

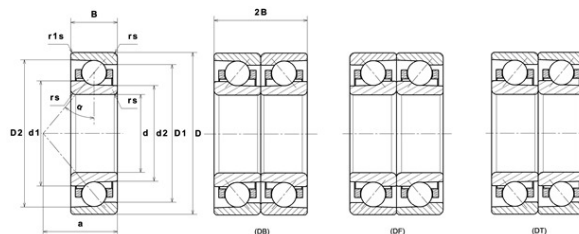
PDF technical sheet 7916UCG/GNP42U3G



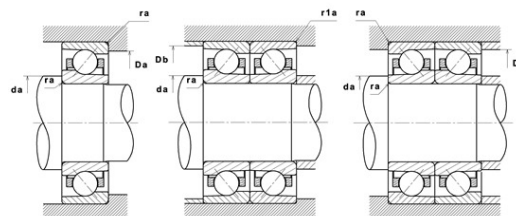
High precision angular contact ball bearings

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

Product definition	
d	3.1496 "
D	4.3307 "
B	0.6299 "
d1	3.5748 "
d2	3.4843 "
D1	3.9449 "
D2	4.1260 "
a	0.8189 "
Contact angle, α	15 °
rs min	0.0394 "
r1s min	0.0236 "
f0	16.5
Precision class	P42
Mass	1.34 oz
Brand	NTN



Product performance	
Dynamic load, C	30.50 kN
Static load, C0	33 kN
Nlim (oil)	19,600 RPM
Nlim (grease)	12,300 RPM
Preload level	GN
Peload value	186 kN
axial rigidity	89.7 N/ μ m
radial rigidity	510 N/ μ m
Min operating temperature, Tmin	-4 °C
Max operating temperature, Tmax	248 °C
Characteristic cage frequency, FTF	0.46 Hz
Characteristic rolling element frequency, BSF	10.85 Hz
Characteristic outer ring frequency, BPF0	12.31 Hz
Characteristic inner ring frequency, BPF1	14.69 Hz



Abutment dimensions

da min	3.3661 "
Da max	4.1142 "
Db max	4.1535 "
r1a max	0.0236 "
ra max	0.0394 "
D6	3.5984 "

Calculation factors

Equivalent dynamic radial load

$$P = X.F_r + Y.F_a$$

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

$$P_o = X_o.F_r + Y_o.F_a$$

Series	e	Single or DT bearing arrangement		DB or DF arrangement	
		X _o	Y _o	X _o	Y _o
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 $P_o < F_r$, then use $P_o = F_r$