SinuTrain: The “Virtual Machine for Training” makes CNC training even more effective

SinuTrain, the SINUMERIK training system, gets you into shape for production:
• Perfectly matched to the different levels of training
• Complete portfolio for CNC training from self-learning medium to instructor training
• Practice-based thanks to user interfaces identical to those used in production and a system configuration identical to that of the actual machines
• Complete technological know-how (e.g. motion control and operating resources)
• Your investment is safe due to long-term availability of systems: SINUMERIK has been around since 1960 and SinuTrain since 1995
• High level of expertise due to our market leadership in technology
• Lower costs due to extensive technological simulation
• Product support available worldwide

www.siemens.com/sinutrain
The growing demand for CNC specialists brings with it a correspondingly high demand for qualified training, using solutions that quickly get the trainees fit and ready for the real world. SinuTrain can support you in your role as a CNC instructor or teacher.

SinuTrain® from the start
SinuTrain is based on the holistic training solution of the SINUMERIK® training software and systems for all levels of training – from basic principles to final qualification. This means you can teach all the functions of SINUMERIK CNC controllers efficiently and precisely in line with requirements.

Get fit fast for the workshop
The advantage of SinuTrain over standard learning software is that SinuTrain is a training system that is identical to the real controllers. Using the same user interface of the SINUMERIK CNC controllers that have been tried and tested throughout the world, trainees can learn and practise exactly the same operations on the PC as they will later have to perform on the machine itself. Precisely because of its high functionality and operational reliability, SinuTrain is highly rated by many training institutes – as a first-class solution for basic and further training.

New option for greater effectiveness
We have now augmented this unique solution with the “Virtual Machine for Training” option. This features a 3D simulation that enables completely realistic operation for even greater efficiency in CNC training.

If components identical to those used in production are also used during training, it becomes possible to communicate knowledge effectively and logically. This also eliminates the need for expensive extra training, for example.

Whereas previous CNC training systems were still implemented on identical hardware in order to provide a training environment identical to real production, a standard PC workstation is now all that is required as the basis for learning. This achieves enormous cost benefits and makes it possible at any time to reproduce technological advances by means of simple software updates.

Saving with simulation
This is where the new “Virtual Machine for Training” option comes in. With this option it is possible, on the basis of three implemented machine types – including a milling machine and two turning machines, one of which has a counter-spindle – to “manufacture” workpieces realistically on the PC. The advantage: No expensive machines are required. And especially if the procurement costs of machines are too high due to restricted budgets, the “Virtual Machine for Training” offers an economical alternative for CNC training.

At the same time it is possible to represent the main elements of the machine room and to simulate the entire machining process. Unintentional collisions between chucks, tools or tool turrets can be detected and so the trainee can recognize errors in parts programs and correct these with the aid of a corresponding program adaptation.

“Virtual Machine for Training” – new options in CNC training

Using the existing operating elements, it is possible to zoom into the machine room dynamically during the simulation or to modify the perspectives. The “Virtual Machine for Training” option allows machining processes to be considered in addition to the programming of SinuTrain in a manner identical to the production process.

In the “virtual machine for training” either the main elements of the machine room can be represented, or just the workpiece itself.

The simulated removal of material shows the machining process from the unmachined part to the finished product. Virtual collisions on machine elements with the workpiece can be recognized and visualized.

Using the additional “Measure” function, the finished workpiece can be compared with the drawing of the intended workpiece on the basis of an automatically produced drawing. Any deviation between the planned and actual measurements can thus be recognized and corrected accordingly.