

## CNC Fanuc Machine Tool Maintenance Training



### Description

This course provides the student with the skill necessary to diagnose and repair problems associated with CNC equipment. The program covers electronic and mechanical maintenance on CNC equipment. During the five-day program many aspects of the machine tool will be covered, including the interaction of mechanical and electrical components. It is important to fully understand how the electronics and mechanics interact

to fully grasp all of the problems that can occur with the machine. Since the majority of problems experienced are electrical in nature, we will concentrate heavily on the electrical side of the program.

This program can be customized to concentrate on the problems your company is facing. This class is typically taught at the customer's location, using the equipment the service people will be working with every day. Classes are also available off-site. All classes will use actual cutting machinery. The use of simulators is not recommended. We will concentrate on the Fanuc controls. During the class, errors will be induced into a machine producing various failures. Each student will be asked to locate and correct the errors.

We will be using a Renshaw ball-bar to inspect the machine for accuracy. As we make changes to the machine the student will be able to see the effects it will have on the finished part.

The customer will need to provide a classroom and machine tool with a Fanuc control suitable for training purposes. The instructor will need unlimited access to the machining center for the duration of the class. The class will also require electrical schematics, mechanical drawings and ladder logic for each student. The student should be able to retain this information after the end of the class for future reference. Fanuc manuals needed for the class will be provided as well as various handouts.

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### Outline

- Wiring Diagrams
- Closed Loop Servo
- Diagnostics
- Parameters
- Ladder Logic
- Cable Breakdowns
- Communications
- Troubleshooting
- Preventive Maintenance
- Mechanical Lost Motion

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### Prerequisites

The typical student must be familiar with machine tool operation, ladder logic and the use of test instruments such as volt/ohm meters.

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### Course Length

36 hours.

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### Performance Objectives

At the completion of this course the student will have the skills to diagnose and correct failures associated with CNC machine tools.