

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.

Dear Editor:

I am involved in a project to investigate alternative shaft/hub connection methods. I would like to request any information on these alternative methods to supplement the investigation.

Ward Machinery manufactures finishing equipment for the corrugated industry (die

cutters and flexo/folder/glueers), employing traditional keyed connections between gears and shafts. In certain locations on the machine we have experienced keyway failures, resulting in customer dissatisfaction and expensive service calls.

One option that looks particularly attractive is the use of internal locking devices and shrink disks instead of keys/ keyways. We already use several of these devices in non-critical locations, but there is skepticism that they will not perform in critical locations in the main gear train. Specific information on internal locking devices and shrink disks would be very helpful.

Kevin W. Erbe, Ward Machinery Co.

Could you direct us to a source where we could get information on the "gear planer or shaper"? We would like to get information on this machine for instructional purposes.

C.F. Fitz, Consultant

Reference is made to your November/December 1987 issue, wherein you published a paper entitled "Finishing of Gears by Ausforming" by M. F. Amateau and R. A. Cellitti. Unfortunately, the authors failed to perform a comprehensive literature search which, if performed, would have discovered that a considerable amount of work had been performed with the ausforming process on bearings and gears. The results reported in this literature do indeed show an improvement in life for many applications. However, the benefit in many instances is offset by increased cost. Further, in large size bearings and gears, the forging capacity of available equipment is insufficient to ausform the components.

A 1976 ASME paper entitled "A Life Study of Ausformed, Standard Forged and Standard Machined AISI Spur Gears" by D.P. Townsend, E.N. Bamberger, and E.V. Zaretsky was published in the *Journal of Lubrication Technology*, Vol. 98, No. 2, 1976, pp. 267-276. The bottom line for this paper is that there was no distinct difference in life between the ausformed and standard forged gears. The reasons are given in the paper.

Erwin V. Zaretsky
NASA Lewis Research Center

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