Diagnostics of CNC Machine Tools in Manufacturing Process with Laser Interferometer Technology

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The paper analyses the influence of the feed motion speed v_f on the value of measured geometric errors of the four-axis vertical machining centre CNC FV-580A with the FANUC 0IMB numerical control system. The tests were conducted with LSP 30 Compact laser interferometer (by Lasertex). Examples of modern, laser diagnostic systems of numerically controlled CNC machine tools were characterised in the article. Self-tracking laser interferometer LaserTRACER, diagnostic appliance LaserTRACER-MT, laser interferometer with XL80 with environmental parameters' measuring module XC80 and with heat sensors along with XR20-W calibrator were presented. Measurement results and their analysis were presented graphically in the form of diagrams and tables. The conclusion section comprises the discussion of the results, summary and deduction.

Keywords: manufacturing, CNC machine tools, diagnostics, diagnostic systems, laser interferometer

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