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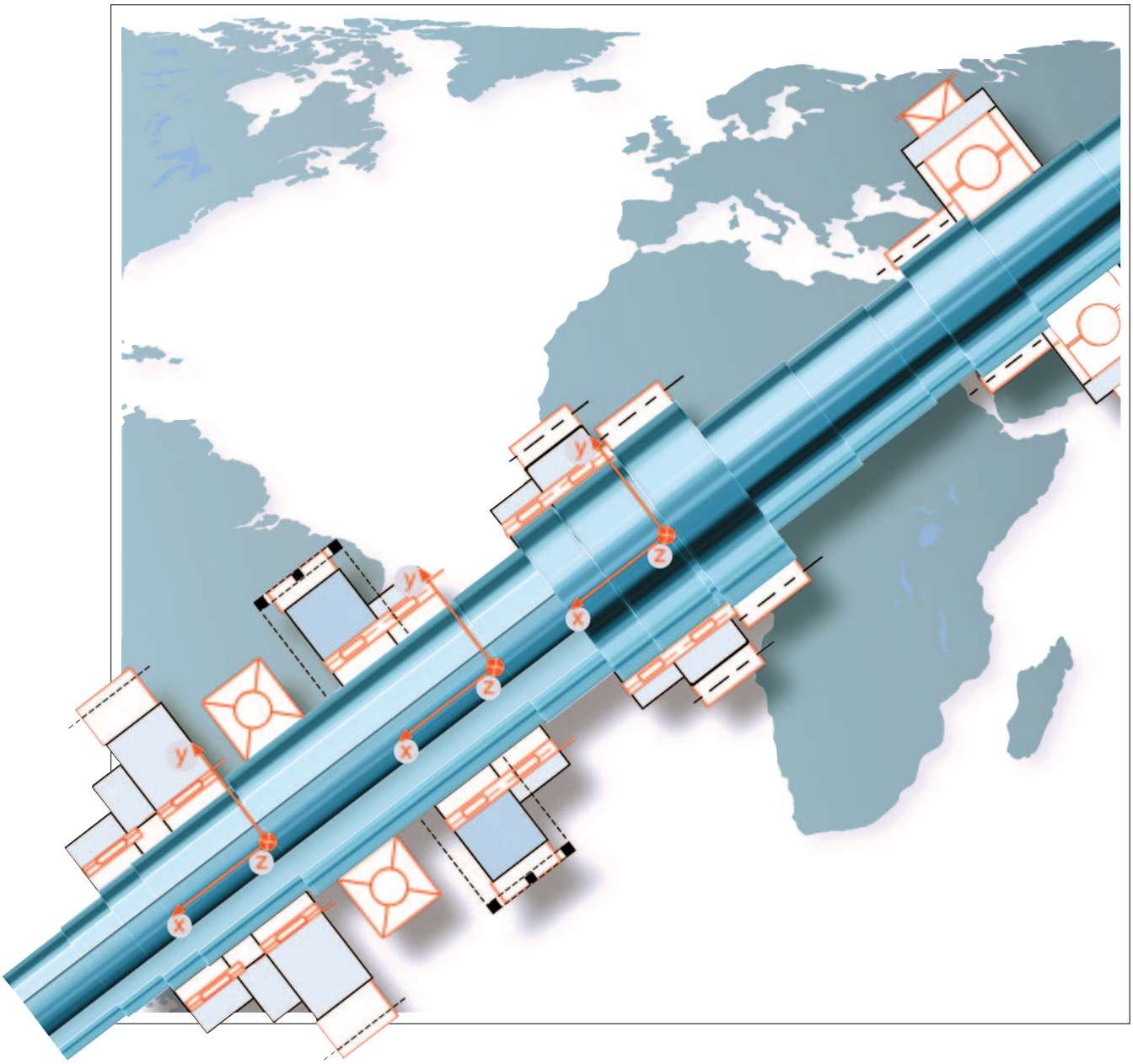

BEARINX®-online
Shaft Calculation

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BEARINX®
Efficient Calculation Software by INA

Along with the supply of top quality machine elements matched to customer applications, good service is an important tradition at INA and FAG. We offer you the support you need when using our products in your application – as early as the design phase, because for us service means a partnership shared with the customer.

Rolling bearing design is one of the focal points of design support. An important task here is to ensure that your product is designed correctly to give you the competitive edge. To meet this requirement, INA and FAG have been using calculation programs successfully for over 30 years.

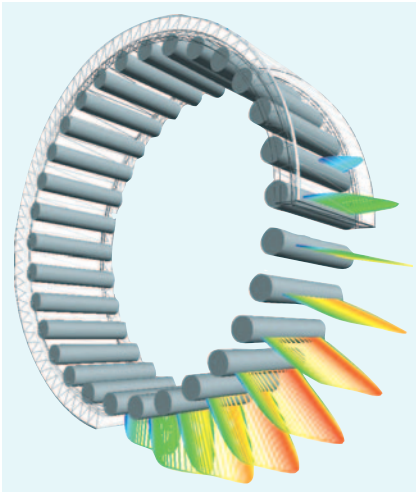
BEARINX® – A leading calculation program

INA's BEARINX® software is one of the leading programs for performing rolling bearing calculations. It enables rolling bearing supports to be analyzed in detail – from single bearings to complex gear systems and linear guide systems. All calculations are performed in a consistent calculation model. Even for complex gears, the contact pressure on each rolling element is considered in the calculation.

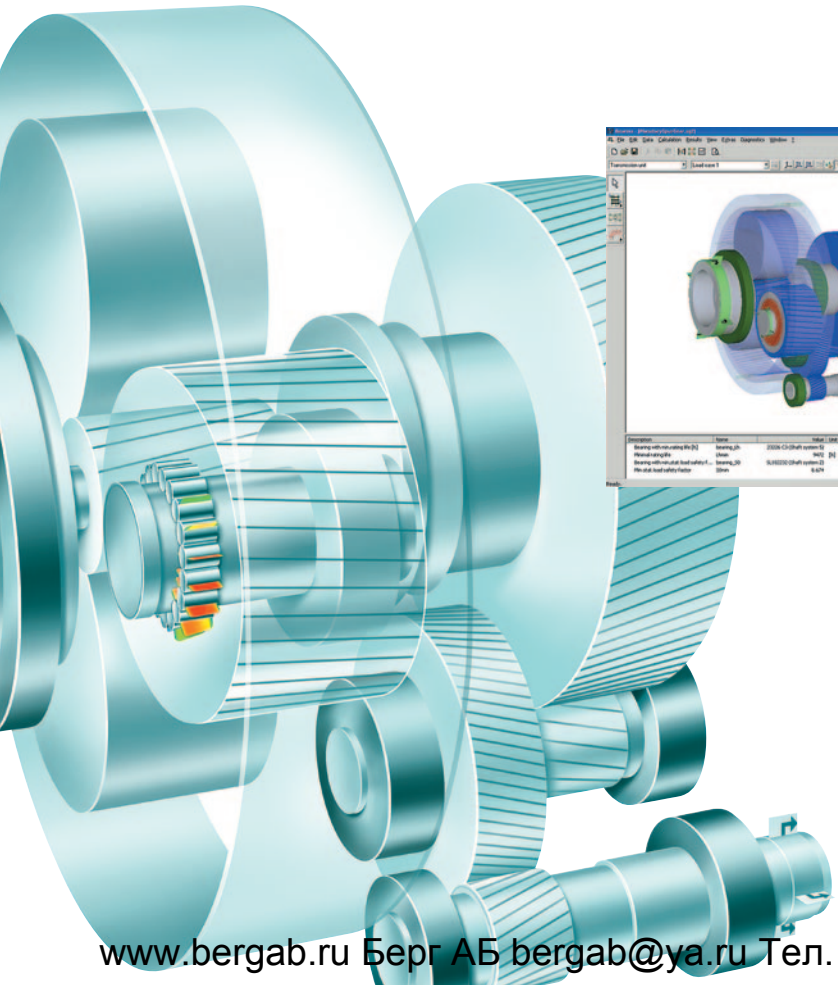
Rolling bearings in the system

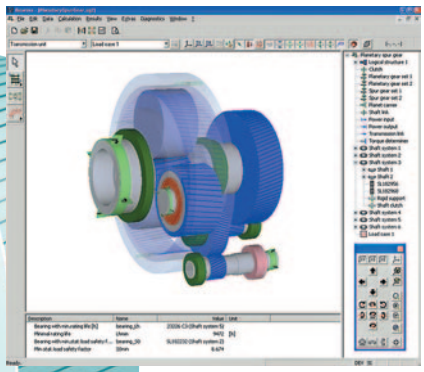
Among other things, the following aspects are considered in BEARINX®:

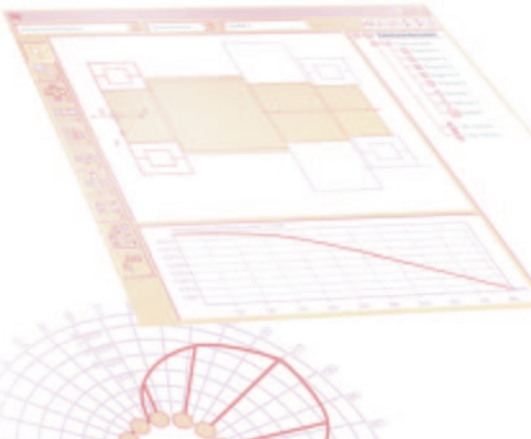
- Non-linear elastic deflection behavior of bearings
- Elasticity of shafts and axles
- Bearing operating clearance or preload
- Roller and raceway profiles as well as raceway osculation
- Load-related contact-angle shifts in the case of ball bearings
- Actual contact pressure when a tilted position and rolling element profiles are considered
- Effects of relief grooves in contact zones
- Effects of lubrication conditions, contamination and actual contact pressure on fatigue life



From the overall machine design all the way down to the contact pressure on a single rolling element – Our calculation program guarantees the optimum bearing design







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Shaft Calculations Online

Other calculation tools currently available on the Internet usually make use of highly simplified calculation methods. In many cases, the tilted position of bearings resulting from shaft deflection and the differing deflection behavior that is present for various bearing designs are ignored. The internal load distribution in the bearing – decisive for fatigue life – is most often determined by approximation methods.

With BEARINX®-online, it is now possible for you to determine actual stresses while taking shaft deflection and rolling bearing deflection behavior into account. And of course, exact calculations for the internal load distribution in the bearing are performed, including contact pressure with the actual rolling element profile considered.

Intuitive user screen

The calculation methods used are identical to the algorithms use in BEARINX® – both programs used the same source text. BEARINX®-online lets you perform calculations at your desk for shaft systems incorporating several bearings.

A Java-based user screen provides support for easy data entry. Graphic representations for your designs allow you to visualize your design and check the data.

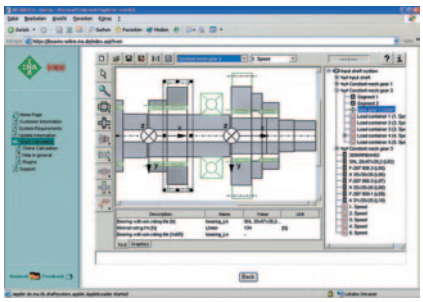
The data and geometry for bearings in INA and FAG catalogs can be easily accessed from an integrated database. Efficient calculation servers at INA then perform the actual calculation.

Engineers at your side

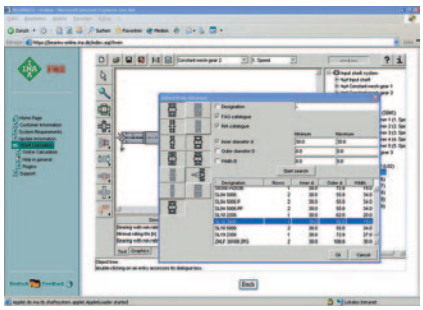
The files you create in BEARINX®-online are compatible with BEARINX®. This facilitates any further communication with our engineers and lets duplicate work be prevented.

The comprehensive results in HTML format as well as the graphic representation of shaft reactions and bearing internal load distribution make it easier for you to analyze your design variants.

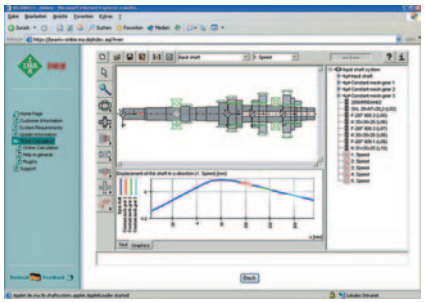
A detailed help system and an online tutorial make it easier for you to use the full potential of BEARINX®-online.



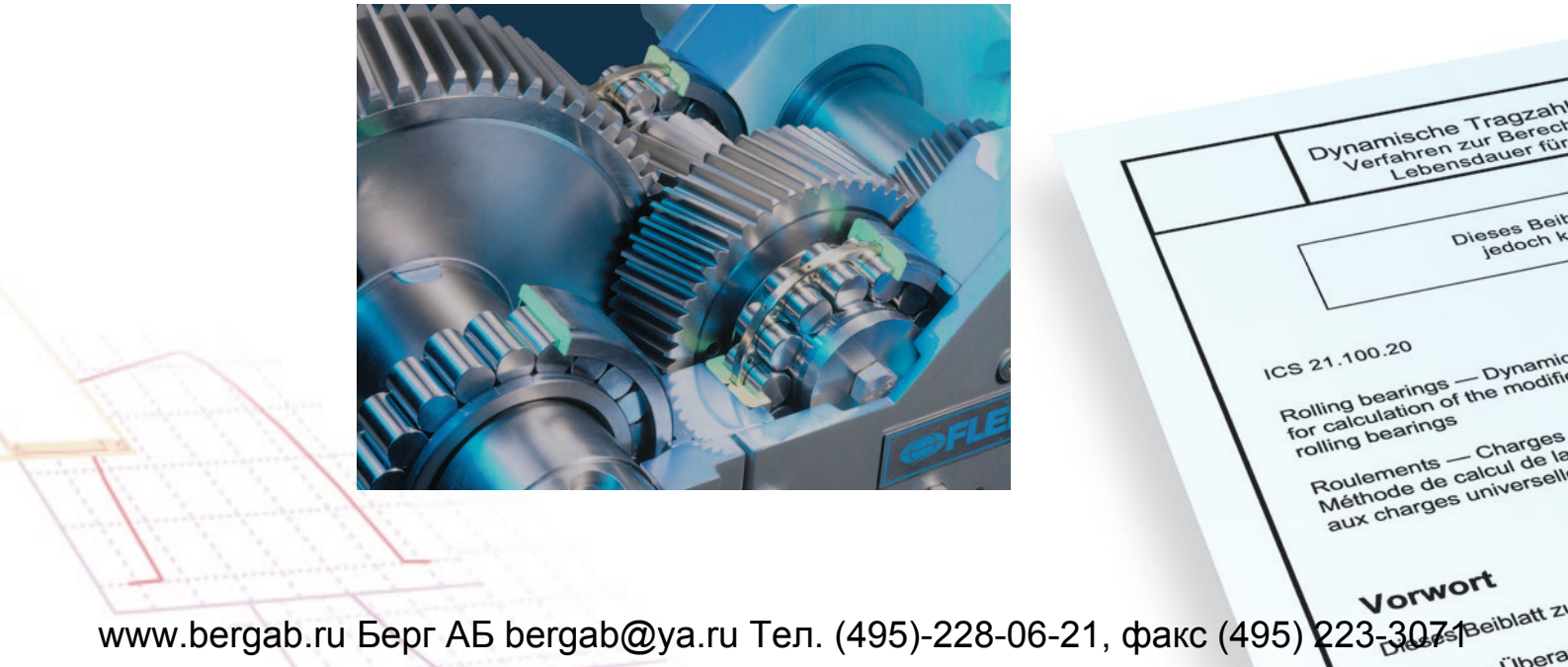
Intuitive user screen



Rolling bearings from the INA/FAG database



Graphic representation of shaft reaction



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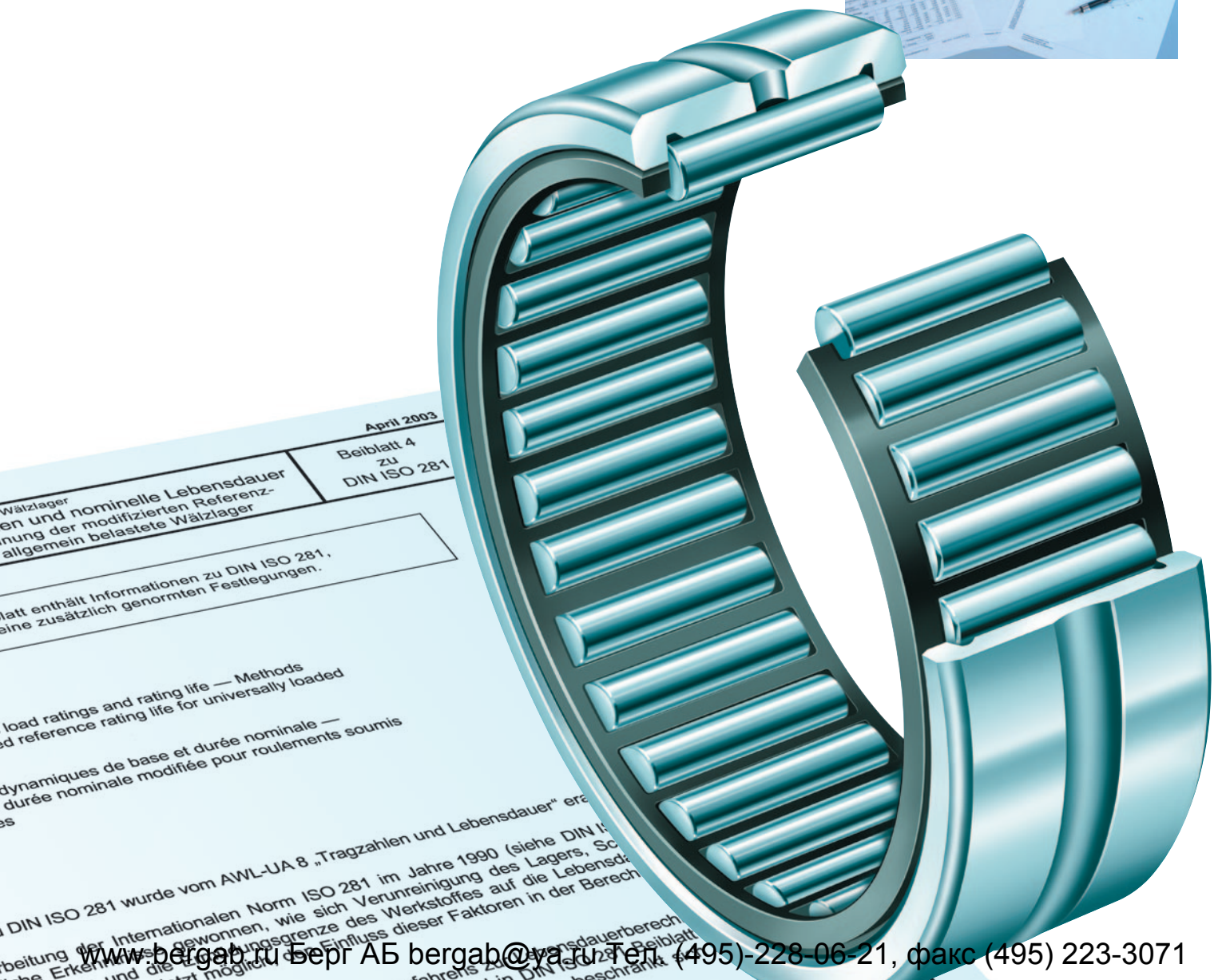
Supplement 4 of DIN ISO 281 (April 2003) contains the first-ever definition for the standardized calculation of fatigue life using state-of-the-art computer-assisted calculation procedures. This procedure is of course available to you in BEARINX®-online.

Working together even more closely

BEARINX®-online was not developed to move support and calculation services away from INA and FAG. On the contrary. We would like to work more closely with you and allow you to make the suitable preliminary selection for rolling bearings early on in the development process so that you can reduce your development times.

Not everything can be completed online: Personal contact with you is still important for us



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BEARINX®-online
... now available for you, too

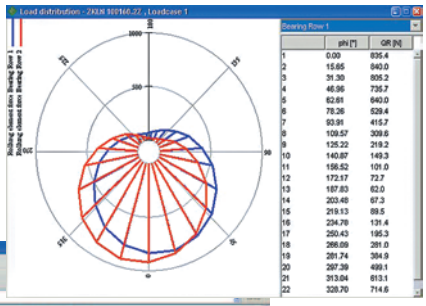
For a long time now, customers have been telling us that they would like to have an efficient tool they can use to perform precise calculations, and BEARINX®-online meets exactly this request. Considering the increasingly short development times and product cycles, it is becoming all the more important to react quickly from your own desk in order to stay competitive. The only way to obtain the required competitive edge is by reacting fast and employing the proper expertise.

Now you too can utilize the excellent opportunities that our proven BEARINX® program has to offer.

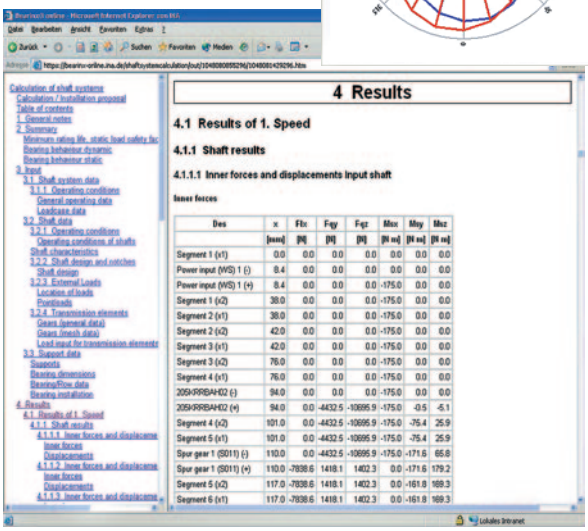
What do you need?

BEARINX®-online allows calculations to be performed for complex elastic systems. We offer one-day training to familiarize you with the program and help you better understand the calculation models used. You'll learn how to work with the user screen and how to interpret calculation results correctly.

The conditions for using the software as well as making use of any additional services such as training programs and support are defined in a mutual contract. Fees are charged for both the training program and the registration to use BEARINX®-online.



Graph showing the load distribution in the bearing



Convenient: Documentation of results in HTML format

System requirements

The actual calculations are performed by efficient servers at INA. The only thing that the local hardware does is operate the user screen. This means that the requirements for your local hardware are low.

Hardware

- Processor: 233 MHz or better
- RAM: at least 64 MB (128 MB are recommended)
- Monitor resolution: 1024 x 768 or better
- 40 MB available hard drive space
- Internet hookup via ISDN or better

Software

- Java 2 runtime environment plug-in from version 1.3.1
- Java plug-in compatible browser

BEARINX® -online

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BEARINX®-online Shaft Calculations

Fax Reply

Advanced Engineering – Analysis & Simulation, INA-Schaeffler KG
Fax no. +49/9132/82-33 44

We would like to register to use BEARINX®-online Shaft Calculations.

☐ INA Customer ☐ FAG Customer ☐ INA/FAG Customer

☐ Distributor ☐ Other

Contact partner in Application or Sales at INA/FAG _____

Company/Department _____

Contact _____

Position _____

City, State, ZIP _____

Phone/Fax _____

E-Mail _____

Please contact the address given below if you have any questions.

(company stamp, city, date, signature)

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