

PDF technical sheet 7920UCG/GNP42U3G

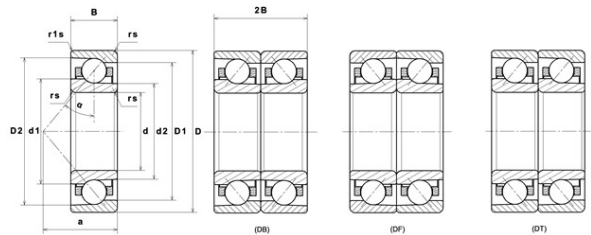


High precision angular contact ball bearings

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

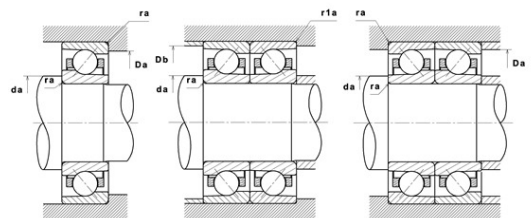
Product definition

d	3.9370 "
D	5.5118 "
B	0.7874 "
d1	4.4724 "
d2	4.3504 "
D1	4.9764 "
D2	5.2244 "
a	1.0276 "
Contact angle, α	15 °
rs min	0.0433 "
r1s min	0.0236 "
f0	16.5
Precision class	P42
Mass	2.86 oz
Brand	NTN



Product performance

Dynamic load, C	54.50 kN
Static load, C0	61 kN
Nlim (oil)	15,600 RPM
Nlim (grease)	9,800 RPM
Preload level	GN
Peload value	325 kN
axial rigidity	118.5 N/ μ m
radial rigidity	680 N/ μ m
Min operating temperature, Tmin	-4 °C
Max operating temperature, Tmax	248 °C
Characteristic cage frequency, FTF	0.45 Hz
Characteristic rolling element frequency, BSF	9.99 Hz
Characteristic outer ring frequency, BPF0	12.21 Hz
Characteristic inner ring frequency, BPF1	14.79 Hz



Abutment dimensions

da min	4.2126 "
Da max	5.2362 "
Db max	5.3346 "
r1a max	0.0236 "
ra max	0.0394 "
D6	4.4843 "

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	0.72	2.39
		0.357	0.4				1.4			2.28
		0.714	0.43				1.3			2.11
		1.07	0.46				1.23			2
		1.43	0.47				1.19			1.93
		2.14	0.5				1.12			1.82
		3.57	0.55				1.02			1.66
		5.35	0.56							1.63
	7.14	0.56	1	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

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

Series	e	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 $Po = Fr$