ANALYSIS OF THE EFFECT OF BIG END HEIGHT VARIATIONS ON THE PERFORMANCE AND SPECIFIC FUEL CONSUMPTION OF A 200 CC FOUR-STROKE ENGINE''

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ABSRACT

This study analyzes the effect of big end height variations on the performance and specific performance and specific fuel consumption of a 200 cc four stroke engine. Three configurations were tested: standard (0 mm), 2 mm stroke, and 3 mm stroke, using a chassis dynamometer across an engine speed range of 5000–10000 RPM. Results indicate that the 3 mm stroke variation delivered the highest torque and power, reaching 23.31 Nm at 6232 RPM and 22.7 HP at 7638 RPM, respectively. However, this increase in performance was accompanied by higher fuel consumption. The best specific fuel consumption (SFC) value was recorded in the standard configuration at 0.0109 kg/HP.hour. The 3 mm stroke modification offers the best performance enhancement, though with reduced fuel efficiency.

Keywords: big end, engine performance, fuel consumption, four-stroke engine, dynamometer.