

# The Identification of Dynamic Characteristics of Rotating Shaft Using Modal Tests

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## ABSTRACT

The main idea of this research project is to measure the dynamic response of a rotating shaft and of a crankshaft by experiment method, and to compare the results with the outcomes calculated by a Finite Element Method. From the experiments, the natural frequencies of forward and backward modes of the rotating shaft can be measured, and are agreed with the calculated results by the Finite Element Method. The measured results of the crankshaft have similar trend as the results of the rotating shaft. However, as the frequency closed to the frequency of the crankshaft, the calculated results from the Finite Element Method show unexpected frequency shift. This may be due to the imbalance of the crankshaft resulting in the unstable numerical calculation of the Finite Element Method. This problem will be investigated later.

Keywords : rotating shaft ; crankshaft ; dynamic responses ; forward ; backward

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## REFERENCES

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