



Australian Government

Department of Education, Employment and Workplace Relations

MEM18094B Service and repair commercial refrigeration

Release: 1

MEM18094B Service and repair commercial refrigeration

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers servicing and repairing commercial and supermarket equipment and components.
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Application of the Unit

Application of the unit	It includes interpreting drawings and diagrams of refrigeration 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. This unit applies to the service and repair of commercial refrigeration systems. This can include supermarket, retail, wholesale and other commercial applications. This would include service and repair work, reconditioning components, returning to service and testing equipment, and completing service reports for administrative action. It may include retrofitting alternative refrigerants in existing equipment. Where any rectification, modification involves electrical disconnection and reconnection, then Unit MEM18049C (Disconnect/reconnect fixed wired equipment up to 1000 volt a.c./1500 volt d.c.) should also be considered. When there is a requirement to remove and replace components by brazing and or silver soldering, Unit MEM05006B (Perform brazing and/or silver soldering) should also be accessed. Where detailed maintenance is carried out on control systems, Unit MEM18057B (Maintain/service analogue/digital electronic equipment) should also be selected. Band: A Unit Weight: 6
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Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		
Path 1	MEM09002B	Interpret technical drawing
	MEM10002B	Terminate and connect electrical wiring
	MEM12002B	Perform electrical/electronic measurement
	MEM12023A	Perform engineering measurements
	MEM18001C	Use hand tools
	MEM18002B	Use power tools/hand held operations
	MEM18049C	Disconnect/reconnect fixed wired equipment up to 1000 volts a.c./1500 volts d.c.
	MEM18055B	Dismantle, replace and assemble engineering components
	MEM18086B	Test, 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 commercial refrigeration equipment	1.1. Visual inspection and testing with appropriate test equipment is carried out according to refrigeration principles, procedures and safety requirements. 1.2. Preventative maintenance tasks are performed according to manufacturers' specifications using refrigeration techniques and practices.
2. Undertake fault finding on commercial refrigeration equipment	2.1. Equipment components are identified correctly. 2.2. The characteristics and operation of each component is understood. 2.3. The operational function of each component is inspected and tested. 2.4. Correct operation of each component is assessed against specification.
3. Repair/replace commercial refrigeration components	3.1. Faulty components are localised and malfunction is confirmed by inspection and testing using refrigeration principles, procedures and safety requirements. 3.2. The refrigerant is removed safely from the system and contained in accordance with standard operating procedures and regulatory requirements where appropriate. 3.3. Faulty components are dismantled and repaired to manufacturers' specifications as required. 3.4. Replacement parts are selected from manufacturers' catalogues according to required specifications.
4. Return to service commercial refrigeration equipment	4.1. Components are reassembled and tested for correct operation and assessed against specification 4.2. Using refrigeration principles and system application techniques, correct operation of the equipment is verified. 4.3. Maintenance records/service reports are completed by appropriate designated means.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

REQUIRED SKILLS AND KNOWLEDGE**Required skills**

Look for evidence that confirms skills in:

- 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
- using tools, techniques and equipment necessary to check commercial and supermarket equipment and components for correct operation
- comparing system, controls and 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
- calculations and numerical operations within the scope of this unit

Required knowledge

Look for evidence that confirms knowledge of:

- test procedures
- frequency and reason for preventative maintenance
- variations in component identities
- operation and characteristics of range of components
- procedures for checking refrigeration components for correct operation
- tools, techniques and equipment necessary to check refrigeration system components
- procedures for identifying components for repair or replacement
- recovery containment and storage procedures for refrigerants
- refrigeration systems evacuation procedures
- effect of poor repair practices
- process to select replacement parts
- assembly and testing procedures
- procedures, tools, techniques and equipment for adjusting refrigeration systems
- procedures for obtaining authorisation of adjustments outside of operational specifications
- codes and regulations relevant to the refrigeration/air conditioning industry, including environmental and ozone and greenhouse substance legislation
- hazards and controls associated with commercial refrigeration, including

REQUIRED SKILLS AND KNOWLEDGE

- housekeeping
- safe workplace practices and procedures

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 commercial refrigeration 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. Where assessment occurs off the job, i.e. the candidate is not in productive work, 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 and repairing commercial and supermarket 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, standards, manuals and reference materials.

EVIDENCE GUIDE**Guidance information for assessment****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

Multimeter, ammeter, megohm meter, refrigeration gauge set, vacuum pump, service gauges, thermometer etc.

Preventative maintenance tasks

Overhaul of major system components, cleaning of major system components, test operation of all safety devices

Unit Sector(s)**Unit sector****Co-requisite units****Co-requisite units**

Competency field

Competency field	Maintenance and diagnostics
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