Comparative Analysis of ECU Re-Mapping on Standard and Modified (Handmade) Camshafts on the Performance of a 150 cc 4-Stroke Motorcycle

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ABSTRACT

This study aims to determine the effect of using a modified camshaft and ECU re-mapping on motorcycle performance, with a focus on increasing torque and power. The method used is an experimental approach, by comparing engine performance across several configurations: standard, modified camshaft, ECU re-mapping, and a combination of both. Test results show that both torque and power experience significant increases in the 5000 to 9000 rpm range. The highest power in standard condition was recorded at 15.69 Hp at 8411 rpm, while in the configuration with a 1 mm modified camshaft and ECU re-mapping, it increased to 17.73 Hp at 8776 rpm. The highest torque also increased from 14.25 Nm in the standard condition to 15.68 Nm at 7191 rpm with the 1 mm camshaft modification and ECU re-mapping. The conclusion of this study indicates that using a 1 mm modified camshaft and ECU re-mapping has a positive impact on improving motorcycle engine performance, with the combination of both resulting in the most optimal increase in power and torque.

Keywords: *Power, Torque, Camshaft, Re-mapping*