



Australian Government

Assessment Requirements for MEM27026 Service and repair mobile plant air conditioning systems

Release: 1

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Modification History

Release 1: New unit

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria on at least two (2) occasions and include:

- following work instructions, standard operating procedures (SOPs) and safe work practices including refrigerant safe handling procedures
- obtaining and interpreting specifications air conditioning system/circuit diagrams, system operation and control data records, and identifying and inspecting system components for compliance with specifications
- planning and undertaking sequential servicing of air conditioning system in accordance with manufacturer specifications and regulatory requirements
- checking and adjusting control and system operation using appropriate test equipment, including checking for:
 - ambient and vent temperature
 - condenser and suction temperature
 - manifold gauge pressure
 - refrigerant leaks
 - heater core and system water coolant leaks
- ensuring that the sequence of operations conforms to specifications and operational requirements
- recording/reporting any modifications/alterations to the system in accordance with SOPs
- fault finding air conditioning systems controls and circuits using fault-finding techniques and appropriate test equipment
- repairing/replacing faulty items after testing for compliance to specifications using appropriate tools, equipment and techniques
- reassembling of air conditioning system to meet specifications
- verifying correct operation of air conditioning system after service and repair
- initiating maintenance and/or service follow-up procedures and completing maintenance and/or service reports according to SOPs.

Knowledge Evidence

Evidence required to demonstrate the required knowledge for this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include knowledge of:

- safe work practices and procedures and use of personal protective equipment (PPE)

- types of air conditioning systems used in mobile applications, including:
 - piston, scroll and rotary vane compressors
 - electric compressors
 - variable displacement compressors
 - clutchless compressors
 - single and multi-zone
- system operational and control requirements and specifications, including:
 - high and low pressure switches
 - pressure relief valves
 - temperature sensors
 - sunlight sensors
 - zone temperature sensors
 - carbon dioxide sensors
- heating system components, including core, control valve, blower motor and fan, ducts, controls and sensors
- typical mobile systems refrigerants, their features and applications and relationship to Australian Refrigerant Council (ARC) regulatory requirements
- lubricating oils
- application of air conditioning system components and controls
- digital controllers in mobile fieldbus systems (e.g. controller area network (CAN) bus) and their function and capabilities in regards to air conditioning systems
- controller fault code interrogation and interpretation where installed
- circuit sensors and controllers
- special system installation requirements
- air conditioning system test equipment and test procedures, including use of:
 - manifold gauges
 - surface probe thermocouples
 - temperature gauges
 - scan tools
 - electrical test equipment
 - electronic leak detectors
 - recovery units
 - vacuum pumps
 - electronic scales
 - other test equipment relevant to the vehicle system
- correct operational sequence of the system
- typical adjustments to correct sequencing variations from specification
- procedures for recording/reporting modifications/alterations and consequences of not recording/reporting
- air conditioning system commissioning procedures

- components not complying with operational specification and typical causes of component failure
- cause of the faulty condition in the component and appropriate procedures for rectifying the faulty condition
- appropriate maintenance schedule and procedures
- appropriate control component repair procedures
- typical test equipment and its application
- common adjustments that can be made to control systems and their effect
- any maintenance/service follow-up procedures
- maintenance/service recording/reporting requirements.

Assessment Conditions

- Assessors must:
 - have vocational competency in the service and repair of mobile plant air conditioning systems at least to the level being assessed with relevant industry knowledge and experience
 - satisfy the assessor requirements in the *Standards for Registered Training Organisations 2015* or its replacement and comply with the *National Vocational Education and Training Regulator Act 2011*, its replacement or equivalent legislation covering VET regulation in a non-referring state/territory as the case requires
- Where possible assessment must occur in operational workplace situations. Where this is not possible or where personal safety or environmental damage are limiting factors, assessment must occur in a sufficiently rigorous simulated environment that reflects realistic operational workplace conditions. This must cover all aspects of workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>