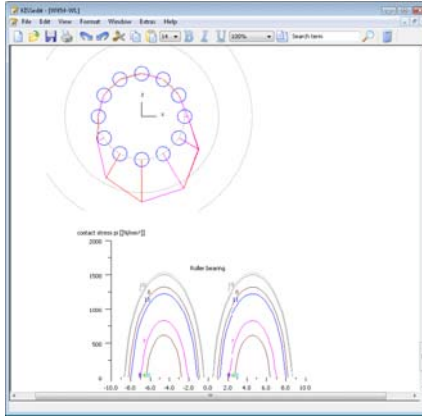
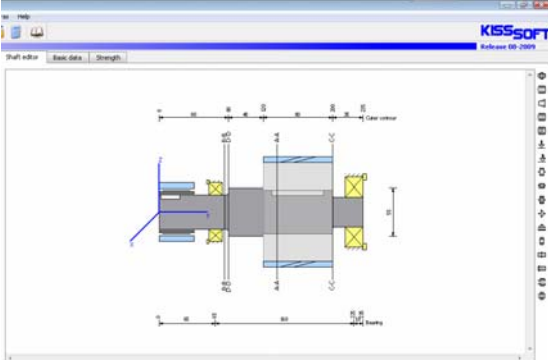
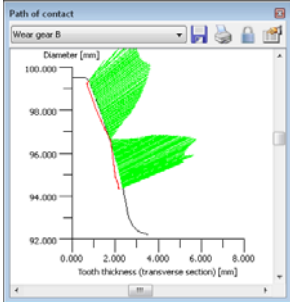


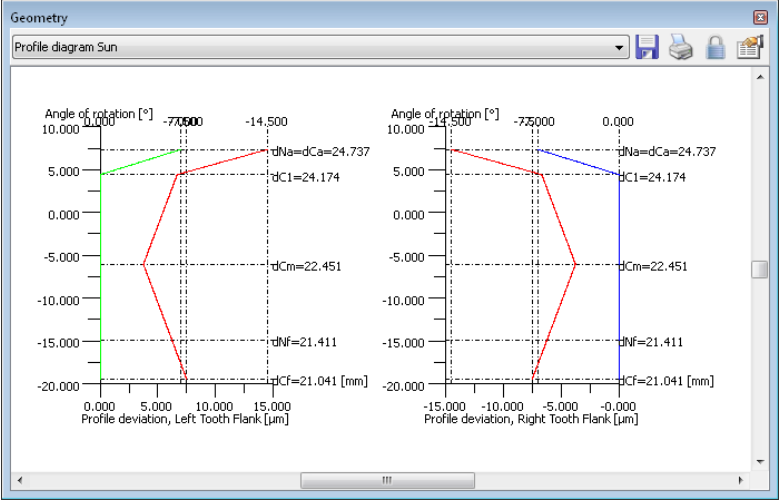
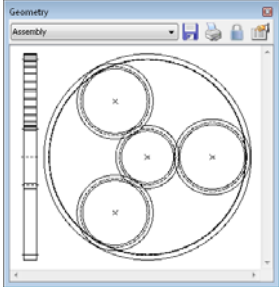
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Changes from Release 10/2008 to release 08/2009

Module	Changes / Enhancements
General	An explorer is added to the modules-tree for a faster loading of files.
General	Load spectra with unlimited length are possible for gears, shafts and bearings, if the data is read-in form a file. In the Data base tool itself the maximum remains at 50 elements.
General	Additional Castrol lubricants are integrated: <ul style="list-style-type: none"> • Castrol Optigear Synthetic A • Castrol Optigear Synthetic X • Castrol TRIBOL 1710
General	The overview of the results can be extended by the user by means of the report template XXXXresult.rpt (e.g. Z012result.rpt) This report will be added to the standard results overview.
General	Possibility to activate the generation of a logfile of the utilization of the license in the configuration file KISS.INI
General	The configuration tool allows for the association of the KISSsoft files with the actual KISSsoft version in order to open the files with a double click in the explorer itself.
General	A new version of the KISSedit as external report editor is available. Writing and saving in Word 2007 format .docx is possible.
W010	For deep groove ball bearings, angular contact bearings and four-point contact bearings calculated according to ISO/TS 16281, the extension of the pressure ellipse is documented in the report. 
W010	Import and export of the shaft geometry in DXF format and in internal text format is possible using the context menu in the Elements-tree
W010	A default value for radius can be defined in the settings. It will be used in the strength calculation in case there is a shoulder without a radius value.

W010	<p>The density of nodes for the calculation can be changed in the settings. In a linear shaft model, it has no influence on the calculation results (except a small influence on the line moments), but the number of points for the report and the processing speed can be controlled.</p> <p>The setting affects the calculation of the eigenfrequencies</p>
W010	Spherical roller bearings with service life and stiffness according to ISO/TS 16281
W010	<p>Calculation method: DIN 743 (Draft 2008)</p> <p>A few factors have been changed. Additional part 4 with finite life fatigue strength. Additional safety factor against incipient crack.</p>
W010	Input from list for shaft geometry and force elements
W010	<p>Toolbar and dimensioning in the shaft editor</p> 
W010	<p>Shaft sizing for bending and equivalent stress (W12).</p> <p>The sizing is only for one shaft and requires stiff bearings.</p>
W010	Graphics for strength added
W010	The individual stress components can be displayed in the graphics for equivalent stress
W010	Shaft-hub-Tolerances for the bearings can now also be introduced as numbers instead of tolerance fields.
W050	Data of four-point contact bearing are adjusted to the SKF catalog 2007
W050	FAG/INA bearings added
W060	Notch factor for threads: The standard calculation methods offer no definition for notch factors of threads. Instead of taking the notch factor of the circumferential groove as before, the notch factor for V-notch (slightly higher) is now taken for calculation.
Z000	Definition of own S/N-curves for the calculation according to ISO or DIN: For cylindrical gears, bevel gears, crossed helical gears
Z000	An own input for the load spectrum is possible. The load spectrum is saved along with the calculation file. This feature works also when calculation files are passed on.
Z000	In order to show the strength data available for each material, a key has been added to the material labels, e.g. [SWd]. Explanations in the help.
Z000	20 new plastic materials in the data base (from SABIC and LNP)

<p>Z000</p>	<p>Several small changes:</p> <ul style="list-style-type: none"> • Calculation of tolerances for planetary gears, 3 gears and 4 gears that are depending on center distance, is now done with the averaged center distance (e.g. for the second gear a averaged center distance of pair gear 1-2 and pair gear 2-3) • Scuffing flash temperature: The accuracy of the iteration in the calculation of the local temperature is higher now (+/- 0,2° instead of +/- 2°)
<p>Z010</p>	<p>New module Z30:</p> <ul style="list-style-type: none"> • Micropitting calculated according to draft ISO TR 6336-7 • Curve of flash temperature • Lubrication gap (oil film layer) • Local specific oil film layer
<p>Z010</p>	<p>New module Z31:</p> <p>Wear: Calculation of local wear on the tooth flank for plastic gears</p> 
<p>Z010</p>	<p>Calculation according to AGMA (all versions):</p> <p>For internal gearing is now also the Rim Thickness Factor KB determined and taken into account. (It is not specified in the AGMA standard if the factor for internal gearing is to be taken into account or not.)</p>
<p>Z010</p>	<p>Fine Sizing</p> <ul style="list-style-type: none"> • Output of the life time of the root (smallest value of all the gears), of the flank (smallest value of all the gears) and the overall life time in the results table. • Profile shift x of one of the gears can be fixed
<p>Z010</p>	<p>Cylindrical gear strength calculation according to ISO or DIN:</p> <p>The calculation according to ISO6336 has compared to the DIN3990 an improved bases for the tooth root stress calculation. However the determination of the foot rounding in the critical point (at the 60° tangent) is still inaccurate. The method according to VDI2737 annex B is much more exact and therefore it is recommended to use this method. Using this method, only the tooth root rounding ρ_F and the tooth root thickness s_{Fn} in the critical section are calculated according to the formulae in the VDI2737, all the other values are calculated according to the ISO6336.</p>
<p>Z010</p>	<ul style="list-style-type: none"> • Calculation of internal gear according to ISO6336 Corrigendum 04-2007 is implemented: Root radius r_{oF} changes (but it is rather less accurate as until now! - please see note above concerning option VDI2737). • Input of wall thickness coefficient instead of the inner diameter
<p>Z010</p>	<p>The input of the tip circle tolerance as tolerance field according to ISO 286 is possible.</p>

Z010	Input of profile and flank line corrections now possible separately for left or right flank.
Z010	<p>Graphical display of the profile correction and flank line corrections (K diagrams) for import into the drawings for manufacturing (Z19n)</p> 
Z000	Import and export of single gears is possible in all cylindrical gear and helical gear calculations. It allows for the use of a gear definition from the cylindrical gear calculation for example in the planetary gear calculation as planet.
Z010	Definition of the pin for measurement in the actual tooth form. Graphical display (Z05x). Documentation in the report of the tooth form calculation. Ideal for non-involute and pre-treated toothings.
Z010	The load spectrum can be displayed with S/N-curve
Z010	<p>The strength calculation according to AGMA2001-B88 and –C95 uses per default the toothing accuracy grade according to AGMA2000 instead of AGMA2015.</p> <p>Using method AGMA2001-D04, however, the standard is the accuracy grade according to AGMA2015. This can be changed in the Settings.</p>
Z014	<p>All the planets are displayed in the graphics „Assembly“</p> 
Z040	<p>New module for non-circular gears</p> <p>Calculation of the geometry of non-circular gears ether with given pitch curve or course of the ratio.</p>
Z060	The pressure angle α_n in the tooth middle is now used for the calculation of the radial, axial and normal force, not any more the angle of the reference profile.

Z070	<p>Hypoid gears</p> <p>Strength calculation according to ISO10300 with the enhancement for hypoid gears along the proposition FVA411. The ISO10300 (edition 2001) is valid for bevel gears. An enhancement of the method for hypoid gears is discussed. In Germany, an enhancement in the context of the FVA411 research assignment has been proposed. The method is already documented in the book ‚Kegelräder‘ from Jan Klingelnberg. The method according to FVA411 differs only slightly from the not yet published proposition of the ISO10300 enhancement.</p>
Z070	<p>Hypoid gears:</p> <p>Display of the tooth form of the virtual cylindrical gear according to FVA411 proposition for conversion. Exception: No display possible when using method Klingelnberg KN3029.</p>
Z070	<p>Tooth thickness modification factor x_s can be introduced optionally for gear1 and gear2 separately.</p>
Z070	<ul style="list-style-type: none"> • Calculation according ISO10300: A mid-zone factor ZM-B smaller than 1.0 reduces the hertzian pressure. (Until now, ZM-B was always set ≥ 1.0 in the calculation of σ_{H0}.) Reason: Adjustment with the KN+ of TU Munich. • The calculation of d_{mn} (middle circle for the tooth thickness measurement) has been changed according to the projected Corrigendum 2009 of ISO23509
Z080	<p>Worm gear calculation:</p> <ul style="list-style-type: none"> • Sizing and calculation of the service life • Calculation with load spectra (in the verification, sizing of service life and torque) for the methods DIN3996 and ISO TR 14521 with the wear and hertzian pressure and tooth root
Z080	<p>Method ISO/DIS14521.2 (2006) for worm gear calculation is replaced by ISO/DTR14521 (2008)</p> <p>Most important changes: Worm-wheel-face-width factors f_p, f_h for the consideration of narrow worm gears</p>
Z080	<ul style="list-style-type: none"> • For Gear: Calculation of the effective root circle $d_{f.e}$ and $d_{f.i}$ using transverse module (not normal module) • The virtual E module (Youngs modulus) E_{red} is determined using the exact E module according to the material data base. Until now the assumption for the worm gear was $E = 210000 \text{ N/mm}^2$ if the effective value was within $\pm 5000 \text{ N/mm}^2$ at 210000 (That way the obtained values were the same as in the table of the standard.)
Z170	<p>Root/flank calculation for temperature depending plastic materials according to Niemann, VDI2545, VDI2545-modified. Calculation of wear. Requires right Z14.</p>
Z170	<p>Static strength calculation</p>
Z170	<p>The helix angle of gear 1 can be bigger than the shaft angle</p>
Z09A	<p>The tooth form can be calculated for effective or actual tolerances. Effective refers to the measurement with gauges, actual refers to single measurement.</p>

Z091	<p>Additional types of toothed belts implemented:</p> <p>8/ 14mm-ISORAN-RPP-GOLD (Megadyne)</p> <p>8/ 14mm-ISORAN-RPP-SILVER (Megadyne)</p> <p>8/ 14MGT-Poly-Chain-GT-Carbon (Gates)</p>
M02D	<p>New calculation method for polygon profiles according to DIN 32711-2 (Profile P3G) / and DIN 32712-2 (Profile P4C)</p>
M03A	<p>New configuration of the pin and bolt calculation: „Bolts in circular arrangement“</p> <p>Additional spring-type straight pin according to following standards are implemented:</p> <ul style="list-style-type: none"> • Spring-type straight pin, DIN EN ISO 8748 • Spring-type straight pin, DIN EN ISO 8750 • Spring-type straight pin, DIN EN ISO 8751 • Spring-type straight pin, DIN EN ISO 8752 • Spring-type straight pin, DIN EN ISO 13337
CAD-Interfaces	<p>Using the setting SYMMETRIC=1 in the KISS.INI, symmetric tooth forms are exported. Otherwise the export is done as until now using an approximation over the tooth space, what leads to slightly unsymmetrical forms, but needs less elements.</p>
K05n	<p>Interface for NX5/NX6 now also available for 64bit</p>
K05k	<p>Interface for SolidWorks now also available for 64bit</p>
K05m	<p>Interface for Autodesk Inventor now also available for 64bit</p>
	<p>KISSsoft - HiCad Interface is available from the company ISD</p>