



Australian Government

AUMGTW005 Perform gas metal arc welding

Release: 1

AUMGTW005 Perform gas metal arc welding

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTW3005 Perform gas metal arc welding operations

Application

This unit describes the performance outcomes required to weld components using the gas metal arc welding (GMAW) process.

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a specialist level.

Licensing, legislative, regulatory or certification requirements may apply to this unit in some jurisdictions. Users are advised to check with the relevant regulatory authority.

Competency Field

Manufacturing - Bus, Truck and Trailer

Unit Sector

Technical - Welding, Grinding, Machining and Soldering

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section
1. Plan and prepare	1.1 Weld specifications are identified and confirmed from job sheets, welding standards and work instructions 1.2 Welding safety equipment and welder are identified, obtained and inspected for faults and correct operation 1.3 Resources and work areas are prepared and potential hazards identified
2. Weld materials	2.1 Workplace procedures are identified and followed

Elements	Performance Criteria
	2.2 GMAW equipment is prepared, adjusted and used according to manufacturer operating procedures 2.3 Weld test runs are conducted according to work plan, weld specifications and quality requirements 2.4 Materials are welded using GMAW process to specifications
3. Check welds	3.1 Welds are cleaned using appropriate techniques according to work instruction 3.2 Weld quality and specifications are checked and confirmed by non-destructive testing 3.3 Weld defects are identified and prepared for re-welding, and appropriate personnel are notified
4. Complete job	4.1 Work areas are cleaned and cleared of waste materials according to workplace procedures 4.2 GMAW equipment is cleaned, maintained, inspected and stored according to workplace procedures 4.3 Faulty welding equipment is identified, tagged and reported 4.4 Work sheets are completed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Learning skills to:	locate, evaluate and organise information.
Reading skills to:	- interpret work health and safety (WHS) requirements, workplace procedures, work instructions and work plans - identify weld inspection reports and weld quality requirements - interpret welding standards - interpret job specifications - interpret equipment safe operating procedures.
Writing skills to:	- complete welding plans - legibly complete work sheets and inspection reports - prepare weld rectification plans - complete faulty equipment tags.
Numeracy skills to:	- identify and set machine settings - measure materials from job specifications.

Digital literacy skills to:	identify, set and operate welding equipment.
Planning and organising skills to:	- prepare work area, welding equipment, materials and job specifications - manage job outcomes and production time.
Problem-solving skills to:	identify and apply distortion prevention measures.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Resources</i> must include:	- materials for welding - welding equipment, including: - GMAW - GMAW wire - shielding gas - tips, liners and nozzles - welding face shield - materials and equipment for preventing distortion during welding, including braces, clamps, jigs and fixtures - materials and equipment for non-destructive testing of welds - workplace welding standards and WHS requirements relevant to the work being performed.
<i>Workplace procedures</i> must include:	- operating procedures of GMAW equipment - procedures for recording and reporting GMAW processes - WHS and environmental requirements relating to GMAW procedures.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMGTW005 Perform gas metal arc welding

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTW3005 Perform gas metal arc welding operations

Performance Evidence

Before competency can be determined, individuals must have competently demonstrated gas metal arc welding (GMAW) operations on a minimum of three occasions.

Individuals must demonstrate they can:

- identify welding requirements from work sheets and work instructions
- prepare welding equipment and work area according to workplace procedures and work health and safety (WHS) requirements
- perform GMAW using standard and inverter welding equipment, while controlling weld distortion, according to workplace procedures, applicable welding standards, and WHS requirements
- inspect welding using non-destructive testing procedures and identify and rectify faults
- clean welds and work area, and maintain and store welding equipment according to workplace procedures and WHS requirements
- complete GMAW work sheets.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- WHS requirements and workplace procedures relating to performing gas metal arc welding:
 - hazard identification and risk control methods
 - personal protective equipment (PPE)
- types of materials that can be welded using GMA welding
- types of GMAW electrodes and their application
- basic welding symbols
- procedures for setting up and operating GMAW equipment, including standard and inverter welders
- material preparation techniques for GMAW
- methods for identifying and repairing weld defects

- GMAW distortion control techniques
- GMAW test procedures, including non-destructive testing
- welding standards applicable to GMAW.

Assessment Conditions

Assessors must satisfy SNR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the gas metal arc welding operations that they have performed, e.g. production work sheets.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive manufacturing workplace or simulated workplace
- work orders and job specifications
- applicable gas metal arc welding standards
- safe operating procedures and PPE relating to gas metal arc welding
- gas metal arc welding equipment
- consumables and materials for gas metal arc welding
- production work sheets for the welding job.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>