L G 1

Software for
Roll-contact Bearings
with interface to CAD and Database
for Windows

www.hexagon.de

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Roller Bearing Calculation with LG1

The LG1 software calculates the bearing lifetime for grooved ball bearings, self-aligning ball bearings, needle bushes, cylinder roller bearings, taper roller bearings and self-aligning roll bearings according to DIN. Modified lifetime according to specifications of the roller bearing manufacturers can also be calculated when you input the data for lubricant viscosity, bearing temperature and life expectancy. For a more accurate calculation which takes lubricant gap cleanliness into account you can either enter your own data for the lubricant and material factor a23 or aISO (according to DIN ISO 281), or have LG1 calculate it for you.

Load

You can enter the mean radial and/or axial load directly, or have them calculated by LG1 from a load spectrum, or from static and alternating force components, or from constantly increasing forces.

Data Base

LG1 loads all dimensions and bearing data from the integrated data base so that you only have to choose the required bearing. The package includes data on 600 grooved ball bearings, 100 self-aligning ball bearings, 65 needle bushes, 170 needle bearings, 500 cylinder roller bearings, 300 taper roller bearings, 360 self-aligning roller bearings, 60 angular contact ball bearings, 50 two-row angular contact ball bearings, 230 needle roller cage. Dimensions, support data, permissable speed are provided by the SKF and INA (needle bushes) companies. The data base files use the common DBF (xBase) format and can be modified and appended as required. An info field is provided for your own input.

Graphic and CAD Interface

The roller bearing which was selected from the database can be displayed on screen or sent as a true-scale drawing to CAD via DXF or IGES file. Dimensions available in the database are used for generating the drawing, which means that newly entered bearings can also be drawn.

Bearing Load Fr = 2000 N Fa = 500 N   LG1   Database Needle cage

File View Help

NAME	FW	EW	BC	CR	COR	CUR	NG	NE
K5X8X8-TV	5	8	8	2350	1920	237	39000	
K5X8X10-TV	5	8	10	3000	2650	350	39000	
K6X9X8-TV	6	9	8	2600	2280	285	36500	
K6X9X10-TV	6	9	10	3350	3150	420	36500	
K6X10X13-TV	6	10	13	3800	3100	395	35500	
K7X9X7-TV	7	9	7	1730	1770	215	35500	
K7X10X8-TV	7	10	8	2850	2650	330	34500	
K7X10X10-TV	7	10	10	3650	3600	485	34500	
K8X11X8-TV	8	11	8	3100	3000	375	32500	
K8X11X10-TV	8	11	10	3950	4100	560	32500	
K8X11X13-TV	8	11	13	5100	5800	790	32500	
K8X12X10-TV	8	12	10	5000	4700	560	31500	
K9X12X10-TV	9	12	10	4500	5000	680	31000	
K9X12X13-TV	9	12	13	5900	7100	970	31000	
K10X13X10-TV	10	13	10	4750	5500	750	29500	
K10X13X13-TV	10	13	13	6200	7800	1060	29500	
K10X13X16-TV	10	13	16	7100	9300	1310	29500	
K10X14X10-TV	10	14	10	5800	6000	720	29000	
K10X14X13-TV	10	14	13	7500	8400	1020	29000	

Tables
Bearing data and load values can be displayed on screen as tables, or generated as DXF or IGES files and included in the CAD drawing.
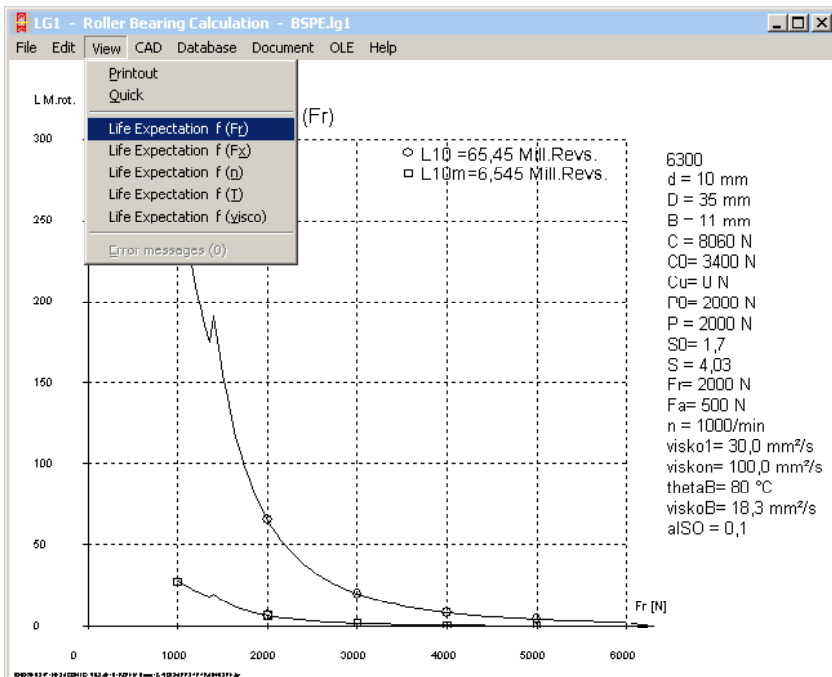
Quick View
Quick View shows roller bearing drawing together with tables of bearing data and calculation results.

Life Expectancy Diagrams
You can have a life expectancy curve generated for the bearing dependent on radial or axial force, speed, temperature or lubricant viscosity.

Text Printout
The calculation results, along with the input data can be displayed on screen, printed on Windows printer, saved to text file or HTML file, or directly be loaded with MS-Excel.

LG1 - Roller Bearing Calculation - BSPE.lg1

File Edit View CAD Database Document OLE Help

View menu:
- Printout
- Quick
- Life Expectation f (Fr)
- Life Expectation f (Fx)
- Life Expectation f (n)
- Life Expectation f (T)
- Life Expectation f (visco)
- Error messages (0)

○ L10 =65,45 Mill.Revs.
□ L10m=6,545 Mill.Revs.

6300
d = 10 mm
D = 35 mm
B = 11 mm
C = 8060 N
C0= 3400 N
Cu= 0 N
P0= 2000 N
P = 2000 N
S0= 1,7
S = 4,03
Fr= 2000 N
Fa= 500 N
n = 1000/min
visko1= 30,0 mm²/s
viskon= 100,0 mm²/s
thetaB= 80 °C
viskoB= 18,3 mm²/s
alSO = 0,1

Fr [N]

Graphic Printout
Drawings and diagrams can be printed or saved as DXF or IGES files for CAD import.

Units
LG1 can be switched between metric units (mm, N. MPa) and imperial units (inch, lbf, psi)
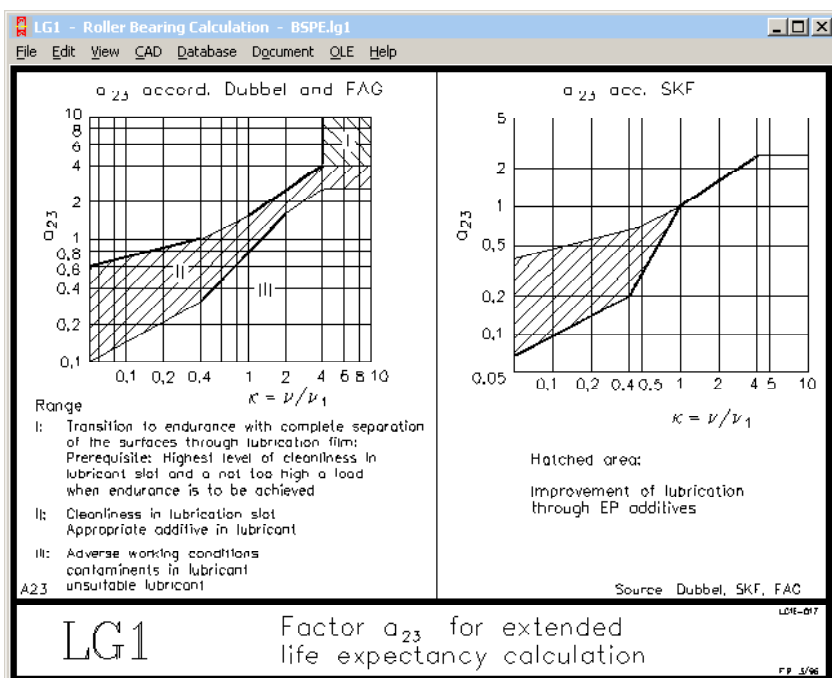
Graphic Help Function
Integrated help texts and auxiliary images ensure a short familiarization time and provide a quick overview, for example with the explanations for data base symbols. If error messages occur, you can get description and remedy suggestion.

Export Formats
DXF, IGES, HTML, TXT, DBF, Excel, LG1.

Import Formats
TXT, DBF, Excel, LG1.

LG1 - Roller Bearing Calculation - BSPE.lg1

File Edit View CAD Database Document OLE Help

a_23 accord. Dubbel and FAG

a_23 acc. SKF

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Range

I: Transition to endurance with complete separation of the surfaces through lubrication film; Prerequisite: Highest level of cleanliness in lubricant slot and a not too high a load when endurance is to be achieved

II: Cleanliness in lubrication slot Appropriate additive in lubricant

III: Adverse working conditions contaminants in lubricant unsuitable lubricant

Hatched area:
Improvement of lubrication through EP additives

Source Dubbel, SKF, FAG

LG1 Factor a_23 for extended life expectancy calculation

System Requirements
LG1 is available as 32-bit app or as 64-bit app for Windows 10, Windows 8, Windows 7.

Scope of Delivery
LG1 program with roller-bearing database files, example applications and help images, user manual (pdf), license agreement for an indefinite period of time

Guarantee
HEXAGON gives a 24 month guarantee on full functionality of the software. We provide help and support by email and hotline without extra charge.

Maintenance
HEXAGON Software is continuously improved and updated. Registered users are regularly kept informed of updates and new editions.