

Domain	AUTOMOTIVE MECHANICS	Unit ID: 66
Title:	Use basic metal processing tools in automotive mechanics	
Level: 1		Credits: 3

Purpose

This unit standard specifies the competencies required to use basic metal processing tools in automotive mechanics. It includes mark out work, applying basic chip-removal processes and using chip-less forming processes. 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 knowledge and skills.
2. To demonstrate competence, at a minimum, requires evidence of selecting and correct application of the necessary tools, materials and personal protective equipment to perform one marking-out task, one chip-removal forming task and one chip-less forming task. 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 at a real workplace or a 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' and company guidelines and instructions.
5. '*Specifications*' refers to any, or all of the following: manufacturer's specifications and recommendations, 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. 268, 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 is not limited to workplace inspection, equipment defect identification, assessment of conditions and hazards and determination of work requirements.

Materials are to include but are not limited to ferrous and non-ferrous material.

Performance Criteria

- 1.1 Work instructions, including repair order forms, sketches, 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 are consistent with the requirements of the job, checked for serviceability and any faults rectified or reported prior to commencement.
- 1.4 Material requirements are identified and obtained in accordance with repair order form and/or specifications.
- 1.5 Materials are processed and/or safely handled and located, ready for use.
- 1.6 Environmental protection requirements are identified and applied in line with environmental and legislative requirements.

Element 2: Use basic metal processing tools to mark out work pieces

Range

Tools and equipment may include but are not limited to scribe, prick punch, centre punch, divider, steel rule and straight edge, try square and combination square.

Marking out may include light walled pipe, small sections and angles.

Materials are to include but are not limited to 0.4mm to 0.8mm sheet metal, ferrous and/or non-ferrous material.

Performance Criteria

- 2.1 Tools and material are identified and selected for a required task.
- 2.2 Dimensions from a sketch, drawing or other specifications are transferred to the work piece.
- 2.3 Marking out are carried out in accordance with job specifications.

- 2.4 Patterns, sections and templates are inspected and measured for compliance to job specifications.
- 2.5 Non-conformance to job specifications is identified and reported to supervisor.

Element 3: Use basic metal processing tools to perform chip-removal forming processes

Range

Chip-removal forming processes may include chiseling, sawing, filing, scraping, drilling and boring to include counter boring and countersinking, thread tapping and cutting.

Tools and equipment may include chisels, handsaw, files, scraper, drill and boring tools, tapers and dies.

Materials are to include but are not limited to 0.4mm to 0.8mm sheet metal, ferrous and/or non-ferrous material.

Performance Criteria

- 3.1 Tools and equipment are identified and selected to match requirements of the task according to workplace procedures.
- 3.2 Work piece is clamped firmly in a vice before being processed in line with safety and workplace requirements.
- 3.3 Chip-removal forming process is accomplished in line with task requirements and specifications.
- 3.4 Safe working practices are maintained in line with legislative and workplace requirements.

Element 4: Use basic metal processing tools to perform chip-less forming processes

Range

Chip-less forming processes may include cold straightening, cold bending and cutting.

Tools and equipment may include vice, hammers, hand sheers, and machine sheers.

Materials are to include but are not limited to 0.4mm to 0.8mm sheet metal, 3.0mm to 6.0mm ferrous material.

Performance Criteria

- 4.1 Tools and equipment are identified and selected to match requirements of the task according to workplace procedures.
- 4.2 Work piece is clamped firmly in a vice before being processed in line with safety and workplace procedures.

- 4.3 Chip-less forming process is accomplished in line with task requirements and specifications.
- 4.4 Safe working practices are maintained in line with legislative and workplace requirements.

Element 5: 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

- 5.1 Work is completed and appropriate personnel notified in accordance with workplace procedures.
- 5.2 Work area is cleared of waste, cleaned, restored and secured in accordance with workplace procedures.
- 5.3 Reusable material is collected and stored in accordance with workplace procedures.
- 5.4 Tools and equipment are cleaned, checked, maintained and stored in accordance with workplace procedures.
- 5.5 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