

SWOOD

by EFICAD

CAM software: What is it and what are its advantages in the woodworking industry?

With advice from woodworking professionals inside



SWOOD e-guide

Woodworking software
from design to manufacturing

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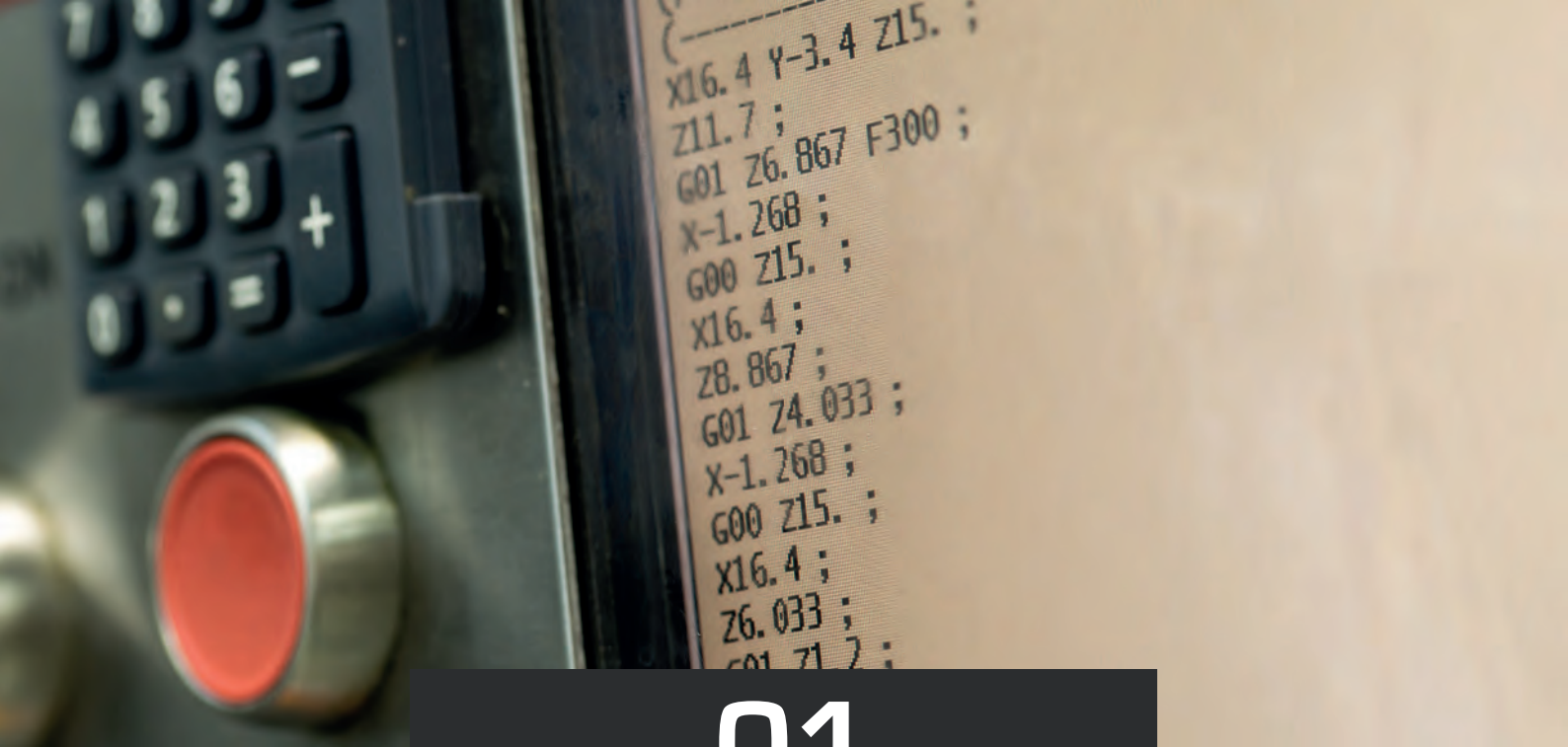
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01

What is a CAM software?

CAM software refers to Computer-Aided Manufacturing.

A CAM software helps to automate the manufacturing of workpieces to get the best possible machining. The goal is to create a file containing the control program for **numerically controlled machine tools*** that specifies the movements and contours to be executed during the manufacturing process.

In brief: a woodworking CAM software tells a machine how to manufacture a workpiece by generating tool paths. Thus it allows to completely plan the manufacturing process.

***Focus on numerically controlled machine tools**

A computer numerical control machine also called CNC is designed to perform precise machining.

It is used to produce a part or a set of parts.



With a CAM software, you can:

- Define which machine and which tool is used (drilling, milling, routing, etc.)
- Define the trajectories of the chosen tools
- Define machining strategies (feed rate, number of passes, etc.)
- Design and manage the positioning system used to hold a part
- Simulate the machining processes with highlighting of collisions, non-machined areas, surface defects, etc.
- Generate the codes to control the specific woodworking CNC machines
- Output the documents associated with the manufacturing process

CAM software is frequently used with CAD software, which stands for Computer-Aided Design. You can use a CAD program to design a part in the finest details and optimize assemblies by means of features like simulation.

Coupling CAD software with CAM software gives you the ability to work in a single environment. By interconnecting the CAM and CAD software, the various machining constraints are considered starting from the design phase and any modification is replicated on the entire process.



02

CAM software for furniture, layout and fitting

The woodworking industry has many specificities, especially in the manufacturing process. CNC woodworking machine tools also have their own specific tools (drilling block, edge banding unit, profiling tools, etc.) and specific holding technologies (beams and pods vacuum, etc.).

At EFICAD, we have developed our own woodworking CAM software, fully integrated within SOLIDWORKS, which allows fast and efficient control of woodworking CNCs: namely, SWOOD CAM.





03

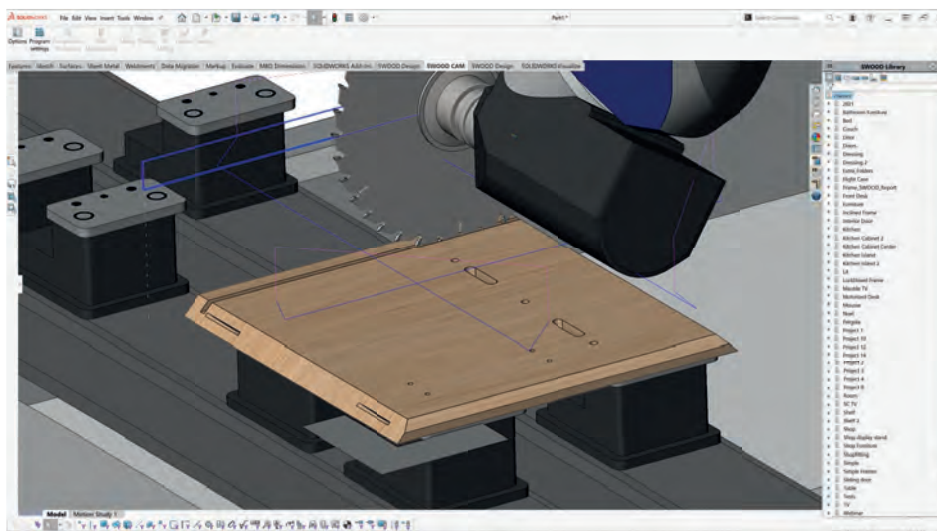
SWOOD CAM

Presentation and features

SWOOD CAM is the perfect answer to the woodworking needs by helping you handle these daily tasks.

- **Complex strategic machinings**

Our software offers the possibility of defining custom and complex strategic machining in a few clicks, and saves all this know-how in a library usable with simple drags and drops. It considers your material and especially modulates the feed rate based on grain direction on solid wood material.



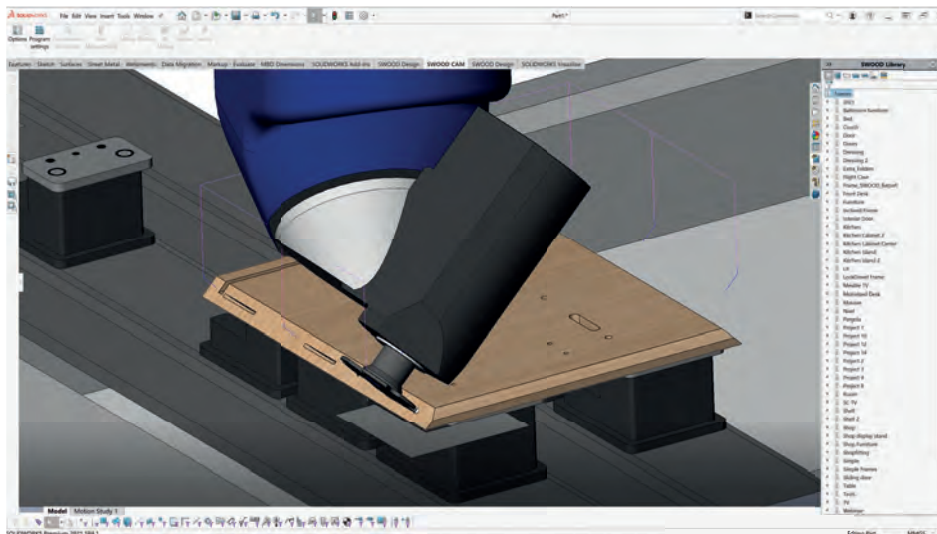
Drag and drop automatic machining

• Geometric analysis

With its geometric analysis, SWOOD CAM automatically detects most machining used in this industry such as contouring, pocketing, drilling, grooving, sawing and specific hardware milling (such as Lamello or Clamex).

As its core is based on the 3D model analysis, you will be able to deal with several files format such as all the exchange file formats (.step, .iges, .sat, .x_t, etc.). The other advantage of this smart analysis is that it dramatically decreases production errors.

Even last-minute design changes are considered and are automatically updated in the program generation.

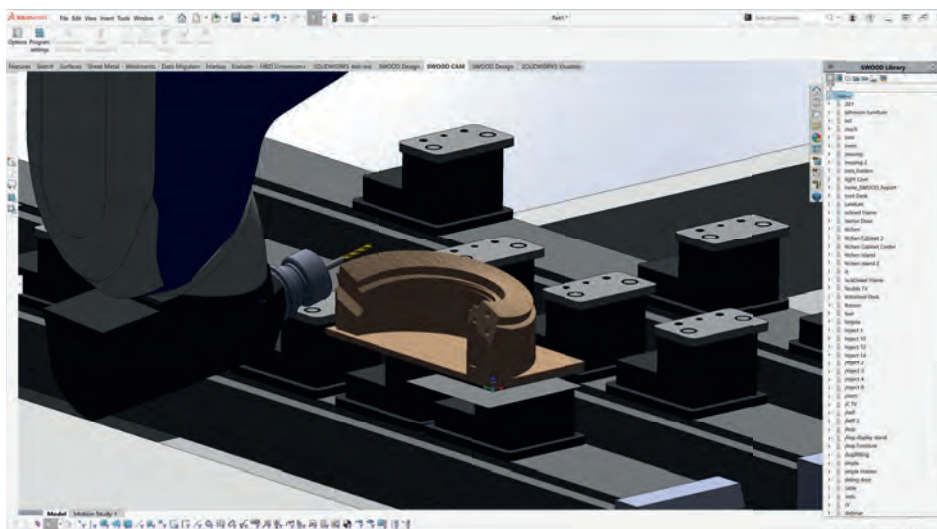


Update automatic machining

• Creating programs up to 5 axis

The software natively manages up to five axis allowing the creation of programs for all CNC machine tools with different languages (.hop, .cix, .bnp, .iso, .pgmx, .mpr, etc.).

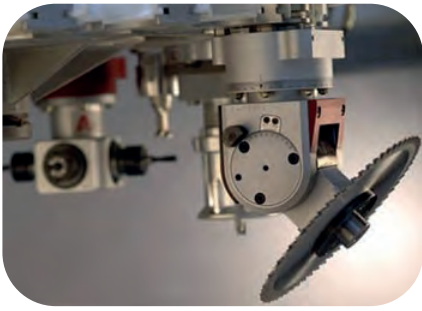
On complex 5 axis parts, which need to be double-checked, we have developed a simulation feature with material removal and collisions detection.



5 axis simulation

• Management of specific tools

Furthermore, our CAM solution also deals with specific woodworking tools such as drilling blocks, horizontal spindles, edge banding aggregate, profiling tool for joinery purpose, etc.



Horizontal spindle



Drilling block

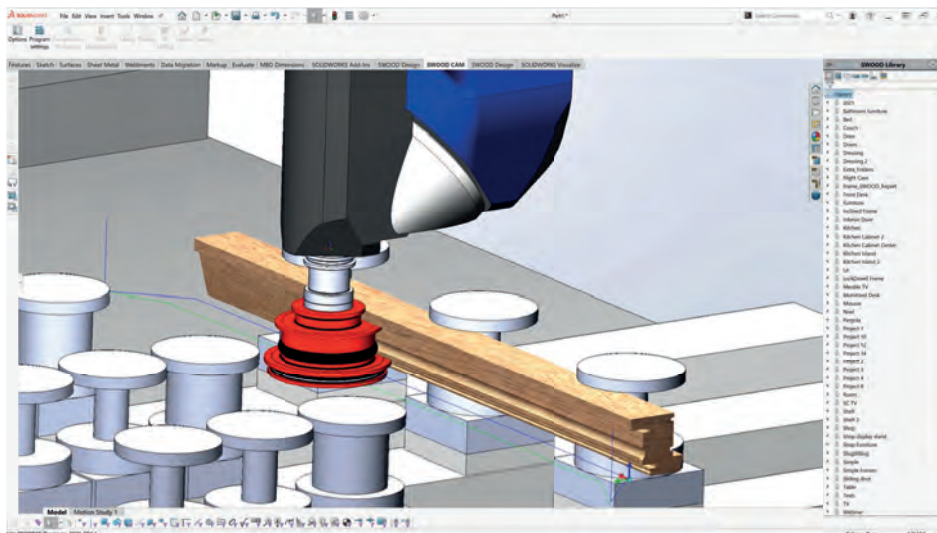
It is also possible to manage motorized tables, whether with a suction cup or presser (clamp or pods), and laser projection systems.



Clamping system



Beam and pod vacuum



Window milling

• Piloting of numerous CNC machines

With our 30+ years of experience in the wood industry, we have always kept our CAD/CAM solutions up to date with all the latest machine technologies (Homag, Biesse, SCM, Felder, Holzher, etc.).

As a result, we can generate programs for all numerical control machine brands in the woodworking industry up to five axes (WoodWOP, bSolid, BiesseWorks, Maestro, Xilog, TPA, NC-Hops, GCODE, OSAI etc.).



04

SWOOD CAM advantages

Finally, SWOOD CAM allows us to optimize and automate the entire manufacturing process by facilitating modifications and improving the speed of execution.

Using SWOOD CAM coupled with SWOOD Design (our design software) increases your efficiency in the full workflow. Indeed, with panels from the SWOOD Design library and the integration of intelligent operations, you can automatically create programs from the design stage. This link between the two modules ensures complete reliability, from design to manufacturing, and meets the need for efficiency in today's economic climate.



More reliability

Any changes made in SWOOD Design are automatically relayed to SWOOD CAM: path updates, program updates, production data updates, etc. This avoids many errors due to last-minute changes and maintains consistency between the different parts of the assemblies.



Automatic machining

SWOOD CAM is a specific tool for the woodworking industry. It automatically detects the most common machining operations in this industry: drilling, grooving, pocket machining, sawing, contouring, Lamello or Clamex type machining, etc.



Time saving

All these automations allow you to create machining programs for CNC machines much faster as well as update them in case of modifications on parts and assemblies.



THANK YOU
for reading this guide!

SWOOD is an all-in-one CAD/CAM solution
from design to manufacturing that speeds up
all your woodworking projects within **SOLIDWORKS**



www.swood.eficad.com

