In the latest release of KISSsoft, you can now input asymmetrical tooth forms for cylindrical gears, and calculate them, with ease. Either the ISO 6336 or VDI plastic methods can then be used to evaluate strength. In Release 2018, this module is provided free of charge as a beta version.

New: cylindrical gear data can now be exported in GDE format (GDE stands for Gear Data Exchange according to VDI 2610:2014). This enables the toothing data to be passed on and transferred electronically, from the Design department to Production to Quality Assurance.

The backlash (as the tooth thickness allowance) according to ISO, Gleason and Klingelnberg is now available for bevel gears, which is especially helpful in the design process. Alternatively, you can use the tooth thickness modification factors to set the clearance.

Bevel gears
- Scuffing according to ISO 10300-20 (Draft)
- Backlash according to Gleason and Klingelnberg

In the ISO Committee, the scuffing load-bearing capacity calculation for bevel and hypoid gears is currently in draft form and has been implemented so in KISSsoft. This method is considerably more precise, especially for hypoid gears, and takes into account real-life effects such as running in or the use of GL5 oils.

Additional features have been implemented in the shaft editor, which make it much easier to design and remodel shafts. Pulling on grid points to size cylinder elements is one of these additional features. The positions of the grid points can either snap to a grid or be free-floating.

Reading in a background drawing when you are remodeling existing shafts, is another. This makes it easy to check the shaft geometries accurately, and correct them if required, especially for coaxial shafts such as those used in automobile gearboxes. Other functions, such as a fully featured elements box, the separate display of shafts and configurable overviews in the elements editor round off the numerous extensions to the functionality.
Bearing and spring calculation

- Updated rolling bearing database
- Rolling bearing types with internal geometry
- Conical compression springs

The rolling bearing database has been updated again this year, using the latest manufacturer's data. This includes the manufacturers SKF, Schaeffler (FAG/INA) and Koyo. When calculating the bearing using the classic method, you can now also set a value for the axial stiffness in addition to the previous radial stiffness.

The list of bearing types for which the internal geometry can now be approximated has been extended: it now includes double-row deep groove ball bearings and axial angular contact roller bearings. Radial bearings can be taken into account either with or without an outer or inner ring.

New: the calculation of conical compression springs is now also available in KISSsoft. This spring type is, for example, frequently used for valves and dual clutches. It enables the spring characteristic line to be modified to make it the best possible match for the application.

KISSsys

- Bevel gear displacements and GEMS®
- Load spectrum calculation and handling

KISSsys now has a new template, which determines the bevel gear displacements under load, and displays them. It can be used together with the interface to GEMS®, Gleason’s bevel gear calculation software platform.

Displacements are determined on the principle of the perpendicular line between the two shaft axes (pinion and bevel gear) and can be set with the E/P/G/Sigma or V/H/J/Sigma parameters.

Using the new interface between KISSsys and GEMS®, it is easy to exchange data between the KISSsys design software and the GEMS® manufacturing and analysis software. The geometry data for the bevel and hypoid gears is transferred along with the displacement values. In GEMS®, a tooth contact analysis under load is performed using the finite elements method. The results for the transmission error and contact pattern are then displayed in KISSsys.

A system function has been provided, with which the kinematics of power-split gear units, which are being used more and more for industrial applications, can be modeled with ease. The only value that must be supplied for this system function, is the power split: how much power is to be transferred over the different strands. The software automatically calculates the torque for every drive strand.

Using the appropriate template, the load spectrum calculation can be combined with all existing system calculations, such as the efficiency calculation or modal analysis, or take into account the housing stiffness. Here, it is also possible to output the results for each load stage to user-defined output files. For example, you can generate torque- and speed-dependent fields with results for vehicle gear boxes.

If you are interested in acquiring a test license, please contact us at info@KISSsoft.AG