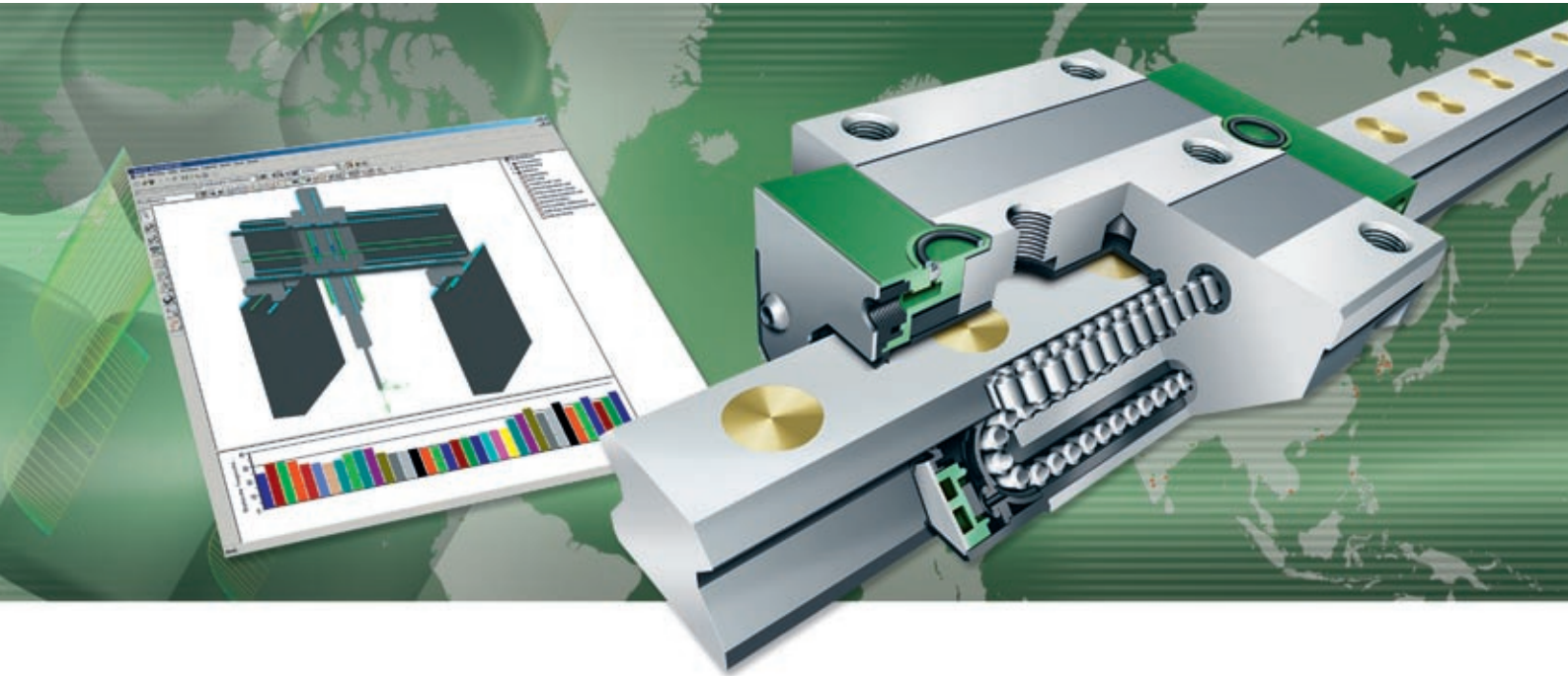




FAG



BEARINX[®]-online Linear Calculation

SCHAEFFLER GROUP
INDUSTRIAL

BEARINX® Efficient Calculation Software by the Schaeffler Group

Along with developing and manufacturing top quality precision parts, great service is an important tradition at the Schaeffler Group. We offer you the support you need as early as the design phase, so you can put our products into operation with confidence, because for us, service means a partnership with the customer from the first design idea right up to supplying the product.

Rolling bearing design is one of the focal points of design support. We want to give you a competitive edge by supplying you with perfectly designed products. We have already been using calculation programs successfully for over 30 years to meet these requirements.

BEARINX® – A leading calculation program

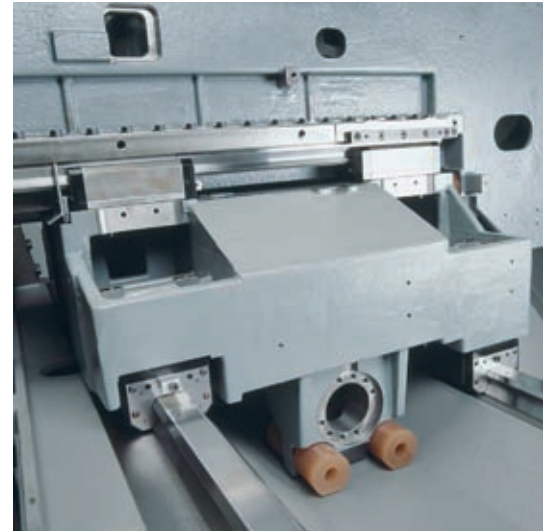
With BEARINX®, we have created one of the leading programs for bearing

calculation. The software enables rolling bearing supports to be analyzed in detail – from single bearings to complex shaft or linear guidance systems within machine tools. All calculations are performed in a consistent calculation model. Even for complex applications, the contact pressure on each rolling element is considered in the calculation.

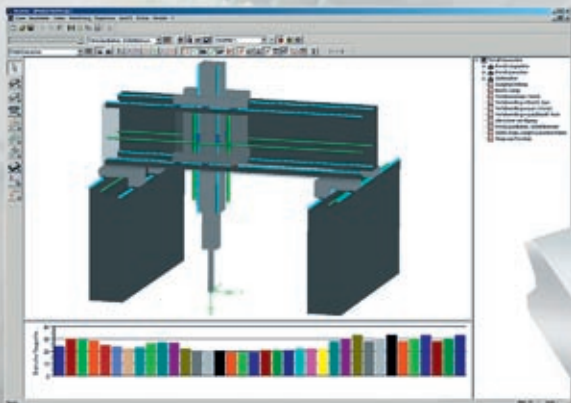
Linear calculation

A special module for linear calculation has been added to the current version of BEARINX®. Amongst others, BEARINX® considers the following factors:

- Non-linear elastic deflection behavior of the bearings
- Elasticity of carriage and guideway
- Linear bearing preload
- Roller profiling
- Load-related contact angle shifts in the case of linear ball bearings
- Actual contact pressure when a tilted position and rolling element profiles are considered.



RUE linear bearings in a machine tool



Portal machine tool. Precision in every detail: Even the contact pressures on every rolling element are considered in the calculation

Linear Calculation Online. Cut Your Development Time!

Other calculation tools currently on the market usually make use of highly simplified calculation methods. In many cases, displacement, tilting and the consideration of rigid or elastic guideways and carriages are ignored. The internal load distribution in the bearing – decisive for fatigue life – is most often determined by approximation methods.

With our software, you can now determine actual stresses while taking various loads and the deflection behavior of the linear bearing with guideway and carriage into consideration. And of course, exact calculations for the internal load distribution in the bearing are performed, including contact pressure with the actual rolling element profile and various preload classes.

Intuitive user interface

The algorithms used in BEARINX®-online Linear Calculation are identical to the



Not everything can be done online. Personal contact with you is very important when designing linear systems

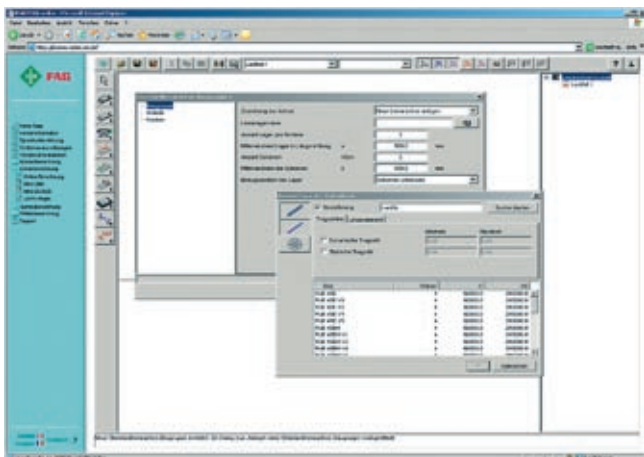
ones used in BEARINX® at the Schaeffler Group. BEARINX®-online Linear Calculation enables you to perform calculations at your desk for multi-axis linear systems.

A Java-based user interface provides support for easy data entry. Graphic representations for your designs allow

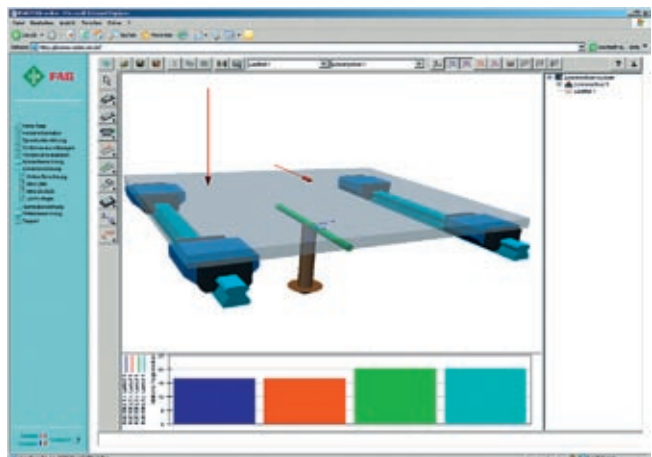
you to visualize your design and check the data easily.

The data and geometry for linear bearings in Schaeffler Group catalog can be easily accessed from an integrated database.

Powerful calculation servers at the Schaeffler Group then perform the actual calculation.



User-friendly interface due to an assistant and integrated database access



Standard linear axis with two guideways and four linear bearings RUE45-E

Engineers At Your Side

The input files you create with BEARINX®-online Linear Calculation are compatible with BEARINX®. This facilitates any further communication with our engineers and prevents duplicate work.

The comprehensive results in HTML format as well as the graphic representations of pressure and bearing internal load distribution make it easier for you to analyze your design variants. An online tutorial and a detailed help system make it easier for you to use the full potential of BEARINX®-online Linear Calculation.

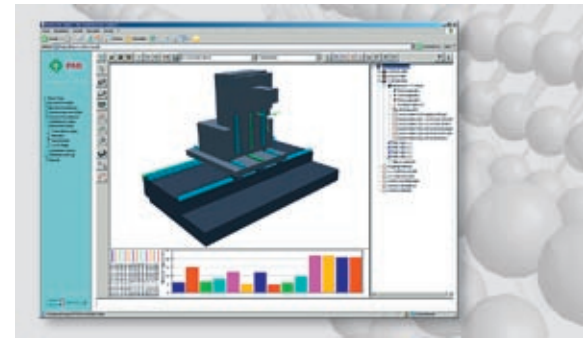
Working together even more closely

BEARINX®-online Linear Calculation was not developed to move support and calculation services away from the Schaeffler Group and to transfer them to the customer. On the contrary, since we would like to work with you even more closely. Our objective is to allow you to make the suitable preliminary selection for linear bearings early on in the development process so that you can reduce your development times.

BEARINX®-online Linear Calculation – an overview

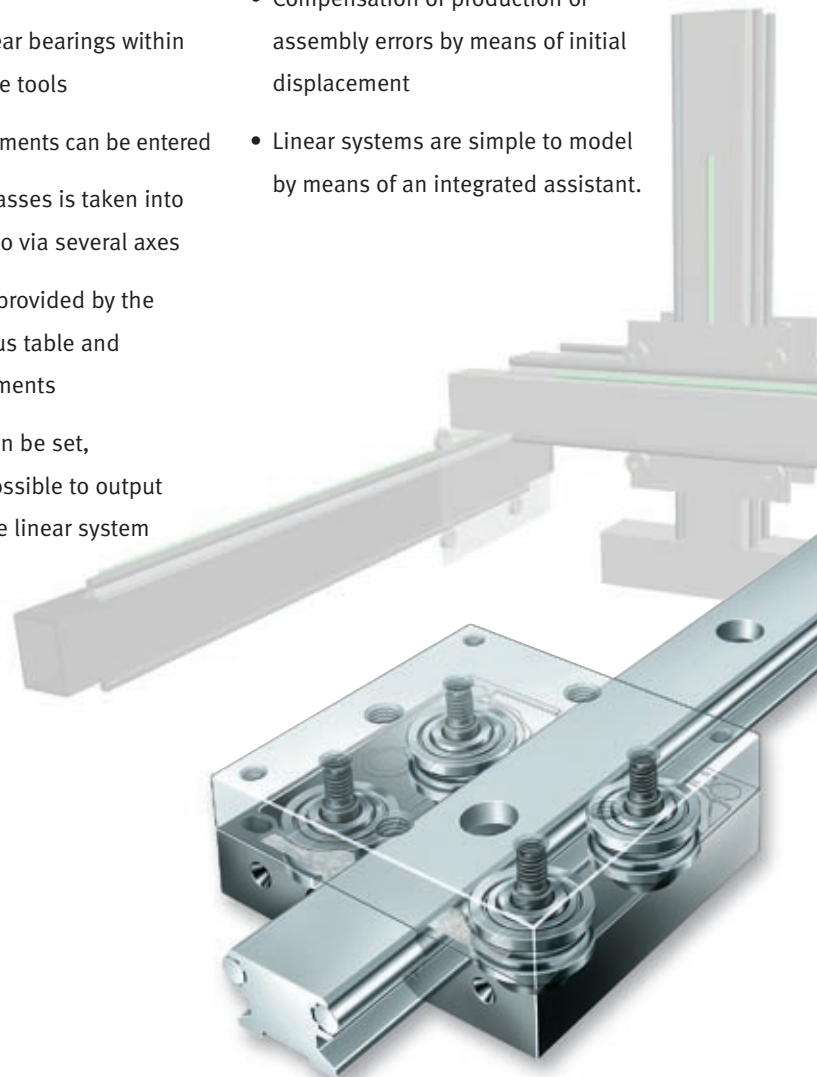
- The linear system is modeled in an interactive 3D user interface

- The user can freely rotate, move and zoom the calculation model in the display
- Linear axes can be designed individually
- Database support with the current product range
- Combination of linear recirculating bearing and guideway assemblies based on rollers or balls with track rollers and yoke type track rollers possible
- Calculation of linear bearings within multi-axis machine tools
- Any forces and moments can be entered
- Acceleration of masses is taken into consideration, also via several axes
- Visual support is provided by the selection of various table and machine bed segments
- Working points can be set, which makes it possible to output deformation of the linear system at any location



Online calculation of a 3-axis machine tool

- Compensation of production or assembly errors by means of initial displacement
- Linear systems are simple to model by means of an integrated assistant.



BEARINX®-online ... Now Available For You, Too

Ever decreasing development times and product cycles put mechanical engineers and their suppliers under pressure. The only way to obtain the required competitive edge is by reacting fast and employing the proper expertise. With the Schaeffler Group you have found the perfect partner to do this.

This is why we give our customers the opportunity to try the outstanding features of BEARINX® themselves. With BEARINX®-online Linear Calculation you now have access to the integrated module in BEARINX® for designing linear systems.

What do you need?

We offer 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 interface 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 Linear Calculation.

System requirements

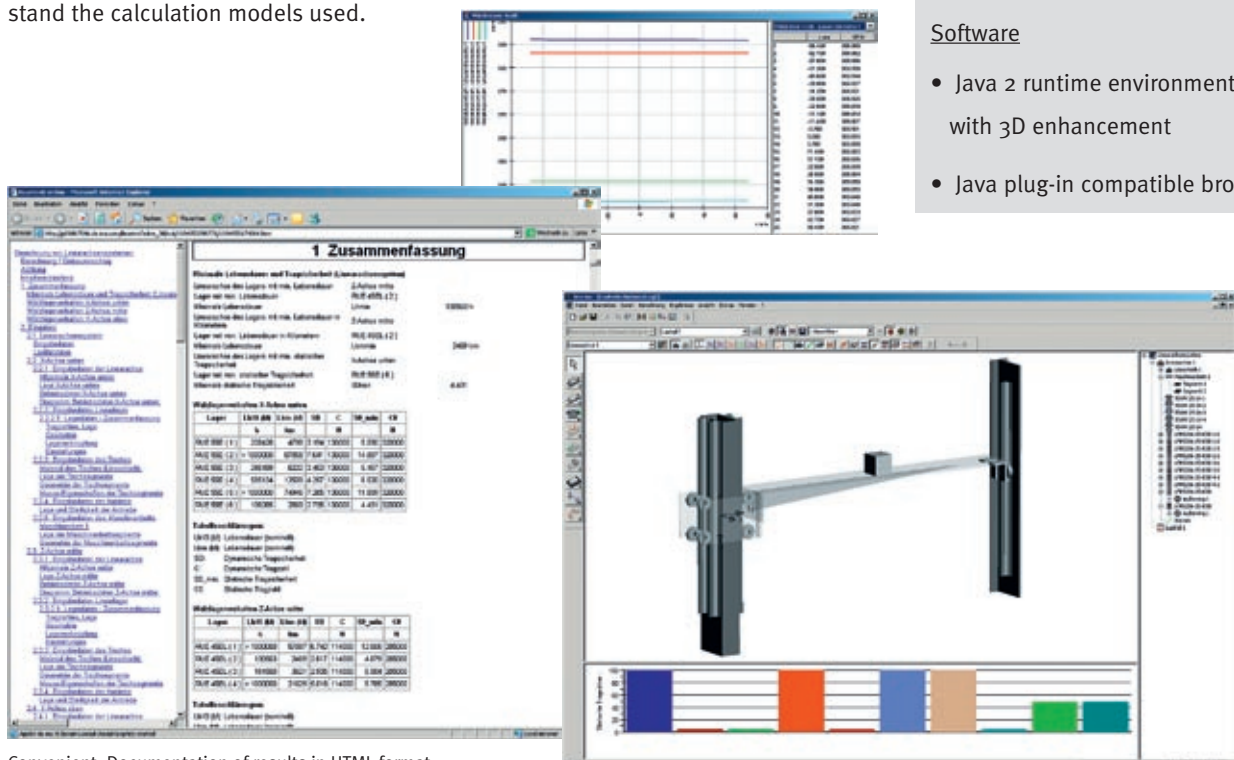
The actual calculations are performed by powerful servers at the Schaeffler Group. The only thing the local hardware does is operate the user interface. This means that the requirements for your local hardware are low.

Hardware

- Processor: 500 MHz or better
- RAM: at least 256 MB (512 MB are recommended)
- Monitor resolution: 1024 × 768 or better
- Internet hookup via ISDN (DSL is recommended)

Software

- Java 2 runtime environment with 3D enhancement
- Java plug-in compatible browser



Convenient: Documentation of results in HTML format



BEARINX®-online Linear Calculation

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Fax no. +49 9132 82-3344

We would like to register to use BEARINX®-online Linear Calculation.

Contact partner in Application Engineering or Sales at the Schaeffler Group

Company/Department _____

Name _____

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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