



# BEARING PRECISION AXLE CORP.



## 7010 CD/HCP4A SKF High Speed Angular Contact Ball Bearings

Bearing No. 7010 CD/HCP4A

7010 CD/HCP4A Bearing 2D drawings and 3D CAD models

Size	80x50x16 mm
Bore Diameter	80 mm
Outer Diameter	50 mm
Width	16 mm
d	50 mm
D	80 mm
B	16 mm
d <sub>1</sub>	59.2 mm
d <sub>2</sub>	59.2 mm
D <sub>1</sub>	70.8 mm
r <sub>1,2</sub> - min.	1 mm
r <sub>3,4</sub> - min.	0.3 mm
a	16.8 mm
d <sub>a</sub> - min.	54.6 mm
d <sub>b</sub> - min.	54.6 mm
D <sub>a</sub> - max.	75.4 mm
D <sub>b</sub> - max.	78 mm
r <sub>a</sub> - max.	1 mm
r <sub>b</sub> - max.	0.3 mm
d <sub>n</sub>	61.2 mm
Basic dynamic load rating - C	29.6 kN
Basic static load rating - C <sub>0</sub>	24 kN
Fatigue load limit - P <sub>u</sub>	1 kN
Limiting speed for grease	20000 r/min



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Lubrication	
Limiting speed for oil lubrication	32000 mm/min
Ball - $D_w$	9.525 mm
Ball - $z$	18
$G_{ref}$	3.6 cm3
Calculation factor - $f_0$	15.4
Preload class A - $G_A$	110 N
Preload class B - $G_B$	220 N
Preload class C - $G_C$	440 N
Preload class D - $G_D$	880 N
Calculation factor - $f$	1.11
Calculation factor - $f$	1
Calculation factor - $f_{2A}$	1
Calculation factor - $f_{2B}$	1.02
Calculation factor - $f_{2C}$	1.05
Calculation factor - $f_{2D}$	1.09
Calculation factor - $f_{HC}$	1.02
Preload class A	64 N/micron
Preload class B	88 N/micron
Preload class C	124 N/micron
Preload class D	179 N/micron
Category	Precision Ball Bearings
Inventory	0.0
Manufacturer Name	SKF
Minimum Buy Quantity	N/A
Weight / Kilogram	0
Product Group	B04270
Enclosure	Open
Precision Class	ABEC 7   ISO P4



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Material - Ball	Ceramic
Number of Bearings	1 (Single)
Contact Angle	15 Degree
Preload	None
Raceway Style	1 Rib Outer Ring
Cage Material	Phenolic
Rolling Element	Ball Bearing
Flush Ground	No
Inch - Metric	Metric
Other Features	Single Row   Angular Contact   High Capacity Basic Design
Long Description	50MM Bore; 80MM Outside Diameter; 16MM Width; Open Enclosure; ABEC 7   ISO P4 Precision; Ceramic Ball Material; 1 (Single) Bearing; 15 Degree Contact Angle; Phenolic Cage Material; 1 Rib Outer Ring Ra
Category	Precision Ball Bearings
UNSPSC	31171531
Harmonized Tariff Code	8482.10.50.28
Noun	Bearing
Keyword String	Ball Angular Contact
Manufacturer URL	<a href="http://www.skf.com">http://www.skf.com</a>
Weight / LBS	0.46297
Outside Diameter	3.15 Inch   80 Millimeter
Width	0.63 Inch   16 Millimeter
Bore	1.969 Inch   50 Millimeter
d <sub>1</sub>	59.2 mm
d <sub>2</sub>	59.2 mm
D <sub>1</sub>	70.8 mm
r <sub>1,2</sub> min.	1 mm



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$r_{3,4}$ min.	0.3 mm
$d_a$ min.	54.6 mm
$d_b$ min.	54.6 mm
$D_a$ max.	75.4 mm
$D_b$ max.	78 mm
$r_a$ max.	1 mm
$r_b$ max.	0.3 mm
$d_n$	61.2 mm
Basic dynamic load rating C	29.6 kN
Basic static load rating $C_0$	24 kN
Fatigue load limit $P_u$	1.02 kN
Attainable speed for grease lubrication	20000 r/min
Attainable speed for oil-air lubrication	32000 r/min
Ball diameter $D_w$	9.525 mm
Number of balls z	18
Reference grease quantity $G_{ref}$	3.6 cm <sup>3</sup>
Preload class A $G_A$	110 N
Static axial stiffness, preload class A	64 N/ $\mu$ m
Preload class B $G_B$	220 N
Static axial stiffness, preload class B	88 N/ $\mu$ m
Preload class C $G_C$	440 N
Static axial stiffness, preload class C	124 N/ $\mu$ m
Preload class D $G_D$	880 N
Static axial stiffness, preload class D	179 N/ $\mu$ m
Calculation factor f	1.11
Calculation factor $f_1$	1
Calculation factor $f_{2A}$	1



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Calculation factor $f_{2B}$	1.02
Calculation factor $f_{2C}$	1.05
Calculation factor $f_{2D}$	1.09
Calculation factor $f_{HC}$	1.02
Calculation factor $f_0$	15.4
Mass bearing	0.22 kg