

medias®

SCHAEFFLER

Rating life calculation according to catalog 404

Calculation / Installation proposal

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1 General notes

The following estimate of rating life was made without taking account of lubrication and operating conditions. In practice, results may vary considerably due to inclusion of the adjacent construction and the lubrication and environmental conditions.

For lubrication and maintenance, please refer to the medias CD. Every slewing bearing is supplied with an installation and maintenance manual.

To simplify the calculation, the radial load is applied so that the worst load condition will occur on the slewing bearing.

The frictional resistance of the slewing bearing is dependent on a number of factors, including lubrication, bearing clearance, seal friction, installation, distortion of the supporting structure, etc. This means that the calculated value cannot be regarded as a preferred value.

The dimensioning of the rotary drive mechanism should be based on the computed value for frictional resistance multiplied by a factor of 2.

If significantly lower values for frictional resistance are required, please consult the INA Engineering Service.

2 Input

Bearing

Designation	XU060111	
Reference diameter	dM	95.000 mm
Basic static load rating, radial	C0_r	21500 N
Basic static load rating, axial	C0_a	44500 N
Basic dynamic load rating, radial	C_r	22800 N
Basic dynamic load rating, axial	C_a	36000 N
Application factor	fa	1.00

Loadcase 1

Time portion	q	40.000 %
Type of movement	rotating	
Speed	n	7.5 1/min
Force in x direction	Fx	1500.00 N
Force in y direction	Fy	2000.00 N
Moment about y axis	My	500.000 N m

Loadcase 2

Time portion	q	35.000 %
Type of movement	rotating	
Speed	n	7.5 1/min
Force in x direction	Fx	750.00 N
Force in y direction	Fy	1400.00 N
Moment about y axis	My	250.000 N m

Loadcase 3

Time portion	q	15.000 %
Type of movement	rotating	
Speed	n	7.5 1/min
Force in x direction	Fx	300.00 N
Force in y direction	Fy	1100.00 N
Moment about y axis	My	150.000 N m

Loadcase 4

Time portion	q	10.000 %
Type of movement	rotating	
Speed	n	7.5 1/min
Force in x direction	Fx	200.00 N
Force in y direction	Fy	900.00 N
Moment about y axis	My	100.000 N m

3 Results

Loadcase 1

Rating life for the load case in hours (nominal)	Lh10_i	14371 h
Static safety factor, raceway	S0	3.4
Frictional moment	Mr	9 N m

Loadcase 2

Rating life for the load case in hours (nominal)	Lh10_i	108153 h
Static safety factor, raceway	S0	6.4
Frictional moment	Mr	7 N m

Loadcase 3

Rating life for the load case in hours (nominal)	Lh10_i	359064 h
Static safety factor, raceway	S0	10.3
Frictional moment	Mr	6 N m

Loadcase 4

Rating life for the load case in hours (nominal)	Lh10_i	975115 h
Static safety factor, raceway	S0	14.5
Frictional moment	Mr	6 N m

Bearing

Total rating life in hours (nominal)	Lh10	31656 h
Minimal static load safety factor, raceway	S0_min	3.4
Maximum frictional torque	Mr_max	9 N m

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