

Swagelok Orbital Weld Training

August 20-24, 2018

Tulsa, Oklahoma



Learn and enhance skills necessary for quality orbital welds.

For nearly four decades, Swagelok has offered premium-quality welding tools. Today, our welding training emphasizes the theories and skills associated with gas tungsten arc-based orbital welding (GTAW) with both classroom and hands-on training in a four day course.

Because of the complexity of skills required to consistently achieve good orbital welds, new and even experienced welders must be trained using cutting-edge techniques from qualified instructors. The techniques taught in this course can be applied to any automatic gas tungsten arc welding system.

All classes are taught by experienced instructors who have earned the qualifications of Certified Weld Inspector (CWI) and Certified Weld Educator (CWE).

Course fee: Contact info@tulsa.swagelok.com for more information. Swagelok will provide all course materials. Attendees keep the comprehensive course workbook. Additional information will be sent with your confirmation and prior to course start. Registered students who fail to appear at the course may be invoiced accordingly. Does not include travel or lodging.

Swagelok®
Oklahoma | West Texas

Course Objectives

- Understand basic metallurgy and industry standards and specifications for welding
- Set up and operate orbital welding equipment
- Learn how to select, use and care for tungsten electrodes
- Learn how proper gas selection and purging techniques affect the quality of a weld
- Practice troubleshooting common issues and learn preventive maintenance procedures that will protect your equipment investment
- Practice orbital weld procedures on applications with up to 4 inch diameter tubing
- Develop a weld procedure and adjust the variables of the GTAW process to impact the quality of a weld



Successful Course Completion

To complete the course, you must successfully demonstrate the ability to prepare and weld a tubing system, without assistance from the facilitator or peers. Upon successful course completion, you will receive a signed certificate.

Sample Orbital Welding Class Agenda

- Day 1
- Overview of GTAW process (History, evolution, practical theory, and basic variables).
 - Overview of SWS functions and operations (Connecting, setting up, and using the SWS-M200. Screens and options available).
- Day 2
- Introduction to the 5H fixture block (side plates, plenums, collets, adjusting alignment, using the arc gap gage, etc.).
 - 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).
- Day 3
- Auto-generate a new program for 1/4" x .035" SS tubing.
 - Creating a weld program for making a dissimilar thickness weld using the level adjustment feature on a previously developed weld program.
 - Repackaging the 5H orbital Weld head.
 - Features of the 20H fixture block (standard side plate vs thin side plate, collets (tube & pipe), alignment of side plates, arc gap gage, etc.).
 - Creating a weld program for 2" x .083" wall SS tubing.
 - Welding an elbow/tee to 2" x .083" wall tubing to use thin side plate.
 - Repackaging the 20H orbital weld head.
- Day 4
- Test spool exercises.
 - Requirements of ASME section IX including qualifications (WPS, PQR, WOP, etc.).
 - Perform Qualification welds for Procedure and Performance in accordance with Swagelok Custom Solutions Policy.
 - Roles and responsibility of a weld examiner.
 - Making the weld samples 1/4"x .035" and 1/2"x .065" for ASME certificate test.
 - Weld "spool" assembly to mock-up custom solutions applications (Using microfit tees, elbows, and VCR glands make an assembly using various collets and fixture plates on Series 5 weld head).
 - Micro Weld Heads (as time permits)
- Day 5
- An optional fifth day is available if you wish to learn more about welding under ASME Section IX. Consumables and equipment necessary to obtain your qualification will be provided.

Note: Content may vary by customer and class size. Class size limit is 10 persons.

To register for weld training contact:

Swagelok Oklahoma | West Texas

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