



Australian Government

AURETR015 Inspect, test and service batteries

Release: 1

AURETR015 Inspect, test and service batteries

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to inspect, test and service vehicle, vessel and machinery batteries. It involves preparing for the task, inspecting battery systems, servicing the systems, and completing workplace processes and documentation, including any associated recommendations for further action.

It applies to those working in the automotive service and repair industry. The battery systems 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 inspect, test and service battery	1.1 Job requirements are determined according to workplace instructions 1.2 Inspection, testing and servicing procedures are accessed and interpreted

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.
	1.3 Hazards associated with the work are identified and risks are reported 1.4 <i>Tools, equipment and materials</i> are selected and checked for serviceability
2. Inspect and test battery	2.1 Battery systems are inspected and tested according to workplace procedures and <i>safety requirements</i> 2.2 Battery circuits are tested according to workplace procedures and without causing damage to components or systems 2.3 Inspection results are compared with manufacturer specifications 2.4 Inspection findings are reported according to workplace procedures, including recommendations for required repairs or adjustments
3. Service and maintain battery	3.1 Battery is serviced and maintained according to manufacturer and battery specifications, workplace procedures, and safety and <i>environmental requirements</i>, and without causing damage to components or systems 3.2 Post-service testing is carried out to confirm battery is operating to manufacturer specifications, any reported problems are resolved, and no other problems are present
4. Complete work processes	4.1 Final inspection is made to ensure work is to workplace expectations and vehicle, vessel or machinery is presented ready for use 4.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recycle material is collected 4.3 Tools and equipment are checked and stored and any faulty electrical equipment is identified, tagged and isolated according to workplace procedures 4.4 Workplace documentation is processed according to workplace procedures

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
---------------	--------------------

Skills	Description
Learning skills to:	locate battery information efficiently.
Reading skills to:	interpret information from manufacturer and workshop literature when seeking battery service procedures and specifications.
Writing skills to:	legibly and accurately fill out workplace documentation when reporting inspection findings, making recommendations, and recording parts and material used.
Oral communication skills to:	clarify instructions and report inspection findings to appropriate personnel.
Numeracy skills to:	- match battery types and identification numbers to workplace instructions and manufacturer specifications - interpret and compare battery specifications and procedures, including: - battery-specific gravity measurements - cold cranking amp (CCA) measurements.
Technology skills to:	use specialised tools and equipment when inspecting, testing and servicing batteries, including battery load testing devices 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. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Tools, equipment and materials</i> must include:	- battery load testing device - multimeter - battery cleaning materials.
<i>Safety requirements</i> must include:	- work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for: - selecting and using personal protective equipment (PPE), including clothing, and eye and hand protection - working with high current electrical systems - manually handling batteries and toxic and corrosive substances - conducting risk assessments of battery, vehicle and equipment movement before carrying out work - working safely when using battery testing equipment.

<i>Environmental requirements</i> must include:	• procedures: • found in safety data sheets (SDS) relating to toxic and corrosive substances • for recycling and disposing of replaced batteries.
--	--

Unit Mapping Information

Equivalent to AURETR2015 Inspect and service batteries

Links

Companion Volume implementation guides are found in VETNet -

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

Assessment Requirements for AURETR015 Inspect, test and service batteries

Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standard defined in the unit's elements, performance criteria, range of conditions and foundation skills:

- inspect, test and service the batteries of three different vehicles, vessels or machinery, in which the work must involve one maintenance-free battery.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to inspecting, testing and servicing batteries, including procedures for:
 - selecting and using personal protective equipment (PPE), including clothing, and eye and hand protection
 - working with high current electrical systems
 - manually handling batteries and toxic and corrosive substances
 - conducting risk assessments of battery, vehicle and equipment movement before carrying out work
 - working safely when using battery testing equipment
- environmental requirements, including procedures:
 - found in safety data sheets (SDS) relating to toxic and corrosive substances
 - for recycling and disposing of replaced batteries
- basic operating principles of batteries, including using chemical energy to produce electrical energy
- types of automotive batteries, including:
 - lead acid batteries
 - deep cycle batteries

- maintenance-free batteries
- gel batteries
- absorbed glass mat batteries
- calcium batteries
- lithium ion and lithium ion phosphate batteries
- battery classifications, including:
 - reserve capacity
 - amp hour rating
 - cold cranking amps
- battery connection methods for 6 volt, 12 volt, 24 volt and 48 volt, including:
 - series
 - parallel
 - series parallel
- inspection and testing procedures for batteries, including:
 - terminals and leads
 - battery securing system
 - testing battery with load testing devices
 - testing battery with a hydrometer
 - battery memory retention
- servicing procedures for batteries, including:
 - cleaning battery and battery compartments
 - topping up battery fluid
- post-service testing procedures, including confirming that battery is serviceable and operating to manufacturer specifications.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

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

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the batteries that they have inspected, tested and serviced, e.g. repair orders.

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 repair workplace or simulated workplace
- workplace instructions
- manufacturer battery specifications

- PPE, including clothing, and eye and hand protection
- three different vehicles, vessels or machinery with batteries as specified in the performance evidence requiring servicing
- tools, equipment and materials appropriate for inspecting, testing and servicing batteries, including battery load testing devices, multimeters and cleaning materials.

Links

Companion Volume implementation guides are found in VETNet -

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

Companion Volume implementation guides are found in VETNet -

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