



Australian Government

AURETR012 Test and repair basic electrical circuits

Release: 1

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Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to inspect, test and repair basic electrical circuits in vehicle and machinery electrical systems. It involves preparing for the task, inspecting and testing the circuit, repairing the circuit, and completing workplace processes and documentation.

It applies to those working in the automotive service and repair industry. The basic electrical circuits 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 - Electrical and Electronic

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. Prepare to test basic electrical circuit	<p>1.1 Job requirements are determined according to workplace instructions</p> <p>1.2 Testing procedures and information are accessed and interpreted</p> <p>1.3 Fault finding options are analysed and those most appropriate to</p>

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	<p>the circumstances are selected</p> <p>1.4 Hazards associated with the work are identified and risks are managed</p> <p>1.5 Tools and electrical test equipment are selected and checked for serviceability</p>
2. Test circuit	<p>2.1 Basic electrical circuit is checked to establish extent of failure or damage</p> <p>2.2 Circuit is tested according to manufacturer specifications, workplace procedures and <i>safety requirements</i>, and without causing damage to components or systems</p> <p>2.3 Faults are identified from test results and causes of faults are determined</p> <p>2.4 Findings are reported according to workplace procedures</p>
3. Repair and check circuit	<p>3.1 Repair procedures and information are accessed and interpreted</p> <p>3.2 Repair options are analysed and most appropriate option is selected</p> <p>3.3 Repair tools and materials are selected according to job requirements</p> <p>3.4 Circuit components are repaired and adjusted according to manufacturer specifications, workplace procedures and safety requirements</p> <p>3.5 Post-repair testing is carried out to confirm basic electrical circuit is operating correctly, any reported problems are resolved, and no other problems are present</p>
4. Complete work processes	<p>4.1 Final inspection is made to ensure work is to workplace expectations and vehicle or machinery is presented ready for use</p> <p>4.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recyclable material is collected</p> <p>4.3 Tools and equipment are checked and stored and any faulty electrical equipment is identified, tagged and isolated according to workplace procedures</p> <p>4.4 Workplace documentation is processed according to workplace procedures</p>

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:	<ul style="list-style-type: none"> locate appropriate sources of information efficiently.
Reading skills to:	<ul style="list-style-type: none"> interpret text, symbols and wiring diagrams in information relating to basic electrical system testing and repair equipment from manufacturer specifications, and workplace instructions and procedures.
Writing skills to:	<ul style="list-style-type: none"> legibly and accurately fill out workplace documentation relating to testing and repairing basic electrical circuits.
Oral communication skills to:	<ul style="list-style-type: none"> clarify instructions.
Numeracy skills to:	<ul style="list-style-type: none"> interpret vehicle electrical measurements and readings measure voltage, current and resistance use basic mathematical operations, including addition, subtraction, multiplication and division, to calculate deviations from manufacturer specifications.
Planning and organising skills to:	<ul style="list-style-type: none"> plan own work requirements and prioritise actions to achieve required outcomes and ensure tasks are completed within workplace timeframes.
Technology skills to:	<ul style="list-style-type: none"> use specialised tools, such as test lights and multimeters.

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.

Italicised wording, if used in the performance criteria, is detailed below.

<i>Safety requirements</i> must include:	<ul style="list-style-type: none"> work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for: <ul style="list-style-type: none"> using specialised tools and equipment selecting and using personal protective equipment (PPE) identifying hazards and controlling risks associated with wearing jewellery while working around electrical systems.
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Unit Mapping Information

Equivalent to AURETR2012 Test and repair basic electrical circuits

Links

Companion Volume implementation guides are found in VETNet -

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