Virtual Machine

Virtual machining for real savings

Benefits
- Maximizes the useful production time of your real machine tool
- Reduces setup time
- Reduces the need for real tryouts
- Enables operator training without using the machine tool
- Minimizes the risk of machining errors

Features
- Genuine Siemens 840D control software with complete operating panel display
- Calibrated software with all the parameters and data of your specific machine
- Fully detailed, 3D solids simulation model, including all tool carriers, spindles and tools
- Performance matched to the real machine
- Utilize custom blanks and clamping devices imported directly from CAD models
- Software that runs all Sinumerik codes and cycles

Summary

Siemens Virtual Machine software is just like a second version of your machine tool that is available at any time for testing, premachining setup preparation and operator training.

Use Virtual Machine to ensure that your real machine is available for maximum production work.
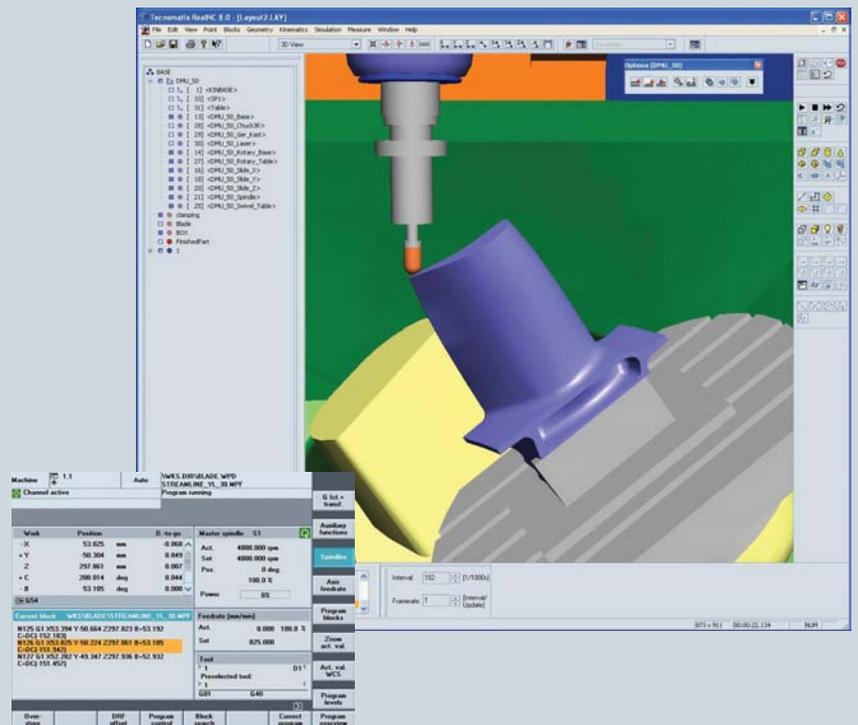
Siemens Virtual Machine uses the core software from the real Sinumerik controller to drive the machine simulation and provide the simulated user interface.

PLM Software

SIEMENS

Virtual Machine

The challenge

Time spent on job preparation on the real machine is lost time that could have been used producing parts.

Long setup times, on machine program editing and checking, or using the machine for operator training all mean an unproductive machine tool.

Traditional machine tool simulation applications require the user to learn a separate software package and may not simulate the full motion of the machine.

The solution

Imagine if you had an exact copy of your machine tool in 3D software, which behaves just like your real machine, runs all of the NC program code and has a user interface taken from the real controller, all on a PC.

Most of your program testing, setup preparation and even operator training could be done on this virtual machine tool. This means that your real machine tool has increased availability for production.

The Siemens advantage

Siemens Virtual Machine is built on the real Sinumerik controller software and not a software emulator like most machine tool simulations. This provides the most compete simulation. The controller interface means that using Virtual Machine is just like working on the real machine.

Virtual Machine uses the genuine Siemens control software with a complete operating panel display to drive the machine tool simulation.
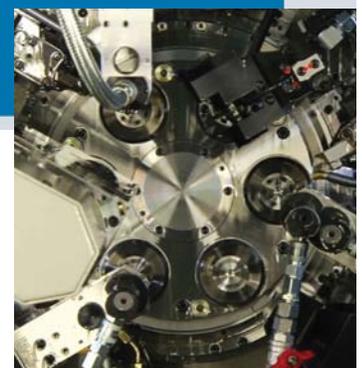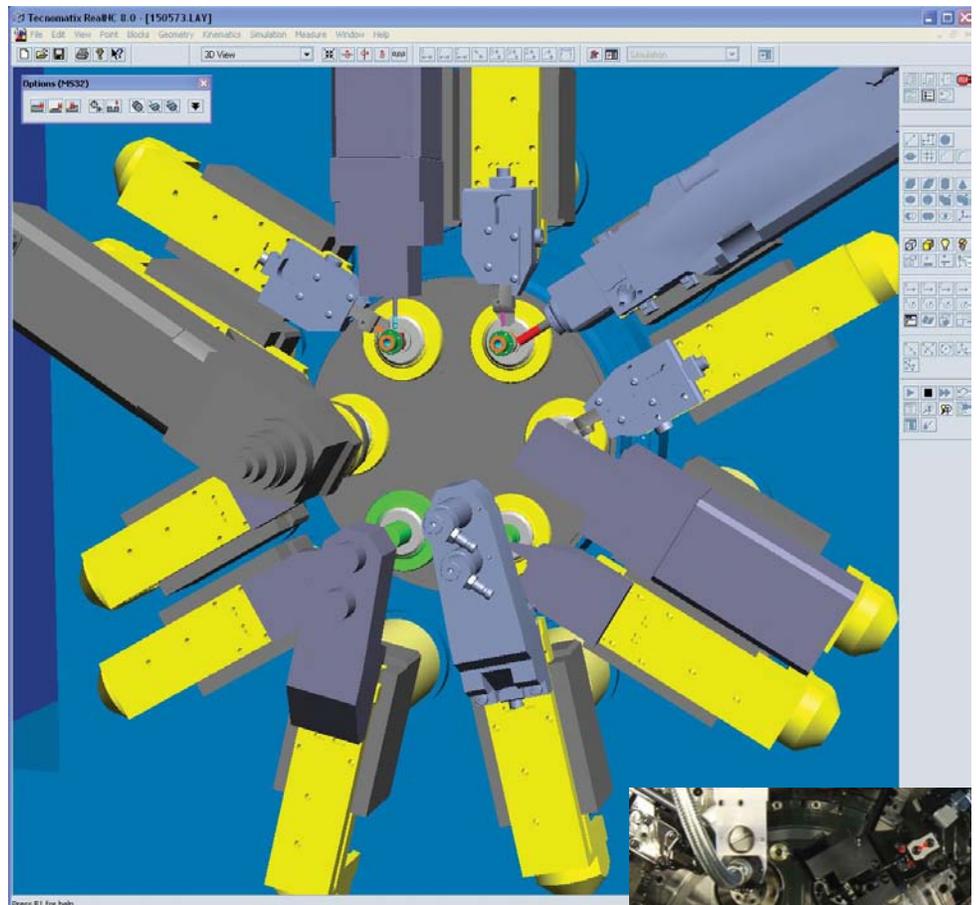
Eliminate nonproductive machine time

The complete representation of the machine and its controller functions allows you to edit, check and test programs on Virtual Machine while the real machine produces other parts.

Shop floor programming and code editing

Many shops create part programs by hand, even for advanced machines and programs created by CAM software often require edits at the machine.

With Virtual Machine, these tasks can be done with the reality of the actual machine but without wasting its production time.
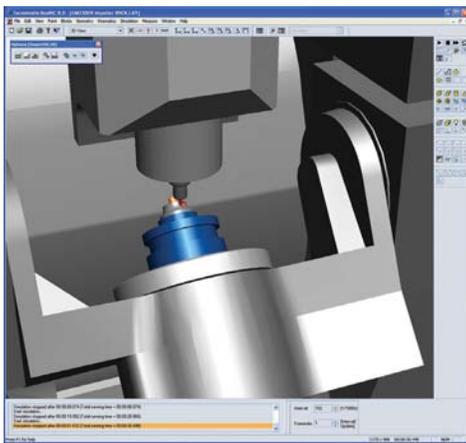
Virtual Machine reads and reacts to Sinumerik code just like the real 840D controller.

Simulate and optimize the machining process

By simulating machine-specific, post-processed NC code, cycle times, including tool change, can be calculated more accurately.

New operations can be validated and optimized without risk or wasting time on the real machine.

You can simulate programs that are written directly in Virtual Machine or import existing NC programs from any source.


The Sinumerik display panel view in Virtual Machine makes it ideal for use by the machine operator.

Optimize machining

Shop floor program testing, code editing and setup checking is often done in a hurry since these activities tie up the real machine.

With Virtual Machine, there is more time to make sure that the program and setup are optimized for maximum performance and productivity.
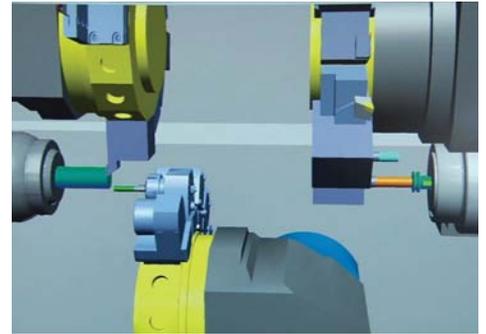
Virtual environment for machine tool setup work.

Calibrated to a unique machine

The unique configuration files copied from your real Sinumerik controller are used in the Sinumerik software on Virtual Machine. This even more accurately represents your machine tool and its exact performance.
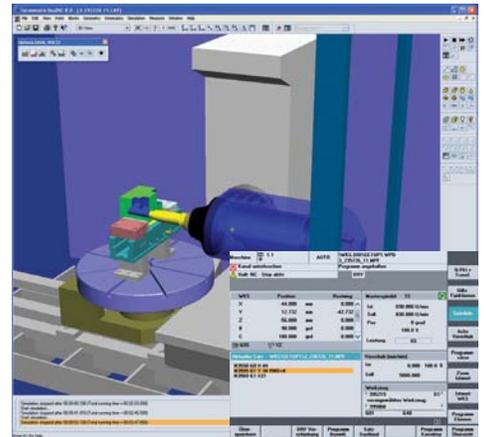
You can program Virtual Machine using the same control panel software on the PC as the real machine.

How do I get started?

Check with your machine tool manufacturer to see if they have used the virtual machine software toolkit from Siemens to build a virtual machine for your Sinumerik controlled machine tool.

You can validate NC programs on a virtual machine tool.

Hardware requirements

Virtual Machine can run on a standard PC. A second screen can be used with the 3D simulation model on one display and the controller panel display on the other. Some users add Virtual Machine to a PC within their machine tool controller rack.

Built by machine tool manufacturers

Virtual machines can be built by the machine tool manufacturer for almost any machine configuration that uses a Sinumerik controller using the flexible software toolkit available from Siemens.

The Siemens Virtual Machine toolkit includes:
• Customizable machining simulation
• Tools to model the kinematics of a specific machine
• The software kernel (VNCK) and its human machine interface (HMI) software from the Siemens Sinumerik controller

Virtual Machine is a software solution that is configured, packaged and delivered by the machine tool builder to their customers.

Siemens can provide services to assist machine tool builders in using the Virtual Machine software toolkit to create specific versions of Virtual Machine.

Virtual Machine software can be licensed to allow the machine tool builder to offer Virtual Machine as an option with sales of the corresponding real machine tool.

INDEX is a machine tool builder that implemented a virtual machine using the software toolkit available from Siemens.

If you would like to hear more about these products and services, please contact your Siemens PLM Software representative today and let us work with you to determine the best way to get started.