



Australian Government

AURETR021 Inspect, service and repair electronic management, monitoring and tracking systems

Release: 1

AURETR021 Inspect, service and repair electronic management, monitoring and tracking systems

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to inspect, service and repair electronic monitoring, management and tracking systems fitted to heavy vehicles or machinery. It involves preparing for the task, inspecting the systems, repairing 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 electronic management, monitoring and tracking systems include those in heavy vehicles, agricultural machinery or mobile plant machinery.

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, service and repair	1.1 Job requirements are determined according to workplace instructions

Elements Elements describe the essential outcomes.	Performance Criteria 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.
electronic management, monitoring and tracking system	1.2 Inspection, servicing and repair procedures are accessed and interpreted 1.3 Hazards associated with the work are identified and risks are managed 1.4 Tools and electrical test equipment are selected and checked for serviceability
2. Inspect and test system	2.1 System is inspected and tested according to workplace procedures and safety requirements 2.2 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 repair system	3.1 System is serviced and repaired according to manufacturer and component specifications, workplace procedures, and safety and environmental requirements , and without causing damage to components or systems 3.2 System is performance tested and final adjustments are made 3.3 Post-repair testing is carried out to confirm system 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 or machinery is presented ready for use with protective guards, safety features and cowlings in place 4.2 Work area is cleaned, waste and non-recyclable materials are disposed of and recyclable 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
Learning skills to:	locate appropriate sources of information efficiently.
Reading skills to:	interpret text, symbols and diagrams in manufacturer specifications and workplace procedures.
Writing skills to:	legibly and accurately fill out workplace documentation when reporting diagnostic findings, making repair recommendations, and recording parts and material used.
Oral communication skills to:	clarify instructions and report inspection findings to appropriate personnel.
Numeracy skills to:	- interpret vehicle electrical measurements and readings on digital and analogue gauges - measure voltage, current and resistance and use basic mathematical operations, including addition and subtraction, to calculate deviations from manufacturer specifications.
Technology skills to:	use specialised tools and electrical test equipment, including scan tools.

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 electronic management, monitoring and tracking system components.

Unit Mapping Information

Equivalent to AURETR3021 Inspect, service and repair electronic management, monitoring and tracking 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 AURETR021 Inspect, service and repair electronic management, monitoring and tracking systems

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Performance Evidence

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

- inspect, service and repair three of the following electronic management, monitoring and tracking systems:
 - receivers
 - displays
 - electronic controllers
 - steering actuators
 - telematics
 - connectors and harnesses.

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, servicing and repairing electronic management, monitoring and tracking systems, including procedures for:
 - 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 electronic management, monitoring and tracking system components

- operating principles of electronic management, monitoring and tracking systems, including:
 - system overview
 - global positioning system (GPS)
 - electronic sensors and processors
 - electrical actuators
- application, purpose and operation of electronic management, monitoring and tracking systems, including:
 - receivers
 - displays
 - electronic controllers
 - steering actuators
 - telematics
 - connectors and harnesses
- techniques for reading and interpreting automotive technical information, graphic symbols and wiring diagrams
- inspection procedures, including:
 - analysing system operation
 - identifying software versions
 - interrogating electronic fault codes
- testing electrical systems, including procedures for accessing electrical terminals and using test probes without damaging connectors, fuse holders or wiring
- service and repair procedures, including:
 - component removal and replacement procedures
 - downloading and installing relevant component software
 - component and associated system adjustment procedures to include variable operating conditions
- post-repair testing procedures, including:
 - confirming that vehicle or machinery electronic monitoring, management and tracking systems are serviceable and operating to manufacturer specifications
 - confirming that no other problems are present as a result of the repair.

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 electronic management, monitoring and tracking system that they have inspected, serviced and repaired, 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 specifications for electronic management, monitoring and tracking systems
- PPE, including clothing, and eye and hand protection
- vehicles or machinery with the electronic management, monitoring and tracking systems specified in the performance evidence requiring service or repair
- tools, equipment and materials appropriate for inspecting, servicing and repairing electronic management, monitoring and tracking systems, including scan tool.

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