

STRESS ANALYSIS OF MODIFIED 2 STROKES SI ENGINE WITH EXTERNAL SCAVENGING AND ITS VALIDATION

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Abstract

This paper presents the Finite Element Analysis of engine cylinder subjected to internal pressure. The engine is a single cylinder, two stroke, 150cc designed to operate at maximum speed of 5500 rpm. For this, a model engine cylinder is created in PRO/ENGINEER and the same model is imported in ANSYS software for FEM analysis. In experimental work, modification of engine is done for the purpose of scavenging. A hole is created in the engine opposite to the exhaust port for the air passage in order to avoid short circuiting phenomenon. Maximum pressure inside the engine cylinder before and after direct air aspiration is noted. It has been observed that due to modification, pressure inside the engine cylinder is very high which increases possibility of engine cylinder failure. This paper reports comparative stress analysis by FEM method and experimental investigations carried out on a single cylinder 2 stroke S.I. engine.

Keywords : External Scavenging, Experimental Stress Analysis, FEM, Two Stroke Engine