



Australian Government

Department of Education, Employment and Workplace Relations

MEM18084A Commission and decommission split air conditioning systems

Release: 1

MEM18084A Commission and decommission split air conditioning systems

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers commissioning and decommissioning of split air conditioning systems to relevant standards, codes and local regulations.
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Application of the Unit

Application of the unit	<p>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.</p> <p>This unit refers to plug in appliances only. For hard wired installations a licensed electrical tradesperson must undertake connection and disconnection.</p> <p>Band: A</p> <p>Unit Weight: 4</p>
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Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		
Path 1	MEM09002B	Interpret technical drawing
	MEM12023A	Perform engineering measurements

Prerequisite units		
	MEM18001C	Use hand tools
	MEM18002B	Use power tools/hand held operations
	MEM18055B	Dismantle, replace and assemble engineering components

Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine the operating conditions of vapour compression systems	1.1. Established procedures are used to determine the actual and specified range of operating conditions from measured and calculated values as they apply to particular vapour compression systems. 1.2. Established OHS procedures and risk control measures for carrying out the work are followed. 1.3. Operating conditions are established and recorded on commissioning documentation. 1.4. Tools, equipment and testing devices needed to determine the basic operating conditions are obtained and checked for correct operation and safety 1.5. The system is checked and isolated where necessary, in strict accordance OHS requirements and procedures
2. Recover refrigerants from split air conditioning systems	2.1. Circuits/appliances are isolated where necessary in strict accordance OHS requirements and procedures. 2.2. Refrigerants are removed safely into suitably labelled containers in accordance with legislative and industry requirements. 2.3. Contaminated refrigerant is dealt with in accordance with legislative and industry requirements.
3. Pressure and leak test split air conditioning systems	3.1. Safety hazards are identified and noted and established risk control measures are implemented. 3.2. Industry codes of practice and manufacturer installation instructions are followed. 3.3. Precautions are taken to prevent damage to components while pressure testing the system. 3.4. Pressure testing is conducted at a pressure compatible with the refrigerant to be used. 3.5. Leaks are located, isolated and repaired using methods appropriate to the system type under test and in accordance with industry practices.
4. Evacuate split air	4.1. Safety hazards which have not previously

ELEMENT	PERFORMANCE CRITERIA
conditioning systems	<p>been identified are noted, and established risk control measures are implemented.</p> <p>4.2. The system is evacuated to the required level and cleaned the system of all moisture and other containments in accordance with legislative and industry requirements.</p> <p>4.3. A standing vacuum test is applied in accordance with industry codes of practice and applicable standards.</p>
5. Charge split air conditioning systems	<p>5.1. Correct refrigerant is selected for the system, in accordance with manufacturer requirements and industry practices.</p> <p>5.2. The refrigerant charge is measured by weight in accordance with manufacturer specifications.</p> <p>5.3. The system is charged correctly in accordance with manufacturer requirements and industry practices.</p> <p>5.4. All components are checked and maintained in accordance with manufacturer requirements.</p>
6. Test the operation of split air conditioning systems	<p>6.1. The system is started and operated in accordance with manufacturer instructions</p> <p>6.2. Standard tests are carried out to confirm system performance to manufacturer specifications.</p> <p>6.3. The refrigerant charge is checked and refrigerant added if required.</p> <p>6.4. The system is leak checked in accordance with refrigeration procedures and practices.</p> <p>6.5. Test data is recorded as required.</p>
7. Complete the commissioning/recommissioning of split air conditioning systems	<p>7.1. The worksite is cleaned and left in presentable condition in accordance with original presentation, client requirements, industry standards and organisational requirements.</p> <p>7.2. Final inspections are undertaken to ensure installation conforms with industry, legislative and work order requirements.</p> <p>7.3. The client is instructed on the use of the product in accordance with organisational requirements and manufacturer</p>

ELEMENT	PERFORMANCE CRITERIA
	<p>specifications.</p> <p>7.4. Certificates of compliance and other relevant commissioning documentation are completed and processed in accordance with State regulatory requirements.</p>
8. Decommission split air conditioning systems	<p>8.1. Plug in appliance is electrically disconnected or arrangements made for appropriately licensed person to isolate hard-wired appliances</p> <p>8.2. Refrigerants are recovered, stored and disposed of in accordance with legislative and industry requirements.</p> <p>8.3. Units and components are removed and disposed of safely and in accordance with regulations, industry codes of practice and sustainable environmental practices.</p> <p>8.4. The worksite is cleaned and left in presentable condition, client and organisational requirements, industry standards and sustainable environmental practices.</p> <p>8.5. Decommissioning documentation is completed and processed in accordance with State regulatory requirements.</p>

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- reading, interpreting and following information on written job instructions, specifications, standard operating procedures, charts, catalogues, lists, drawings and other applicable reference documents
- effective communication with appropriate persons
- planning and sequencing operations
- checking and clarifying task related information
- using tools, techniques and equipment necessary to check for correct operation

REQUIRED SKILLS AND KNOWLEDGE

- comparing system and component performance/ operation against specification
- identifying faulty components and non-compliances
- using appropriate test equipment to identify non-compliance
- safely removing, containing and adding refrigerant to relevant Australian Standards or codes and regulations
- making required adjustments to achieve specifications
- applying safety procedures, standard operating procedures and legislative requirements to all work undertaken
- completing relevant commissioning and decommissioning documentation

Required knowledge

Look for evidence that confirms knowledge of:

- 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
- procedures to determine the actual and specified range of operating conditions from measured and calculated values as they apply to particular vapour compression 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 evacuating system
- procedures for leak testing
- procedures for adding refrigerant
- requirements and procedures to isolate circuits/appliances
- procedures for checking air flow
- measuring instruments/equipment, specifications and procedures for checking temperature and system performance
- measuring instruments/equipment, specifications and procedures for checking components
- procedures for reporting non-conformances
- process for identifying refrigerant type
- types of commissioning documentation
- requirements and procedures for completing documentation
- OHS procedures and risk control measures
- hazards and risk control measures associated with commissioning split and domestic air conditioning systems

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to install split air conditioning systems to manufacturer specifications, safely, to relevant Australian Standards, codes and regulations.

Competency in this unit cannot be claimed until all prerequisites have been satisfied.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.

Context of and specific resources for assessment

This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by an individual working alone or as part of a team. The assessment environment should not disadvantage the candidate.

This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with commissioning, recommissioning and decommissioning split air conditioning systems or domestic air conditioning and refrigeration appliances and other units requiring the exercise of the skills and knowledge covered by this unit.

Method of assessment

Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, supervisor reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency. The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be

EVIDENCE GUIDE	
	permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
<p>The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.</p>	
Tools, equipment and testing devices	Refrigeration gauge manifold, Schraeder access valves; quick connect couplings, 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	<ul style="list-style-type: none"> • 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); State and local building regulations • Sustainable environmental practices for commissioning and decommissioning split air conditioning and domestic refrigeration.
System performance	Pressure; temperature; sub cooling; superheating; evaporator coil to air temperature difference
Residential split air conditioning systems	Single head split systems up to 18kw cooling capacity

RANGE STATEMENT

Domestic refrigeration and air conditioning systems	Domestic refrigeration and air conditioning systems being self contained 240 volt plug in self contained appliances primarily used in domestic/residential situations
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Unit Sector(s)

Unit sector	
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Co-requisite units

Co-requisite units		

Competency field

Competency field	Installation and commissioning
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