



Australian Government

MEM18084 Commission and decommission split air conditioning systems

Release: 1

MEM18084 Commission and decommission split air conditioning systems

Modification History

Release 1. Supersedes and is equivalent to MEM18084A Commission and decommission split air conditioning systems

Application

This unit of competency defines the skills and knowledge required to commission and decommission single head split air conditioning systems, up to 18kW, to relevant standards, codes and local regulations.

It includes the application of safe working practices, following standard procedures to pressure test, evacuate, recover, charge and perform functional checks to test system performance.

This unit refers to plug in appliances only.

A Refrigerant Handling Licence must be held by any person who carries out work in relation to refrigeration and air conditioning equipment.

Band: A

Unit Weight: 4

Pre-requisite Unit

MEM09002	Interpret technical drawing
MEM11011	Undertake manual handling
MEM12023	Perform engineering measurements
MEM12024	Perform computations
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

Maintenance and diagnostics

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 | 1.1 | Follow standard operating procedures (SOPs) |
| | | 1.2 | Comply with work health and safety (WHS) requirements at all times |
| | | 1.3 | Use appropriate personal protective equipment (PPE) in accordance with SOPs |
| | | 1.4 | Identify job requirements from specifications, drawings, job sheets or work instructions |
| | | | |
| 2 | Determine the operating conditions of vapour compression systems | 2.1 | Determine the actual and specified range of operating conditions from measured and calculated values using established procedures to determine as they apply to particular vapour compression systems |
| | | 2.2 | Establish operating conditions and record on commissioning documentation |
| | | 2.3 | Obtain tools, equipment and testing devices needed to determine the basic operating conditions and check for correct operation and safety |
| | | | |
| 3 | Recover refrigerants from split air conditioning systems | 3.1 | Check for, and protect site from, ignition sources if R32 or other flammable refrigerants are used |
| | | 3.2 | Isolate circuits/appliances in strict accordance with work health and safety (WHS) requirements and procedures, where necessary |
| | | 3.3 | Remove refrigerants safely into suitably labelled containers in accordance with legislative and industry requirements |
| | | 3.4 | Deal with contaminated refrigerant in accordance with requirements |

Elements describe the essential outcomes.

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

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| 4 | Pressure and leak test split air conditioning systems | <p>4.1 Identify and note safety hazards and implement established risk control measures</p> <p>4.2 Follow industry codes of practice and manufacturer installation instructions</p> <p>4.3 Take precautions to prevent damage to components while pressure testing the system</p> <p>4.4 Conduct pressure testing at a pressure compatible with the refrigerant to be used</p> <p>4.5 Located leak, isolate and repair using methods appropriate to the system type under test and in accordance with industry practices</p> |
| 5 | Evacuate split air conditioning systems | <p>5.1 Note safety hazards which have not previously been identified, and implement established risk control measures</p> <p>5.2 Evacuate the system to the required level and clean the system of all moisture and other containments in accordance with requirements</p> <p>5.3 Apply a standing vacuum test in accordance with industry codes of practice and applicable standards</p> |
| 6 | Charge split air conditioning systems | <p>6.1 Select correct refrigerant for the system, in accordance with manufacturer requirements and industry practices</p> <p>6.2 Measure the refrigerant charge by weight in accordance with manufacturer specifications</p> <p>6.3 Charge the system in accordance with manufacturer requirements and industry practices</p> <p>6.4 Check all components and maintain in accordance with manufacturer requirements</p> |

Elements describe the essential outcomes.		Performance criteria describe the performance needed to demonstrate achievement of the element.	
7	Test the operation of split air conditioning systems	7.1	Start and operate the system
		7.2	Carry out standard tests to confirm system performance to manufacturer specifications
		7.3	Check the refrigerant charge and add refrigerant, if required
		7.4	Leak check the system
		7.5	Record test data, as required
8	Complete the commissioning/recommissioning of split air conditioning systems	8.1	Ensure the worksite is cleaned and left in presentable condition in accordance with original presentation, client requirements, industry standards and organisational requirements
		8.2	Undertake final inspections to ensure installation conforms to industry, legislative and work order requirements
		8.3	Instruct the client on the use of the product in accordance with organisational requirements and manufacturer specifications
		8.4	Complete certificates of compliance and other relevant commissioning documentation and process in accordance with state/territory regulatory requirements
9	Decommission split air conditioning systems	9.1	Electrically disconnect plug in appliance
		9.2	Recover refrigerants, store and dispose of in accordance with legislative and industry requirements
		9.3	Remove units and components and dispose of safely and in accordance with regulations, industry codes of practice and sustainable environmental practices
		9.4	Clean the worksite and leave in presentable condition, to client and organisational requirements, industry standards and sustainable environmental practices

Elements describe the essential outcomes.

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

- 9.5 Complete decommissioning documentation and process in accordance with state/territory regulatory requirements

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.

Tools, equipment and testing devices include one (1) or more of the following:

- refrigeration gauge manifold
- Schraeder access valves; quick connect couplings, and thermometer/thermocouple temperature measuring devices
- analogue and digital vacuum measuring gauges
- digital scales
- refrigerant recovery unit
- vacuum pump
- electronic leak detectors
- refrigerant containers/cylinders

Legislative and industry requirements include one (1) or more of the following:

- Commonwealth, state and territory legislation, regulations, standards and industry codes of practice
- The Ozone Protection and Synthetic Greenhouse Gas Legislation Amendment Bill 2003
- air conditioning residential best practice guidelines (AIRAH)
- AIRAH flammable refrigerants fact sheets and guide
- state/territory and local building regulations
- sustainable environmental practices for commissioning and decommissioning split air conditioning

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.

- System performance includes one (1) or more of the following:**
- pressure
 - temperature
 - sub-cooling
 - superheating
 - evaporator coil to air temperature difference

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM18084A Commission and decommission split air conditioning systems

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>

Assessment Requirements for MEM18084 Commission and decommission split air conditioning systems

Modification History

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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
- identifying and interpreting charts, lists, catalogues, specifications, legislative and industry requirements and drawings and obtaining relevant data with respect to commissioning and decommissioning split air conditioning systems
- checking system for correct operation using appropriate tools, techniques and equipment and comparing system and component performance/operation against specifications
- isolating circuit and appliances in strict accordance with work health and safety (WHS) requirements and procedures, where necessary
- identifying faulty components and non-compliances using appropriate tools, equipment and testing
- removing, containing and adding refrigerant safely in compliance with relevant Australian Standards or codes and regulations
- pressure and leak testing split air conditioning systems at a pressure compatible with the refrigerant to be used and locating leaks, isolating and applying appropriate repairs, adjustments or remedial action to achieve specifications
- completing commissioning procedures, including undertaking final inspection, instructing the client and completing certificates of compliance and other relevant commissioning documentation and processes
- decommissioning split air conditioning – single head systems using sustainable environmental practices
- completing all relevant commissioning and decommissioning documentation in accordance with state/territory regulatory requirements.

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)

- applicable legislative and regulatory requirements, standards, codes, licensing requirements and sustainable environmental practices for commissioning and decommissioning systems
- applicable procedures and legislative requirements for storage, handling and treatment of ozone depleting and synthetic greenhouse gas refrigerant
- applicable procedures for working with R32 and other flammable refrigerants where used in split air conditioning systems
- typical work environments, demands and considerations
- specifications, operational characteristics and process for identifying system components
- typical problems, contingencies and solutions
- applicable tools, equipment and testing devices and their operation
- procedures for determining the actual and specified range of operating conditions from measured and calculated values as they apply to particular vapour compression systems
- procedures for evacuating system, leak testing, adding refrigerant and checking air flow
- requirements and procedures to isolate circuits/appliances
- measuring instruments/equipment, specifications and procedures for checking temperature, system performance and components
- process for identifying refrigerant type
- types of commissioning documentation
- requirements and procedures for reporting non-compliances completing documentation.

Assessment Conditions

- Assessors must:
 - have vocational competency in commissioning and decommissioning split 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.

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