Contributions towards improving the displacement and strain responses of an internal combustion engine piston through topology optimisation

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Abstract

State-of-the-art parts require state-of-the-art engineering. On this occasion, in this research paper, contributions towards improving the displacement and strain responses of an internal combustion engine piston are presented. The load case scenario and the topology constraints are established in the beginning. In the following stage, the reference values are defined with the means of an FEA simulation. Afterwards, the topology of the piston is optimised. To quantify the improvements, a comparison analysis was made in the ending part of this paper. This study aims to reduce the displacement and strain responses of an internal combustion engine piston through topology optimisation.

Keywords: internal combustion engine pistons, topology optimisation

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