

## ABSTRACT

This study discusses the analysis of engine performance after camshaft modifications using a special tool. The camshaft modification aims to repair worn components while improving engine performance by changing valve opening and closing characteristics. The research method used was testing rotational speed, cutting power, and evaluating the precision of the modification results. The analysis results showed that the camshaft rotational speed was within the range of 15.49–15.80 rad/s, which is still within safe and optimal limits for producing a smoother surface without the risk of overheating. Furthermore, modifications using this tool have been shown to increase processing time efficiency, extend component life, and support improved engine performance. This study concludes that the camshaft modification tool is capable of producing precise, efficient, and economical results, although further testing with dyno testing and emissions analysis is still needed to assess the overall performance and environmental impacts.

**Keywords:** Camshaft, camshaft, engine modification, engine performance, precision analysis.