



Australian Government

AURETK2002 Use and maintain automotive electrical test equipment

Release 1

AURETK2002 Use and maintain automotive electrical test equipment

Modification History

Release	Comment
Release 1	New unit of competency

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes required to select, safely use and maintain automotive electrical test equipment used in an automotive workplace for the purpose of identifying, diagnosing and rectifying electrical and electronic faults in motor vehicles. Work involves identifying and confirming job requirements; preparing for work; selecting, using, servicing, maintaining and storing automotive electrical testing equipment; and completing work finalisation processes, including clean-up and documentation. Licensing, legislative, regulatory or certification requirements may apply to this unit in some jurisdictions. Users are advised to check with the relevant regulatory authority.
------------------------	---

Application of the Unit

Application of the unit	Work applies to where equipment used is dedicated to an electrical or electronic diagnosis or repair operation or machine-type function used for electrical system or component repair. Work requires individuals to demonstrate judgement and problem-solving skills in managing own work activities and contributing to a productive team environment.
--------------------------------	--

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains employability skills.
-----------------------------	--

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.
---	--

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Select equipment suitable to workplace application	1.1. Workplace health and safety (WHS) requirements and appropriate precautions are identified and applied 1.2. Electrical test equipment and other suitable equipment is selected for use in the workplace environment according to job and workplace requirements 1.3. Equipment condition and functionality are confirmed prior to use
2. Use electrical test equipment	2.1. Electrical test equipment is used in a safe manner to prevent injury to self and others 2.2. Electrical test equipment is connected to vehicle or equipment without causing damage as a result of inappropriate testing procedures 2.3. Workplace safe operating procedures are followed during the use of test equipment
3. Service and maintain equipment	3.1. Damaged or faulty equipment is tagged and removed from the workplace for repair or replacement and reported according to workplace maintenance methods 3.2. Test equipment is inspected, serviced, adjusted and/or maintained in line with manufacturer and component supplier schedule within scope of own responsibility 3.3. Servicing and maintenance operations are carried out according to industry regulations and guidelines, WHS requirements and workplace policies and procedures
4. Finalise work processes	4.1. Test equipment is cleaned, inspected and checked 4.2. Test 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

- technical skills to:
 - identify types of automotive electrical test equipment
 - select test equipment appropriate to the task
 - use test equipment safely
 - identify and analyse technical information
 - identify test equipment defects
 - store equipment according to manufacturer specifications and standard operating procedures
- communication skills to:
 - follow written and verbal instructions
 - communicate basic information relating to the safe use of electrical test equipment
- literacy skills to:
 - read and follow basic vehicle repair information and electrical test equipment instruction manuals
 - read and follow information on standard operating procedures
- numeracy skills to interpret numbers as a measure of 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 electrical test equipment
- self-management skills to:
 - locate and identify electrical test equipment appropriate to the task
 - 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
 - apply knowledge of own role to support workplace activities and tasks
- technology skills to use workplace technology to assist with work practices

Required knowledge

- WHS regulations, requirements, equipment and material relating to automotive electrical test

REQUIRED SKILLS AND KNOWLEDGE

equipment, including:

- personal safety requirements
- test equipment safety and operating procedures
- test equipment selection procedures
- basic maintenance procedures for automotive electrical test equipment
- types, characteristics, uses and limitations of automotive electrical test equipment
- work organisation and planning processes relating to automotive electrical test equipment
- workplace policies and procedures relating to diagnosing electrical faults on vehicles

Evidence Guide

EVIDENCE GUIDE

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.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

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.

A person who demonstrates competency in this unit must be able to:

- select and safely use personal protective equipment
- select and safely use automotive electrical test equipment
- undertake basic maintenance and storage of electrical test equipment within scope of own responsibility.

Context of, and specific resources for assessment

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

Assessment is to occur:

- using standard workplace practices and procedures
- following safety requirements
- applying environmental constraints.

Assessment is to comply with relevant:

- regulatory requirements
- Australian standards
- industry codes of practice.

The following resources should be made available:

- vehicles and electrical components that can be used to simulate conditions that require use of electrical test equipment and diagnosis of system condition or fault
- materials and equipment relevant to the use and maintenance of automotive electrical test equipment
- materials and equipment relevant to the secure storage of automotive electrical test equipment
- specifications and work instructions.

Method of assessment

Assessment must satisfy the endorsed Assessment Guidelines of this Training Package.

EVIDENCE GUIDE

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.

Workplace health and safety requirements:

- are to include those prescribed under regulations, codes of practice, and workplace safety policies and procedures
- may include
 - 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.

Electrical test equipment
may include:

- multimeters
- test lights and probes
- logic probes
- scan tools
- load testers
- circuit testers
- oscilloscopes
- computer
- ignition module test equipment
- alternator or starter test bench
- distributor test bench
- emissions analysers
- leak detectors
- fuel system analysers.

Workplace requirements
may include:

- Australian standards
- engineer's design specifications and instructions
- 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
- safe work procedures relating to the use and maintenance of electrical test equipment

RANGE STATEMENT	
	• 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:	• intrusive testing (which must not be performed as it is not a recommended test and repair method), which includes: • 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.
<i>Safe operating procedures</i> may include:	• conducting operational risk assessment and treatments associated with vehicle movement • safe use of automotive electrical test equipment • electrical safety • manual and mechanical lifting and shifting • procedures for working in proximity to others and site visitors • safe handling of material.
<i>Maintenance methods</i> may include:	• routine maintenance to test equipment according to schedules • labelling faulty tools and equipment • performing minor electrical test equipment repairs, adjustments or calibration • documenting or tagging equipment as faulty or out-of-service.

Unit Sector(s)

Competency field	Electrical
Unit sector	Technical – Tools and Equipment

Custom Content Section

Not applicable.