

DOI: [https://doi.org/ 10.15407/technd2016.01.020](https://doi.org/10.15407/technd2016.01.020)

ENERGY EFFICIENCY OF THE VIBRATORY DEVICE ELECTROMAGNETIC DRIVE SYSTEM

Journal	Tekhnichna elektrodynamika
Publisher	Institute of Electrodynamics National Academy of Science of Ukraine
ISSN	1607-7970 (print), 2218-1903 (online)
Issue	№ 1, 2016 (January/February)
Pages	20 – 25

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Abstract

The paper deals with the investigation of vibratory device electromagnetic drive system energy characteristics. By means of numerical simulation of electromechanical processes, the values of the electromagnetic vibrator efficiency, the frequency converter efficiency and the resulting efficiency of the drive system were calculated for the different values of the output power and the current frequency. The optimal frequency, providing the maximum efficiency, was determined. It was found, that an electromagnetic drive with an automatic control system provides a higher efficiency than an unbalanced one. The theoretical results were confirmed by the results of the experiments. References 12, figures 5, tables 2.

Key words: vibratory device, electromagnetic drive, energy efficiency

Received: 17.08.2015

Accepted: 15.09.2015

Published: 29.01.2016

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