

PDF technical sheet

7020UCG/GNP42U3G



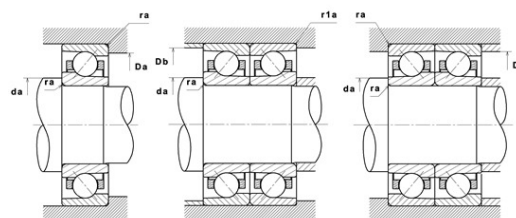
High precision angular contact ball bearings

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

Product definition	
d	3.9370 "
D	5.9055 "
B	0.9449 "
d1	4.6024 "
d2	4.4488 "
D1	5.2441 "
D2	5.5551 "
a	1.1339 "
Contact angle, α	15 °
rs min	0.0591 "
r1s min	0.0394 "
f0	16
Precision class	P42
Mass	4.48 oz
Brand	NTN



Product performance	
Dynamic load, C	77.50 kN
Static load, C0	81 kN
Nlim (oil)	15,000 RPM
Nlim (grease)	9,400 RPM
Preload level	GN
Peload value	460 kN
axial rigidity	126.1 N/ μ m
radial rigidity	730 N/ μ m
Min operating temperature, Tmin	-4 °C
Max operating temperature, Tmax	248 °C
Characteristic cage frequency, FTF	0.44 Hz
Characteristic rolling element frequency, BSF	8.18 Hz
Characteristic outer ring frequency, BPF0	10.16 Hz
Characteristic inner ring frequency, BPF1	12.84 Hz



Abutment dimensions

da min	4.2717 "
Da max	5.5709 "
Db max	5.6890 "
r1a max	0.0394 "
ra max	0.0591 "
D6	4.6024 "

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	1	0	0.41	0.87	1	0.92	0.67	1.41		
	30°		0.8										
							0.39		0.76		0.78	0.63	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 $Po = Fr$