



Australian Government

AURETR3025 Test, charge and replace batteries

Release 1

AURETR3025 Test, charge and replace batteries

Modification History

Release	Comment
Release 1	Replaces AURE218676A Test, service and charge batteries (Heavy Vehicle) Performance Criteria and Range Statement updated to reflect technologies

Unit Descriptor

Unit descriptor	<p>This unit describes the performance outcomes required to test, charge, jump-start, and remove and replace automotive batteries.</p> <p>The unit involves identifying and confirming work requirements; preparing for work; servicing, testing and charging batteries; and completing work finalisation processes, including clean-up and documentation.</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 light vehicles, heavy vehicles, motorcycles, mining plant and equipment, outdoor power equipment, and marine craft.</p> <p>Work requires individuals to demonstrate some judgement and problem-solving skills in managing own work activities and contributing to a productive team environment.</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 required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or 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. Prepare to test and inspect battery	<p>1.1. Nature and scope of work requirements are identified and confirmed</p> <p>1.2. Workplace health and safety (WHS) requirements, including individual state and territory regulatory requirements and personal protective equipment (PPE) needs, are observed throughout the work</p> <p>1.3. Safe operating procedures and information such as site procedures and specifications are sourced</p> <p>1.4. Technical information is accessed from manufacturer and component supplier specifications and interpreted</p> <p>1.5. Tools, equipment and materials are identified and prepared</p> <p>1.6. Warnings in relation to working with batteries are observed</p>
2. Test and service battery	<p>2.1. Service and maintenance methods are carried out according to workplace procedures and manufacturer and component supplier specifications</p> <p>2.2. Electrolyte levels are checked and topped up where appropriate according to service and maintenance methods</p> <p>2.3. Batteries and terminals are cleaned according to site procedures</p> <p>2.4. Battery voltage and load checks are conducted to confirm service repair action</p> <p>2.5. Battery is charged, jump-started or replaced</p>
3. Charge battery	<p>3.1. Technical information for charging is accessed from manufacturer and component supplier specifications and is correctly interpreted</p> <p>3.2. Components, tools and equipment to complete work are identified, selected and prepared according to site procedures</p> <p>3.3. Electrolyte levels are checked and topped up according to site procedures</p> <p>3.4. Batteries are charged according to site procedures and component manufacturer and supplier recommendations</p>
4. Carry out jump-start procedures to vehicle	<p>4.1. Technical information is accessed from manufacturer and component supplier specifications and is correctly interpreted</p> <p>4.2. Battery voltage is identified and vehicle and equipment are confirmed as being appropriate to jump-start procedures</p> <p>4.3. Leads are connected and disconnected in correct sequence and polarity</p> <p>4.4. Work is carried out without causing damage to the vehicles</p>

ELEMENT	PERFORMANCE CRITERIA
	involved and equipment being used
5. Remove and replace battery	5.1.Battery is removed from vehicle according to site procedures, and component manufacturer and supplier recommendations 5.2.Battery is replaced in line with vehicle electrical and physical specifications and measurements 5.3.Correct secure battery fitment is confirmed 5.4.Battery terminals are reconnected and tightened
6. Retest battery	6.1.Test methods are implemented according to workplace procedures and manufacturer and component supplier specifications 6.2.Test results are compared with manufacturer and component supplier specifications 6.3.Results are documented with evidence, and supporting information is recorded
7. Prepare vehicle and equipment for delivery to customer after battery is replaced	7.1.Final inspection is made to ensure work is to workplace expectations 7.2.Vehicle is cleaned to workplace expectations and presented ready for use 7.3.Workplace documentation is processed according to workplace procedures
8. Clean up work area and maintain equipment	8.1.Material that can be reused or recycled is collected and stored according to workplace sustainability practices 8.2.Waste and scrap are removed according to workplace practices 8.3.Tools, equipment and work area are cleaned and inspected according to workplace procedures 8.4.Tools and equipment are maintained according to workplace procedures 8.5.Faulty equipment is identified, tagged and isolated according to workplace procedures

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 verbal and written instructions
 - communicate basic information relating to battery safety
 - clarify workplace instructions and determine job requirements
 - gain information from appropriate persons and assistance as required
- initiative and enterprise skills to:
 - participate in self-improvement activities
 - recognise a workplace problem or potential problem
- literacy skills to:
 - read and follow battery inspection and maintenance information
 - read and follow information on standard operating procedures and repair guidelines
- numeracy skills to:
 - test, measure and analyse test equipment results compared to desired system performance
 - assess tolerances and apply accurate measurements and adjustments
- 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 refer problems outside area of responsibility to appropriate person
- self-management skills to:
 - locate and identify appropriate tools and equipment
 - locate technical information
 - 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
 - work with diverse individuals and groups
- technical skills to:
 - understand technical information relating to recognising and reporting unsafe situations
 - select tools and equipment appropriate to inspecting, servicing and maintaining light and heavy vehicle batteries
 - use battery servicing and testing tools and equipment safely
 - maintain tools and equipment using appropriate techniques and standard operating procedures
- technology skills to:

REQUIRED SKILLS AND KNOWLEDGE

- use workplace technology relating to inspecting, servicing and maintaining battery storage systems, including use of specialist tools, measuring equipment and communication devices
- report and document results

Required knowledge

- WHS and environmental regulations, requirements, equipment and material, including personal safety requirements
- battery testing methods
- dangers of working with battery testing equipment
- dangers associated with overcharging batteries
- operating principles and layout of vehicle battery storage systems
- battery inspection procedures
- battery service and maintenance procedures
- workplace quality procedures
- work organisation and planning processes relating to testing, charging and replacing batteries

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, the 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:

- observe safety procedures and requirements
- select methods and techniques appropriate to the circumstances
- complete preparatory activity in a systematic manner
- service and charge batteries
- test batteries and battery connections
- jump-start vehicles
- remove and replace vehicle batteries correctly
- accurately interpret inspection and test results
- conduct servicing, removal and replacement according to workplace, manufacturer and component supplier requirements
- present vehicle and equipment in a condition that complies with workplace requirements.

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 must be made available for the assessment of this unit:

- workplace location or simulated workplace

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the Performance Criteria, required Skills and Knowledge, the Range Statement and the Assessment Guidelines for the Training Package.

Overview of assessment

- material relevant to servicing, maintaining and replacing batteries, including a range of various battery types
- equipment, and hand and power tools appropriate to servicing, maintaining and replacing batteries
- specifications and work instructions.

Method of assessment

Assessment must satisfy the endorsed Assessment Guidelines of 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, 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.

<i>Workplace health and safety requirements</i> may include:	<ul style="list-style-type: none"> • personal protective clothing and equipment • safe use of tools and equipment • handling of potentially hazardous material and substances • use of fire-fighting equipment • first aid training and response • control of hazards and hazardous materials.
<i>Personal protective equipment</i> may include:	<ul style="list-style-type: none"> • safety glasses • protective clothing • gloves.
<i>Safe operating procedures</i> may include:	<ul style="list-style-type: none"> • conducting operational risk assessments • treatments associated with vehicle movement • toxic substances • electrical safety • machinery movement and operation • manual and mechanical lifting and shifting • procedures for working in proximity to others and site visitors.
<i>Technical information</i> may include:	<ul style="list-style-type: none"> • battery manufacturer and component supplier recommendations.
<i>Tools and equipment</i> may include:	<ul style="list-style-type: none"> • hand tools • load testing devices • hydrometer • multimeter • jumper leads • booster charger.
<i>Materials</i> may include:	<ul style="list-style-type: none"> • battery consumables • cleaning materials.
<i>Service and maintenance methods</i> may include:	<ul style="list-style-type: none"> • inspecting battery, terminals and leads • inspecting battery securing system • cleaning battery and battery compartment or storage area • topping up battery fluid • testing battery with a hydrometer.

Unit Sector(s)

Competency field	Electrical
Unit sector	Technical – Electrical and Electronic

Custom Content Section

Not applicable.