



**Australian Government**

**Assessment Requirements for AURETU006  
Diagnose complex faults in air conditioning  
and HVAC systems**

**Release: 1**

# Assessment Requirements for AURETU006 Diagnose complex faults in air conditioning and HVAC 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 this unit's elements, performance criteria, range of conditions and foundation skills:

- diagnose a complex fault in the air conditioning and heating, ventilation and air conditioning (HVAC) systems of two different vehicles, vessels or machinery
- 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 air conditioning and HVAC systems, including procedures for:
  - identifying hazards and controlling risks associated with wearing jewellery while working around high electrical currents
  - working with refrigerants at boiling point given risk of frostbite
  - working with system lubricants, including carcinogenic oils
  - handling flammable refrigerants
  - preventing loss of refrigerant to environment
  - using personal protective equipment (PPE)
  - identifying and using fire safety equipment

- environmental requirements, including procedures for preventing loss of refrigerant to the atmosphere
- types of complex faults relating to air conditioning and HVAC systems, including:
  - intermittent
  - multi-system
  - introduced as a result of system repair
  - indirect, caused by the influence of external systems
- requirements of Australian automotive code of practice: Control of refrigerant gases during manufacture, installation, servicing or de-commissioning of motor vehicle air conditioners, including procedures for preventing loss of refrigerant to atmosphere
- methods for locating and content of manufacturer specifications, workplace procedures and other technical information relating to air conditioning and HVAC systems
- types, function and operation of air conditioning and HVAC systems, including:
  - climate control systems
  - single and dual zone systems
  - electric controlled compressor systems
- testing procedures for air conditioning and HVAC systems, including:
  - vehicle HVAC performance testing
  - component failure analysis
  - vehicle continuous and non-continuous monitored systems
- procedures for using testing and diagnostic tools and equipment, including:
  - scan tools
  - oscilloscopes
  - manifold and gauge sets
  - vacuum pumps
  - leak detectors
  - nitrogen cylinder and regulators
  - digital vacuum gauges (vacrometer)
  - digital multimeters
  - infra-red thermometers (pyrometer)
- types, functions, operation and limitations of diagnostic testing equipment required to diagnose complex faults in vehicle air conditioning and HVAC 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
- methods and processes for documenting and reporting diagnostic findings and recommendations.

## Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements and hold an Australian Refrigerant Council (ARC) Refrigerant Handling licence.

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 air conditioning and HVAC 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 air conditioning and HVAC system specifications
- two different vehicles, vessels or machinery with complex faults in their air conditioning and HVAC systems
- testing and diagnostic tools and equipment appropriate for diagnosing and repairing complex faults in air conditioning and HVAC systems, including:
  - manifold and gauge sets
  - leak detectors
  - digital multimeters
  - thermometers
- tools, equipment and materials appropriate for diagnosing complex faults in air conditioning and HVAC 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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