



Australian Government

Department of Education, Employment and Workplace Relations

MEM18087B Service and repair domestic and light commercial refrigeration and air conditioning equipment

Release: 2

MEM18087B Service and repair domestic and light commercial refrigeration and air conditioning equipment

Modification History

Prerequisite unit MEM05006B updated to MEM05005C

Unit Descriptor

Unit descriptor	<p>This unit covers servicing of domestic and light commercial refrigeration and air conditioning equipment and components.</p> <p>It includes interpreting diagrams of refrigeration and air conditioning equipment; utilising basic fault finding procedures, service manifolds and test equipment to identify and diagnose faults in equipment; isolating faulty components including control components; and rectifying common faults.</p>
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Application of the Unit

Application of the unit	<p>This unit applies to retrofitting existing domestic and light commercial refrigeration and air conditioning equipment with alternative refrigerants; reconditioning components; returning to service; testing equipment; and completing service reports for administrative action. Prerequisite pathways must be applied within a refrigeration/air conditioning context.</p> <p>Band: A Unit Weight: 6</p>
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Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		
Path 1	MEM05006C	Perform brazing and/or silver soldering
	MEM09002B	Interpret technical drawing
	MEM12002B	Perform electrical/electronic measurement
	MEM12023A	Perform engineering measurements
	MEM18001C	Use hand tools
	MEM18002B	Use power tools/hand held operations
	MEM18055B	Dismantle, replace and assemble engineering components
	MEM18086B	Test, recover, evacuate and charge refrigeration systems

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. Undertake preventive maintenance checks/adjustment on domestic/light commercial refrigeration/air conditioning	<p>1.1. Visual inspection and testing with appropriate test equipment are carried out according to refrigeration/air conditioning principles, procedures and safety requirements.</p> <p>1.2. Preventative maintenance tasks are performed according to manufacturers' specifications using refrigeration/air conditioning techniques/practices.</p>
2. Undertake fault finding on domestic/light commercial refrigeration/air conditioning equipment	<p>2.1. Equipment components are identified correctly.</p> <p>2.2. The characteristics and operation of each component is understood.</p> <p>2.3. The operational function of each component is inspected and tested.</p> <p>2.4. Correct operation of each component is assessed against specification.</p>
3. Repair/replace faulty domestic/light commercial refrigeration/air conditioning components	<p>3.1. Faulty components are localised and malfunction is confirmed by inspection and testing using refrigeration and air conditioning principles, procedures and safety requirements.</p> <p>3.2. The refrigerant is removed safely from the system and contained in accordance with standard operating procedures and regulatory requirements where appropriate.</p> <p>3.3. Faulty components are dismantled and repaired/replaced to manufacturers' specifications as required.</p> <p>3.4. Replacement parts are selected from manufacturers' catalogues according to required specifications and relevant legislation.</p>
4. Return to service domestic/light commercial refrigeration/air conditioning equipment	<p>4.1. Components are reassembled and tested for correct operation and assessed against specification.</p> <p>4.2. Using domestic refrigeration/air conditioning principles and system application techniques, correct operation of the equipment is verified.</p> <p>4.3. Maintenance records/service reports are completed by appropriate designated means.</p>

Required Skills and Knowledge

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:

- using tools, techniques and equipment necessary to check refrigeration/air conditioning system components for correct operation
- obtaining, reading and interpreting specifications
- comparing component performance/operation against specification
- identifying faulty components and non-compliances
- making required adjustments to achieve specifications
- sourcing and using relevant catalogues/lists
- applying safety procedures, standard operating procedures and legislative requirements to all work undertaken
- documenting results of the adjustments
- reading, interpreting and following information on written job instructions, specifications, standard operating procedures, charts, lists, drawings and other applicable reference documents
- planning and sequencing operations
- checking task-related information
- undertake calculations and numerical operations within the scope of this unit
- recording and reporting service activities

Required knowledge

Look for evidence that confirms knowledge of:

- preventative maintenance requirements
- variations in component identities
- operation and characteristics of range of components
- procedures for checking refrigeration/air conditioning components for correct operation
- procedures for identifying components for repair or replacement
- recovery, containment and storage procedures
- effect of poor repair practices
- processes and resources to select replacement parts
- assembly procedures
- procedures, tools, techniques and equipment for adjusting refrigeration/air conditioning systems for correct operation and to specification
- procedures for obtaining authorisation of adjustments outside of operational specifications
- basic electrical principles, testing and fault identification
- hazards and control measures associated with the service and repair of domestic

REQUIRED SKILLS AND KNOWLEDGE
<p>and light commercial refrigeration and air conditioning equipment</p> <ul style="list-style-type: none">• safe work practices and procedures• codes and regulations relevant to the refrigeration/air conditioning industry including environmental and ozone and greenhouse substance legislation

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 service and repair domestic and light commercial refrigeration and air conditioning equipment. 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 servicing of domestic and light commercial refrigeration and air conditioning equipment and components or 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's 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 permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes,

EVIDENCE GUIDE	
	standards, manuals and reference materials.

EVIDENCE GUIDE

Guidance information for assessment	
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Range Statement

RANGE STATEMENT

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.

Test equipment	Pressure gauges, vacuum gauges, multimeter, ammeter, megohm meter, vacuum pump
Preventative maintenance tasks	Check/adjust fan belts, check/clean filters, check/clean heat exchangers (evaporator and condenser), overhaul of major system components, cleaning of major system components, testing operation of all control and safety devices, testing refrigeration charge, testing operational current, testing insulation resistance of relevant electrical components
Relevant legislation	Noise and environmental regulations. Other applicable Commonwealth, State and Territory regulations and legislation

Unit Sector(s)

Unit sector	
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Co-requisite units

Co-requisite units	
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Co-requisite units		

Competency field

Competency field	Maintenance and diagnostics
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