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“Computer Aided Engineering Dynamic Analysis of HCR Spur Gear”

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Abstract

This paper deals with estimation of errors occurring in transmission of power including the contact problem and the mesh stiffness variations of spur gears. It is generally accepted that the noise generated by a pair of gears is mainly related to the gear transmission error. To reduce the total number of the elements and the total number of the nodes in order to save computer memory 2D-FEA models are used. Two different models of a generic gear pair have been built to analyze the effects of gear body deformation and the interactions between adjacent loaded teeth results are from each of the two models' average values for every 1° rotation of the pinion & gear and so the mean of these two angular rotations would give the best estimate of the true static transmission error of the involutes profile gears under load.

Keywords: FEA, two dimensional models, angular rotation of gear & pinion.