Complex Parts Machining Using CAD/CAM to Generate CNC Code

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Abstract: Computer-Aided-Design/Computer-Aided-Manufacturing (CAD/CAM) techniques are gaining importance in machining complex parts. The free surface machining with more than three axes motion needs CAD/CAM system for the cutter location and orientation data. Since these data are defined with respect to the coordinate system of workpiece, they need converting for machine control commands in machine coordinate system, through processing so called a NC post-processing. This research shows the machining of a work piece in order to obtain the G code used in CNC machines, using CAD programs such as CorelDraw, AutoCAD, SolidWorks and MasterCam. CorelDraw was used to vectoring the outline of the part. SolidWorks was used to finishing the piece and correcting the design and errors. And MasterCam was used to simulating the machining process and generate our G code of the final piece, explaining with details the follow steps to get the G code element for the CNC milling machine.

Keywords: G Code, CorelDraw, AutoCad, SolidWorks, MasterCam, CNC Milling Machine