

# Vericut Machine & Control Building

## 2.5 Days Training Course

**Note:** The Vericut Machine & Control Building Class is intended for experienced Vericut users. It is assumed that attendees already have a good working knowledge of Vericut's user interface and basic verification techniques. The class builds on your existing foundation of knowledge to advise on proper techniques for configuring Vericut machines, controls, and master project files to be used by all users at your company.

### DAY 1 - MACHINE BUILDING INTRODUCTION

This course introduces users to the basics of building a Vericut Machine Configuration (VMC). Following an overview of the machine building concepts, you'll learn how to layout the machine kinematics and then add 3D models to the VERICUT machine. On day one you will see how to build 3-, 4- and 5-axis milling machines and also a 2-axis lathe.

### DAY 2 - CONTROL BUILDING INTRODUCTION

Day two of this course will concentrate on the configuration of the Vericut control. Following an overview of the control building concepts, you'll learn how to customize a control to simulate how various G-Code words and data formats will be processed by Vericut. We'll cover how to: configure spindle logic for milling and mill/turn machines, customize a control to generate additional error messages, configure rotary behavior, and other control specific options.

### DAY 3 [Half Day] - ADVANCE MACHINE BUILDING

Day three builds on what you learned in the first two days and shows how to incorporate machine auxiliary components to your VMC. On this day you will also learn how to use Vericut's many trouble-shooting tools to assist you in the configuration of your machine and control.

### INDIVIDUAL MACHINE/CONTROL WORKSHOP

Following the 2.5 Day Training session, a review and discussion of each machine will be conducted individually with the respective companies.



#### PRICING:

US\$1000 per class per attendee

Training courses are held online via Teams. On-site customer training is also available at US\$1,950/day plus travel expenses.



#### CLASS TIME:

9am - 5pm per day (SGT)

Classes typically commence between these hours.



#### Cancellation Policy:

48 Hours before scheduled training

If you can no longer attend, please notify Vericut at least 48 hours before your scheduled training course is due to commence to avoid being charged the full training fee. All training must be completed within 12 months of purchase.

# Vericut Machine & Control Building Training Course cont.

## PREREQUISITES FOR WEB TRAINING

- Must have the latest version of Vericut running on your computer prior to class. Licensing concerns can be addressed by emailing support.seao@cgtech.com.
- Computer must be set up to support voice over IP. There will be no "Phone-in" option available for the training.
- All users must use headphones or earbuds for listening in. Open speakers can cause feedback problems when microphones are enabled.
- Two monitors are required. Computer display should be configured to extend applications to either monitor (not duplicated).

## PREPARATION FOR MACHINE & CONTROL BUILDING COURSE

Prior Vericut experience is required - proficiency with using Vericut is a prerequisite for this class. To get the most from this class we strongly recommend that you have gone through Vericut verification training sessions to reinforce your understanding of basic Vericut knowledge. In addition, you can quickly review the Vericut training sessions (part of every install). The training sessions can be found in Vericut's Help menu > On Vericut... - look for "Training Sessions" in the tree on the left side of the window. The Machine and Control Building Class will pick up from the basic Vericut training, and will cover advanced material pertinent to CNC machines and G-code NC program simulations.

The goal of this class is to provide you with a foundation of machine and control building knowledge. By the end of the class you will be able to begin building a wide range of machines and simulate the NC codes that run on them. This should not be considered a "custom machine building" class, although you are invited to work on your own machines in the Workshop session that follows the class. The class will discuss principles applicable to a wide array of NC machines so that all attendees may advance their machine and control building knowledge.

Selecting a machine to build - we suggest starting with a simple 3 or 4-axis machine, as this increases your chances of completion. Some 5-axis machines may be candidates if the NC program is not too complex. Avoid selecting complex machines (e.g. mill-turn, multi-tasking or multi-channel machines, etc.), as they typically require more time and effort than is available during class.

What to bring - if there is a particular machine you are interested in building, bring as much data/information about this task as possible. For example:

### MACHINE INFORMATION:

- Machine Make and Model.
- Machine diagrams - showing all motion axes & directions, pivot distances, travel distances & limits (more info is better).
- Machine models - model files when available, otherwise drawings of machine components.
- Tool behavior - which axes move during a tool change, and to where.
- Rapid & Max Feed Rates of each axis.
- Rapid motion behavior - Dog-leg vs. interpolated motion, axis priorities and sequences.

### CONTROL INFORMATION:

- Control Make and Model.
- Programming or Operator's Manual - or equivalent, describing all codes to be supported.

### SAMPLE/TEST JOB DATA:

- NC Program - this should be a program that is known to run correctly on the machine without operator intervention, and demonstrates all features to be simulated.
- Stock model - model file, drawing, or dimensions.
- Fixture/Design models - bring when available. These can aid in faster setups on the simulated NC machine, and with verifying that simulated motions are correct.
- Setup sketch/instructions.
- Cutting tool descriptions - tool shapes, pocket numbers, gage lengths, offsets, etc. You may not actually need all this data, but it is a good idea to have it just in case.

What happens after class - while every attempt is made to help you complete your machine(s) during class, it may not always be feasible or possible to do so. Keep in mind that the intent of this class is to provide you with a good foundation of basic machine and control building knowledge that enables you to begin building a wide range of machine types. As questions arise, feel free to contact Technical Support for assistance. It has been our experience that most questions can be answered directly, however, some may be better handled via consulting services. Either way, we will do our best to assist you