The Finite Element Analysis & Improvement On A Single CylinderHead Of Spark Ignition Engine

**ABSTRACT -**

The finite element method is applied to find the stresses field from the parts of a single cylinder head of a spark ignition engine. There are thus identified the most stressed component elements and respective regions. This paper aims to study the stresses on an engine cylinder head spark ignition, which is known constructive characteristics and the thermal parameters. The paper deals with thermal & structural stress analysis and improvement of the cylinder head assembly of SI (Spark Ignition) engine. A detailed FE model was created for this purpose. The FE model consists of main parts of the cylinder head assembly and it includes a description of thermal and mechanical loads and contact interaction between its parts. The model considers a temperature dependency of a thermal conductivity and heat transfer coefficient on wall temperature. The paper presents a comparison of computed and measured temperature. The design was carried out using the catia v5 and analysis was carried out using the FE program ANSYS v14.

Keywords -Actual process, Cylinder Head, Deformation Spark Ignition Engine, Temperature, Finite element, Stresses, mesh.