

EFFECT OF SHAFT MISALIGNMENT ON COUPLING AND ENERGY CONSUMPTION

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Abstract

One of the most important requirements of the market competition is the production of economically produced products on customer's demand and in proper quality. That can be guaranteed only by reliably operating machines, instruments being in good conditions, so their maintenance is of capital importance. It is worth considering it, since the overwork of machine adjustment returns multiply during the lifetime of the machine.

The subject of our research is the investigation of different shaft misalignments' effect on a given machine group's lifetime. Our goal is the evaluation of the here measured bearing vibrations by SPM method and spectrum analysis, and as an innovation the analysis of economic effects of coupling alignment and applied investigating methods. The literature describes in detail the measurement of bearing vibrations, so we only slightly deal with it. But the economic effect of the coupling alignment has not been sufficiently investigated yet, so in this paper we make effort to reduce this lack by measuring the power consumption. We think there is some incompleteness in the recognition of shaft alignment faults, so we analyse the misalignments with temperature and noise measurement, too. During our work we have investigated the skew shaft misalignments. Our measurements partly confirm the literature descriptions, but we achieved surprising results as well.