



Australian Government

**Assessment Requirements for AURETU007
Overhaul air conditioning and HVAC
system compressors**

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:

- overhaul the air conditioning compressors of two different vehicles or machinery, including:
 - piston, scroll and rotary vane compressors
 - electric compressors
 - variable displacement compressors
 - clutchless compressors
- recover and evacuate refrigerants according to required code of practice and regulations, and recharge the system with the appropriate manufacturer refrigerant and oil type.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to overhauling air conditioning and heating, ventilation and air conditioning (HVAC) system components, including procedures for:
 - working with refrigerants at boiling point given risk of frostbite
 - working with system lubricants, including carcinogenic oils
 - handling flammable refrigerants
 - using personal protective equipment (PPE)
 - identifying and using fire safety equipment
- environmental requirements, including procedures for preventing loss of refrigerant to the atmosphere
- techniques for reading and interpreting technical information, including:

- refrigerant saturation temperatures in relation to ambient temperatures and changing levels of humidity
- graphic symbols and diagrams
- principal types of vehicle air conditioning and HVAC systems, including:
 - piston, scroll and rotary vane compressors
 - electric compressors
 - variable displacement compressors
 - clutchless compressors
- principal refrigerant types and their respective operating pressures and lubricating oils, including:
 - R12
 - R134a
 - R1234yf
- air conditioning and HVAC system component overhaul procedures, including:
 - methods for cleaning and preparing air conditioning and HVAC system compressor for overhaul
 - air conditioning and HVAC system compressor dismantling procedures
 - air conditioning and HVAC system compressor inspection, measuring and evaluation procedures, including methods for measuring and calculating tolerances and clearances
 - air conditioning and HVAC compressor repair and adjustment procedures, including:
 - piston, scroll and rotary vane compressors
 - electric compressors
 - variable displacement compressors
 - clutchless compressors
 - procedures for tolerance measuring and calculating and adjusting components
- post-overhaul bench testing procedures, including:
 - use of manifold gauges and surface probe thermocouples for complete system analysis
 - analysis of system operation while using gauges, temperature probes, electrical test equipment, scan tools, oscilloscopes and other industry-relevant test equipment
- post-overhaul testing of air conditioning and HVAC systems in vehicle or machinery, including:
 - diagnostic procedures for air conditioning and HVAC systems, including:
 - accessing and interpreting diagnostic trouble codes (DTCs)
 - diagnostic flow charts
 - visual, aural and functional assessments
 - ambient temperature
 - centre vent temperature
 - condenser and suction line temperature
 - manifold gauge pressure readings
 - refrigerant leaks.

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
- Australian automotive code of practice: Control of refrigerant gases during manufacture, installation, servicing or de-commissioning of motor vehicle air conditioners.
- manufacturer specifications for air conditioning and HVAC system components
- two different vehicles or machinery requiring overhaul, with operational air conditioning and HVAC systems and with components specified in the performance evidence
- tools, equipment and materials appropriate for overhauling and adjusting a range of air conditioning and HVAC compressors.

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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