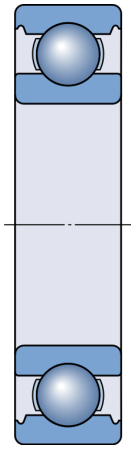
Bearing A - Axle shaft

Bearing in position A mounted in the axle shaft



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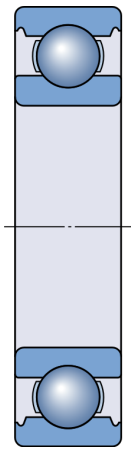
July 14, 2020

1. Abstract



Deep groove ball bearing

■ SKF Explorer ▶ Popular item

Designation	Life model	
	Basic	SKF life
	L_{10h}	L_{10mh}
	h	
▶ **61812**	> 2x10^5	> 2x10^5

** SKF rating life (L_{10mh}) for steel-steel bearings; GBLM load based life (L_{10GMh}) for hybrid bearings*

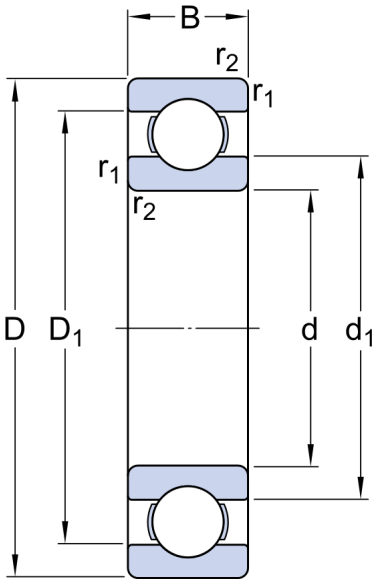
warnings

! Results are based on default operating conditions. Please, review and adjust operating conditions where needed

! For rating life results above 100000 hours, other failure modes than those included in the current rating life models will dominate and limit the life of the bearing.

2. Input

2.1. Bearing data



Designation	Bearing type	Principal dimensions			Basic load ratings		Fatigue load limit
					Dynamic	Static	
		d	D	B	C	C_0	P_u
		mm			*kN*		
▶ 61812	Deep groove ball bearing	60	78	10	11.9	11.4	0.49

Designation	Speed ratings		Clearance class
	Reference	Limiting	
	n_{ref}	n_{lim}	
	r/min		
▶ 61812	17000	11000	Normal

2.2. Loads, Speed and Temperature

	Forces		Speed	Temperature		Case weight
	Radial (F_r)	Axial (F_a)		Inner ring	Outer ring	
	kN		*r/min*	*°C*		
LC1	0.21	0.0	4026.62	70	65	1

- *Maximum temperature is used for calculating the actual viscosity, kappa, a_{SKF} and SKF rating life.*
- *Mean temperature is used for calculating bearing friction and power loss.*

2.3. Lubrication

Designation	Lubricant			Effective EP additives
	Type	Method	Name	
▶ 61812	Grease	SKF grease	LGMT 2: all purpose industrial and automotive	False

Designation	Contamination
	Method
▶ 61812	Detailed guidelines

3. Results

3.1. Bearing loads

Designation	Load ratio	Equivalent dynamic load
	C/P	P
		kN
▶ 61812	56.7	0.21

3.2. Lubrication conditions

Designation	Operating viscosity			Viscosity ratio
	Actual	Rated	Rated @ 40 °C	
	ν	ν_1	ν_{ref}	K
	mm²/s			
▶ 61812	28.0	7.31	19.2	3.82

3.3. Bearing rating life

Designation	Bearing rating life		SKF life modification factor	Contamination factor
	Basic	SKF		
	L_{10h}	L_{10mh}	a_{skf}	η_c
	h			
▶ 61812	> 2x10^5	> 2x10^5	50.0	0.72

** SKF rating life (L_{10mh}) for steel-steel bearings; GBLM load based life (L_{10GMh}) for hybrid bearings*

warnings

! For rating life results above 100000 hours, other failure modes than those included in the current rating life models will dominate and limit the life of the bearing.