



Australian Government

Assessment Requirements for AURETR020 Diagnose and repair network electronic control systems

Release: 1

Assessment Requirements for AURETR020 Diagnose and repair network electronic control systems

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 and performance criteria, range of conditions and foundation skills:

- diagnose and repair a fault in three different network electronic control circuits that set network communication diagnostic trouble codes (DTCs), including one single wire circuit and one two-wire circuit.

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 and repairing network electronic control systems, including procedures for identifying hazards and controlling risks associated with:
 - working on vehicle high voltage ignition systems
 - wearing jewellery while working around high current wiring systems
- operating principles of network electronic control systems and associated components, including:
 - assurance of message delivery, non-conflicting messages, minimum time of delivery, and electromagnetic field (EMF) noise resilience
 - network topographies
 - network protocols, including characteristics and data speeds
- application, purpose and operation of network electronic control systems and components, including:
 - controlled area network (CAN), including:
 - nodes: host processor, CAN controller, and transceiver
 - gateway modules

- terminating resistors
- data transmission
- vehicle data logic connector (DLC)
- local interconnect network (LIN), including:
 - master and slaves
 - data transmission
- diagnostic testing procedures for network electronic control systems, including:
 - accessing and interpreting scan tool system data, including:
 - DTCs, including 'U' type communication codes
 - live data
 - freeze frame data
 - waveforms
 - using diagnostic flow charts
 - testing electrical systems, including procedures for:
 - accessing electrical terminals and using test probes without damaging connectors, fuse holders or wiring
 - determining damage to system wiring and connectors
- repair procedures for network electronic control systems, including:
 - connector removal and replacement procedures
 - removal and replacement procedures for vehicle network electronic control system components
- post-repair testing procedures for network electronic control systems, including:
 - DTC clearing procedures
 - checking for electrical connector mating.

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 network electronic control 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 specifications for network electronic control systems

- two different network electronic control circuits
- diagnostic equipment for network electronic control circuits, including:
 - multimeter
 - scan tool
 - oscilloscope
- tools, equipment and materials appropriate for repairing network electronic control circuits.

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>