

# Manufacturing

## Resistance Welding Technology Course Description

### COURSE AGENDA

#### *Day 1*

- Fundamentals of Resistance Welding
- Types of Resistance Welding
- Heat Zone
- Fundamentals of the Process
- Weld Sequence

#### *Day 2*

- Weld Time & Current
- Weld Types
- Weld Component Factors
- Visual Inspection
- Non-Destruct Inspection
- Destruct Audit

#### *Day 3*

- Resistance Welding Machines
- Resistance Welding Electrodes
- Welding Transformers
- Power Conversion Equipment
- Welding Controls
- Fluid Power Systems

#### *Day 4*

- Cooling Systems
- Materials
- Maintenance & Troubleshooting
- Weld Quality
- Spot Weld Indications
- Visual Inspection
- Non-Destruct and Destruct Test
- Application Specific Problems



### COURSE NUMBER: MFG230

#### *Course Purpose*

This course is designed to increase knowledge and skills of personnel whose responsibilities include the setup, maintenance, and troubleshooting of equipment used in the resistance welding processes.

At the completion of this course, participants will be able to:

- Set-up and troubleshooting weld controllers
- Determine recommended weld schedules for welding low carbon steels, coated steels and high strength steels
- Adjust schedules to compensate for varying conditions
- Identify different types of coated steels and the effects on weld set-up
- Identify causes of discrepant welds using visual indications, non-destructive tests, and/or destructive tests
- Describe how electrode size, shape and hardness effect electrode life along with weld consistency
- Describe functions and changes in the primary and secondary loops
- Develop a window of weldability, given set-up, sample metals and a recommended weld schedule

### ***Who Should Attend***

Individuals in the workplace who have a responsibility for weld setup, quality, and maintenance, such as supervisors, electricians, and engineering personnel should attend this course.

### ***Prerequisites***

To successfully complete this course, the following prerequisites are required:

- Industrial Electrical Controls Fundamentals (MFG213)
  - Industrial Hydraulic Equipment Troubleshooting (MFG236)
- OR
- Equivalent work experience

### ***Technology Requirements***

All technology is provided for student use in the classroom by Rockwell Automation. It is not necessary for students to bring any technology with them when attending this course.

### ***Student Materials***

To enhance and facilitate your learning experience, the following materials are provided as part of the course package:

- *Student Manual*, which contains the definitions, key concepts, examples, and exercises presented in the course.

### ***Hands-On Practice***

Throughout this course, you will have the opportunity to practice the skills you have learned through a variety of interactive and hands-on exercises. These exercises focus on the skills introduced during the lessons.

To complete the exercises, a welder will be used to observe the production of welds using course acquired weld schedules, adjustments for varying conditions, followed by weld quality tests. Because the learned skills taught in the course apply to basic welding applications, the exercises permit you to apply what has been learned in the workplace environment.

### ***Course Length***

This is a four-day course.

### ***Course Number***

The course number is MFG230.

### ***To Register***

To register for this or any other Rockwell Automation training course, contact your local authorized Allen-Bradley Distributor or your local Sales/Support office for a complete listing of courses, descriptions, prices, and schedules.

You can also access course information via the Web at <http://www.rockwellautomation.com/training>

**[www.rockwellautomation.com](http://www.rockwellautomation.com)**

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