

PDF technical sheet

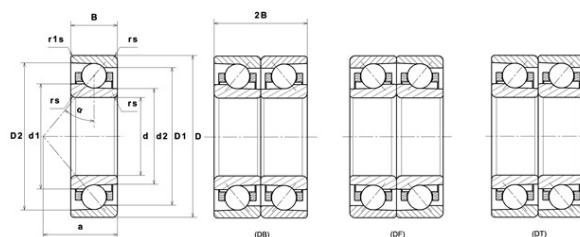
7009UADG/GNP42U3G



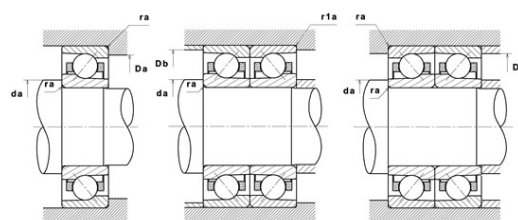
High precision angular contact ball bearings

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

Product definition	
d	1.7717 "
D	2.9528 "
B	0.6299 "
d1	2.1772 "
d2	2.0866 "
D1	2.5472 "
D2	2.7283 "
a	0.8701 "
Contact angle, α	25 °
rs min	0.0394 "
r1s min	0.0236 "
f0	15.6
Precision class	P42
Mass	0.85 oz
Brand	NTN



Product performance	
Dynamic load, C	24 kN
Static load, C0	19.40 kN
Nlim (oil)	27,300 RPM
Nlim (grease)	16,900 RPM
Preload level	GN
Peload value	245 kN
axial rigidity	149.5 N/ μ m
radial rigidity	315 N/ μ m
Min operating temperature, Tmin	-4 °C
Max operating temperature, Tmax	248 °C
Characteristic cage frequency, FTF	0.43 Hz
Characteristic rolling element frequency, BSF	6.76 Hz
Characteristic outer ring frequency, BPF0	7.81 Hz
Characteristic inner ring frequency, BPFI	10.19 Hz



Abutment dimensions

da min	1.9882 "
Da max	2.7362 "
Db max	2.7756 "
r1a max	0.0236 "
ra max	0.0394 "
D6	2.2008 "

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								0.78

Equivalent static radial load

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

Series			Single or DT bearing arrangement		DB or DF arrangement	
			Xo	Yo	Xo	Yo
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 $Po = Fr$