

Highlights KISSsoft Release 03/2016

Modeling in KISSsys

- 3D modeling
- System calculation

Model creation in KISSsys has been radically simplified. For example, when elements are added, the part geometries are prefilled with default values. At the same time, the shafts are positioned intelligently, to suit the gearing types involved, such as cylindrical gear pair, bevel gear or planetary stage. This enables you to check the modeling progress immediately, in the 3D view.



You can also add complete gear stages to an existing model and, optionally, integrate shafts.

Gearing

- Fine sizing
- Final machining: Additional options

The fine sizing of cylindrical gear calculations has been extended to enable the gear reference profiles to be modified. In addition, it is possible to select automatic use of the largest possible root radius for the strength calculation. Then, all variants are compared on the basis of the maximum tooth root strength.

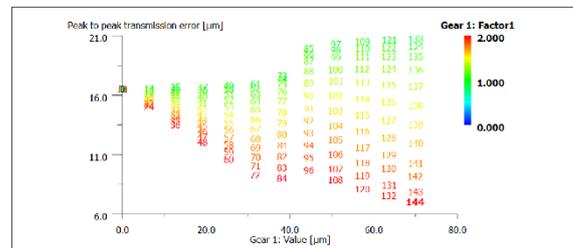
Other options are available for the final machining, to include the root rounding or even the root diameter in grinding.

These options alter the nominal reference profile of the gearing and thus influence the strength calculation.

Face load factor and contact analysis

- Constant mounting deviations
- New possibilities in contact analysis
- Evaluation in "Modifications sizing"

A new feature is that the mounting deviations can be split into proportional and constant components in the calculation of the face load factor. Consequently, the diagrams of bending under load are more accurate, for example, if a constant displacement of bearing due to the housing tolerances is taken into account.



A graphic has been added to the "Modifications sizing" function. This graphic makes it possible to perform the evaluation with three parameters, to produce a quick and transparent summary of profile/tooth trace modifications.

Bevel gears

- Link to the shaft calculation
- Bevel gear misalignments

When determining bevel gear misalignments you can now use shaft displacements directly, because shafts files are now linked with the bevel gear contact analysis. The VHJ misalignment values are determined from the relevant portions of the two shafts of the pinion and the bevel gear. These values are then considered when the contact is calculated.

Updated strength analysis

- Micropitting ISO/TR 15144
- Proposal for VDI 2737, 2016 Edition

A number of modifications to ISO/TR 15144 (micropitting) have been agreed at meetings of the ISO committees. These modifications have already been included in KISSsoft release 03/2016.

An updated proposal for VDI 2737 (calculation of tooth root load capacity, taking into account the influence of the gear rim) has also been implemented.

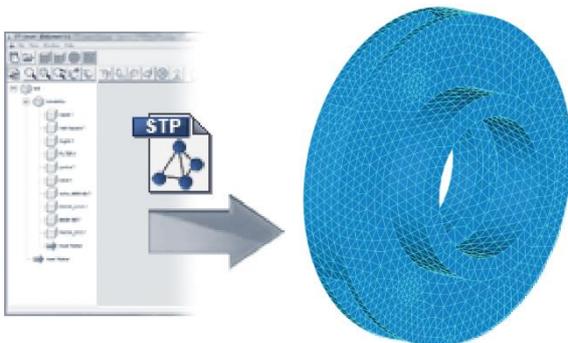
Gear body

- Parametrized geometry
- FE calculation of deformation
- Influence on tooth trace deformation

Deformation occurs in three dimensions on the gear rims of webbed gears and therefore cannot be calculated using the one-dimensional approach used in the shaft calculation. This becomes even more complex if the web is displaced to the side and, as a consequence, the gear body is asymmetrical. This influences the tooth trace under load. The new DPK module in KISSsoft 03/2016 can be utilized to define the gear body geometry parametrically. The Code_Aster FE software can then be used to run a FE calculation and determine the influence matrix.

Planetary gear unit

- Extended planet carrier definition
- Insert STEP file



The carrier geometry can now also be imported from a STEP model to verify the planet carrier deformation. This STEP model is automatically meshed with the supplied FE software and calculates the resulting deformations.

Calculation for plastics

- Wear calculation according to Pech
- Properties for plastic

As a supplement to the VDI 2736 guideline, the calculation of plastic deformation and wear of plastic crossed helical gears (according to Pech) has been implemented.

Bearing calculation

- Using 11500 SKF bearing data
- KISSsoft bearings database updated
- Plain bearing calculation according to DIN 31657

The bearing database has been updated to include information provided by a number of different manufacturers. More than 7000 bearings from SKF have been added. In addition to bearings from the main catalog, the database now includes special bearings, such as precision bearings etc. The X/Y factors for deep groove and angular contact ball bearings have also been updated in accordance with the latest data from the "Wälzlagerpraxis" reference.

A plain bearing calculation according to DIN 31657 for multi-lobed and tilting pad plain bearings has also been added.

Customizing

- Using the KUI to create your own software interface
- Defining your own variables

A range of additional user-defined customization options are now available for KISSsoft: The KUI – KISSsoft User Interface – can be used to tailor the input window to suit your own requirements. Tabs can be hidden, or additional, customized tabs can be added. These options are currently available for the most important input fields. You can also use your own variables to define new input fields. These can then be added to the KISSsoft interface and documented in the report.

If you are interested in acquiring a test license, simply send an e-mail to info@KISSsoft.AG