Australian Government

Assessment Requirements for AURTTC003 Diagnose and repair cooling systems

Release: 1

Assessment Requirements for AURTTC003 Diagnose and repair cooling 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 standards defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- diagnose and repair a fault in two different cooling systems, in which the work must involve:
  - removing and refitting or replacing all of the following components:
    - radiator
    - water pump
    - engine core plugs
  - removing and refitting or replacing two of the following components:
    - thermostat
    - radiator hoses and heater hoses
    - heater core
    - heater valve
    - heat exchanger
    - engine fan system.

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 cooling systems, including procedures for handling hot pressurised cooling systems
- environmental requirements, including procedures for trapping, storing and disposing of fluids released from cooling systems
- operating principles of cooling systems and associated components, including:

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  - effects of heat, including changes of temperature, colour, state and volume of substances
  - heat transfer, including conduction, convection and radiation
  - air cooled systems
  - liquid cooled systems
- application, purpose and operation of the following components of cooling systems and components, including:
  - engine coolant types and composition
  - water pumps
  - thermostats and bypass systems
  - mechanical, hydraulic, pneumatic and electric cooling fan systems
  - radiators and radiator caps
  - heat exchangers
  - expansion tanks
  - hoses
  - drive belts
  - temperature sensors and gauges
- diagnostic testing procedures for cooling systems, including testing procedures for:
  - effects of corrosion, cavitation and electrolysis
  - transient voltage
  - engine coolant
  - cooling system pressure
  - combustion leak
  - cooling fan system
  - thermostat
  - infra-red thermal devices
  - cooling system hose
  - water pump
- repair procedures for cooling systems, including procedures for bleeding coolant systems
- post-repair testing procedures for cooling systems, including:
  - fan system operation
  - thermostat operation.

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.

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Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the cooling 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 cooling system specifications
- two different vehicles or machinery with cooling system faults
- diagnostic equipment for cooling systems
- tools, equipment and materials appropriate for repairing cooling 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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