**Finite Element Analysis of 4-Cylinder Diesel Crankshaft**

**Abstract**

The stress analysis and modal analysis of a 4-cylinder crankshaft are discussed using finite element method in this paper. Three-dimension models of 480 diesel engine crankshaft and crank throw were created using CREO software The finite element analysis (FEM) software ANSYS was used to analyze the vibration modal and the distortion and stress status of the crank throw. The maximum deformation, maximum stress point and dangerous areas are found by the stress analysis of crank throw. The relationship between the frequency and the vibration modal is explained by the modal analysis of crankshaft. The results would provide a valuable theoretical foundation for the optimization and improvement of engine design.

Keywords: Stress analysis, Modal analysis, 480 Diesel Engine, crank throw, deformation.