



**Australian Government**

**Assessment Requirements for AURETB101  
Diagnose and repair electric braking  
systems**

**Release: 1**

# Assessment Requirements for AURETB101 Diagnose and repair electric braking systems

## 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 and repair a fault in at least one of the following components in the electrical non CAN-bus networked braking system of at least two different vehicles or machinery:
  - brake controller
  - circuit protection device
  - switch, relay or globe
  - sensor
  - actuator.

## 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:

- techniques for reading and interpreting technical information, including circuit types, diagrams and symbols
- methods to locate and interpret information required to diagnose and repair electric braking systems, including:
  - information provided by customers and supervisors
  - manufacturer specifications and procedures or equivalent documentation
- workplace procedures required to diagnose and repair electric braking systems, including:
  - establishing 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

- disposal of excess materials
- recycling procedures
- workplace health and safety (WHS) 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:
    - wearing jewellery while working around high current wiring systems
- environmental requirements relating to diagnosing and repairing electric braking systems
- electrical principles, including:
  - current, voltage, resistance and power
  - identification and operation of simple electrical circuits, including:
    - series circuits
    - parallel circuits
    - series parallel circuits
  - Ohm's law
  - Faraday's law
  - Kirchhoff's law
  - electromagnetic interference and radiation
- 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)
- diagnostic testing procedures for electric braking systems, including:
  - accessing and interpreting scan tool system data, including:
    - diagnostic trouble codes (DTCs)
    - live 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
  - resistance and voltage drop tests
  - open and short circuit tests

- 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 systems, including procedures for removing and replacing:
  - brake controllers
  - electric drum brakes
  - electric disc brakes
  - electric braking system wiring and connectors
- post-repair testing procedures for electric braking systems, including:
  - DTC clearing procedures
  - static and dynamic performance tests of steering system.

## 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 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 scan tool
- tools, equipment and materials appropriate for repairing vehicle and machinery electric braking 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>