



Australian Government

AURVTW109 Carry out basic gas metal arc welding

Release: 1

AURVTW109 Carry out basic gas metal arc welding

Modification History

Release	Comments
Release 1	This version first released with AUR Automotive Retail, Service and Repair Training Package Version 6.0

Application

This unit describes the skills and knowledge 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, 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.

Unit Sector

Vehicle Body Technical - Welding, Grinding, Machining and Soldering

Elements and Performance Criteria

ELEMENTS	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Prepare to carry out basic GMAW welding	1.1 Identify job requirements from workplace instructions 1.2 Obtain and interpret welding information 1.3 Identify hazards associated with the work, assess potential risks and implement control measures in line with workplace policies and procedures 1.4 Identify tools and equipment required for welding and establish serviceability according to workplace procedures
2. Weld component using GMAW	2.1 Set up welding equipment according to manufacturer specifications, workplace procedures, workplace health and safety and environmental requirements 2.2 Carry out welding according to workplace procedures 2.3 Inspect welded component for conformity with job

ELEMENTS	PERFORMANCE CRITERIA
	requirements
3. Complete work processes	3.1 Conduct final inspection according to workplace procedures and confirm component is ready for use 3.2 Clear work area and dispose of or recycle materials according to workplace procedures 3.3 Complete documentation according to workplace procedures

Foundation Skills

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

SKILL	DESCRIPTION
Learning	Locates required sources of information efficiently.
Oral communication	Clarifies instructions and job requirements.
Numeracy	- Measures components to check conformity with job requirements - Interprets gauges and units of pressure.
Planning and organising	- Plans own work requirements - Prioritises actions to achieve required outcomes - Ensures tasks are completed within workplace timeframes.
Technology	Uses GMAW equipment.

Unit Mapping Information

Supersedes and is equivalent to AURVTW009 Carry out basic gas metal arc welding.

Links

Companion Volume Implementation Guide is found on VETNet -

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

Assessment Requirements for AURVTW109 Carry out basic gas metal arc welding

Modification History

Release	Comments
Release 1	This version first released with AUR Automotive Retail, Service and Repair Training Package Version 6.0

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

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

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- methods to locate and interpret information required to carry out gas metal arc welding on components, including:
 - manufacturer specifications and procedures or equivalent documentation
 - Australian Standard 1554
- workplace procedures required to carry out gas metal arc welding on components including:
 - preparing and operating welding equipment
 - non-destructive testing of completed welds
 - establishing the serviceability of tools and equipment
 - documentation procedures
 - housekeeping procedures, including:
 - examination of tools and equipment
 - storage of equipment
 - identification, tagging and isolation of faulty equipment
 - disposal of excess materials
 - recycling procedures

- workplace health and safety (WHS) 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, including:
 - arc eye and exposure to ultraviolet light
 - molten metal spatter and fire danger
- environmental requirements relating to carrying out basic GMAW, including procedures for:
 - trapping, storing and disposing of waste materials
- 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

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.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume Implementation Guide is found on VETNet -

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