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Diagnosis of mechanical parts by analyzing vibrations measured during operation

M. M. Udrea, D. Voicu, R. M. Stoica, L. Barothi

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Abstract

The present study aims to measure vibrations in machine parts, perform the corresponding spectral analysis and, finally, obtain a diagnosis. The test was performed on a cardan shaft, measuring the vibrations with a uni-axial accelerometer, and follow-up, with the use of the Adash acquisition board, data were recorded and analyzed. It is known that each mechanical part has its own vibration frequency and that the operation at critical speed determines the occurrence of the resonance phenomenon. When this phenomenon appears, damage occurs, which is difficult to remedy and in some cases could endanger the safety of operators. Therefore, it was necessary to perform modal analysis in the Ansys program in order to be able to analyze the own vibration modes of the cardan shaft.

Keywords: vibrations, machine parts, cardan shafts

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