



Australian Government

MEM27027 Install or modify mobile plant air conditioning systems

Release: 1

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Modification History

Release 1: New unit

Application

This unit of competency defines the skills and knowledge required for installing or modifying in cabin air conditioning systems installed in mobile plant and rail vehicles.

The unit covers systems supplying heating, ventilation, air conditioning (HVAC) and cooling systems to operator compartments and includes installing new air conditioning systems into new or operating mobile plant or rail vehicles, modification of existing air conditioning systems, commissioning of systems and replacement and recovery of refrigerant.

This unit forms part of the requirements to obtain an Australian Refrigerant Council (ARC) Refrigerant handling licence – qualified persons (Automotive Air Conditioning Licence).

In some jurisdictions, an occupational licence for refrigeration/air conditioning or electrical restricted licence may be required.

Band: B

Unit Weight: 4

Pre-requisite Unit

MEM09002	Interpret technical drawing
MEM11011	Undertake manual handling
MEM12023	Perform engineering measurements
MEM13015	Work safely and effectively in manufacturing and engineering
MEM16006	Organise and communicate information
MEM18001	Use hand tools
MEM18002	Use power tools/hand held operations
MEM18055	Dismantle, replace and assemble engineering components

Competency Field

Fixed and Mobile Plant

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

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|--|--|
| 1 Determine job requirements | <ul style="list-style-type: none">1.1 Follow standard operating procedures (SOPs)1.2 Comply with work health and safety (WHS) requirements at all times1.3 Use appropriate personal protective equipment (PPE) in accordance with SOPs1.4 Identify job requirements from specifications, drawings, job sheets or work instructions1.5 Plan job to conform to Australian Refrigeration Council (ARC) code of practice requirements |
| 2 Install air conditioning system in new mobile plant | <ul style="list-style-type: none">2.1 Check that mobile plant is parked and engine/power source are safe for air conditioning system access and work2.2 Check cabin installation site against drawings or specifications for access, dimension and levels2.3 Check supplied air conditioning system matches specification and is complete2.4 Identify locations for structural support brackets and other support and holding components2.5 Identify air conditioning connection location and requirements for power, control modules, fieldbus wiring and sensors2.6 Prepare all surfaces, materials and components for use2.7 Install air conditioning system and connections in conformance with manufacturer and customer specifications2.8 Check air conditioning system is levelled, aligned, coupled and connected in accordance with specifications2.9 Charge system with specified refrigerant according to manufacturer specifications and regulatory requirements |

Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
<p>3 Modify or retrofit mobile plant air conditioning system</p>	<p>3.1 Determine modification requirements from customer specifications, job instructions and drawings, and equipment manuals</p> <p>3.2 Check that mobile plant is isolated/made safe according to SOPs</p> <p>3.3 De-gas system using approved recovery unit and appropriate refrigerant recovery cylinder for the refrigerant type</p> <p>3.4 Recover oil and evacuate system</p> <p>3.5 Remove air conditioning system or components requiring modification according to SOPs</p> <p>3.6 Retrofit or modify air conditioning system according to manufacturer specifications and customer requirements</p> <p>3.7 Pressure test system and identify leaks and non-conformances to specifications</p> <p>3.8 Re-charge system with specified refrigerant according to manufacturer specifications and regulatory requirements</p>
<p>4 Test and complete installation of new /retrofitted or modified mobile plant air conditioning system</p>	<p>4.1 Test air conditioning system for correct operation against specifications</p> <p>4.2 Trace non-conformances to specifications to root cause and rectify</p> <p>4.3 Document installation or modification actions according to workplace procedures</p>

Foundation Skills

This section describes those required skills (reading, writing, oral communication and numeracy) that are essential to workplace performance in this unit of competency.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Mobile plant air conditioning systems include one (1) or more of the following:

- in cabin units
- above, behind or below cabin units
- single units that feed two driver cabins e.g. some locomotive systems

Mobile plant air conditioning system components include one (1) or more of the following:

- fieldbus system control unit, modules and sensors relevant to the air conditioning system
- integrated or separate measurement/testing/data logging equipment
- pumps
- motors
- compressors
- condensers
- filters
- pipes and hoses
- switches
- valves
- coils and radiators
- receivers
- ancillary equipment

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -

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