

Swagelok® Orbital Welding + ASME Section IX Certification Training

April 22 - 26, 2024 | Cedar Park, TX | 5-Day Course

Course Description

This 5-day course is designed to provide each participant with an understanding of orbital welding principles, design standards, equipment, and welding procedures. Each student will complete multiple weld coupons and the paperwork required for ASME Section IX weld qualification testing. All ASME Section IX weld qualification testing costs are included in the class registration fee.

Course Objectives

- Understand basic metallurgy, industry standards, and specifications for welding
- Set up and operate M200 orbital welding equipment
- Utilize borescope for weld inspection
- Learn how to select, use, and care for tungsten electrodes
- Learn how proper gas selection and purging techniques affect weld quality
- Troubleshoot common issues
- Practice orbital weld procedures up to 1.5" tubing diameter
- Develop weld procedures and adjust the variables of the GTAW process
- Learn about weld shrinkage and how to calculate cut lengths
- Create an assembly within allowable tolerances
- Create samples to be submitted for ASME Section IX certification

What's included?

5 days of training, orbital weld equipment and consumables to complete all practical projects, student course guide, weld reference cards, certificate of completion, ASME Section IX weld test/qualification, lunch and snacks each day.

Day 1: Monday (lecture)

- GTAW process, history, evolution, practical theory, and weld variables

Day 2: Tuesday (hands-on)

- Overview of Swagelok M200 welding system functions, setup and operations
- Introduction to the 5H fixture block; side plates, plenums, collets, adjusting alignment, and using the arc gap gage
- Using the auto-generate function to create a welding program on 1/2" x .065" SS tubing
- Define what makes an acceptable weld, how to evaluate a weld and how to generate a weld coupon
- Using the level adjustment feature on the M200 power supply
- Developing weld parameters to meet specific weld size (root width)

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Day 3: Wednesday (hands-on)

- How to weld differential wall
- Review of Standard Operating Procedures
- Introduction to the 20H fixture block
- Additional weld coupon exercises, 1/4" and 1/2"
- Welding larger sizes, 1" or 1 1/2", and implementation of tacking

Day 4: Thursday (hands-on)

- Introduction of Micro-Fit® fixture block
- Weld shrinkage calculations
- Facing tool setup and operation
- Weld assembly within allowable tolerances
- Prep spool pieces for ASME Section IX Certification

Day 5: Friday (hands-on)

- Reserved for ASME Section IX welds and paperwork
- Each student must submit 4 samples of 1/4" and 4 samples of 1/2"

Location

Swagelok Austin
1017 Innovation Way
Cedar Park, TX 78613

Registration fee

\$2,500 per student

Contact for more information and to register

Swagelok Austin | Corpus Christi
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