KISSsoft

KISSsoft Release 2025
Corrections, Features and Improvements

Service Pack 2

General

SP 2 - **3D viewer opacity**
Improvement in the handling of opacity in the 3D viewer.

System Module General

SP 2 - **Calculation of modal results in the Characteristic Frequency analysis**
For the special case, when the forced response is first calculated, and then the characteristic frequency analysis including modal results is calculated, it leads to an issue that the modal results cannot be calculated.

SP 2 - **Housing element appearance**
Improvement in the handling of color, opacity and sizing of housing elements.

SP 2 - **Material message improvement**
The message, which came when the gear material in database isn't the same as in the file, is suppressed for spline module.

SP 2 - **Planetary force transfers**
Planetary force transfers are now correctly considering the number of planets.

SP 2 - **System module import from KISSsys**
System module import from KISSsys has been fixed for stalling models.

SP 2 - **Thermal rating calculation**
Thermal rating calculation with planetary models are now correctly considering the number of planets. Iteration has been fixed for low losses.

SP 2 - **Updating the forced response analysis report**
In the report of forced response analysis, after switching between different dynamic calculations (such as modal analysis), the report now updates correctly the meshing stiffness calculation method.

Sketcher

SP 2 - **Adding elements from the shaft context menu**
The shaft context menu allows adding elements regardless of the selection status of the shaft.

Forced Response Gears

SP 2 - **Effect of number of pitches in the forced response analysis**
The effect of number of pitches from the contact analysis module are properly considered in the forced response analysis when calculating the excitation forces based on the given number of excitation harmonics.

SP 2 - **Minor postprocessing issues in the forced response**
Regeneration of the following outputs in some special models after changing and then restoring previous settings may not lead to the same outputs as before. 1-TE results in local and common axes. 2-Dynamic factor in the presence of torque ripple excitation.

SP 2 - **Torque ripple table issue when no file is loaded**
In the forced response analysis, after opening the torque ripple table, it cannot be closed when no input file is loaded.

Gears

SP 2 - **3D graphic of gear**
Improvement in the 3D graphic of a gear, for the case when a gear body is also defined.

SP 2 - **Calculation of flank safety factor with load spectrum for idler gears**
In some cases for idler gear calculation with load spectrum and option "Calculate both cases and document the unfavorable case" activated, the flank safety factor was not calculated correctly.

SP 2 - **Material data for Duracon M90-44**
Material properties for Duracon M90-44 from Polyplastics were updated.

Cylindrical Gears Rating

SP 2 - **Lubrication type setting**
The lubrication type is adapted automatically for oil/grease selection.

Cylindrical Gears Geometry

SP 2 - **Addendum and dedendum hob tolerances in Rollout**
Addendum and dedendum hob tolerances in Rollout are now used correctly for the calculation of the maximum and minimum stock condition. Configured display of warnings and errors.

SP 2 - **Root form diameter calculation for external gears with protuberance**
Root form diameter d_{Ff} for external gears with protuberance is now calculated more precisely for the worst case tolerance conditions.

Contact Analysis

SP 2 - **Contact analysis with load spectrum factors**
The correct load spectrum factors are applied when running the contact analysis with all load bins.

SP 2 - **Face load factor Annex E**
The face load factor according to Annex E is now correctly considering changes in the gear body geometry.

SP 2 - **Improvement in the report generation**
The generation of graphics in reports was optimized and is significantly faster now.

Bevel Gears

SP 2 - **Special load spectrum report**
Special load spectrum report is now available.

Globoid Worm Gears

SP 2 - **Calculation with normal module instead of axial module**
Several improvements were made in the calculation when using the normal module instead of the axial module.

Shafts

SP 2 - **Damage calculation shaft**
In the limited life area of the SN curve the damage calculation is improved. The results are now calculated for different cross sections.

SP 2 - **Importing worm gear data from gear calculation**
Importing worm gear data from worm gear calculation file is possible again.

SP 2 - **Mass properties in the “Element editor” of the shaft calculation module**
Mass moment of inertia for element "Additional mass" can only be defined if mass has already been defined. If mass is zero, mass moments of inertia is also set to zero.

SP 2 - **Reaction force color in 3D viewer**
The reaction force color in the 3D viewer matches the color of the underlying support.

SP 2 - **Shaft is highlighted in the shaft editor**
The shaft is highlighted in the shaft editor when it is selected in the tree view.

SP 2 - **Shaft selection color**
The whole shaft is indicated as selected in the shaft editor.

SP 2 - **Torque balance in Annex E shaft calculations with linked gear calculation files**
Annex E shaft calculations with linked gear calculation files now properly consider load and load application factor defined in the parent gear calculation file.

Bearings

SP 2 - **Minimum and maximum rolling bearing operating clearance**

When calculating rolling bearing operating clearance for minimum (or maximum) tolerance field, the maximum (or minimum) allowance of rolling bearing outside diameter is considered now. Until now it was the opposite. Depending on the tolerances this can have significant effect on bearing contact pressure and rating life.

SP 2 - **Raceway stress results for load spectrum calculation**

Raceway stress results are now properly shown for each load bin. Until now the results for the last load bin were always shown.

SP 2 - **Rolling bearing friction**

Calculation of rolling bearing friction for bearings with zero rotating speed has been improved.

Bolts

SP 2 - **Lifting force for model class II and III**

The lifting force F_{Kab} for FE results model class II and III is now calculated, if the value is not manually defined.

Springs

SP 2 - **Load direction changing coefficient for non-standard cases**

Load direction changing coefficient changed for non-standard cases. For option 'with alternating torque' the f_w is always taken from the diagram according to DIN 6892 (Figure 7).

Hertzian Pressure

SP 2 - **Hertzian pressure force sizing**

The Hertzian pressure force sizing now also works with a zero force input.

FEM Calculations

SP 2 - **3D FEM Root Stress Results**

The 3D FEM Root Stress results are now displayed correctly when a gear body is present.

Scripting

SP 2 - **Additional short hand assignment operators added**
+=, -=, *=, /=, and %= short hand assignment operators added.

SP 2 - **Binary operators +, ==, and != now always work when one operand is a string**
The mentioned operators always work no matter which side of the operator the string is on.

SP 2 - **get_variable(string) function added**
get_variable(string) added which takes a string and returns the variable based on an input string of the name of the variable.

SP 2 - **if/else can be used with curly brackets "{}"**
if/else statements can be used with both curly brackets "{}" as well as with "end".

SP 2 - **make_directory and delete_directory**
New functions to make or delete directories from skript.

SP 2 - **Running the script after aborting the calculation**
Aborting long lasting calculation no longer blocks execution of the script.

SP 2 - **Split function added**
Split function added which takes a string and delimiters and returns a vector of strings. e.g. split("first element\nsecond element", "\n") returns size 2 vector of strings.

SP 2 - **sprintf function added**
Sprintf function added which uses C style printf formatting and returns the string e.g. string str = sprintf("%.2f\n%6d\n%s\n", Pi(), 123, "hello").

STEP-Interface

SP 2 - **Export of bevel gears from the system module**
Improvement in the positioning of bevel gears, when exported from the system module.

CAD-Interfaces

SP 2 - **CAD-Addin language**
CAD-Addin language was not set to the language defined in the kiss.ini.

SP 2 - **Interface to Siemens NX 2506**
Interface to Siemens NX 2506 added.

KISSsys

SP 2 - **Critical Frequencies**
Improved results stability for the calculation of critical frequencies.

SP 2 - **REXS export**
REXS export is now considering proper relations to gear_unit elements.

Service Pack 1

General

SP 1 **- Gear facewidth used in the 3D viewer**

Correction in the gear facewidth used in the 3D viewer, for the case of multi-mesh gears

SP 1 **- Influence of operating temperature on safety added**

The input value of the operating temperature had no influence on safety endurance and yield limit.

SP 1 **- Save button for data representation tables**

The save button has been added to all data representation tables.

SP 1 **- Saving own material data for snap rings**

User inputted material data is now saved correctly.

SP 1 **- Updating σ_{Flim} data for Delrin 100**

The σ_{Flim} data for Delrin 100 was updated with the values from Delrin 100 CPE as the original data was measured with inadequate gear temperature control.

System Module General

SP 1 **- Automatic zooming in sketcher improved**

The automatic zooming for the sketcher in case of a floating tab has been improved.

SP 1 **- DEL key activated for group view**

The group view allows deleting via the DEL key.

SP 1 **- Elements in 3D viewer**

Solves a case where 3D elements would disappear from the 3D viewer, in the shaft editing mode.

SP 1 **- Planet bearings in the 3D viewer**

Improvement in the visibility of planet bearings in the 3D viewer.

SP 1 **- Power loss table size**

The size of the power loss definition table has been improved.

Sketcher

SP 1 **- Annotations visibility improved**

The annotations in the sketcher can be switched on and off individually.

Housing Deformation

SP 1 **- Housing deformation calculation**

Improvement in the update of shaft calculations in the iterations of housing deformation.

Eigenfrequencies

SP 1 **- UI parameters and graphics property list in the Campbell diagram**
The Campbell diagram now supports independent control of UI parameters and graphics property lists. Users can simultaneously adjust settings, such as "Number of calculation steps," in the UI while modifying "Number of resonance curves" in the property list, providing greater flexibility in diagram configuration.

Forced Response Gears

SP 1 **- 3D deformation in the forced response**
3D deformation in the forced response analysis is modified to correctly consider the effect of forces at all excitation frequencies.

SP 1 **- Calculation of bearing forces of the carrier shaft in forced response analysis**
Calculation of bearing forces of the carrier shaft in forced response analysis for a special case did not result to any output.

SP 1 **- Modification of the effect of shaft damping in the dynamic analysis**
The effect of shaft damping in tension, axial, and bending directions is modified for the special case when only the torsional DOF is required. For this case, only the torsional damping (and not axial or bending damping) exposes the effect to e.g. the dynamic factor.

SP 1 **- Postprocessing of the gear boxes with idle gear pair**
In the forced response analysis of gearboxes with idle gear pair, the idle gear pair should not lead to any non-calculated result for active pairs.

Forced Response Shafts

SP 1 **- Curve saving in the forced response analysis in the shaft module**
Activation of saving the curves in the forced response analysis graphic in the shaft module, when the option “Reference position” is selected.

Gears

SP 1 **- Diametral pitch with imperial units**
When switching from metric to imperial units, KISSsoft is also switching to input of normal diametral pitch, and vice versa. In the calculation settings you can overwrite the setting.

SP 1 **- Radio buttons for tooth thickness allowance selection**
Radio buttons for tooth thickness allowance selection are working again.

SP 1 **- Setting the Driving gear for beveloid, face, bevel, worm, and crossed helical gears**
It is again possible to set the "Driving gear" for beveloid, face, bevel, worm, and crossed helical gears.

Cylindrical Gears Rating

SP 1 - **Woehler curve graphics**

In some cases, when SN curves were defined in a DAT file, the curves in the graphic were not displayed correctly. The calculation results were not affected.

Cylindrical Gears Geometry

SP 1 - **Backlash calculation with actual tooth form**

Flank line modifications for the first gear in a gear pair are now properly considered in the backlash calculation with actual tooth form.

SP 1 - **Calculation of d_{Ff} and d_{Fa} using pinion type cutter**

The accuracy of the calculation of d_{Ff} and d_{Fa} using pinion type cutter has been improved.

SP 1 - **Conversion dialogue for h_{aP0} and h_{fP0}**

Conversion dialogue for h_{aP0} and h_{fP0} was not working properly for hobbing cutter and pinion type cutter. Additionally, also the calculation of the tip diameter d_a is now correct when using a topping pinion type cutter.

SP 1 - **Improvements on hobbing process**

The algorithm for finding a time optimized hob improved, e.g. it will now adapt the step size for the outer diameter on the size of the diameter.

SP 1 - **Pre-machining manufacturing profile shift in tab tooth form**

Pre-machining manufacturing profile shift (max) is now calculated correctly for several tooth form operations in tab tooth form.

Bevel Gears

SP 1 - **Export of EPG values to GEMS**

The export of EPG values to GEMS is now working again for the nominal calculation.

SP 1 - **Warning message for factor Z_{KP}**

Warning message for factor Z_{KP} is now shown correctly in case of user defined value.

Crossed Helical Gears

SP 1 - **Meshing power loss calculation**

Meshing power loss calculations are refined when the reference gear is not identical to the driving gear.

Shafts

SP 1 **- 3D animation in the shaft calculation**

Improvement in the 3D animation in the shaft calculation, when opened from the system module.

SP 1 **- Accessing shaft elements from script or COM interface**

Various parameters of shaft elements can now be accessed and modified from script or COM interface by using Meta functions SetElementData(...) and GetElementData(...) when using shaft module, or by using functions SetShaftCalcElementData(...) and GetShaftCalcElementData(...) when using system module.

SP 1 **- Free cross section input**

Free cross section input for tip and root diameter is fixed.

SP 1 **- Gear facewidth used in the results graphic**

Correction in the gear facewidth used in the results graphics, for the case of multi-mesh gears.

SP 1 **- Gear inner diameter**

When gear data is read from the gear calculation file, inner diameter of the gear (outer diameter in case of internal gear) is now also read from the file.

SP 1 **- General support/joint with option Eccentric thrust bearing**

Stiffness, clearance and damping inputs are now shown also for general support or joint with Own input and with enabled option Eccentric thrust bearing.

SP 1 **- Renaming of sub elements added in shaft tree view**

Sub elements can now directly be renamed in the shaft tree view.

SP 1 **- Shaft 3D viewer**

Speed arrows are shown in the 3D view of shafts in the shaft calculation.

SP 1 **- Shaft strength calculation with load spectra and small load sum**

When running shaft strength calculation for load spectrum with small load sum, variable amplitude factor K_{BK} is set to 1 now. Until now it was set to 0 which resulted in zero fatigue safety factors for some cases.

SP 1 **- Shaft support stiffness flag**

Flag for entering stiffness of the support was always turned off when switched from the support element to some other element and then back to the support.

Bearings

SP 1 **- Color bar legend in 3D graphics**

Color bar legend in 3D graphics has again the correct color distribution.

SP 1 **- Pressure curve graphics for roller bearings**

Roller bearing pressure curve graphics now shows different colors and line styles for each roller.

SP 1 **- Rolling bearings with zero speed in load spectrum calculation**

When using load spectrum calculation, the speed of rolling bearings which don't rotate at all, is now set to 0.0001 rpm. Until now this value was assigned to speed ratio, not to speed itself. This has effect on rolling bearing rating life calculation if the rotating speed in a bin is set to zero and nominal rotating speed is high.

SP 1 **- Sizing clearance with oil outlet temperature**

Sizing clearance with oil outlet temperature is improved for different calculation methods.

Shaft-Hub Connections

SP 1 **- Corner distance calculation for non sharp-edged abutment**

The corner distance h is calculated without the influence of the corner distance g, when the abutment is not sharp-edged.

SP 1 **- Diametral measurement over pins (actual)**

The values for the diametral measurement over pins (actual) are again correct in the calculation.

SP 1 **- Groove load capacity $F_{N'}$ with influence of factor p and relation t'/t**

Groove load capacity $F_{N'}$ is calculated with influence of factor p and relation t'/t, according to Seeger catalogue.

Bolts

SP 1 **- Mounting force and tightening torque with operating temperature**

When defining utilization for mounting with operating temperatures, in some cases the utilization was related to the operating temperature, which could affect F_M and M_A. Now the utilization input relates to the mounting temperature.

SP 1 **- Tolerance 7H and 8H for D_{1max}**

The tolerances 7H and 8H for D_{1max} had the wrong order in the database. The tolerances are now correct.

FEM Calculations

SP 1 **- 2D FEM root stress results**

The presentation of results for 2D root stress FEM simulations is improved. This can lead to differences in results compared to previous versions.

SP 1 **- 3D FEM root stress robustness**

The overall robustness of the root stress 3D FEM module has been improved. This can lead to differences in results compared to previous versions.

SP 1 **- 3D Root Stress FEM**

The application of contact forces in the 3D root stress model has been improved. This increases the accuracy of the simulation.

SP 1 **- 3D Root Stress FEM Graphics Improvement**

The visualization of contact lines for 3D FEM models is improved.

SP 1 **- 3D root stress FEM mesh**

The mesher for 3D FEM models is improved. This enhances the reliability of the simulations.

Scripting

SP 1 **- Array literals**

Variables can now be initialized from array literals, e.g., number[][] array = [[0, 1, 2], [2, 3, 4]].

SP 1 **- Update of floating skript editor**

Floating skript editor does update automatically.

STEP-Interface

SP 1 **- Step export of shaft system with worm gear**

Improvement in the orientation of a worm gear, contained in the step export of a shaft system.

CAD-Interfaces

SP 1 **- Interface to Autodesk Inventor 2026**

Interface to Autodesk Inventor 2026 added.

SP 1 **- Rack generation in SolidWorks**

The SolidWorks interface for racks is again working correctly.

SP 1 **- Right handed helical gears generation in NX**

Right handed helical gears are now fully generated in NX.

Interfaces for Data Exchange

SP 1 - **Exporting/importing modifications in GDE format**

The following modifications are now supported in the GDE export/import: Linear tip and root relief, Roll-length centered profile crowning, Flank line crowning, Twist, Pressure angle modification (arc minutes), Helix angle modification (arc minutes) and Linear end relief. Versions 3.1, 3.2 and 3.3 are affected.