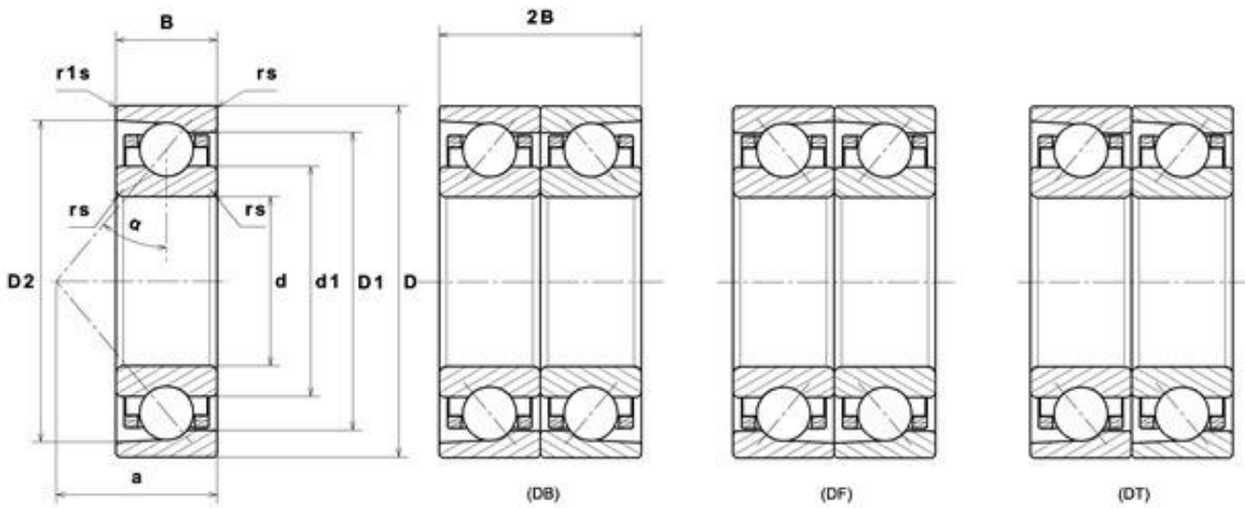
Brand of NTN corporation

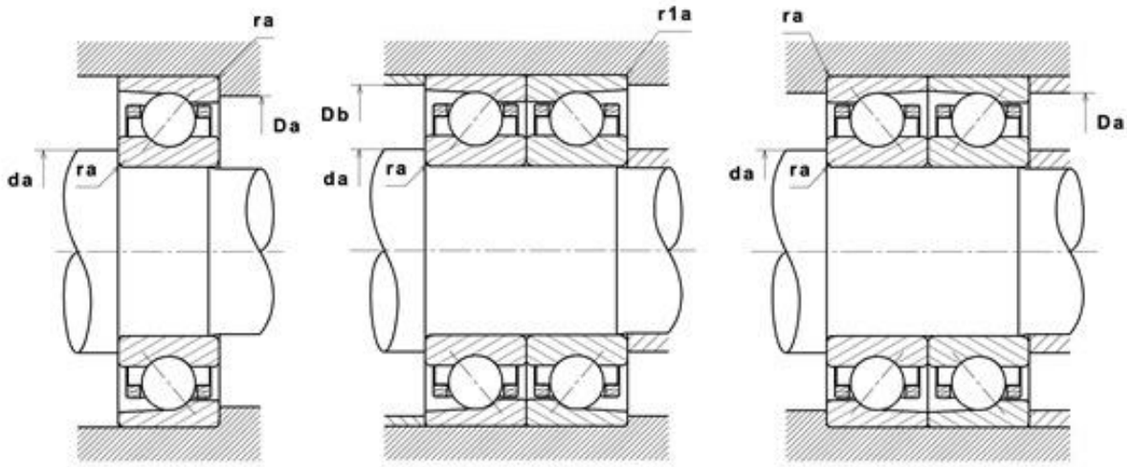
Technical data

7009CVDUJ74

High precision angular contact ball bearings

VISUAL (S)





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S.A. au capital de 322 639 919 € · RCS ANNECY B 325 821 072 · Id. Fiscale : FR 48 325 821 072
SIRET 325 821 072 00015 · Code APE 2815 Z · Code NACE 28.15

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PRODUCT DEFINITION	
Brand	SNR
d - Internal diameter	45 mm
D - External diameter	75 mm
B - Bearing/Inner ring width	16 mm
d1 - External diameter inner ring	60,5 mm
D1 - Inner diameter outer ring	65 mm
D2 - Inner diameter outer ring	68,81 mm
a - Charge load application point	16 mm
- Contact angle	15 °
rs - Min fillet radius	1 mm
r1s - Min fillet radius	0,6 mm
Precision class	P4
Mass	0,238 kg

PRODUCT PERFORMANCE	
C - Dynamic load	25300000 mN
C0 - Static load	20400000 mN
Cu - Fatigue limit load	1110000 mN
f0 - Coefficient	15.4
Axial displacement K Factor	1.21
Preload level	7
Preload value	130000 mN
Axial rigidity	61 N/µm
Radial rigidity	344 N/µm

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PRODUCT PERFORMANCE	
Tmin - Min operating temperature	243,15 °K
Tmax - Max operating temperature	393,15 °K
N lim - Oil lubrication limit speed	174000 °/s
N lim - Grease lubrication limit speed	114000 °/s

BEARING FREQUENCIES	
BPFO - Over rolling frequency on outer ring (60 rpm)	7.735 Hz
BPFI - Over rolling frequency on inner (60 rpm)	10.265 Hz
BSF - Over rolling frequency on rolling element (60 rpm)	6.736 Hz
BRF - Rotational frequency – rolling element (60 rpm)	3.368 Hz
FTF - Rotational frequency - cage (60 rpm)	0.43 Hz

ABUTMENT	
da min - Min shoulder diameter IR	50,5 mm
db min - Min IR shoulder diameter	50,5 mm
Da max - Max shoulder diameter OR	69,5 mm
Db max - Max OR shoulder diameter	70,5 mm
r1a - Max fillet radius	0,6 mm
ra max - Max shaft & housing fillet radius	1 mm

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INDUSTRY CALCUL FACTORS

Equivalent dynamic radial load

P = X.Fr + Y.Fa

Series		e	Single or DT bearing arrangement				DB or DF arrangement			
			Fa / Fr ≤ e		Fa / Fr > e		Fa / Fr ≤ e		Fa / Fr > e	
			X	Y	X	Y	X	Y	X	Y
70 (NTN & SNR) 72 (NTN & SNR) 78 (NTN) 79 (NTN) 719 (SNR)	15°	0.178	0.38	1	0	0.44	1.47	1	1.65	0.72	2.39
		0.357	0.4				1.4		1.57		2.28
		0.714	0.43				1.3		1.46		2.11
		1.07	0.46				1.23		1.38		2
		1.43	0.47				1.19		1.34		1.93
		2.14	0.5				1.12		1.26		1.82
		3.57	0.55				1.02		1.14		1.66
		5.35	0.56						1.12		1.63
		7.14	0.56				1		1.12		1.63
	25°		0.68			0.41	0.87		0.92	0.67	1.41
	30°		0.8			0.39	0.76		0.78	0.63	1.24

Equivalent static radial load

$P_o = X_o.Fr + Y_o.Fa$

Series		Single or DT bearing arrangement		DB or DF arrangement	
		X_0	Y_0	X_0	Y_0
70 (NTN & SNR) 72 (NTN & SNR) 78 (NTN) 79 (NTN) 719 (SNR)	15°	0.5	0.46	1	0.92
	25°		0.38		0.76
	30°		0.33		0.66

For single or DT bearing arrangement :

If Po <Fr, then use Po = Fr