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6315/HC5C3S0

Hybrid ceramic deep groove ball bearing

Hybrid ceramic single row deep groove ball bearings have rings made of bearing steel and rolling elements made of bearing grade silicon nitride, which make the bearings electrically insulating. Deep groove ball bearings are the most widely used bearing type, especially in electric motors. The ceramic rolling elements not only provide protection from electric current damage but also, when compared to same-sized bearings with steel rolling elements, provide enhanced bearing performance, extended bearing service life, higher speed capability, high wear-resistance, high bearing stiffness, reduced risk of smearing and false brinelling, and less sensitivity to temperature gradients. These characteristics make them suitable for use in difficult conditions and contaminated environments. Also available on request with special sized bore and/or outside diameters, suitable for reworked shafts and housings.

- Protected against electric current damage
- Especially suited for use in difficult conditions and contaminated environments
- Typical benefits of single row deep groove ball bearings

Overview

Dimensions

Bore diameter	75 mm
Outside diameter	160 mm
Width	37 mm

Performance

Basic dynamic load rating	114 kN
Basic static load rating	76.5 kN
Reference speed	11 000 r/min
Limiting speed	6 700 r/min

Properties

Filling slots	Without
Number of rows	1
Locating feature, bearing outer ring	Without
Bore type	Cylindrical
Cage	Sheet metal
Matched arrangement	No
Radial internal clearance	C3
Material, bearing	Hybrid (ceramic balls)
Coating	Without
Sealing	Without
Lubricant	None
Relubrication feature	Without
Indicative carbon footprint for new product	9.7 kg CO_2e

Logistics

Product net weight	2.63 kg
eClass code	23-05-08-01
UNSPSC code	31171504

Technical specification

Dimensions

Bore diameter	d	75 mm
Outside diameter	D	160 mm
Width	B	37 mm
Shoulder diameter inner ring	d_1	≈ 101.4 mm
Shoulder diameter outer ring	D_1	≈ 133.15 mm
Recess diameter outer ring shoulder	D_2	138.4 mm
Chamfer dimension	$r_{1,2}$	min. 2.1 mm

Abutment dimensions

Abutment diameter shaft	d_a	min. 87 mm
Abutment diameter housing	D_a	max. 148 mm

Fillet radius	r_a	max. 2 mm

Calculation data

Basic dynamic load rating	C	114 kN
Basic static load rating	C_0	76.5 kN
Fatigue load limit	P_u	2.2 kN
Reference speed		11 000 r/min
Limiting speed		6 700 r/min
Calculation factor	k_r	0.03
Calculation factor	f_0	13.2

Tolerances and clearances

GENERAL BEARING SPECIFICATIONS

- Tolerances: Normal (metric), P6, P5, Normal (inch)
- Radial internal clearance: Classes C2 to C5

BEARING INTERFACES

- Seat tolerances for standard conditions
- Tolerances and resultant fits

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