CNC Machine Virtual Sim E-Learning Exercises

This link to this website covers the CNC Machine Virtual Simulations. This CNC Machine Virtual Sim E-Learning Exercises deliverable was developed for the Trade Adjustment Assistance Community College and Career Training (TAACCCT) Grant Program Round 2 Grant, Innovations Moving People to Achieve Certified Training (IMPACT): TC-23752-12-60-A-31.

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[CNC Machining E-Learning Exercises Website]

Project IMPACT

CNC Machining E-learning Exercises

Select an exercise to start learning!

1. **Exercise 1: Milling, Drilling, Slot Milling, and Pocket Milling**
2. **Exercise 2: Facing, Outer-Diameter Turning, Finish Cut, Parting**
3. **Exercise 3: Facing, Outer-Diameter Turning, Hole Making, Parting**
4. **Exercise 4: Spot Drilling, Drilling, Tapping, Pocket Milling**
5. **Exercise 5: Spot Drilling, Drilling, Chamfering, Profiling**
6. **Exercise 6: Drilling, Reaming, Profiling, Chamfering**
7. **Exercise 7: Facing, Hole Making, Inner-Diameter Turning, Parting**
8. **Exercise 8: Facing, Finish Cut, Outer-Diameter Threading, Parting**
9. **Exercise 9: Turning, Hole Making, Parting, Milling**
10. **Exercise 10: Spot Drilling, Tapping, Pocket Milling, Slot Milling**

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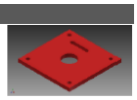
Creating a Milling Program
EXERCISE 1



Topics | Definitions | Courses

Exercise 1: Objectives

In the following exercise, you will demonstrate your understanding of the basic steps necessary to machine a part using a **CNC milling machine**. This particular procedure requires the following **sequence of operations**:

1. **Spot drilling** starts the four holes at each corner of the work piece.
2. **Drilling** completes the four holes at each corner of the work piece.
3. **Slot milling** creates the slot in the work piece.
4. **Pocket milling (end milling)** widens the hole in the center of the work piece.

For each step, you will be required to:

1. Read and interpret the part design **blueprint**.
2. Identify the type of machining **operation**.
3. Select the proper type and size of **machining tool**.
4. Identify the **X, Y** and **Z absolute coordinates** and **block code** corresponding to the given **tool path** from **program zero**.
5. Identify **special codes** and modes of movement.
6. Understand the order of steps.
7. Determine proper mill setting including spindle speed, feed.

Please review the prerequisite list of **Tooling U** courses above that should be completed prior to performing this exercise.

Note 1: *Throughout the exercise you may need to refer to the Haas control to answer questions.*
Note 2: *All measurements are in inches unless otherwise specified.*

Video 1. Milling process overview

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