

Domain	AUTOMOTIVE MECHANICS	Unit ID: 86
Title:	Apply basic oxy acetylene welding techniques used in automotive mechanics	
Level: 2		Credits: 2

Purpose

This unit standard specifies the competencies required to apply basic oxy acetylene welding techniques used in automotive mechanics. This unit standard is intended for those who work as automotive mechanics.

Special Notes

1. Entry information:

Prerequisite

- Unit 65 - *Apply safety rules and regulations in an automotive mechanics workshop or demonstrated equivalent skills and knowledge.*

2. To demonstrate competence, at a minimum, evidence is required of safely performing two given welding tasks using the gas fuel process. The first welding task involves flat position bead welding with filler rod using 150 mm continuous length on a piece of low carbon steel with the dimensions of 50 x 3 x 150 mm. The second welding task involves vertical position welding on a piece of sheet metal with the dimensions of 50 x 1.6 x 150 mm. In performing these tasks ensure correct identification of requirements and finishing of the tasks, correct selection and use of appropriate processes, tools and equipment and completing all work to specification.
3. Assessment evidence may be collected from a real workplace, or simulated real workplace or an appropriate simulated realistic environment in which automotive mechanic operations are carried out.
4. All inspection, operation and maintenance procedures associated with the use of tools and equipment shall comply with manufacturers' guidelines and instructions.
5. '*Specifications*' refers to any, or all of the following: manufacturers' specifications and recommendations, as well as workplace specific requirements.
6. Regulations and legislation relevant to this unit standard include the following:
 - Labour Act, No. 6, 1992
 - Occupational Health and Safety Regulations No. 18, 1997
 - Road Traffic and Transport Regulations No. 266, 2000
 and all subsequent amendments.

Quality Assurance Requirements

This unit standard and others within this subfield may be awarded by institutions which meet the accreditation requirements set by the Namibia Qualifications Authority and the Namibia Training Authority and which comply with the national assessment and moderation requirements. Details of

specific accreditation requirements and the national assessment arrangements are available from the Namibia Qualifications Authority and the Namibia Training Authority on www.nta.com.na

Elements and Performance Criteria

Element 1: Plan and prepare for work

Range

Planning and preparation may include but are not limited to workplace inspection, equipment defect identification, assessment of conditions and hazards and determination of work requirements.

Tools and equipment may include but are not limited to acetylene and oxygen cylinders, regulators, welding hoses, check valves (non-return valves), flash back arrestors, welding torches, welding tips and filler rods.

Materials are to include but are not limited to low carbon steel and sheet metal.

Performance Criteria

- 1.1 Work instructions, including repair order forms, specifications, and operational details are obtained, confirmed and applied.
- 1.2 Safety requirements are followed in accordance with safety plans and policies.
- 1.3 Tools and equipment selected to carry out tasks that are consistent with the requirements of the job, are checked for serviceability and any faults rectified or reported prior to commencement.
- 1.4 Materials appropriate to the work application are identified, obtained, prepared, safely handled and located, ready for use.
- 1.5 Environmental protection requirements are identified and applied in line with environmental plans and regulatory obligations.

Element 2: Prepare materials for welding

Range

Preparation of materials may include but is not limited to preheating, setting up jigs, fixtures and clamps.

Performance Criteria

- 2.1 Weld requirements are determined in accordance with job specifications.
- 2.2 Material is cleaned and prepared using appropriate tools and techniques in accordance with standard operating procedures.

Element 3: Assemble and set up welding equipment

Range

Setting up may include the correct connection of hoses, blowpipes, regulators, cylinder valves, pressure regulators, flashback arrestors, welding tips and correct settings of gas mixtures.

Performance Criteria

- 3.1 Welding equipment including cylinders and regulators are assembled and set up safely and correctly in accordance with standard operating procedures.

Element 4: Select welding tips, settings and consumables

Performance Criteria

- 4.1 Welding tips, settings and consumables are selected against job requirements and welding procedures, in accordance with standard operating procedures.

Element 5: Perform routine welding using fuel gas process

Range

Prescribed procedure is limited to forehand welding (flat position welding and vertical position welding).

Performance Criteria

- 5.1 Weld is undertaken safely and in line with prescribed procedures.
- 5.2 Welds are cleaned in accordance with standard operating procedures.

Element 6: Complete work and clean up

Range

Work completion details may include but are not limited to work schedule or appointment sheet, vehicle drop-off form, repair order form, service record book, service plan form and sign-out form for equipment.

Performance Criteria

- 6.1 Work is completed and appropriate personnel notified in accordance with workplace procedures.
- 6.2 Work area is cleared of waste, cleaned, restored and secured in accordance with workplace procedures.
- 6.3 Reusable material is collected and stored in accordance with workplace procedures.
- 6.4 Tools and equipment are cleaned, checked, maintained and stored in accordance with workplace procedures.

6.5 Work completion details are finalised in accordance with workplace procedures.

Registration Data

Subfield:	Automotive Engineering
Date first registered:	28 September 2006
Date this version registered:	28 September 2006
Anticipated review:	2010
Body responsible for review:	Namibia Training Authority