Topic № 5
TEXTILE MACHINERY AND EQUIPMENT


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ПРОФЕСИОНАЛНА ГИМНАЗИЯ ПО ТЕКСТИЛ И ОБЛЕКЛО
ДОБРИ ЖЕЛЯЗКОВ

DETERMINATION OF CONTROL LIMITS FOR VIBRATION CONTROL OF HARNESS MECHANISM OF WEAVING MACHINES WITH FLEXIBLE RAPIERS

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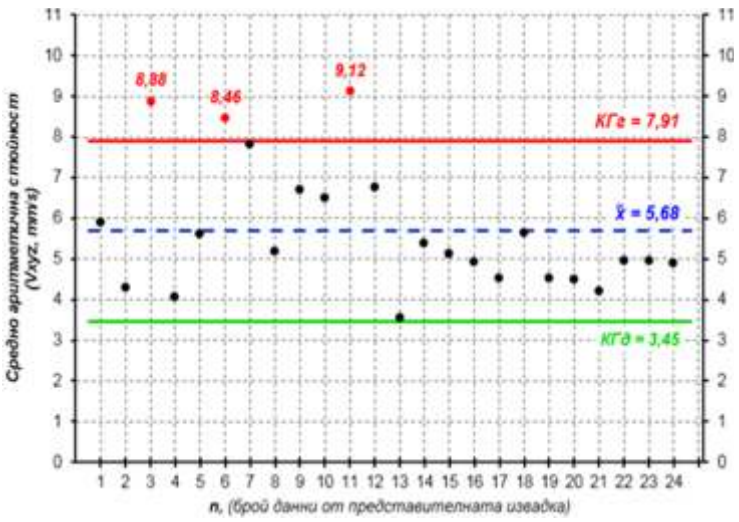
In this study are defined control limits for the vibrations occurring in the harness mechanism of the loom with flexible rapiers. By using the methods and means of the mathematical statistics are defined upper control values, which serve as information for deterioration in technical condition of the diagnosed mechanism. The presented statistical model for determining the level of the quantitated quantities allows the creation of the diagnostic indicators that are necessary for the introduction of preventive vibration control in the weaving technique.

On the base of preliminary, theoretical studies are defined the most loaded kinematic couples, on which are made the measurements of vibrations. For the statistical indicators are use the quantitative parameters of vibration velocity.

On the figure is presented a control card for the mean values of the measured values with upper and lower control limits. It is visible, that some of the mean values do not fall within the confidence interval, i. e they are outside the upper control limit. This indicates, that the mean values (x, y и z) of the measured values (x, y and z), their values are obtained as a result of some violation of the machine mode.



Control card for average values with upper and lower control limits

All other values in the confidence interval can serve as an average for the general aggregation with 95% confidence probability.

The specified control limits for the measured value (vibration velocity) establish an allowable value. Upon exceeding the upper limit of control (**КГг = 7, 91**) it is assumed that the vibrational behavior of the mechanism will lead to a deterioration in its technical condition.

Keywords: weaving machines, harness mechanism, vibrations, preventive control, vibration control, control limits

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