STRESS ANALYSIS OF BEVEL GEARS USING FINITE ELEMENT METHOD

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Abstract

Gears is power transmition between two shafts. The angular velocity and direction of rotation can also be changed. Gears can be used between shafts, which is parallel or inclined to one another.Gears for use with shafts inclined to one another are called bevel gears when the lines of the shafts intersect. Gears dimention and material is depend on the transmitted power and speed ratios. There are several methods that are commonly used as Lewis equatio. Another methods by using the finite element analysis.

In the modeling study of bevel gear, Final Project of completion Finite Element Analysys is conducted within ANSYS . The load is applied by using various shaft angle , thet are 60 °, 90 °, and 120 °. In the model load is 331.58 N which is the maximum allowable load on Lewis equation.

From the modeling results stress values are obtained as a function of shaft angle. Trend of increasing tension with the approach of the node from which the small dimension are known.

Keyword: Bevel gears, finite element, stress.

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