

STEEL GMA (MIG) WELDING THEORY

WCS06

How well a technician understands the theory and practice of weld safety, working with and maintaining welding equipment, and what constitutes proper welds will impact the overall consistency and quality of welds. The need for technical expertise and welding skills are essential to collision repair technicians working on major collision damage. Poor welds can not only lead to part failure and compromised safety, but can impact the structural integrity of the vehicle and collision energy management.

Overview

The content in this course pertains to collision repair professionals and offers fundamental knowledge related to steel GMA (MIG) welding theory. Upon completion of the course, students will have an improved understanding of Gas Metal Arc Welding (GMAW) and the proper use of GMA (MIG) welding equipment, as well as the best techniques for making butt joint with backing, open butt, fillet and plug welds

Course Content

The first module will cover an introduction to GMAW, including the application of electricity in the welding environment. GMA (MIG) welding equipment will also be addressed, such as setting up and turning a machine. Additionally, students will learn requirements for proper electrode wire, contact tip, and shielding gas selection. Topics relating to performing welds—technique, surface preparation, heat management—will also be covered. Lastly, a student will understand how to identify and correct weld defects.

The remaining modules of the course detail four different types of common collision repair welds—the plug, fillet, open butt, and butt joint with backing welds. Students will learn how to make each weld type, as well as how to visually inspect and destructively test each weld.

Recommendations

This course covers the theory of steel GMA (MIG) welding. Prior to attending this course, students should have an understanding of the collision repair process. Courses that are helpful include:

- Hazardous Materials, Personal Safety, and Refinish Safety (WKR01)

Registration

To register for Steel GMA (MIG) Welding Theory (WCS06) click [here](#) or visit www.i-car.com.au

Course Highlights

Points: .75

Estimated Duration: 3 Hours

Format: Classroom

Meets the I-CAR training requirements for the following roles:



STRUCTURAL TECHNICIAN



NON-STRUCTURAL TECHNICIAN

After completing this course, you will be able to:

- Identify different types of welds.
- Understand how to set up and tune a welding machine.
- Select the proper electrode wire, contact tip and shielding gas.
- Explain safety issues involved with steel welding.
- Know how to properly prepare metal surfaces.
- Explain the proper welding gun angles and techniques.
- Identify and correct weld defects.

