

Bearings Configuration

- Calculation of single bearing or bearing-shaft system, any number of bearings in system
- With single load or load spectrum
- Sizing function for bearing selection

Bearing life rating

- Basic rating using load capacity numbers
- Modified rating considering lubricant properties
- Reference rating considering load distribution
- Modified reference rating
- Along ISO 281, ISO/TS 16281, ISO 76

Bearing stiffness and clearance

- Based on bearing inner geometry
- Shaft-bearing interaction for shaft and bearing systems
- Considers operating clearance / pre-tension
- Considers bearing, shaft, hub tolerances

Load distribution calculation

- Load distribution among rolling elements
- Contact stresses for balls
- Contact stresses for rollers, considering roller geometry modification (logarithmic)
- Contact stress distribution on raceway

Thermal rating

- Along DIN 732

Bearing database

- Bearing data from different bearing suppliers
- For different bearing types
- Basic bearing properties
- Bearing inner geometry, user editable
- Separate database for lubricants, lubricant purity definitions along ISO 4406

Hydrodynamic bearings

- Axial bearings DIN 31653, ISO 12130, DIN 31654
- Radial bearings ISO 7902, DIN 31652, DIN 31657, Niemann and Spiegel for grease lubricated bearings

The screenshot displays the SKF software interface for bearing analysis. At the top, the 'Bearing Configuration' section shows various input parameters such as bearing type (SKF 102), dimensions, and material properties. Below this, the 'Auswertung | Wälzlager Lebensdauer (Stunden)' section features a bar chart showing 'Lagerlebensdauer [h]' for six different roller bearings (1-6). The chart compares three calculation methods: L10h (blue), L10mh (green), and L10rh (yellow). A note indicates 'N1 = 5000 h'. The next section, 'Hertzische Pressung [N/mm²]', shows a 3D visualization of a bearing with a color-coded stress distribution. Below this, two diagrams illustrate 'Stresses beneath the contact area' with force vectors and contact geometry. The 'Stresses beneath the contact area' section includes a line graph of 'Hertzian stress [N/mm²]' versus 'Depth [mm]' for different stress components (σx, σy, σz, σmax). The 'Property' table on the right lists various parameters like 'Coordinate system', 'Depth', 'Stress', and 'Force'. The bottom section, 'Force [N]', shows a 3D visualization of a bearing with force vectors and a color-coded stress distribution.