

Structural design of the base of an internal combustion engine using FEM

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Outline

Abstract

Keywords

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Abstract

This document aims to show a rational process to estimate the load generated by the vibratory torque of an Internal Combustion Engine (ICE). As consequence, being able to design the structure of the engine bed. In this way, the objectives are to determine the equivalent load produced by the components of the ICE at a certain working speed while the use of Finite Element Method software let to determine the minimum structural dimensions required to stand these loads. In order to determine the cyclical load to be applied, the mechanical characteristics of the engine were used. By other hand, ANSYS - Workbench was used for the structural optimization in which a geometrical model of the structure, generated in Rhinoceros, was proved at different structural combinations of thickness until obtaining one that satisfies the requirements. Therefore, the scantling of the primary and secondary stiffeners that engine base has to withstand due to cyclical torque load are obtained.

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Keywords

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