

Rolling bearings SKF

- i Calculation without errors.
- ii Project information

Input parameters section

1.0 Selection of bearing type, bearing loads

1.1 Calculation units: SI Units (N, mm, kW...)

1.2 Bearing type: Deep groove ball bearings, single row

1.3 Bearing design

1.4 Open design

1.5 Single bearing

1.6 Normal clearance

1.7 Bearing load

1.8 Rotational speed	n	479.8	[/min]
1.9 Radial load	Fr	305.8	[N]
1.10 Axial load	Fa	1016.5	[N]
1.11 Factor of additional dynamic forces		1.32	

1.12 Required parameters of bearing

1.13 Bearing life	Lh	20000	[h]
1.14 Static safety factor	s0	2.00	

1.15 Additional dynamic forces

1.16 None

1.17 From geared transmissions

1.18 Ordinary machined gears (deviations of shape and pitch 0.02-0.1mm)

1.19 Factor fk: 1.1 - 1.3 (selected 1.20)

1.20 Electric rotary machines, turbines, turbo-compressors

1.21 Factor fd: 1 - 1.2 (selected 1.10)

1.22 From belt drives

1.23 V-belts

1.24 Factor fb: 1.9 - 2.5 (selected 2.20)

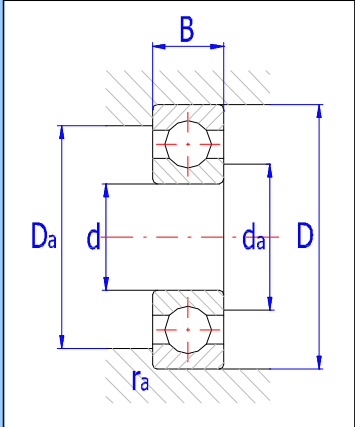
2.0 Selection of bearing size

2.1 Bearing size

ID	d	D	B	C	C0	nr	nmax	Bearing
97	40.0	68.0	15.0	17800	11600	22000	14000	6008 *

2.2 Bearing parameters

2.3 Basic dynamic load rating	C	17800	[N]	d	40
2.4 Equivalent dynamic load	P	2077.7	[N]	D	68
2.5 Basic rating life	L10h	21841	[h]	B	15
2.6 Basic static load rating	C0	11600	[N]	ramax	1
2.7 Equivalent static load	P0	913.1	[N]	Damax	63.4
2.8 Static safety factor	s0	12.7		damin	44.6
2.9 Permissible radial load	F _{rmax}	-	[N]		
2.10 Permissible axial load	F _a max	-	[N]		
2.11 Reference speed	nr	22000	[/min]		
2.12 Limiting speed	nmax	14000	[/min]		
2.13 Power loss	NR	3.13	[W]		
2.14 Bearing mass	g	0.19	[kg]		



3.0 Operating parameters, adjusted bearing life

Supplements section

4.0 Auxiliary calculations

5.0 Fluctuating bearing load

6.0 Calculation of bearings with angular contact