USE OF ALGORITHMIC METHOD OF FAULT FINDING IN OPERATIONAL DIAGNOSTICS OF MODERN HYDRAULIC EQUIPMENT

Fatieieva N., Fatyeyev O., Poliakov V.
National Technical University "Kharkiv Polytechnic Institute", Kharkiv

The paper considers modern approaches to diagnostics of hydraulic drives using the algorithmic method of fault finding. Hydraulic drives play a key role in various industries, and their reliability directly affects the efficiency of equipment operation [1]. Under conditions of complex operating modes and high loads it is important to detect faults in time and prevent emergencies.

When designing diagnostics systems for hydraulic units, the following key tasks are solved: creation of diagnostics algorithms; predicting changes in their technical condition during the exploitation process; diagnostics methods selection; elaboration of diagnostic instruments.

The paper proposes an algorithmic approach to diagnostics, including the stages of data collection, analysis and interpretation of results. It also discusses examples of applying algorithms to identify characteristic signs of failure, such as leaks, oil contamination and component wear, which allows to form maintenance recommendations based on the data obtained. The development of testers for visualising data and presenting diagnostic results is considered [2].

The use of algorithms for diagnostics of hydraulic equipment can be used for implementation into existing monitoring systems to improve their efficiency. Also a promising direction is the application of artificial intelligence for fault prediction and maintenance optimisation.

The paper highlights the importance of integrating algorithmic methods into the hydraulic drive monitoring system, which not only increases the quality of diagnostics, but also optimises maintenance processes. The results of the paper can be useful both for professionals in the sphere of hydraulics and for engineers engaged in operation and repair of hydraulic systems.

References:

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