



Australian Government

AURVTW009 Carry out basic gas metal arc welding

Release: 1

AURVTW009 Carry out basic gas metal arc welding

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to prepare and weld components using the gas metal arc welding (GMAW) process. It involves preparing for the task, selecting and using GMAW equipment and personal protective equipment (PPE), setting gas flow pressures and welder settings, inspecting and testing weld quality, and completing workplace processes and documentation.

It applies to those working in the automotive service and repair industry.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Competency Field

Vehicle Body

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 and italicised text is used, further information is detailed in the range of conditions section.
1. Prepare to carry out basic GMAW welding	1.1 Job requirements are determined from workplace instructions 1.2 PPE is chosen and prepared according to workplace procedures and <i>safety and environmental requirements</i> 1.3 Component and materials to be welded are cleaned and prepared according to workplace and safety requirements

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
	1.4 Hazards associated with the work are identified and risks are managed 1.5 Welding tools and equipment are selected and checked for serviceability 1.6 Work is planned to minimise waste and use time efficiently
2. Weld component using GMAW	2.1 Welding equipment is set up according to workplace procedures 2.2 Welding is carried out using appropriate techniques according to workplace procedures and safety and environmental requirements, and without causing damage to components, systems or equipment 2.3 Welded component is checked to ensure conformity with job requirements
3. Complete work processes	3.1 Final inspection is made to ensure work meets workplace expectations and component is presented ready for use 3.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recyclable material is collected and stored 3.3 Tools and equipment are checked, reported if faulty, and stored according to workplace procedures 3.4 Workplace documentation is processed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	Description
Learning skills to:	locate appropriate sources of information efficiently.
Writing skills to:	legibly and accurately fill out workplace documentation.
Oral communication skills to:	ask questions to clarify instructions and job requirements.
Numeracy skills to:	- measure components to check conformity with job requirements - interpret gauges and units of pressure.
Planning and organising	plan own work requirements and prioritise actions to achieve

Skills	Description
skills to:	required outcomes and ensure tasks are completed within workplace timeframes.
Technology skills to:	use GMAW equipment.

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>Safety and environmental requirements</i> must include:	- work health and safety (WHS), and occupational health and safety (OHS) requirements, including procedures for: - selecting and using PPE when working with GMAW equipment, including approved welding helmet - using specialist welding tools and equipment - using protective screens and fume extraction system - manually handling components and GMAW equipment - identifying and controlling hazards - environmental requirements, including procedures for trapping, storing and disposing of waste materials.
---	--

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURVTW009 Carry out basic gas metal arc welding

Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standards defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- carry out gas metal arc welding (GMAW) on the following steel sections:
 - three butt welds, 150 mm long
 - three fillet welds, 150 mm long
 - three steel exhaust pipe butt welds.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS), and occupational health and safety (OHS) requirements relating to carrying out basic GMAW, including procedures for:
 - selecting and using personal protective equipment (PPE) when working with GMAW equipment, including approved welding helmet
 - using specialist welding tools and equipment
 - using protective screens and fume extraction system
 - manually handling components and GMAW equipment
 - identifying and controlling hazards
- environmental requirements, including procedures for trapping, storing and disposing of waste materials
- hazards associated with GMAW, including:
 - arc eye and exposure to ultraviolet light
 - molten metal spatter and fire danger
- GMAW principles, including:
 - process of using an electric arc to melt and join metal

- basic construction and operation of welding gun and wire feed unit
- types and application of welding wire and shielding gases
- properties and characteristics of metals to be welded
- types of welds, including:
 - butt welds
 - fillet welds
 - tee joints
 - corner joints
- procedures for protecting vehicle electronics during welding
- GMAW procedures, including:
 - component cleaning and preparation
 - welder current and voltage settings, gas flow rates, wire diameters and wire feed speed
 - wire stick out distance, gun angle between the work pieces and travel angle
- weld testing procedures, including non-destructive testing
- post-weld inspection procedures including, weld defects.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

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

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the basic GMAW they have carried out on components, e.g. work orders.

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 repair workplace or simulated workplace
- workplace instructions
- PPE required for GMAW, including approved welding helmet
- GMAW welder
- steel sections requiring GMAW as specified in the performance evidence
- tools, equipment and materials appropriate for carrying out basic GMAW.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

