



Australian Government

**Assessment Requirements for AURTTL011
Diagnose complex faults in CNG fuel
systems**

Release: 1

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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 standards defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- diagnose a complex fault in three different compressed natural gas (CNG) systems
- the above diagnosis must involve two of the following types of complex faults:
 - 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.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to diagnosing complex faults in CNG fuel systems, including procedures for working with lighter-than-air flammable gas
- environmental requirements, including procedures for preventing loss of gas to atmosphere
- types of complex faults relating to CNG fuel systems, including:
 - intermittent
 - multi-system
 - introduced as a result of system repair
 - indirect, caused by the influence of external systems
- types, functions and operation of CNG fuel systems, including:
 - fuel lock-offs
 - injectors

- mixers
- metering units
- requirements of AS/NZS 2739 Natural gas (NG) fuel systems for vehicle engines
- testing procedures for CNG fuel systems, including:
 - component failure analysis
 - safety component operation
 - electrical control systems
 - exhaust emissions
 - on-road fuel efficiency
 - data interpretation
- types, functions, operation and limitations of diagnostic testing equipment required to diagnose complex faults in CNG fuel systems
- 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
 - vehicle continuous and non-continuous monitored systems
- methods and processes for documenting and reporting diagnostic findings and recommendations.

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 CNG fuel 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
- AS/NZS 2739 Natural gas (NG) fuel systems for vehicle engines
- manufacturer CNG fuel system specifications
- three different CNG fuel systems with complex faults
- CNG fuel system diagnostic equipment, including scan tool

- tools, equipment and materials appropriate for diagnosing complex faults in CNG fuel systems.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

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