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 DISCUSSION, GEAR TECHNOLOGY, P.O. Box 1426, Elk Grove Village, IL 60007.

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Dear Editor:

Your May/June issue contains a letter from Edward Ubert of Rockwell International with some serious questions about specifying and measuring tooth thickness. AGMA is working on a new standard (AGMA 231.XX) which addresses these problems in more detail than anything now in print. Because this is a working draft and not a published standard, it is not yet available for general distribution. The committee is reviewing the document, and it will probably reach the "committee comment" stage this year. If Mr. Ubert would like to review the document and make comments on it, he should contact AGMA.

I suspect that the discrepancy which he encounters in using pins to check gears with low numbers of teeth and high helix angles is a function of the pins rocking in the mesh as he makes his measurement. It is generally better to use balls for measuring helicals since pin measurements are hard to reproduce.

Another possible source of problems is in the use of measurement over two pins to determine backlash. Since backlash is a function of runout and center distance as well as tooth thickness, and runout problems are not shown by a two pin measurement, it is conceivable that the radius over one pin or ball would give Mr. Ubert more reliable results.

Addendum modifications can be used on any gear set. They merely affect the operating center distance, not the interchangeability. All gears of the set will be interchangeable if they have the same normal base pitch and base helix angle.

This subject is very long and complicated. There is not complete agreement on the best ways to do these measurements, although everyone agrees on the mathematics. The effects of gear quality variation (lead, profile, pitch and runout) on tooth measurement are the whole subject of the new AGMA standard and can't be covered in one letter.

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