

# Okuma

## Mechanical Maintenance Class

for

### Horizontal Machining Centers

**Course Code : MA-301**

**Prerequisite : None**

**Credits : 0**

**Course length : 4.5 days**

**Class Size : 6 persons**

**COURSE OBJECTIVES** - This course is designed for the Service person who has had only limited exposure to Okuma Horizontal Machining Centers or for those who are first-time CNC machine tool users. Although one week is too short to become completely familiar with the machine, we feel enough material can be covered to enable the student to reach these four main goals.

1. **LEARN** how the different systems of the machine function both individually and in relation to each other, and to become aware of the preventive maintenance required to keep the machine running in top condition.
2. **DIAGNOSE** problems using your own experience, the manuals provided with this course, your machine, and the machine's own self-checking capabilities.
3. **DISCUSS** problems and solutions by phone first with your distributor's service staff or after you have exhausted that source, then with OKUMA.
4. **PERFORM** simple repairs that can save expensive service calls and downtime.

Course emphasis is a blend of classroom instructional theory, time spent on the machine tool, and individually displayed skills.

Both actual demonstration and an exam measure comprehension of the topics.

**COURSE REGISTRATION** - please contact *Von Robertson* at (803-981-7000) the Institute for Manufacturing Productivity to obtain program availability dates, or check our website <http://imp.okuma.com>

**MECHANICAL MAINTENANCE**  
**MA 301 HORIZONTAL MACHINING CENTER COURSE OUTLINE**

***MONDAY***

1. Introduction and Formalities
2. Class Goals and Course Outline
3. Documentation Overview
4. Safety Precautions
5. Machine Installation
  - Oil Requirements
6. Lubrication System
7. Power Requirements
8. Lunch
9. Outline of Control Panels
10. Fundamental Machine Operation Procedure
  - MDI Operation
  - Spindle Rotation
  - Hands On Lab
11. Alarms
12. Machine Leveling
13. Hands on

***TUESDAY***

1. Trouble Shooting in the Lab
2. Leveling Continued
3. Slideways
4. X Axis Ballscrew Replacement
5. Lunch
6. X Axis Ballscrew Replacement Continue

**MECHANICAL MAINTENANCE**  
**MA 301 HORIZONTAL MACHINING CENTER OUTLINE Continued**

***WEDNESDAY***

1. Troubleshooting
2. Y Axis Ballscrew Replacement
3. Lunch
4. Z Axis Ballscrew Replacement
5. B Axis Backlash Adjustments

***THURSDAY***

1. Troubleshooting
2. Automatic Tool Changer Alignments
3. Lunch
4. Automatic Pallet Changer Alignments

***FRIDAY***

1. Troubleshooting
2. Hydraulic and Pneumatics