



Australian Government

Assessment Requirements for AURTTR101

Diagnose complex faults in engine management systems

Release: 1

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Modification History

Release	Comments
Release 1	This version first released with AUR Automotive Retail, Service and Repair Training Package Version 6.0

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- diagnose a complex fault in three different engine management systems in which the work for at least two of the systems must involve a different complex fault from the following:
 - an intermittent fault
 - a fault that affects more than one system
 - a fault introduced as a result of a system repair
 - an indirect fault caused by the influence of external systems
- develop a testing strategy to diagnose the causes of the complex faults in the above systems.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- methods to locate and interpret information required to diagnose and repair complex faults in engine management systems, including:
 - engine management system manufacturer specifications
 - information from customers and supervisors
- workplace procedures required to diagnose and repair complex faults in engine management systems, including:
 - establishing the serviceability of tools and equipment
 - documentation procedures
 - housekeeping procedures, including:
 - examination of tools and equipment
 - storage of equipment
 - identification, tagging and isolation of faulty equipment

- safe disposal of materials
 - recycling procedures
- workplace health and safety (WHS) requirements relating to diagnosing complex faults in engine management systems, including procedures for:
 - working with high pressure petrol fuel systems
 - working on vehicle high voltage ignition systems
 - identifying hazards and controlling risks associated with wearing jewellery while working around high current wiring systems
- environmental requirements relating to engine management systems
- types of complex faults relating to engine management systems, including:
 - intermittent
 - multi-system
 - introduced as a result of system repair
 - indirect, caused by the influence of external systems
- key features of engine management systems, including:
 - injectors
 - air flow meters
 - temperature sensors
 - pressure sensors
 - throttle position sensors
- testing procedures for engine management systems, including procedures for:
 - dynamic and static testing of vehicle or machinery
 - component failure analysis
- types and key features of diagnostic testing equipment required to diagnose complex faults in engine management systems, including:
 - scan tools
 - oscilloscopes
- procedures for accessing and interpreting scan tool system data, including:
 - diagnostic trouble codes (DTCs), including:
 - conditions that set the DTCs
 - conditions for running DTCs
 - live data
 - freeze frame data
 - waveforms.

Assessment Conditions

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 engine management systems that they have worked on, 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 engine management system specifications
- three different vehicles or machinery with complex faults in their engine management systems
- engine management system diagnostic equipment, including scan tools and oscilloscopes
- tools, equipment and materials appropriate for diagnosing complex faults in engine management systems.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume Implementation Guide is found on VETNet -

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