



Australian Government

Assessment Requirements for AURETB001 Diagnose and repair electric braking 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 and repair a fault in the electrical non CAN-bus networked braking system of two different vehicles or machinery.

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 electric braking systems, including procedures for:
 - using specialised tools and equipment
 - using appropriate personal protective equipment (PPE)
 - identifying hazards and controlling risks associated with working on vehicle high voltage ignition systems, including standard precautions including not wearing jewellery while working around high current wiring systems
- electrical principles, including:
 - current, voltage, resistance and power
 - series circuits
 - parallel circuits
 - series and parallel circuits
 - Ohm's law
 - Faraday's law
 - Kirchhoff's law
 - electromagnetic interference and radiation
- application, purpose and operation of electric braking systems and components, including:

- control systems, including:
 - electric over hydraulic
 - electric over vacuum
- circuit protection devices
- switches, relays and globes, including light emitting diodes (LEDs)
- cable types and sizes and current carrying capacity
- sensors (two and three-wire)
- actuators, including pulse width modulated (PWM)
- techniques for reading and interpreting technical information, including circuit types, diagrams and symbols
- diagnostic testing procedures for electric braking systems, including:
 - using diagnostic flow charts
 - testing electrical systems, including procedures for:
 - accessing electrical terminals and using test probes without damaging connectors, fuse holders or wiring
 - testing resistance and voltage drop
 - testing open and short circuits
 - checking shorts to signal, power circuits and grounds
 - visual, aural and functional assessments of electric braking system components, including:
 - component damage and wear
 - component or connector corrosion
 - component water or moisture ingress
- repair procedures for electric braking system circuits, including procedures for removing and replacing:
 - brake controllers
 - electric drum brakes
 - electric disc brakes
 - electric braking system wiring and connectors
- post-repair testing procedures, including static and dynamic performance tests of electric braking systems.

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 includes third-party evidence, individuals must provide evidence that links them to the electric braking 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 electric braking system specifications
- two different vehicles or machinery with electric braking system faults
- diagnostic equipment for electric braking systems, including:
 - multimeter
 - scan tool
- tools, equipment and materials appropriate for repairing vehicle and machinery electric braking systems.

Links

Companion Volume implementation guides are found in VETNet -

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

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