INDUSTRY FORUM

"INDUSTRY FORUM" provides an opportunity for readers to discuss problems and questions facing our industry.

Please address your questions and answers to: INDUSTRY FORUM, GEAR TECHNOLOGY, P.O. BOX 1426, Elk Grove Village, IL 60007.

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Dear Editor,

This letter is in response to your article asking the readers where their interests lie. The division of Rockwell International where I work has engineering departments in Cicero, Illinois and Preston, England, each having its own gear standards department. This has caused a few differences because we use AGMA standards plus information published in the U.S.A. while Preston uses DIN, BS standards plus information published in Europe.

Our division builds newspaper printing presses which, because of geometry, use many non-standard gears. To my knowledge, we have always used the Zahorski method (Van Keuren) to determine the tooth thickness and measurement over wires. I have heard of a few instances when the gear set was placed on centers and we did not get the proper backlash. Some of these problems have occurred when checking gears with high helix angles or with low numbers of teeth. I realize that this method has been in existence since May 8, 1951, but I still wonder if there is a discrepancy in the geometry or equations.

My Preston counterpart is advocating the European belief of addendum modification coefficients which modify every gear to some extent. What happens to interchangeability when all gears are modified? Can addendum modification be used with more than one mate? Have the Europeans found a key to avoid problems the Zahorski method has (if there are problems) or have they created different problems?

Is there anything in AGMA or elsewhere (ANSI) describing tooth proportions for non-standard gears and measurement over wire calculations? What is the preferred method in the U.S.A. for determining tooth thickness and measurement over wires?

Thank you for your assistance.

Edward Ubert
Rockwell
International

Reference:

Precision Measuring Tools, Handbook #37, by Van Keuren Co. page 138-139.
DIN 3960 German Standard
PD 6457 British Standard
VSM 15525 Swiss Standard
PD436 British Standard