

A Simplified Technique To Distinguish Unbalance And Misalignment Using Frequency Domain Operating Deflection Shape

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ABSTRACT

Machinery fault can be identified by performing Condition-Based Monitoring (CBM) program which rely on the machinery vibration data. However, the data which represented by the time wave and vibration spectrum requires technically trained personnel to understand and diagnose. In this research, a simplified technique through visualization of the Operating Deflection Shape (ODS) is proposed. The technique combines both the data of vibration amplitude and phase measurement. An ODS of a general machinery arrangement can be visualized from 4 measurement points. The technique is performed and tested in laboratory condition. Future CBM program should implement this technique because it helps untrained personnel to be able to distinguish primary machinery fault such as unbalance and misalignment easily by visualizing the machine motion.

KEYWORDS: Fault diagnostic, operating deflection shapes (ODS), condition-based monitoring (CBM), phase, unbalance, misalignment

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