



Australian Government

AUMGTR003 Test, modify and repair vehicle electrical circuits and systems

Release: 1

AUMGTR003 Test, modify and repair vehicle electrical circuits and systems

Modification History

Release	Comment
Release 1	Unit updated to reflect the new standards for Training Packages Replaces AUMGTR3003 Perform minor modifications and repairs to electrical circuits and systems

Application

This unit describes the performance outcomes required to test, modify and repair electrical circuits and systems in vehicles.

It applies to those in an automotive manufacturing environment and involves the application of skills and knowledge at a specialist level.

Licensing, legislative, regulatory or certification requirements may apply to this unit in some jurisdictions. Users are advised to check with the relevant regulatory authority.

Competency Field

Manufacturing - Bus, Truck and Trailer

Unit Sector

Technical - Electrical

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 italicised text is used, further information is detailed in the range of conditions section
1. Prepare for work	1.1 Workplace instructions are identified to determine job requirements 1.2 <i>Tools and materials</i> are identified for effective modification and repairs to electrical circuits and systems
2. Test electrical circuits and identify faults	2.1 <i>Workplace procedures</i> are identified and followed 2.2 Testing procedures are carried out according to job

Elements	Performance Criteria
	requirements and manufacturer specifications 2.3 Faults are determined using appropriate tools and techniques 2.4 Faults are identified and repair options planned
3. Complete modifications and repairs	3.1 Modifications and repairs to electrical circuits and systems are carried out according to work orders and manufacturer specifications 3.2 Wiring and electrical circuits are modified or repaired using appropriate tools and equipment and without causing damage to components or system 3.3 Wiring and electrical circuits are tested for correct operation according to manufacturer specifications and workplace procedures
4. Finish the job	4.1 Final inspection is made to ensure work is to workplace quality standards 4.2 Tools and equipment are checked and stored according to workplace procedures 4.3 Faulty equipment is identified, tagged and reported 4.4 Work sheets and test result documents are completed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Skills	Description
Reading skills to:	- interpret work instructions, workplace procedures and work health and safety (WHS) requirements - identify testing and repair techniques from manufacturer specifications.
Writing skills to:	- complete work sheets relating to the testing and repair of basic electrical circuits and systems - complete faulty equipment tags.
Oral communication skills to:	refer equipment faults to appropriate personnel.
Numeracy skills to:	- match materials and component part numbers to work instructions and bills of material - understand measurements of voltage, current and resistance relating to electrical circuits

	• measure materials and components to determine compliance with specifications.
Initiative skills to:	• adapt to changing work conditions.
Planning and organising skills to:	• identify and prepare components, equipment and work area.

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>Tools and materials</i> must include:	• electrical components, wiring, clips, globes, fuses and tapes • hand tools, test lamps and multimeters • soldering equipment.
<i>Workplace procedures</i> must include:	• procedures for recording and reporting the testing, modification and repair of electrical circuits and systems • use of tools and equipment for testing, modifying and repairing vehicle electrical circuits and systems • WHS requirements for testing, modifying and repairing vehicle electrical circuits and systems • workplace quality standards relevant to testing, modifying and repairing vehicle electrical circuits and systems.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=bd587669-08b3-4cd5-85f0-f9fa0c6304c1>

Assessment Requirements for AUMGTR003 Test, modify and repair vehicle electrical circuits and systems

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Performance Evidence

Before competency can be determined, individuals must have competently tested, modified and repaired electrical circuits and systems on a minimum of two occasions.

Individuals must demonstrate they can:

- select and use tools and equipment when modifying, repairing and testing electrical circuits and systems according to workplace procedures and work health and safety (WHS) requirements
- test and identify faults in electrical circuits and systems
- repair electrical circuits and systems
- complete workplace documentation relating to testing, repair and modification of electrical circuits and systems.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- WHS requirements relating to testing, repair and modification of electrical circuits and systems
- electrical circuit and system testing procedures
- electrical circuit and system modification and repair procedures, including:
 - repair techniques
 - use of relevant tools and equipment.

Assessment Conditions

Assessors must satisfy SNR/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 the electrical circuit and systems that they have tested, modified and repaired, e.g. work sheets.

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
- workplace instructions for the testing, modification and repair of electrical circuits and systems
- a range of electrical circuits and systems
- electrical circuit and system specifications
- tools and equipment required for the testing, modification and repair of electrical circuits and systems
- electrical circuit and system work sheets.

Links

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