COMPUTER AIDED TECHNOLOGICAL DESIGN OF MANUFACTURING PROCESSES USING CNC LATHES

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This paper proposes a new computer package to support the computer aided design of technological processes (CADTP) materialized as a software for the automatically determination of the machining allowance and the postprocessor CNC for machining cylindrical surface on CNC machine tool. The suggested software can be used in the design of manufacturing processes on CNC machine tools and both from an industrial and from a didactic point of view. As far as latter is concerned, there are lab appliances on the EMCO COMPACT 5 CNC lathe

Figure1 Geometrical programming

To determine the optimal values for machining allowances of external cylindrical surface a specialized software program was developed using VISUAL Fox. The databases will be realized using Visual Fox. VISUAL Fox allows the development of friendly and easy to use interfaces suitable even for those users that have not computer training.

The proposed software is considering all elements that can influence the size of the machining allowance and intermediary dimension, the optimal semi-finite product for and its regards the CNC turning as a component of the surfaces manufacturing process. The software has been developed using Visual C programming language.

The program calculates the necessary roughing passes which are achieved by linear cycles as well as the contouring and finishing passes on the section that require it. At this stage the program holds all information regarding the geometrical programming for the CNC turning of the piece (figure 1). For each section the following aspects are presented on the screen: the processed section, the type of manufacturing, the machining allowance as well as the geometrical programming of the passes and the interpolation type. This information can be printed.

. The objective of the software is the automatically generation of the postprocessor for the ECN specific to the CNC lathe EMCO COMPACT 5 CNC presently in use in the manufacturing technology lab.

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