



Australian Government

AURETK001 Identify, select and use low voltage electrical test equipment

Release: 1

AURETK001 Identify, select and use low voltage electrical test equipment

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to identify, select and safely use basic low voltage (LV) electrical test equipment to test basic LV electrical circuits in vehicles or machinery.

It applies to those working in the automotive service and repair industry. The electrical systems and components include those in agricultural machinery, heavy commercial vehicles, light vehicles, vessels, motorcycles, mobile plant machinery or outdoor power equipment.

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. Identify and select LV electrical test equipment	1.1 Job requirements are determined according to workplace instructions 1.2 <i>LV electrical test equipment</i> is identified and selected to meet job requirements

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.
	1.3 Function and method of operation of equipment are confirmed before use 1.4 LV electrical test equipment is checked for serviceability according to manufacturer specifications and workplace procedures 1.5 Hazards associated with the work are identified and risks are managed 1.6 Safety requirements and safe operating procedures for equipment are accessed and interpreted
2. Use electrical test equipment	2.1 Equipment is connected according to workplace procedures and without causing damage to vehicle or machinery 2.2 Electrical test equipment is used according to safety requirements to prevent injury to self and others, and damage to vehicle or other workplace equipment 2.3 Test results or readings are interpreted and confirmed according to job requirements and workplace procedures 2.4 Damaged, faulty or inaccurate electrical test equipment is tagged and isolated for repair or replacement and reported according to workplace procedures
3. Complete work processes	3.1 Electrical test equipment is cleaned, checked and stored ready for use according to workplace procedures 3.2 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 information efficiently.
Reading skills to:	interpret text, symbols and basic electrical diagrams in manufacturer literature and safe operating procedures.
Writing skills to:	legibly and accurately record test measurements and enter correct information on tags of faulty LV electrical test equipment.
Oral communication skills	clarify instructions, confirm use and suitability of LV electrical

Skills	Description
to:	test equipment, and report findings.
Numeracy skills to:	measure voltage, current and resistance and use basic mathematical operations, including addition and subtraction, to calculate deviations from manufacturer specifications.
Planning and organising skills to:	select and prepare appropriate LV electrical test equipment to achieve required outcomes and ensure tasks are completed within workplace timeframes.

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>LV electrical test equipment</i> must include:	- test lights and probes - circuit continuity testers - digital multimeters.
<i>Safety requirements</i> must include:	- work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for: - selecting and using personal protective equipment (PPE) - identifying hazards and controlling risks associated with wearing jewellery while working around high current wiring systems.

Unit Mapping Information

Equivalent to AURETK1001 Identify, select and use low voltage electrical test equipment

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 AURETK001 Identify, select and use low voltage electrical test equipment

Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

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

- use a test light or probe to check the voltage supply at three different points of a basic low voltage (LV) electrical circuit and earth return at two different points of the circuit
- use a digital multimeter to check voltage, current and resistance measurements within a basic electrical circuit
- use a circuit continuity tester and test three different electrical circuits between a power source, including:
 - one fuse
 - one lamp or heating element
 - one motor control device.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to identifying, selecting and using LV electrical test equipment, including procedures for:
 - selecting and using personal protective equipment (PPE)
 - identifying hazards and controlling risks associated with wearing jewellery while working around high current wiring systems
- location and content of manufacturer specifications and workplace procedures, including:
 - LV test equipment selection procedures
 - basic checking procedures for automotive LV electrical test equipment
 - checking, identification and isolation procedures for faulty equipment

- types, characteristics, uses and limitations of automotive LV electrical test equipment, including:
 - multimeters
 - test lights, including resistive and light emitting diode (LED) test probes
 - circuit continuity testers
- procedures for testing electrical systems, including:
 - accessing electrical terminals and using test probes without damaging connectors, fuse holders or wiring
 - checking resistance, current flow and voltage drop of system circuits
- procedures for identifying and tagging damaged electrical test equipment.

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.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the LV electrical test equipment they have identified, selected and used, 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 service repair workplace or simulated workplace
- manufacturer specifications and operator instructions for LV electrical test equipment
- materials and equipment relevant to using and checking automotive LV electrical test equipment
- LV electrical test equipment, including:
 - test lights and probes
 - circuit continuity testers
 - digital multimeters
- electrical components and circuits requiring the use of LV electrical test equipment, as specified in the performance evidence.

Links

Companion Volume implementation guides are found in VETNet -

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

Companion Volume implementation guides are found in VETNet -

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