STUDY CONCERNING THE FORCES CUTTING TO THE REMAKING THROUGH TURN IN LONGITUDINAL OF THE POLYAMIDE PA 66 MoS_2

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***Keywords*:** polyamide, main cutting force.

Abstract: As part as work is presented the dependency of the force main of cutting to turn, F_z, in the cutting depth t, of the advance of cutting s, and of the speed v, utilizing even a factorial of the guy 2^{3-1}.

As we know, the main cutting force is one of the factors which influence the workability of a material during the cutting process

The main cutting force during the lathing process is indirectly determined by measuring the electric current intensity of operating of the machine-tool during the unloaded running of the machine Igol and the electric current intensity during the loaded running $I_{sarcină}$.

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The relation obtained after working on the data experiment is:

$$F_z = 1,28 \cdot t^{0,454} \cdot s^{0,148} \cdot v^{0,369} \quad [daN]$$

The relation obtained after working on the data experiment is:

$$P_{as} = 0,027 \cdot t^{0,555} \cdot s^{-0,595} \cdot v^{0,16} \quad [kW]$$

By analysing of the results above we observe that the work feed and the cutting speed have a smaller influence on the main cutting force than the cutting depth. Another observation is that the influence of the feed and of the cutting speed is approximately equal.

By comparison to the forces which occur when lathing a metallic material, we observe that in the case of the lathing process of the polyamide PA 66 MoS_2 these forces are very small.

In the relation obtained for cutting power we notice that the cutting speed has a great influence on the power of cut and that it is closely followed by the cutting depth. The working feed has an almost insignificant influence on the power of cut.

Thus, we notice that the cutting depth has the greatest power on both the force of cut and the power of cut.

So, in order to have a force and power of cut with values as low as possible we have to work with smaller cutting depths.

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