



Australian Government

AURETR013 Inspect, test and service charging systems

Release: 1

AURETR013 Inspect, test and service charging systems

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 charging systems. It involves preparing for the task, inspecting charging 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 charging 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 charging system	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 Tools and equipment, including multimeter, are selected and checked for serviceability
2. Inspect and test system	2.1 System is inspected and tested according to manufacturer specifications, workplace procedures and safety requirements 2.2 Charging circuit is 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 system	3.1 System is serviced according to manufacturer specifications, workplace procedures, and safety and environmental requirements, and without causing damage to components or systems 3.3 Post-service testing is carried out to confirm charging system is operating to manufacturer specifications and that 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
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Skills	Description
Learning skills to:	locate charging system information efficiently.
Reading skills to:	interpret information from manufacturer and workshop literature when seeking charging system service procedures and specifications.
Writing skills to:	legibly and accurately complete 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:	measure system output and use basic mathematical operations, including addition and subtraction, to calculate deviations from manufacturer specifications.
Technology skills to:	use specialised tools and equipment, including 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>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 safely with high current electrical systems.
<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 charging system components.

Unit Mapping Information

Equivalent to AURETR2013 Inspect and service charging systems

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 AURETR013 Inspect, test and service charging systems

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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 charging systems of three different vehicles, vessels or machinery, in which the work must involve checking:
 - system output
 - system control circuit
 - system wiring.

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 charging systems, including procedures for:
 - selecting and using personal protective equipment (PPE), including clothing, and eye and hand protection
 - working safely with high current electrical systems
- environmental requirements, including procedures:
 - found in safety data sheets (SDS) relating to toxic and corrosive substances
 - for recycling and disposing of replaced charging system components
- identification and function of charging system components, including:
 - battery types, including:
 - lead acid and deep cycle batteries
 - maintenance-free batteries
 - generators
 - alternators

- basic operating principles of charging systems, including:
 - using mechanical energy to produce electrical energy
 - charging battery and supplying power demands of vehicle
- inspection procedures for charging systems, including visual, aural and functional assessments of:
 - component damage and wear
 - component corrosion
- testing procedures for charging systems, including:
 - accessing electrical terminals and using test probes without damaging connectors, fuse holders or wiring
 - measuring charging system output under load
- servicing procedures for charging systems, including:
 - changing and adjusting drive belts
 - cleaning and tightening terminals
 - checking gauges and warning devices for operation
- post-service testing procedures, including confirming that charging system is 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 charging systems 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 charging system specifications
- PPE, including clothing, and eye and hand protection
- three different vehicles, vessels or machinery with charging systems requiring servicing
- tools and equipment appropriate for inspecting, testing and servicing charging systems, including multimeter.

Links

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