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Improving the processing accuracy of the valve seats of internal combustion engines using diagnostic measurements

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Abstract

© Published under licence by IOP Publishing Ltd. Currently, the main tool of quality management at the enterprises of various industries are statistical methods of quality management. In the literature, mostly on examples of the successful application of control charts for dimensions. More sophisticated measures of quality details not given. The article illustrates a practical application of control charts applied to technologically sophisticated measure of the accuracy of the key indicator affecting the operation of the engine - radial runout of valve seat cylinder head. Data of measurements made in accordance with the standard metrological definitions are processed in the software product "Attestator". As a result, identify the potential percentage of possible marriage, revealed the existence of special reasons to change the values of individual indicators, the index of reproducibility and stability of the process, the decision about the certification process, but the factors of the process that need to be addressed to improve the quality of the products is not revealed. A universal methodology consisting of four steps, the implementation of which allows to develop such a scheme of measurement, which significantly improves the search performance of important technological factors. For example, the same technological operations and the accuracy rate shows the application of the methods. The result of the survey revealed two main factors of the process is bending of the boring bar and the error of the satellite-based suppression will significantly improve the quality of manufacturing of parts.

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Keywords

accuracy, automotive components, diagnostic components, improving the quality, processing

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