FANUC MACHINING SIMULATOR

The FANUC Machining Simulator encompasses the complete manufacturing process from part design and engineering to CNC programming to virtual production simulation. The FANUC Machining Simulator features Autodesk Fusion 360 CAD/CAM/CAE software and a custom machining simulation program.

CAD/CAM

The FANUC Machining Simulator comes with Fusion 360, a cloud-based 3D CAD, CAM and CAE software platform that helps bridge the gap between design and machining and works on both Mac and PC. Students can use Fusion 360 to perform CAD/CAM work and the included post processors will convert the designs into G-code suitable for the CNC. The FANUC CNC will use this G-code to command the machine tool. The simulation system also includes a simple G-code editor for making modifications before the program is sent to the CNC. Students can easily import their programs directly to the CNC using the FANUC FASBacCNC user interface and also back-up the critical CNC data.

FANUC CNC Simulator

The core of the system is the flexible and powerful FANUC CNC Simulator with an integrated PC embedded. Based on the industry standard FANUC Series 0i-Model F, the CNC Simulator can be operated as either a 3-axis mill or a 2-axis lathe. Users can run programs, manage tooling and make any modifications on the control just like they would in a manufacturing environment. The FANUC CNC Simulator includes FANUC Manual Guide i conversational programming software for users who would like to learn shop floor programming.

Machining Simulation

With the machining simulation component, users can virtually manufacture parts in milling or turning environments with realistic kinematics and structure. The simulation is based on actual CNC position data, not on the G-code program, so the virtual machine reacts exactly like a real machine tool. Manual machine functions like jog, hand-wheel and reference cycles also work exactly like a real machine. Color-coded tool paths, back-plot and cut locations make it easy for users to identify the tool, path and cutting result. Real-time collision detection uses visual and audio signals to notify users of collisions. The milling simulation includes a 21-tool changer and the turning simulation includes a 12-tool turret. Milling tool data can be freely assigned or imported from the CNC Simulator, while turning uses a predefined set of turning tools that cover a wide range of applications.
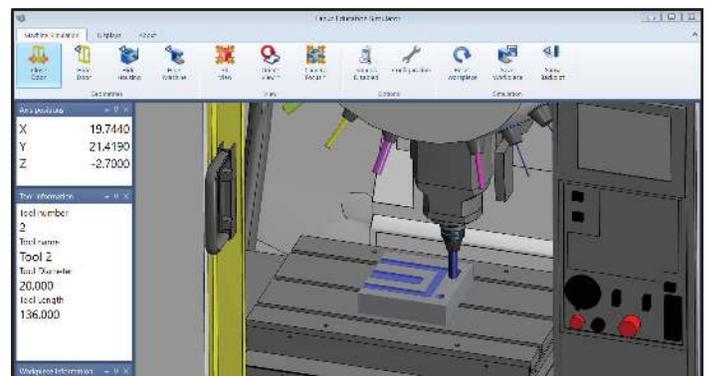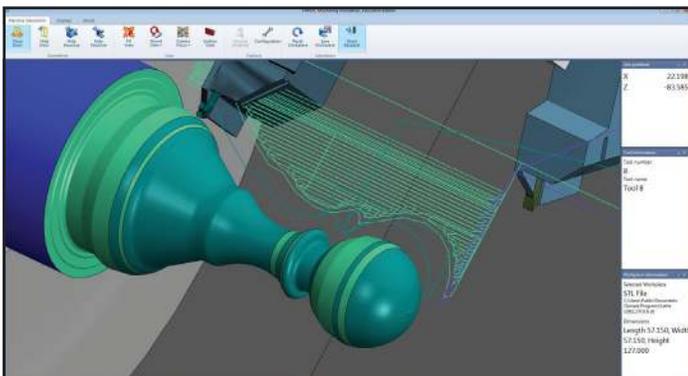
*The machining simulation software is designed for metric measurements only. For proper performance, all STL files, workpiece measurements, CNC part programs and tool offsets should be designed with millimeter as the measurement units.

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