

Domain	AUTOMOTIVE ELECTRICAL AND ELECTRONICS	Unit ID: 475
Title:	Use and maintain automotive service tools and equipment	
Level: 1		Credits: 5

Purpose

This unit standard specifies the competencies required to apply automotive service tools and equipment. It includes the use, storage and maintenance procedures for service tools and equipment. This unit standard is intended for those who work as automotive electricians.

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, evidence is required of selecting and safely using eight different hand and power tools and five different items of equipment used in automotive service tasks. 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, simulated real workplace or an appropriate simulated realistic environment in which automotive electrical and electronic 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, instructions, and reasonable flat rate time.
5. 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.
6. This unit standard applies to passenger and commercial vehicles, heavy plant and earthmoving equipment.

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 0.4mm to 0.8mm sheet metal, ferrous and/or non-ferrous material.

Performance Criteria

- 1.1 Work instructions, including repair order forms, maintenance schedules, 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 maintenance schedule and/or specifications.
- 1.5 Materials are safely handled and located, ready for use.
- 1.6 Environmental protection requirements are identified and in applied accordance with environmental plans and legislative requirements.

Element 2: Use common automotive service tools

Range

Automotive service hand tools may include but are not limited to crimping pliers (terminal pliers), wire stripper, reamer, tools for turning such as open ended spanners, ring spanners, combination spanners, socket spanners including attachments, driving handles, extensions and adaptors, special spanners such as crow's foot and c-shaped, adjustable spanners, torque wrenches, allen wrenches (allen keys), wheel braces, screw drivers, torx bit, tools for gripping and holding such as combination pliers, long-nose pliers, side-cutting pliers, circlip pliers, multi-grip pliers, vice grip pliers, bench vices, tools for hammering and driving such as ball-pein hammer, rubber hammer, different types of punches, marking pen, knife, tools for cutting and forming such as hacksaws, cold chisels, files, tools for pulling and pushing such as pullers and presses and special service tools.

Automotive service power tools may include but are not limited to air impact wrench, air blow gun, tools and consumables for grinding and abrading such as sandpaper, bench grinder, drilling machine, jigsaw, angle grinder and air grinder.

Performance Criteria

- 2.1 Automotive service hand tools are identified and selected to match requirements of the task according to manufacturers' requirements and workplace procedures.
- 2.2 Automotive service power tools are identified and selected to match requirements of the task according to manufacturers' requirements and workplace procedures.
- 2.3 Safe working practices are carried out throughout the task according to manufacturers' requirements and workplace procedures.

Element 3: Use common automotive service workshop equipment

Range

Automotive service workshop equipment may include but are not limited to jacks such as hydraulic jacks, air jacks, safety stands, hoists, air compressors, cleaning equipment such as pressure cleaner, vacuum cleaner, parts wash tub, service and diagnostic equipment such as battery charger, battery tester, headlight adjuster, vacuum tester, lathe, combination bench tester, tach-dwell meter, timing light, exhaust gas analyser.

Performance Criteria

- 3.1 Automotive service workshop equipment is identified and selected to match requirements of the task according to manufacturers' requirements and workplace procedures.
- 3.2 Safe working practices are carried out throughout the task according to manufacturers' requirements and workplace procedures.

Element 4: Use common automotive measuring tools

Range

Automotive measuring tools may include but are not limited to measuring tape, ruler, feeler gauge, vernier calliper, micrometer, pressure gauge, multimeter, volt/ammeter, hydrometer, depth gauge and dial gauge.

Performance Criteria

- 4.1 Automotive measuring tools are identified and selected to match requirements of the task according to manufacturers' requirements and workplace procedures.
- 4.2 Safe working practices are carried out throughout the task according to manufacturers' requirements and workplace procedures.

Element 5: Service and maintain workplace tools and equipment

Range

Signs of damage may include but is not limited to wear, cracks, leaks, faulty electrical insulation.

Performance Criteria

- 5.1 Tools and equipment are serviced, adjusted and/or maintained as specified by the manufacturer and/or workshop requirements within the scope of responsibility.
- 5.2 Damaged or worn out tools and equipment are identified and reported.
- 5.3 Safe working practices are carried out throughout the task according to manufacturers' requirements and workplace procedures.

Element 6: Store and secure tools and equipment

Range

Signs of damage may include but is not limited to wear, cracks, leaks, faulty electrical insulation.

Performance Criteria

- 6.1 Tools and equipment are cleaned and checked for any sign of damage.
- 6.2 Tools and equipment are stored and secured according to manufacturers' requirements and workplace procedures.
- 6.3 Safe working practices are carried out throughout the task according to manufacturers' requirements and workplace procedures.

Element 7: Complete work and clean up

Range

Work completion details may include but are not limited to repair order form, sign-out form for equipment, company specific maintenance or service plan.

Performance Criteria

- 7.1 Work is completed and appropriate personnel notified in accordance with workplace procedures.
- 7.2 Work area is cleared of waste, cleaned, restored and secured in accordance with workplace procedures.
- 7.3 Reusable material is collected and stored in accordance with workplace procedures.
- 7.4 Tools and equipment are cleaned, checked, maintained and stored in accordance with workplace procedures.
- 7.5 Work completion details are finalised in accordance with workplace procedures.

Registration Data

Subfield:	Automotive Engineering
Date first registered:	15 November 2007
Date this version registered:	15 November 2007
Anticipated review:	2011
Body responsible for review:	Namibia Training Authority