



Design and Analysis of IC Engine Components

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Abstract: Internal combustion (IC) Engine is a complex power generating machines and used widely in automotive industry. IC engine is not just a single component it is an assembly of various components. They are 1. Piston, 2. Connecting rod, 3. Crankshaft, and 4. Cylinder block. For the design of these components the Original dimensions are taken from the 110cc engine. After the selection of dimensions, the components are designed in the creo parametric 4.0 software. After the required design is achieved, the design is imported to the Ansys workbench 18.1 software. Then the material of the components is changed to the Aluminum alloy of AL6061 material from the existing design material of forged steel and low carbon steel. Now the design is ready to be tested in the Ansys software. For these components the thermal analysis and structural analysis are to be tested. In structural analysis the von misses stress and the total deformation of the particular component under force or pressure can be identified. And in thermal analysis the amount of heat that can be able to withstand by the component can be identified. For the piston, pressure and temperature is applied. And for connecting rod, crankshaft and cylinder block force and temperature are applied on it after performing meshing. The main objective of the project is to reduce the weight and obtain better stiffness compared to the former material used in the components.

Keywords: IC Engine Component, Ansys, Analysis.

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