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Leading Gear Rating Software Providers Join Forces

KISSsoft AG, the Swiss specialist in gear calculation software, and GEARTECH Software of the United States are pleased to announce the introduction of a new and updated version of GEARCALC, a user friendly gear design program originally released in 1986.

GEARTECH Software has been providing rating programs for spur and helical gears since the 1984 release of AGMA218, the first commercial product to comply with the AGMA standard of the same name. Using techniques pioneered by GEARTECH founder Robert Errichello, this program was later updated to include analyses of wear and scuffing probabilities (SCORING+ in 1985) and preliminary sizing routines (GEARCALC in 1986) into one seamless package.

GEARCALC, which keeps its original name, is extremely user friendly and simple to run. It requires a minimum of input data and prompts the user to input the application, load, material, and heat treatment data for a gearset. GEARCALC designs maximum-capacity gearsets that have minimum volume and weight. Profile shift coefficients can be selected to maximize pitting and wear resistance, scuffing resistance, or bending strength.

AGMA 2001, which replaces AGMA218, rates gears exactly as intended by the American Gear Manufacturers Association Standards:

“ANSI/AGMA 2001-D04 and ANSI/AGMA 2101-D04, “AMERICAN NATIONAL STANDARD, Fundamental Rating Factors and Calculation Methods for Involute Spur and Helical Gear Teeth.”

AGMA 2001 performs the following analyses:

Life Rating – given the transmitted power and speed, the pitting life and bending fatigue lives are calculated for a single load and speed, or for an entire spectrum of loads and speeds with the resultant lives determined from Miner’s Rule.

Power Rating – given the pinion speed and required design life, the allowable transmitted power based on gear tooth pitting and bending fatigue is calculated for both the pinion and gear. The allowable power rating of the gearset is the minimum of the four power capacities.

AGMA 925, which replaces SCORING+, rates gears exactly as intended by the American Gear Manufacturers Association Information Sheet:

AGMA 925-A03, “AGMA Information Sheet, Effect of Lubrication on Gear Surface Distress.”

AGMA 925 performs a complete analysis of the tribology of spur and helical gears. It calculates the EHL film thickness using the Dowson and Toyoda equation and the flash temperature using Blok’s critical temperature theory.

AGMA 925 features include:

- Calculates EHL specific film thickness and probability of wear
- Calculates total contact temperature and probability of scuffing
- Calculates rolling, sliding, and entraining velocities, and specific sliding (slide/roll) ratios
- Calculates Hertzian contact stress
- Provides screen and hard-copy plots of specific sliding, Hertzian stress, film thickness, specific film thickness, and contact temperature

Programs GEARCALC, AGMA 2001, and AGMA 925 work together in a seamless integrated system that has been optimized using state-of-the-art technology to make gear design and analysis as simple as possible. These programs are the friendliest, most powerful gear design and analysis software you can buy.

The software is available as a stand-alone package, or integrated into the CAD programs Inventor, Solid Edge, SolidWorks and Pro/E.

“GEARCALC has a 22 year history of providing fast and accurate “minimum weight” gear sizing solutions using methods developed by Mr. Errichello and tested by hundreds of users around the world. Now integrated into the KISSsoft system this package will provide a new way of getting fast and accurate preliminary designs that can be quickly checked against AGMA, ISO, and DIN standards.”

Charles D. Schultz, PE [VP-Engineering, Brad Foote Gear Works, Inc.]