



Extended System Calculation

SystemManager software allows for a fast and easy design of complete systems of machine elements. The individual system elements are directly linked to the eAssistant/TBK calculation modules. Listed below is an overview of some of the major new features in version 04/2017:

SystemManager is a true software application for complete systems of machine elements, i.e., the software is a coupled FE calculation of multi-shaft systems with gears as non-linear coupling elements.

SystemManager runs as a desktop application, making it possible to configure and calculate entire systems with just a few mouse clicks.

The application ranges from simple to complex systems, e.g. multi-stage gearboxes, shift gear transmissions or different types of planetary gear trains, etc.

- Housings as 3D elastic parts: import of housings as 3D STEP and automatic FEM meshing to consider deformation and stiffness of the housing throughout the system.
- 3D elastic housings can be imported as Nastran mesh, too.
- 3D elastic housings can be considered for calculation of eigenfrequencies using modal reduction.
- Integration of axisymmetric 3D elastic parts can be defined using a polygon. The software meshes the parts automatically and connects to the boundary conditions of the shafts.
- A further extension of the 3D elastic parts function is the support of planet carriers and imported shafts.
- Planet carriers importable as CAD models or definable parametrically for the use as 3D elastic part; various basic designs available for parametric planet carriers.
- Import of shaft geometry as 2D DXF or 3D STEP
- Export of single shafts or complete shaft systems in 3D STEP format
- Import of existing shaft systems into a new system
- User input of notch factors for strength calculation according to DIN 743
- Two new boundary conditions added: cylindrical support, axial stiffness
- Boundary condition "weld point" now comes with additional width-related input
- Export of animations using a third party program
- The calculation report provides application factors and the deformation amount of the face load factor K_{HB} as a table.
- Diagrams come with 2D representation of the shaft.
- Diagram line style now adjustable
- Dimensioning of 2D shaft geometry: enable/disable function now available
- Default color setting for bearings, shafts and gears
- 2D contact pressure on the raceway of rolling bearings will be colored.
- Consideration of the extension of bearing rings
- Import of tables in XLS or XLSX format in addition to CSV format