



Australian Government

AURETK003 Operate electrical test equipment

Release: 2

AURETK003 Operate electrical test equipment

Modification History

Release	Comment
Release 1	New unit of competency
Release 2	Minor typographical errors corrected

Application

This unit describes the performance outcomes required to operate electrical test equipment.

It requires the learner to plan and prepare the task, select the correct equipment, test electrical and electronic circuits, and check and store the electrical test equipment.

It applies to those undertaking a Vocational Education and Training in Schools (VETiS) or pre-vocational qualification as preparation to entering the automotive service and repair or automotive manufacturing industry.

The unit is designed for use in a highly supervised context and is not suitable for use in a vocational qualification.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Competency Field

Electrical

Unit Sector

Technical - Tools and Equipment

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section
1. Plan to operate electrical test equipment	1.1 <i>Safety requirements</i> are sourced and interpreted 1.2 Task instruction is interpreted and vehicle electrical circuit to be

Elements	Performance Criteria
	worked on is identified 1.3 Manufacturer specifications and workplace procedures for operating electrical test equipment are sourced and interpreted 1.4 Potential hazards and risks associated with task are identified and reported to workplace supervisor 1.5 Electrical test equipment is identified according to task instruction and manufacturer specifications
2. Test electrical circuits	2.1 Electrical test equipment is checked prior to use according to manufacturer specifications and safety requirements 2.2 Electrical test equipment is used to test vehicle electrical circuits according to manufacturer specifications and safety requirements 2.3 Electrical test equipment readings are checked and compared with manufacturer specifications 2.4 Electrical test equipment readings are recorded
3. Complete work processes	3.1 Final inspection is made to ensure work meets task instruction and workplace standards, and vehicle or equipment is presented ready for use or storage according to workplace procedures 3.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recyclable material is collected and stored according to environmental requirements and workplace procedures 3.3 Tools and equipment are checked and stored according to workplace procedures, or tagged and reported where necessary 3.4 Workplace documentation is processed according to workplace procedures

Foundation Skills

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

Skills	Description
Learning skills to:	locate appropriate sources of vehicle electrical system information and electrical test equipment operating procedures.
Reading skills to:	- select and interpret key information from job instruction, manufacturer specifications, safety requirements and workplace procedures to safely and effectively operate electrical test equipment - select and interpret key information from environmental requirements and workplace procedures to support environmental

	sustainability and to ensure a clean and safe work site.
Writing skills to:	legibly and accurately fill out workplace documentation, using correct industry terminology and conventions.
Oral communication skills to:	participate effectively in verbal exchanges using questioning and active listening to request, clarify and clearly convey information.
Numeracy skills to:	- use basic mathematical operations, including addition, subtraction, multiplication and division, when using Ohm's law and Watt's law to calculate electrical voltage, current flow, resistance and power - read and interpret electrical test equipment correctly, and report and record the results correctly using relevant mathematical symbols and conventions (e.g. Ω for ohms).
Planning and organising skills to:	plan own work requirements and prioritise actions to achieve required outcomes.
Self-management skills to:	recognise own limitations when selecting and using tools and equipment and seek timely advice.
Problem-solving skills to:	refer problems that cannot be readily resolved and seek assistance from workplace supervisor.

Range of Conditions

This section specifies work environments and conditions that may affect performance.

Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Safety requirements</i> must include:	- information about key aspects of work health and safety (WHS) and occupational health and safety (OHS) requirements, including: - use of personal protective equipment, including safety glasses, ear protection and safety footwear - use of tools - identification of electrical hazards - application of procedures for operating electrical test equipment.
<i>Electrical test equipment</i> must include:	12 volt test lights and LED test lights - ammeters - voltmeters - ohmmeters - multimeters.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -

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

Assessment Requirements for AURETK003 Operate electrical test equipment

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Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standards defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- correctly and safely operate electrical test equipment to test electrical circuits on a minimum of two different vehicles.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- key aspects of work health and safety (WHS) and, occupational health and safety (OHS) requirements when operating electrical test equipment, including:
- procedures for the correct use of personal protective equipment, including safety glasses, ear protection and safety footwear
- procedures for the correct use of tools
- identification of electrical hazards
- procedures for operating electrical test equipment
- meaning of electrical terms, including:
 - voltage
 - amperage
 - watts
 - resistance
- theory of electrical circuits, including:
 - Ohm's law
 - Watt's law
- circuit types, including series and parallel
- electrical component symbols

- types of electrical circuits in vehicles, including electrical components
- types of electrical circuit diagrams
- types, application and operation of electrical test equipment, including:
 - 12 volt test lights and LED test lights
 - ammeters
 - voltmeters
 - multimeters
 - ohmmeters
- procedures for testing electrical circuits on vehicles
- procedures for identifying and rectifying faults
- work area clean-up and maintenance requirements.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to operating electrical test equipment, e.g. repair 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 workplace or simulated workplace
- electrical test equipment, including:
 - 12 volt test light
 - ammeter
 - voltmeter
 - ohmmeter
 - multimeter
 - LED test light
- two vehicles with operational electrical circuits.

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