

KISSsoft evaluation

File

Name : RollerBearings 1
 Description: KISSsoft example
 Changed by: kspl on: 07.03.2016 at: 10:53:52

Important hint: At least one warning has occurred during the calculation:

1-> Bearing1:

The fatigue load limit is not specified in the database.
 An approximation equation according to ISO 281 (2007) B3.3 will be used.

2-> Bearing2:

The fatigue load limit is not specified in the database.
 An approximation equation according to ISO 281 (2007) B3.3 will be used.

ROLLING BEARING ANALYSIS

**Calculation method: ISO 281:2007 und Herstellerangaben
 - With enhanced bearing service life according to
 ISO 281:2007**

General data:

Speed (1/min)	980.000
Axial force (N)	-1740.600
Required service life (h)	5000.000

Operating temperature (°C)	70
Type of oil	Oil: Mobilgear 600 XP 220
Lubricant base	Mineral-oil base
Kinematic viscosity oil at 40 °C (mm ² /s)	220.00
Specific density oil at 15 °C (kg/dm ³)	0.890
Own Input	
Lubricant with additive	

Rolling bearing No. 1:

Bearing type	Koyo 6208		
Type	Deep groove ball bearing (single row)		
Bearing clearance:	normal		
Radial and axial load			
Radial force (N)	[Fr]		3127.500
Axial force (N)	[Fa]		-1740.600
Inner diameter (mm)	[d]		40.000
External diameter (mm)	[D]		80.000
Width (mm)	[B]		18.000
Basic dynamic load rating (kN)	[C]		29.100
Basic static load rating (kN)	[C0]		17.800
Speed limit (oil) (1/min)	[n.max]		10000
Dynamic equivalent load (N)	[P]		4291.627
Static equivalent load (N)	[P0]		3127.500
Operating viscosity (mm ² /s)	[nu]		51.701
Reference viscosity (mm ² /s)	[nu1]		19.117
Fatigue load limit (kN)	[Cu]		0.809
Impurity characteristic quantity	[ec]		0.500
Service life coefficient	[aISO]		4.829
Rolling moment of friction (Nmm)	[Mrr]		135.066
Sliding moment of friction (Nmm)	[Msl]		87.775
Moment of friction, seals (Nmm)	[Mseal]		0.000
Mseal according to SKF Main Catalog 10000/1 EN:2013			
Moment of friction flow losses (Nmm)	[Mdrag]		0.000
Total moment of friction (Nmm)	[M]		222.842
Service life (h)	[Lh]		25605.730
Static safety factor	[S0]		5.691

Rolling bearing No. 2:

Bearing type	Koyo 6307		
Type	Deep groove ball bearing (single row)		
Bearing clearance:	normal		
Only radial load			
Radial force (N)	[Fr]		3949.100
Axial force (N)	[Fa]		0.000
Inner diameter (mm)	[d]		35.000
External diameter (mm)	[D]		80.000
Width (mm)	[B]		21.000
Basic dynamic load rating (kN)	[C]		33.400

Basic static load rating (kN)	[C0]	19.300
Speed limit (oil) (1/min)	[n.max]	10000
Dynamic equivalent load (N)	[P]	3949.100
Static equivalent load (N)	[P0]	3949.100
Operating viscosity (mm ² /s)	[nu]	51.701
Reference viscosity (mm ² /s)	[nu1]	19.528
Fatigue load limit (kN)	[Cu]	0.877
Impurity characteristic quantity	[ec]	0.500
Service life coefficient	[aISO]	6.245
Rolling moment of friction (Nmm)	[Mrr]	57.034
Sliding moment of friction (Nmm)	[Msl]	49.163
Moment of friction, seals (Nmm)	[Mseal]	0.000
Mseal according to SKF Main Catalog 10000/1 EN:2013		
Moment of friction flow losses (Nmm)	[Mdrag]	0.000
Total moment of friction (Nmm)	[M]	106.197
Service life (h)	[Lh]	64249.996
Static safety factor	[S0]	4.887

Notice:

The modified rating life according ISO 281 contains only approximate formulae for the calculation of the fatigue load boundary and the resulting values for a23 are sometimes very high..
The moment of friction is calculated according to the details in SKF Catalog 2013..
This is always calculated with a coefficient for additives in the lubricant mybl=0.15.

End of Report
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