CNC Lathe

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Description

From idea to completed project, the entire modern manufacturing process relies on an accurate and orderly fulfillment of linear steps. DEPCO's CNC Lathe curriculum, complete with a sturdy working lathe and stock material, introduces students to the CAD/CAM/ CNC process, piece-by-piece, until they are confidently completing each step independently. By the end of the curriculum, students are able to easily identify and use the different parts of the lathe, use the latest CAD software to design a part, generate Numerical Code (NC) from their design, verify the NC code, and operate the lathe to bring their original idea to life. They master various cutting operations by completing specific activities and get a real sense of accomplishment that can be verified by their take-home projects.

Skills

- Safely set up and operate CNC Lathe
- Correctly key in and verify numerical codes
- Locate position coordinates
- Generate original NC programs
- Verify numerical codes

Knowledge

- Use relative and absolute coordinate positioning
- Use accurate toolpaths
- Commonly used numerical codes

Activities

- Activity 1 - Introduction
- Activity 2 - Machine a Sample Part
- Activity 3 - NC Code and Verification
- Activity 4 - Coordinate Positioning
- Activity 5 - Generate NC Code
- Activity 6 - Chess Pawn Project
- Activity 7 - Machine from NC Code
- Activity 8 - Screwdriver Project I
- Activity 9 - Screwdriver Project II
- Activity 10 - Post-Test and Wrap-up
- Activity 11 - Bonus Activities
- Activity 12 - Challenge
- Activity 13 - Open-Ended Challenge
- Activity 14 - Careers
- Activity 15 - Internet

Standards

Math/Measure Problem Solving Reading

Module Includes:

Student Workbook, Instructor's Manual, Installation CD, Lathe Machinist Kit, CNC Turning Center (Lathe), Lathe Control Software, Screwdriver Drilling Fixture, Heat Resistant Gloves, Utility Lighter, Cordless Drill, Drill Bit, Screwdriver Drill Fixture, T-Allen Wrench Driver, Safety Glasses (2), Headphones (2), CNC Lathe Supply Kit for 24 Students

Requirements
Sufficient workspace should be provided to accommodate a computer monitor, keyboard, mouse, lathe control box and CNC lathe.
Module requires a computer workstation.

Curriculum Specifications

The student workbook contains concise hands-on procedures, illustrations, screen captures, and photographs which reinforce the multimedia content. Special attention is placed on interesting and relevant graphics to encourage visual learning. DEPCO Studio is an effective curriculum delivery system that uses the power of the computer to deliver educational content. By using interesting digital videos, full-color animations, professional quality narrations, challenging interactions, relevant photographs, and Computer Aided Instruction (CAI), DEPCO has modernized the way subject matter is taught. Modules are 15 units consisting of: - 10 basic activity days with Pre-Test, Post-Test, and Activity Review Questions - 5 enrichment activities include: vocabulary reinforcement, problem-solving, open-ended challenges, careers, and Internet activities An instructor's section includes: lesson plan outlines, installation instructions, and answer keys.

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