such as carburized steel) or high-temperature stainless steel, and undergoing special heat treatment, ensures dimensional stability and resists deformation caused by frictional heat or ambient heat.

HCB7222-C-T-P4S application:

CNC machine tool spindles (machining center spindles, milling machine spindles, precision grinding machine spindles, turning-milling composite machine tool spindles), PCB drilling machines, precision engraving and milling machines, integrated spindle motor units, turbomolecular pumps, helicopter transmission systems, aero-engine accessories, gyroscopes, radar rotary mechanisms, precision rotary tables, precision reducers (such as RV reducers) and articulated spindles for industrial robots, high-performance turbochargers, racing car gearboxes.

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