
Increase in accuracy of automatic control of vital parts

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Increasing the requirements for the accuracy of machine part surfaces is one of the consequences of the development of modern machine building. It leads to complication of intermediate control and acceptance testing, which will reduce the rejection rate. However, increasing the requirements for accuracy can significantly complicate control technology and the requirements for measuring technology. To solve this problem, it is possible to apply multiple measurements with the obligatory condition of optimizing their quantity. The application of the methodology for determining the minimum required number of measurements based on the Student's coefficient, described in the classical literature, is associated with uncertainty. We suggest, in order to overcome these difficulties, applying the method of sequential analysis with the introduction of dimensionless criteria for stabilizing the process. The specified method allows us to reveal the minimum necessary quantity of measurements depending on characteristics of technological process.

Keywords: mechanical engineering, vital parts, accuracy of manufacture and measurement, control, automation, sequential analysis

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