

Technical data

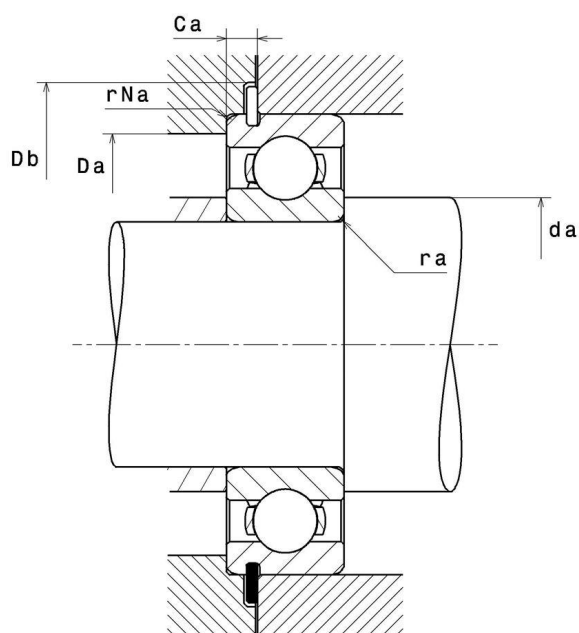
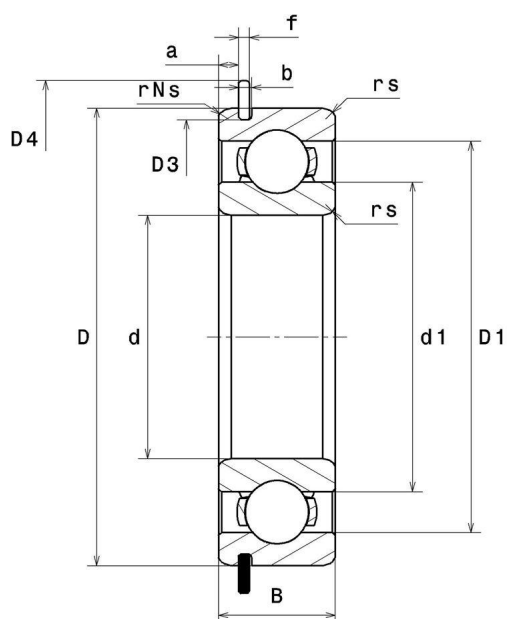
6311NRC3

Single row deep groove ball bearings



Deep groove ball bearing, radial contact, pressed steel cage, snap ring & groove on outer diameter, open

VISUAL (S)



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Single row deep groove ball bearings

PRODUCT DEFINITION

Brand	SNR
d - Internal diameter	55 mm
D - External diameter	120 mm
B - Bearing/Inner ring width	29 mm
d1 - External diameter inner ring	69 mm
D1 - Inner diameter outer ring	102,3 mm
a min - Min position Groove	3,86 mm
a max - Max position groove	4,06 mm
Ca min - Mini segment position	6,58 mm
Ca max - Max segment position	6,88 mm
rs - Min fillet radius	2 mm
rNs - Min fillet radius	0,5 mm
D3 - Max bottom groove diameter	115,21 mm
b min - Min groove width	3,1 mm
b max - Max groove width	3,4 mm
r0 max - Max bottom groove radius	0,6 mm
D4 max - Max outer diameter of assembled stop ring	129,7 mm
f - Stop ring thickness	2,77 mm
Snap ring reference	R120
Radial clearance class	C3
Mass	1,347 kg

PRODUCT PERFORMANCE

C - Dynamic load	75300000 mN
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NTN Europe

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S.A. au capital de 322 639 919 € · RCS ANNECY B 325 821 072 · Id. Fiscale : FR 48 325 821 072
SIRET 325 821 072 00015 · Code APE 2815 Z · Code NACE 28.15

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PRODUCT PERFORMANCE

C0 - Static load	44700000 mN
Cu - Fatigue limit load	2030000 mN
f0 - Coefficient	13.1
N ref - Reference thermal speed	43200 °/s
N lim - Mechanical Limit Speed	57000 °/s
Tmin - Min operating temperature	233,15 °K
Tmax - Max operating temperature	393,15 °K

BEARING FREQUENCIES

BPFO - Over rolling frequency on outer ring (60 rpm)	3.057 Hz
BPFI - Over rolling frequency on inner (60 rpm)	4.943 Hz
BSF - Over rolling frequency on rolling element (60 rpm)	4.004 Hz
BRF - Rotational frequency - rolling element (60 rpm)	2.002 Hz
FTF - Rotational frequency - cage (60 rpm)	0.382 Hz

ABUTMENT

da min - Min shoulder diameter IR	64 mm
Da max - Max shoulder diameter OR	111 mm
ra max - Max shaft & housing fillet radius	2 mm
rNa max - Max fillet radius on segment side	0,5 mm
Db min - Min stop ring position diameter	131,5 mm



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INDUSTRY CALCUL FACTORS

Equivalent dynamic radial load

$P = X.Fr + Y.Fa$

$\frac{f_0 F_a}{C_0}$	e	Fa / Fr ≤ e		Fa / Fr > e	
		X	Y	X	Y
0.172	0.19	1	0	0.56	2.3
0.345	0.22				1.99
0.689	0.26				1.71
1.03	0.28				1.55
1.38	0.3				1.45
2.07	0.34				1.31
3.45	0.38				1.15
5.17	0.42				1.04
6.89	0.44				1

Equivalent static radial load

$P_0 = X_0.Fr + Y_0.Fa$

X ₀	Y ₀
0.6	0.5

For single or DT bearing arrangement :

If P₀ <Fr, then use P₀ = Fr

