

# SKF SimPro Quick



Quick evaluation of the performance of your bearing arrangements



## Design engineers gain competitive edge

Industrial manufacturers are facing new challenges every day when it comes to rapid design of more robust and more cost efficient machines.

To maintain a competitive edge in product performance through innovation, design engineers are increasing the use of computer software all the way through their design cycle; exploring new design alternatives, including more parameters, and reducing time to market.

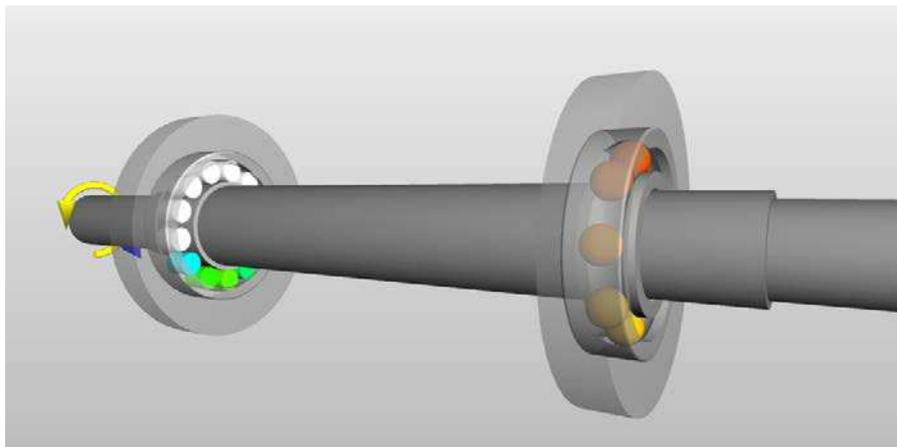
### **Bearing arrangements performance evaluation**

As a design engineer, you know how critical bearing arrangements can be for machine performance, especially with the increasing variety of application conditions. You then need an effective evaluation of bearing performance without compromising on time and flexibility in order to choose the best possible arrangements for your machine design.

SKF has core expertise in bearings, seals and lubrication, and more than a century of experience with applying bearings in rotating machineries in a wide variety of industries. The software tool SKF SimPro Quick is created to empower design engineers with that SKF engineering knowledge.

# SKF SimPro Quick at a glance

SKF SimPro Quick is a single-shaft bearing simulation tool that is developed to quickly evaluate the design of bearing arrangements and their field performance based on relevant application requirements and conditions. This tool is aimed to provide you with more SKF engineering knowledge and autonomy in order to accelerate your design process and optimize your choice of bearings.



## 1. Application modelling

SKF SimPro Quick has an intuitive interface to model your application, with relevant components such as shafts, bearings, housings, gears, lubricants, spacers and springs. A bearing selection dialogue enables the selection of bearings from the SKF catalogue Rolling bearings database updated on a regular basis.



## 2. Adding operating conditions

Operating conditions such as speed, loads, lubrication and fits of shaft and housing are added to the application model. The load and speed conditions can be entered as a combined load cycle.

Create SKF bearing

Name: SKF\_bearing\_1  Use designation as name

Search by designation | Search by bearing type

Designation: 7216 BECBP/VQ64

Search bearings

	Designation	Type	Version	d [mm]	D [mm]	B [mm]	C [kN]	C <sub>0</sub> [kN]	Reference speed [rpm]	Limiting speed [rpm]	Attain
1	7216 BECBJ	ACBB	1.35	80	140	26	85	75	5600	5600	
2	7216 BECBM	ACBB	1.43	80	140	26	85	75	5600	5600	
3	7216 BECBP	ACBB	1.32	80	140	26	85	75	5600	5600	
4	7216 BECBP/VQ64	ACBB	1.38	80	140	26	85	75	5600	5600	
5	7216 BECBPH	ACBB	1.29	80	140	26	85	75	5600	5600	
6	7216 BECBV	ACBB	1.32	80	140	26	85	75	5600	5600	
7	7216 BEGAF	ACBB	1.24	80	140	26	80.6	69.5	5300	5300	
8	7216 BEGAM	ACBB	1.44	80	140	26	85	75	5600	5600	
9	7216 BEGAP	ACBB	1.39	80	140	26	80.6	69.5	5300	5300	
10	7216 BEGAPH	ACBB	1.23	80	140	26	85	75	5600	5600	
11	7216 BEP	ACBB	1.26	80	140	26	80.6	69.5	5300	5300	
12	7216 BECBJ	ACBB	1.35	80	170	39	143	118	5000	5000	
13	7216 BECBM	ACBB	1.35	80	170	39	143	118	5000	5000	
14	7216 BECBP	ACBB	1.36	80	170	39	143	118	5000	5000	
15	7216 BECBPH	ACBB	1.20	80	170	39	143	118	5000	5000	
16	7216 BECBV	ACBB	1.36	80	170	39	143	118	5000	5000	

SKF SimPro Quick options for bearing selection

## 3. Running calculation

Once your model is built, you can choose to run a single load analysis or a full load cycle analysis, depending on your machine operating conditions. In addition, a bearing preload optimization analysis can be performed.



SKF SimPro Quick 2D Modelling

## 4. Viewing and reporting

SKF SimPro Quick provides calculation results with a comprehensive range of useful performance output parameters such as bearing fatigue life, bearing

load, loaded zone, contact stress, bearing displacement & misalignment, friction, bearing defect frequencies and shaft deflection. The output can be viewed in various graphical charts and in a 3D model. A report is created auto-

matically, based on selected output results and is exportable in pdf, doc and html formats.

# SKF SimPro Quick suitable for many industries

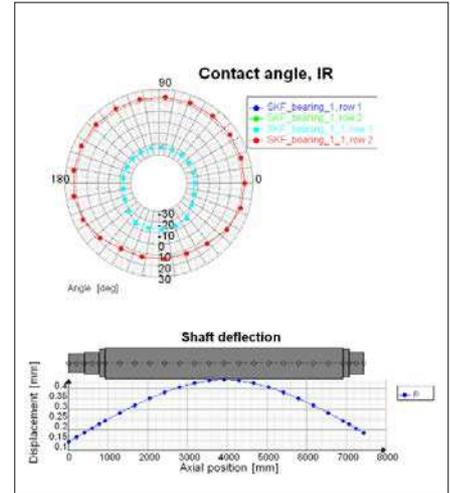
SKF SimPro Quick supports bearing selection and verification in various applications such as fans, pumps, compressors, electric motors, gearbox shafts, process industry machines, etc

## SKF application engineers are here to help

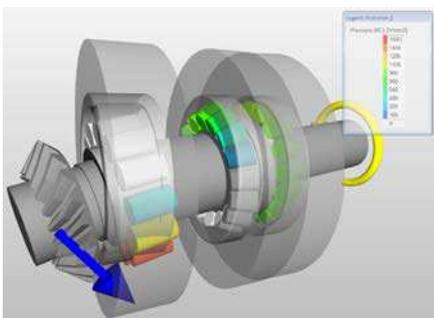
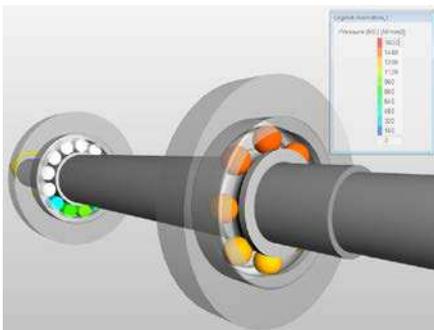
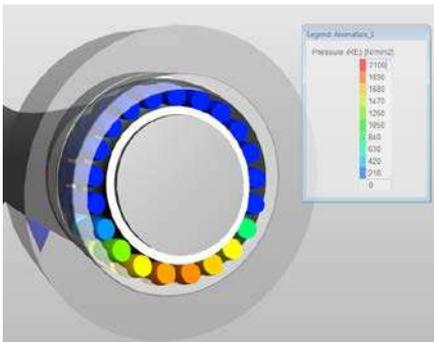
To get started with SKF SimPro Quick, an SKF application engineer will provide you with an initial training and will be available to assist you in the selection of bearings to optimize field performance.

## SKF SimPro Quick main features

- Intuitive stepwise graphical interface
- With guidance, warning system and 3D visualization
- Comprehensive modelling capabilities of components
- Bearings, shaft, housing, gears, lubricant, spacers, springs
- Bearing selection based on SKF selection criteria, using product data from the SKF catalogue Rolling bearings
- With detailed and updated geometry data
- Various analysis and output options for bearing arrangements performance evaluation
- Bearing load, loaded zone, contact stress, bearing life, friction, frequencies, shaft deflection, grease relubrication interval, grease life
- 3D animation
- Basic rating life, SKF rating life, as well as the Modified Reference Rating Life (according to ISO/TS 16281:2008)
- Global support



SKF SimPro Quick: Graphical results



**SKF**

### 3. Results

#### 3.1. Bearing loads

	SKF_bearing_1	SKF_bearing_1_1
Bearing axial load [N]	137042	130023
Bearing radial load [N]	0	-19
Force [N]	0	0
Moment [Nm]	-137042	-130023
Min clearance [mm]	0	0
Max clearance [mm]	0	0
Min clearance [mm]	0	0
Max clearance [mm]	0	0

#### 3.2. Bearing clearance

	SKF_bearing_1	SKF_bearing_1_1
Internal radial clearance before mounting [mm]	890	890
Operating radial clearance [mm]	390	350
Internal axial clearance before mounting [mm]	2862	2862
Operating axial clearance [mm]	1371	1371

The operation of the shaft and housing are not taken into account.

#### 3.3. Relubrication interval & grease life

	SKF_bearing_1	SKF_bearing_1_1
Substratum	L3WB2	L3WB2
Catalogue relubrication interval [days]	19720	19720
Relubrication quantity [g]	18320	18320
Relubrication quantity through lubrication holes [g]	632	632

SKF SimPro Quick: Report

## More information / Registration link

To find out more and get registered, please contact your local SKF contact or follow the below link for online registration:

[www.skf.com/skfsimpro](http://www.skf.com/skfsimpro)

[skf.com](http://skf.com)

® SKF and SKF SimPro are registered trademarks of the SKF Group.

™ Windows is a trademark of the Microsoft Corporation in the U.S. and/or other countries.

© SKF Group 2017

The contents of this publication are the copyright of the publisher and may not be reproduced (even extracts) unless prior written permission is granted. Every care has been taken to ensure the accuracy of the information contained in this publication but no liability can be accepted for any loss or damage whether direct, indirect or consequential arising out of the use of the information contained herein.

**PUB 91/P2 16461/1 EN** · July 2017

Certain image(s) used under license from Shutterstock.com.