

## Face Gear Modeling Software from Web Gear Services Creates 3-D Face Gear Models

Web Gear Services Ltd. of Waterloo, Ontario Canada developed software that interfaces with Solidworks to create dimensionally accurate 3-D face gear models. The profile accuracy of the face gear models is an input value established by the user. Models can be generated that can be used in building tooling for plastic, powder metal, or die cast face gears.

The software uses the modeling technique as described in the accompanying article. In this technique, the process of machining a face gear is simulated within Solidworks by inputting numerical geometric values of the shaper cutter tool, and of the face gear blank, via dialogue box-type entries. Once the values are input, the software automatically revolves the shaper cutter through the necessary gyrations to create the face gear tooth surfaces. The typical time to create a face gear is four to seven minutes once the details have been entered.

This modeling technique is especially useful in verifying whether undercut or other geometric conditions exist that may make the design impractical. Furthermore, once the models have been completed, other commercial applications like *Cosmosworks* can be used to do FEA analysis as well. The benefits of an accurate modeling technique can quickly justify the initial software expense.

Web Gear also has a complete line of Excel-based gear design software for calculating mesh geometries of most gear types. Many of Web Gear's clients have switched to the gear design software packages because of a feature incorporating complete tolerance effects automatically, thereby saving valuable design time and reducing errors.

Web Gear also offers complete gear consulting services including design and manufacturing problem resolution, measurement services, individualized training and complete gear box design services. Areas of expertise include plastic, powder metal and cut steel gearing, for automotive or consumer product applications.

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