

Abstract

This work considers the automated electric screw cutting lathe scheme inverter - induction motor based on autonomous voltage inverter. In this work described the technological features of work, calculated the mechanical characteristics of the drive parameters and elements of the power circuit of the frequency converter.

In this work represented the mathematical and the virtual model of actuator, which researches done among Matlab, obtained by the waveform change of speed and power, as well as good quality showed transient, satisfying all the requirements of the process.

In safety and life activities part, made the analysis of produced technical conditions for health and safety in metal shops. The event on preventive measures of protect against fire. There shown the calculations for the ventilation system in the workplace.

In the economic part of the thesis was considered cost-effectiveness of the new electric drive system based on the frequency converter.