

# Welding with GAS METAL ARC

SIX-PART SERIES

Available format:

 VHS

## SERIES SPECIFICATIONS & COURSE OUTLINE



### Contents

These courses are designed to help students master gas metal arc welding.

### Audience

The Welding with Gas Metal Arc series is designed for new welding students who have little to no knowledge of the field. Many of the terms used are defined or explained throughout the courses, so students are not required to have a welding vocabulary to understand the content.

### Learner Expectations

This series is intended to be used as an essential component in your industrial welding preparation program. Each lesson is designed to provide the background knowledge necessary to develop a fundamental understanding of gas metal arc welding. Each lesson has specific objectives that identify the anticipated level of understanding associated with the information presented. While we cannot guarantee student success, our experience indicates that those who complete the training are likely to accomplish the stated objectives. Furthermore, if these lessons are built into a total curriculum which includes practice in the working environment, it will provide students with the knowledge necessary to master the subject.

# Welding with GAS METAL ARC



## **O80010** Butt Joint, T-Joint, Lap Joint & Outside Corner Joint in Flat & Horizontal Position with GMAW

**Purpose:** This course teaches students how to weld common joints using the inert-gas-shielded metal arc welding process in flat and horizontal positions.

**Objectives:** List the safety precautions to observe when using inert-gas-shielded metal arc welding equipment and describe the procedures for welding butt joints, T-joints, lap joints, and outside corner joints in flat and horizontal positions with GMAW.

## **O80020** Butt Joint, T-Joint, Lap Joint & Outside Corner Joint in Vertical & Overhead Position with GMAW

**Purpose:** This course demonstrates how to weld four commonly used joints in the vertical up and overhead positions using the GMAW process. The demonstrations use 1/8 inch mild steel for the base metal and .035 inch wire with a gas mixture of 75% argon and 25% carbon dioxide. The ampere setting for .035 inch electrode and 1/8 inch mild steel is 140 to 160 amperes. The gas flow will be 20 to 25 cubic feet per hour.

**Objectives:** List the safety precautions to observe in gas metal arc welding and describe the procedures for welding butt joints, T-joints, lap joints, and outside corner joints in vertical up and overhead positions with GMAW.

## **O80030** Setting Up Flux-Cored Wire & Running Continuous Beads

**Purpose:** This course demonstrates how to set up the equipment for dual shielded or flux-core welding (FCAW) and how to run beads in the flat, horizontal, and vertical positions.

**Objectives:** List the safety precautions to observe in flux-core welding; describe the procedures to follow in setting up flux-core welding equipment; and describe the procedures to follow in running continuous beads in flat, horizontal, and vertical positions.

## **O80040** Butt Joint, T-Joint & Lap Joint with Dual-Shielded

**Purpose:** This course demonstrates how to weld some common joints using flux-cored arc welding equipment in flat and horizontal positions. The base metal used for these demonstrations will be 1/4 inch mild steel. The electrode will be .062 inch diameter wire with a flux core.

**Objectives:** List the safety precautions to observe when using flux-cored arc welding equipment and describe the procedures for welding butt joints, T-joints, and lap joints in flat and horizontal positions using flux-cored arc welding equipment.

## **O80050** Multi-Pass Welding with Dual-Shielded

**Purpose:** This course demonstrates multi-pass welding of the butt joint and T-joint with flux-core wire in flat and horizontal positions.

**Objectives:** List the safety precautions to observe in flux-core arc welding and describe the procedures to follow in running multiple passes to make butt joints and T-joints in flat and horizontal positions.

## **O80060** Setting Up Aluminum Wire-Feed & Running Butt, T-Joints & Lap Joints

**Purpose:** This course teaches how to weld aluminum with GMAW using aluminum wire for an electrode. It demonstrates how to weld butt joints, T-joints, and lap joints in flat and horizontal positions. The base metal used in these demonstrations is 3/32 inch aluminum. The wire electrode is .030 diameter aluminum wire. The recommended operating ranges for .030 diameter aluminum wire are 50 to 125 amps and 12 to 22 volts. The inert gas is straight argon and should be regulated to flow at a rate of 25 to 35 cubic feet per hour (CFH).

**Objectives:** List the safety precautions to observe when using GMAW equipment with aluminum wire and describe the procedures for welding butt joints, T-joints, and lap joints in flat and horizontal positions.