



Automated Cells & Equipment, Inc.

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5 Day M-10iA (R-30iA) Robot Troubleshooting & Repair Training Syllabus

Monday 12:00 p.m. – 4:30 p.m.

1. **SAFTEY**
 - A. E-stop
 - B. Work Cell
 - C. Jog Speed
2. **ROBOT OVERVIEW**
 - A. Axis Definition
 - B. Controller
 - C. Teach Pendant
3. **ROBOT POWER**
 - A. Safe Start
 - B. Safe Power Down
4. **ROBOT MOVEMENT**
 - A. Joint
 - B. Tool
 - C. World

Tuesday – Wednesday 8:00 a.m. – 4:30 p.m.

5. **MECHANICAL REPAIR**
 - A. Mechanical Maintenance CD review
 - a. Mechanical Unit Overview
 - b. Preventive Maintenance Schedule
 - c. Greasing Points
 - d. Troubleshooting
 - B. J2 Motor & Reducer Removal
 - C. J2 Motor & Reducer Install
 - D. J5/J6 Wrist Removal
 - E. J5/J6 Wrist Install
 - F. J1 Reducer Removal
 - G. Full Internal Cable Set Removal
 - H. Full Internal Cable Set Installation
 - I. J1 Reducer Install

- J. Mastering
 - a. Zero Degree
 - b. Quick
 - c. Single Axis
 - d. Precision Mastering
 - e. Mastering Enhancement Techniques
- K. Cell Frame Verification
 - a. Tool
 - b. User
 - c. Touchups
 - d. Vision Calibration

Thursday 8:00 a.m. – 4:30 p.m.

6. **ELECTRICAL REPAIR**
 - A. Controller Maintenance CD Review
 - a. Controller Overview
 - b. Diagnostic Screens
 - c. Lights and LED's
 - d. Troubleshooting
 - B. Component Removal & Replacement
 - a. Main Board
 - b. Software Installation
 - c. E-Stop Board
 - d. Servo Amplifier

Friday 8:00 a.m. – 12:00 p.m.

7. **TROUBLESHOOTING REVIEW**
 - A. Mechanical Troubleshooting Review
 - B. Electrical Troubleshooting Review

CERTIFIED SERVICING INTEGRATOR

STRATEGIC MARKET SPECIALIST

CERTIFIED VISION SPECIALIST

