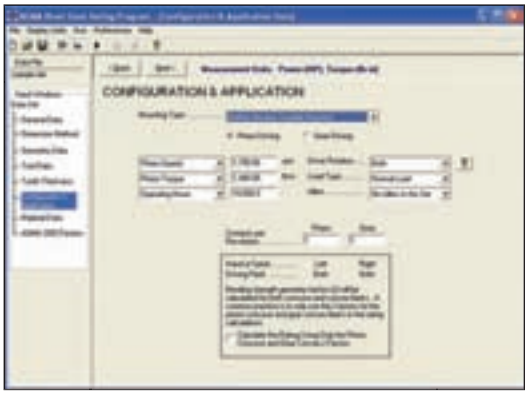
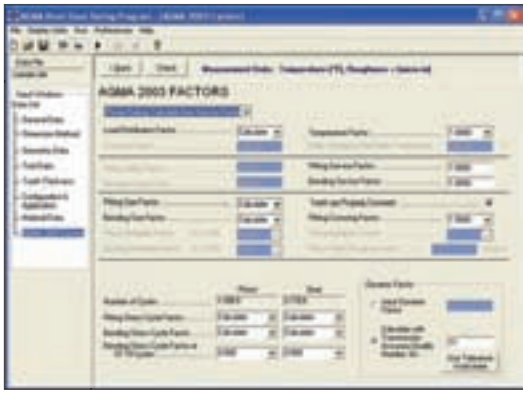
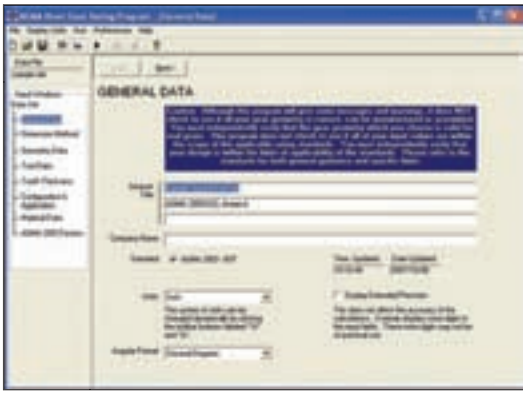
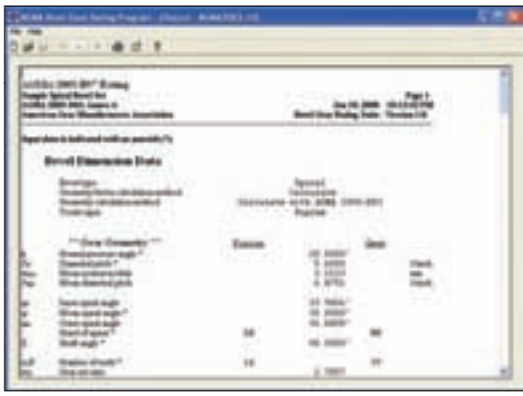
Software Suite

SERVES FULL RANGE OF GEAR ANALYSIS









For seven years, AGMA's Computer Programming Committee has been working on bevel gear software that includes all of the AGMA standards. *The Bevel Gear Rating Software Suite* calculates geometry and ratings for straight, spiral, skew and Zerol bevel gears, according to ANSI/AGMA standards. These standards are followed without imposing design rules, providing a full range of gear analysis.

"There are many factors involved in calculating and rating bevel gears," says George Lian, vice chairman of the Bevel Gearing Committee and senior project engineer at Amarillo Gear Co. "With this software, you not only have calculations, you have the ability to customize the program and input the data however you see fit."

Lian says the flexibility of the software allows experienced and inexperienced users to easily navigate the screens and get accustomed to the program. Users can accurately compare their own designs and practices with these standards or simply understand their competitor's ratings.

"The software has a preference screen so the user can run a series of calculations that are common and adjust the items that aren't. It can convert both metric as well as U.S. units. These can be entered in the manner in which you prefer," says Robert Wasilewski, chairman of the Bevel Gearing Committee and design engineering manager at Arrow Gear.

"The software can calculate the geometry factors or accept the factors that have been calculated outside the program," Lian says. "Tooth thickness can be measured, calculated by geometry factors or calculated from AGMA or ISO thickness factors."

Customization might be the software's greatest selling point, as the flexible data entry concept offers users a variety of possible formats, including entering tooth thickness data as normal or transverse circular thickness, or as chordal measurements.

According to Lian and Wasilewski, if a user needs to start a new job while working on a project, the computer will memorize the necessary data and hold the pertinent information until the user returns to that specific job.

Other features include an intuitive user interface that allows drop-down boxes, lookup tables, and graphical guides; dynamic unit conversion that allows users to go back and forth between SI and inch units; a hardness conversion routine with eight different scales; tolerance worksheets; error and warning messages; and an online help feature that serves as the software's user manual.

The program output is displayed and may be printed directly by the program or stored in a rich text format. A printout can include symbols from the hardcopy of the AGMA standards

where applicable.

"If you're going through hundreds and hundreds of equations, you're bound to make a few mistakes," Wasilewski says. "With the bevel software suite, the user can be confident knowing it is written with the AGMA standards in mind."

The program covers material from the following standards:

- AGMA 208.03–System for Straight Bevel Gears (1978)
- AGMA 209.03–System for Spiral Bevel Gears (1964)
- AGMA 209.04–System for Spiral Bevel Gears (1982)
- AGMA 202.03–System for Zerol Bevel Gears (1965)
- AGMA390.03 a Gear Handbook Gear Classification, Materials and Measuring Methods for Bevel, Hypoid, Fine Pitch Wormgearing and Racks Only as Unassembled Gears (1988)

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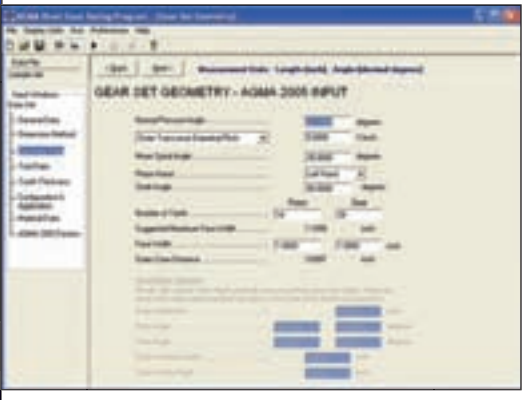

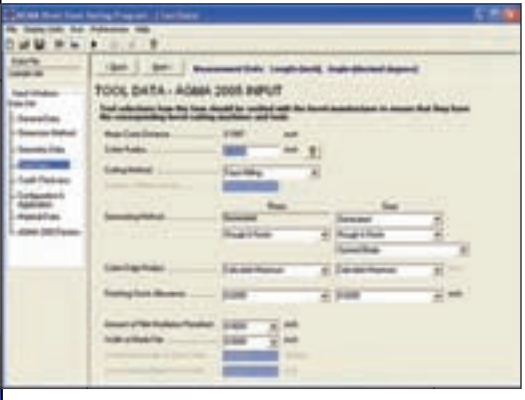

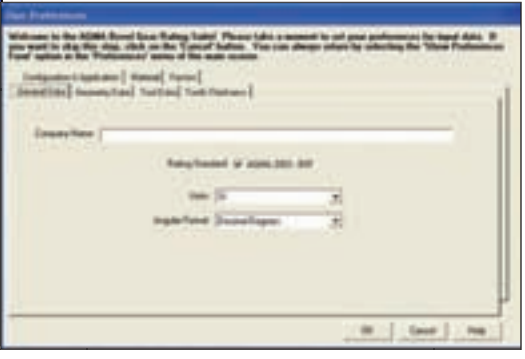

- AGMA 929–Calculation of Bevel Gear Top Land and Guidance on Cutter Edge Radius
- ANSI/AGMA 2003–Rating the Pitting Resistance and Bending Strength of Generated Straight Bevel, Zerol Bevel and Spiral Bevel Gear Teeth
- ANSI/AGMA 2005–Design Manual for Bevel Gears
- ANSI/AGMA 2009–Bevel Gear Classification, Tolerances, and Measuring Methods
- ISO 23509–Bevel and Hypoid Gear Geometry

The software suite is available for purchase with the built-in help file and electronic (read only) copy of all standards referenced by the program or with the help file only. AGMA members receive a discounted rate on their purchase. A demo of the program with a fixed number of teeth is available for download at *www.agma.org*. For more information, call (703) 684-0211.

Measuring, Inspection System Measures

GEARS UP TO 1,500 MM

The TTi line of CNC Gear Measuring and Inspection Systems, distributed in North America by KGK International, is designed to be modular, easy to use and highly accurate for gear configurations from 40 mm to 1,500 mm. "The TTi gear measuring and inspection systems offer a number of advantages to North American manufacturers. Smaller sized units in the 250 mm range are portable, and thanks to the modular reinforced construction, they can be moved from station to station without affecting accuracy," says Tom Donnowitz, KGK sales manager. "We're also exceptionally enthusiastic about the capability of measuring large-sized gears up to 1,500 mm."

Wear resistance of the shaft component is increased with a 0.1