



Australian Government

AURETK1001 Identify, select and use low voltage electrical test equipment

Release 1

AURETK1001 Identify, select and use low voltage electrical test equipment

Modification History

Release	Comment
Release 1	New unit of competency

Unit Descriptor

Unit descriptor	<p>This unit describes the performance outcomes required to identify, select and safely use basic low voltage (LV) electrical test equipment for the purpose of testing, diagnosing and rectifying LV electrical conditions and faults in motor vehicles.</p> <p>Work involves identifying and selecting LV electrical test equipment by type and name, applying methods for its safe use, and storing it.</p> <p>No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.</p>
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Application of the Unit

Application of the unit	<p>Work applies to the identification and use of low voltage test equipment for basic circuit and system testing on light and heavy vehicle, mining, construction, agricultural, motorcycle, outdoor power equipment and marine environments.</p> <p>Work is normally carried out under supervision, in defined contexts and within established parameters, with the requirement for only limited decision making by the candidate.</p>
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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify LV electrical test equipment	1.1. <i>Low voltage electrical test equipment</i> types suitable to task are identified 1.2. Function and method of operation of equipment are confirmed prior to use 1.3. <i>Workplace health and safety (WHS) requirements</i> and <i>safe operating procedures</i> are identified and applied
2. Select correct equipment for workplace application	2.1. LV electrical test equipment appropriate to task is selected according to <i>workplace requirements</i> 2.2. Equipment is checked to confirm condition and performance
3. Use electrical test equipment	3.1. Electrical test equipment is used in a safe manner to prevent injury to self and others and damage to vehicle or other workplace equipment 3.2. Equipment is connected without causing damage to vehicle or equipment as a result of <i>inappropriate testing procedures</i> 3.3. Workplace safe operating procedures are followed during the use of test equipment 3.4. Test results or readings are interpreted and confirmed according to job or workplace requirements
4. Finalise work processes	4.1. Equipment is cleaned, inspected and checked 4.2. Equipment is securely and appropriately stored 4.3. Fixed electrical test equipment is isolated where required 4.4. Documents are completed according to workplace requirements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- communication skills to:
 - follow written and verbal instructions
 - communicate basic information relating to the safe use of LV electrical test equipment
- literacy skills to:
 - read and follow basic vehicle repair information and associated LV electrical test equipment manuals
 - read and follow information on standard operating procedures
- numeracy skills to:
 - interpret numbers as a measure of electrical power or resistance
 - make simple calculations as they relate to electrical power or resistance
- planning and organising skills to:
 - identify risk factors to minimise risk to self and others
 - contribute to activities that implement and follow standard workplace procedures
- problem-solving skills to:
 - recognise a workplace problem or potential problem
 - refer problems outside area of responsibility to appropriate person
 - identify defects and potential problems with LV electrical test equipment
- self-management skills to:
 - locate and identify appropriate electrical test equipment
 - recognise limitations and seek timely advice
 - follow basic workplace documentation, such as operating procedures
- teamwork skills to work with others and in a team by cooperating with team members
- technical skills to:
 - identify types of LV electrical test equipment
 - select equipment appropriate to the task
 - use equipment safely
 - store equipment according to manufacturer specifications and standard operating procedures
- technology skills to use workplace technology to assist with work practices

Required knowledge

- WHS regulations, requirements, equipment and material relating to working with low voltage electrical test equipment, including:
 - personal safety requirements

REQUIRED SKILLS AND KNOWLEDGE

- low voltage electrical test equipment safety and operating procedures
- basic electrical circuit theory
- equipment selection procedures
- types, characteristics, uses and limitations of low voltage electrical test equipment
- workplace policies and procedures

Evidence Guide

EVIDENCE GUIDE	
<p>The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.</p>	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	<p>The evidence required to demonstrate competency in this unit must be relevant to workplace operations and satisfy all of the requirements of the performance criteria and required skills and knowledge.</p> <p>A person who demonstrates competency in this unit must be able to:</p> <ul style="list-style-type: none"> • identify low voltage electrical test equipment • select and safely use personal protective equipment • select and safely use low voltage electrical test equipment • interpret and report electrical test results • use methods appropriate for storage of low voltage electrical test equipment.
Context of, and specific resources for assessment	<p>Competency is to be assessed in the workplace or a simulated workplace environment that accurately reflects performance in a real workplace setting.</p> <p>Assessment is to occur:</p> <ul style="list-style-type: none"> • using standard workplace practices and procedures • following safety requirements • applying environmental constraints. <p>Assessment is to comply with relevant:</p> <ul style="list-style-type: none"> • regulatory requirements • Australian standards • industry codes of practice. <p>The following resources should be made available:</p> <ul style="list-style-type: none"> • low voltage electrical test equipment of the type required for automotive diagnosis and repair • WHS and safety equipment, such as personal protective equipment • functioning vehicle electrical systems and components or vehicles capable of being tested • specifications and work instructions.
Method of assessment	Assessment must satisfy the endorsed Assessment Guidelines of

EVIDENCE GUIDE

this Training Package.

Assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with the application of required skills and knowledge.

Assessment methods must be by direct observation of tasks and include questioning on required skills and knowledge to ensure correct interpretation and application.

Competence in this unit may be assessed in conjunction with other units which together form part of a holistic work role.

Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate the needs of diverse clients.

Assessment processes and techniques must be culturally sensitive and appropriate to the language, literacy and numeracy capacity of the candidate and the work being performed.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

<p><i>Low voltage electrical test equipment</i> may include:</p>	<ul style="list-style-type: none"> • multimeters • test lights and probes • load testers • circuit testers • oscilloscopes • ignition module test equipment • emissions analysers • leak detectors • fuel system analysers.
<p><i>Workplace health and safety requirements:</i></p>	<ul style="list-style-type: none"> • are to include those prescribed under regulations, codes of practice, and workplace safety policies and procedures • may include: <ul style="list-style-type: none"> • personal protective clothing and equipment • emergency shutdown • use of fire-fighting equipment • first aid training and response • hazard control, including control of hazardous materials and toxic substances • site evacuation procedures.
<p><i>Safe operating procedures</i> may include:</p>	<ul style="list-style-type: none"> • being involved in an operational risk assessment associated with vehicle movement • safe use of automotive electrical test equipment • electrical safety • manual and mechanical lifting and shifting • safe handling of material • procedures for working in proximity to others and site visitors • emergency shutdown.
<p><i>Workplace requirements</i> may include:</p>	<ul style="list-style-type: none"> • Australian standards • instructions issued by authorised workplace or external persons • material safety data sheets (MSDS) • workplace work specifications and requirements • regulatory and legislative requirements relating to the automotive industry

RANGE STATEMENT	
	<ul style="list-style-type: none"> • safe work procedures relating to the use of LV electrical test equipment • signage • verbal, written and graphical instructions • work bulletins and memos • work schedules and plans • workplace policies and procedures.
<i>Inappropriate testing procedures</i> may include:	<ul style="list-style-type: none"> • intrusive testing (which must not be performed as it is not a recommended test and repair method), which includes: <ul style="list-style-type: none"> • back probing terminals and connectors and fuse holders with inappropriate test probes • probing terminal and connectors with inappropriate test probes • pushing sharp probes and objects into wiring insulation.

Unit Sector(s)

Competency field	Electrical
Unit sector	Technical – Tools and Equipment

Custom Content Section

Not applicable.