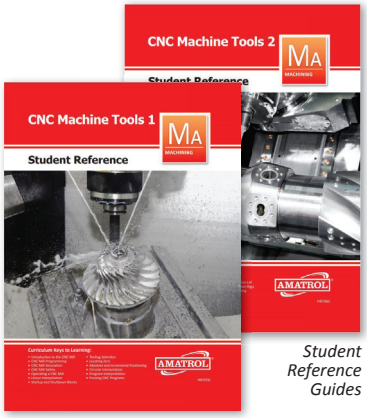
CNC Machines 1 and 2 Learning Systems

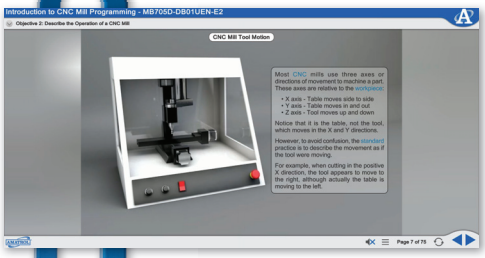
96-CNC1D
96-CNC2D

MA
MACHINING

CNC Machines 1 and 2 Learning Systems with Optional Mobile Technology Workstation



Student Reference Guides



Interactive Multimedia Curriculum

Learning Topics:

- CNC Mill Programming
- CNC Mill Safety
- Startup and Shutdown Blocks
- Tooling Selection
- Circular Interpolation
- Program Interpretation
- Speeds and Feeds
- Cycle Time Optimization
- CNC Mill Canned Cycles
- Alternate Drilling Cycles
- CNC Mill Cutter Compensation
- Scaling and Mirroring

Amatrol's CNC Machines 1 and 2 Learning Systems (96-CNC1D and 96-CNC2D) cover how to operate a CNC milling machine and how to develop basic programs that will run the machine. More specifically, the 96-CNC1D will cover fundamentals like linear interpolation, startup and shutdown blocks, tooling selection, and accurate PRZ location before moving on to more advanced circular interpolation commands. The 96-CNC2D builds on these foundational skills by adding how to calculate the speeds and feeds for CNC operations, how canned cycles and subprograms are used to simplify CNC programs, and how to use cutter compensation.

Each of these learning systems uses the Denford Micromill IST CNC milling machine, which allows learners to gain hands-on milling program design and practice. This level of hands-on practice offered by CNC Machines 1 and 2 training is mirrored throughout other systems in Amatrol's Project Based Learning program. Project Based Learning systems were specifically designed for high school students in order to teach them teamwork, STEM, and problem-solving skills that are applicable to real-world advanced manufacturing career opportunities.

AMATROL®

Technical Data

Complete technical specifications available upon request.

CNC Machines 1 Learning System – Micromill (96-CNC1D)

- Tooling Package and Vise for CNC Milling Machine (15700-D)
  - Quick Change Tool Holder
  - End Mills
  - Offset Edgefinder
  - Large Vise
  - Step Blocks
  - Clamping Blocks
  - Parallels
  - Tee Nuts
  - Drill Chuck and Key
  - Vise Mounting Hardware Kit
  - Washer Set
- Denford Micromill IST CNC Milling Machine (94-CNC-M60)
- Multimedia Curriculum (MB705D)
- Instructor's Guide (CB705D)
- Installation Guide (DB705D)
- Student Reference Guide (HB705D)
- Additional Requirements:
  - Computer: See requirements: http://www.amatrol.com/support/computer-requirements
  - Raw Materials (94-RM2 and 94-RM3)
- Additional Recommendations:
  - Mobile Technology Workstation (82-610)
- Utilities:
  - Electricity (120 VAC/60 Hz/1 phase)

CNC Machines 2 Learning System – Micromill (96-CNC2D)

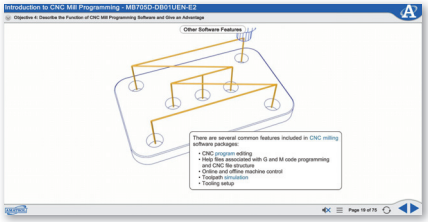
- Tooling Kit 2 (15725)
  - Drill, Stub, #7
  - End Mills
- Multimedia Curriculum (MB706D)
- Instructor's Guide (CB706D)
- Student Reference Guide (HB706D)
- Additional Requirements:
  - Computer: See requirements: http://www.amatrol.com/support/computer-requirements

The Denford Micromill: A CNC Mill Built for CNC Training and Education

CNC Machines 1 includes a Denford Micromill IST CNC milling machine, as well as a tooling package and vise. The Denford Micromill is designed specifically for training and education. The Micromill is a compact 3 axis milling machine with variable spindle speeds and feedrates which make it ideal for cutting a wide range of synthetic materials. If you already own a Denford Micromill, Amatrol also offers the 96-CNC1-DC, which provides all of the tooling and curriculum included with the 96-CNC1D, but excludes the Micromill.

Design a CNC Mill Program using Circular Interpolation with CNC Machines 1

With the Micromill, computer, and 96-CNC1D interactive multimedia curriculum, learners will be able to practice real-world skills like locating the PRZ of a part in a CNC mill using an edge finder, designing a CNC mill program using circular interpolation, and mounting a tool in the CNC mill. Additionally, this course offers topics like CNC mill safety, locating zero, absolute and incremental positioning, and pausing programs.



Interactive Multimedia Curriculum

Design a CNC Mill Program that uses Cutter Compensation with CNC Machines 2

Interactive Multimedia Curriculum

Using the 96-CNC1D's Denford Micromill, CNC Machines 2 includes end mills and a stub drill bit. Learners will use these components to practice industry-applicable skills like designing CNC programs that use a pecking cycle, a boring cycle, subprograms, cutter compensation, and mirroring. Other topics discussed in this course include spindle speed, feed rate, and cycle time optimization.

Virtual Trainer for Online CNC Machine Skill-Building

The CNC Machines 1 and 2 Training Systems also feature a virtual multimedia trainer! Amatrol's virtual trainers replicate hands-on equipment in such great detail that learners will feel like they are using the actual equipment. Learners will perform essentially the same tasks using virtual trainers that they would perform using equipment hardware. Transition from theory to hands-on is a seamless process.

Student Reference Guide

Sample copies of the CNC Machines 1 and CNC Machines 2 Student Reference Guides are also included with each system for your evaluation. Sourced from the curriculum, these Student Reference Guides take the entire series' technical content contained in the learning objectives and combines them into perfectly-bound books. Student Reference Guides supplement this course by providing a condensed, inexpensive reference tool that learners will find invaluable once they finish their training, making them the perfect course takeaway.

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