

ADVANCED TIG WELDING

**Weld carbon steel pipe, using the
gas tungsten arc welding process
in all positions.**

US 243054 Level 4 (20 Credits)

**Describe and assemble gas tungsten arc
welding equipment.**

- The importance of correct assembly of the gas tungsten arc welding equipment, and the consequences of incorrect assembly, is explained with reference to the manufacturer's requirement.
- Components of the gas tungsten arc welding equipment are identified and the explanation of function and purpose is correct in terms of the manufacturer's specifications.
- Suitable power source, earth clamp, gas cylinders, welding torch, pressure regulator flow meter, torch liner, gas diffuser, contact tips and gas nozzles.
- Parts and components correctly identified and the implications for incorrect identification explained.
- Terms and definitions used are consistent with generally accepted welding terminology as recorded in national and international welding standards.

**Select, assemble and conduct pre-
operational checks of gas tungsten arc
welding equipment.**

- Verification, identification and selection of gas tungsten arc welding equipment as per job requirements.
- Identification and rectification of possible welding hazards in accordance with standard work site practices.
- Pre-operational checks are carried out in accordance with manufacturer's specifications.
- A safe worksite is created to prevent damage to equipment and injury to people.
- Manufacturer's operational and specifications manual, worksite practices, safety and environmental regulations.

Prepare pipes prior to welding.

- Learners have to display sufficient competency to prepare the groove prior to welding.
- Pipes prepared prior to welding as specified on drawing and worksite practices.
- Dimensions and alignment checked as specified on drawing.
- Pipes tack-welded into position as specified as per drawing.
- Safety precautions adhered to.
- Inspect pipes prior to welding.
- Worksite practices, tools and equipment.
- Safety legislation as per job requirements.

- Inspection methods - Visual, destructive or non-destructive.

Weld pipes.

- Welding parameters are established and conform to job requirements.
- Welding consumables selected and used as per job requirements.
- Potential causes of welding imperfections and defects are identified prior to welding and precautions taken as per worksite practices.
- Pipes welded in position as per job requirements.
- Safety precautions adhered to during welding process.
- Pipes cleaned after welding as per worksite practices.

Inspect welded pipe for defects.

- Post-cleaning of welded joint is performed.
- Welded pipe conforms to job specifications.
- Inspection methods and procedures selected are conducive to specifications.
- Documentation completed as reflected in worksite practices.
- Worksite practices, inspection methods, and cleaning procedures.
- Welded joints acceptance criteria to be in accordance with a national and/or international welding standard.

**Care for and store welding consumables
and equipment.**

- Tools and equipment cared for as per worksite practices.
- Tools and equipment stored as per worksite practices.
- Welding consumables stored as per worksite practices.
- Care and storage practices should conform to manufacturer's requirements and be conducive to preventative maintenance schedules.
- Defective equipment to be dealt with in accordance to worksite practices.
- Consumables and equipment are to be stored in a usable condition for the next user.


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COURSE DURATION: 5 – 7 DAYS