

## **Economic Aspects of Using Different Strategies for Rough Turning of Wide Grooves Based on the Measurement of Cutting Force Components\***

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\* Presented at the 44<sup>th</sup> IBIMA International Conference, 27-28 November 2024 Granada, Spain

### **Abstract**

The trochoidal method is a grooving method used for machining wide grooves in CNC machine tools. The main objective of this work was to analyze the financial benefits of using individual strategies. The results of the calculation were presented in the form of a report for cutting tools with different strategies, differing mainly in tool life. The analysis of cutting forces allowed us to present the method as the best in terms of generating cutting forces. First, manufacturing costs for the strategy that generated the lowest cutting forces are compared, and then they were compared with the other strategies (plunge and dynamic). In relation to the plunge strategy, the use of the strategy allowed the reduction of the unit machining cost by as much as 40%. The tool cost per product series decreased from €2.75 per tool in plunge machining to €1.65 in trochoid machining.

**Keywords:** tool costs, turning, grooving, cutting forces