

Domain	AUTOMOTIVE ELECTRICAL AND ELECTRONICS	Unit ID: 481
Title:	Service automotive batteries	
Level: 2		Credits: 4

Purpose

This unit standard specifies the competencies required to service automotive batteries. It includes procedures for charging and testing batteries and jump-starting a vehicle. 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 servicing, charging and testing two (2) automotive batteries. It includes jump-starting a vehicle using booster battery, booster pack, or additional vehicle.
3. Assessment evidence may be collected from a real workplace or a simulated real workplace or an appropriate simulated realistic environment in which automotive electrical and electronic operations are carried out.
4. Performance of all elements in this unit standard must comply with manufacturers' specifications, workplace specific requirements 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.
7. 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. All approved unit standards, qualifications and national assessment arrangements are available on the Namibia Training Authority website 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.

Tools and equipment may include but are not limited to standard tool set, battery terminal puller, battery carry handle or strap, hydrometer, jumper leads, battery charger, battery load tester and multimeter.

Materials may include but are not limited to battery consumables and cleaning material.

Performance Criteria

- 1.1 Installation and 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 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 safely handled and located ready for use in line with workplace procedures.
- 1.6 Technical and/or calibration requirements for tools and equipment are sourced and implemented in line with workplace procedures.
- 1.7 Environmental protection requirements are identified and applied in line with environmental plans and regulatory obligations.

Element 2: Service batteries

Range

Battery service may include but is not limited to visual inspection, checking and topping up electrolyte level, cleaning battery posts, terminals and battery casing, removal and replacement.

Faults may include but are not limited to corroded contacts, leakage, damaged or worn battery terminals and poles, deformed battery casing and battery securing.

Adjustments may include but are not limited to clock and radio.

Performance Criteria

- 2.1 Procedures and information required for servicing batteries are identified and sourced in line with workplace procedures.
- 2.2 Batteries are serviced according to workplace procedures and manufacturers' specifications.
- 2.3 Adjustments after removal and/or replacement are made in line with workplace procedures and manufacturers' specifications.
- 2.4 Faults are identified and documented with evidence and supporting information.

Element 3: Charge batteries

Range

Storing and preparing for charging batteries may include but are not limited to battery charging room or area, topping up electrolyte level, and cleaning battery.

Charging may include but is not limited to normal charging and boost charging methods, both series and parallel circuits.

Performance Criteria

- 3.1 Procedures and information required for charging batteries are identified and sourced in line with workplace procedures.
- 3.2 Batteries are stored and prepared for charging according to workplace procedures and manufacturers' specifications.
- 3.3 Batteries are charged in line with workplace procedures and manufacturers' specifications.
- 3.4 Results are documented and forwarded with evidence and supporting information.

Element 4: Test batteries

Performance Criteria

- 4.1 Procedures and information required for testing batteries are identified and sourced in line with workplace procedures.
- 4.2 Battery tests are performed in line with workplace procedures and manufacturers' specifications.
- 4.3 Test results are compared with manufacturers' specifications.
- 4.4 Results are documented and forwarded with evidence and supporting information.

Element 5: Jump-start a vehicle

Performance Criteria

- 5.1 Procedures and information required for jump-starting a vehicle are identified and sourced in line with workplace procedures.
- 5.2 Leads are connected and disconnected in correct sequence and polarity.
- 5.3 Work is carried out according to workplace procedures and manufacturers' specifications without causing damage or short to vehicle components or systems.

Element 6: Complete work and clean up

Range

Work completion details may include but are not limited to repair order form, sign-out form for equipment, service record book and service plan form.

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 Equipment used is cleaned, checked, maintained and stored in accordance with workplace procedures.
- 6.5 Work completion details are finalised in accordance with workplace procedures.

Registration Data

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