



MODULAR WEAR MACHINE FOR TRIBOLOGICAL TESTING

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Abstract

The article deals with the problems of obsolete wear machines, which were designed and manufactured in the 80s of the last century, and their partial modernization.

It is noted that despite the modernization of machines of obsolete designs and the emergence of new wear machines in the 21st century, the level of their automation is quite low. Therefore, a new approach to the construction of wear machines with a high degree of research automation is proposed. A wear machine with a modular construction principle is considered. Thanks to this principle, it is possible to reproduce various methods of tribological tests, as well as to automate the main actions of the maintenance personnel.

The main modules of the device and their design are described. In addition, the architecture of the device, its electronic and electrical components and the software developed to control the operation of the device are given. The results of determining the amount of wear of cylindrical specimens, obtained using the developed wear machine, are presented.

The proposed modular principle of building a wear machine, which simplifies the structural elements of a wear machine, can significantly reduce their cost, automate the main processes, which will make it possible to scale and, consequently, reduce the time and cost of research, improve the quality of the results obtained by eliminating the influence of the human factor.

Keywords: wear machine, tribological tests, architecture of the device, electrical components, software for control the operation.