

PDF technical sheet

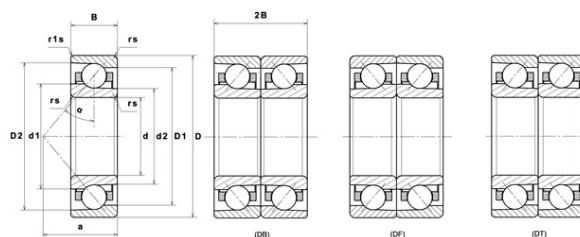
7024UCG/GNP42U3G



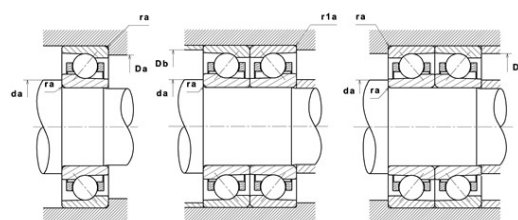
High precision angular contact ball bearings

High precision angular contact ball bearing, moulded polyamide cage centred on balls

Product definition	
d	120 mm
D	180 mm
B	28 mm
d1	140.20 mm
d2	135.40 mm
D1	159.90 mm
D2	169.40 mm
a	34.20 mm
Contact angle, α	15 °
rs min	2 mm
r1s min	1 mm
f0	16
Precision class	P42
Mass	2.11 kg
Brand	NTN



Product performance	
Dynamic load, C	106 kN
Static load, C0	113 kN
Nlim (oil)	12,500 Tr/min
Nlim (grease)	7,800 Tr/min
Preload level	GN
Peload value	635 kN
axial rigidity	145.2 N/ μ m
radial rigidity	840 N/ μ m
Min operating temperature, Tmin	-20 °C
Max operating temperature, Tmax	120 °C
Characteristic cage frequency, FTF	0.44 Hz
Characteristic rolling element frequency, BSF	8.10 Hz
Characteristic outer ring frequency, BPF0	9.71 Hz
Characteristic inner ring frequency, BPFI	12.29 Hz



Abutment dimensions

da min	130 mm
Da max	170 mm
Db max	174.50 mm
r1a max	1 mm
ra max	2 mm
D6	139.90 mm

Calculation factors

Equivalent dynamic radial load

$$P = X \cdot Fr + Y \cdot Fa$$

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		0.92		1.41
	30°		0.8				0.39		0.78		1.24

Equivalent static radial load

$$Po = Xo \cdot Fr + Yo \cdot Fa$$

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 $Po = Fr$