



Australian Government

MEM18094 Service and repair commercial refrigeration

Release: 1

MEM18094 Service and repair commercial refrigeration

Modification History

Release 1. Supersedes and is equivalent to MEM18094B Service and repair commercial refrigeration

Application

This unit of competency defines the skills and knowledge required to service and repair commercial and supermarket equipment and components.

It applies to supermarket, retail, wholesale and other commercial applications and can include retrofitting alternative refrigerants in existing equipment.

Where the removal and replacement of components by brazing and/or silver soldering is required unit MEM05006 Perform brazing and/or silver soldering should also be selected.

Where detailed maintenance on control systems is required unit MEM18057 Maintain/service analog/digital electronic equipment should also be selected.

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: 6

Pre-requisite Unit

MEM09002	Interpret technical drawing
MEM10002	Terminate and connect electrical wiring
MEM11011	Undertake manual handling
MEM12002	Perform electrical/electronic measurement
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
MEM18049	Disconnect/reconnect fixed wired equipment up to 1000 volts a.c./1500 volts d.c.

MEM18055	Dismantle, replace and assemble engineering components
MEM18086	Test, recover, evacuate and charge refrigeration systems

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.								
1 Determine job requirements	<table><tr><td>1.1</td><td>Follow standard operating procedures (SOPs)</td></tr><tr><td>1.2</td><td>Comply with work health and safety (WHS) requirements at all times</td></tr><tr><td>1.3</td><td>Use appropriate personal protective equipment (PPE) in accordance with SOPs</td></tr><tr><td>1.4</td><td>Identify job requirements from specifications, drawings, job sheets or work instructions</td></tr></table>	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
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 Undertake preventive maintenance checks/adjustments	<table><tr><td>2.1</td><td>Carry out visual inspection and testing with appropriate test equipment according to refrigeration principles, procedures and safety requirements</td></tr><tr><td>2.2</td><td>Perform preventative maintenance tasks according to manufacturers' specifications</td></tr></table>	2.1	Carry out visual inspection and testing with appropriate test equipment according to refrigeration principles, procedures and safety requirements	2.2	Perform preventative maintenance tasks according to manufacturers' specifications				
2.1	Carry out visual inspection and testing with appropriate test equipment according to refrigeration principles, procedures and safety requirements								
2.2	Perform preventative maintenance tasks according to manufacturers' specifications								
3 Undertake fault finding on commercial refrigeration equipment	<table><tr><td>3.1</td><td>Identify equipment components</td></tr><tr><td>3.2</td><td>Interpret the characteristics and operation of each component</td></tr><tr><td>3.3</td><td>Inspect and test the operational function of each component and assess correct operation against specifications</td></tr></table>	3.1	Identify equipment components	3.2	Interpret the characteristics and operation of each component	3.3	Inspect and test the operational function of each component and assess correct operation against specifications		
3.1	Identify equipment components								
3.2	Interpret the characteristics and operation of each component								
3.3	Inspect and test the operational function of each component and assess correct operation against specifications								

Elements describe the essential outcomes.		Performance criteria describe the performance needed to demonstrate achievement of the element.	
4	Repair/replace commercial refrigeration components	4.1	Localise faulty components and confirm malfunction
		4.2	Remove the refrigerant safely from the system and contain in accordance with procedures and regulatory requirements, where appropriate
		4.3	Dismantle faulty components and repair to manufacturers' specifications, as required
		4.4	Select replacement parts from manufacturers' catalogues
5	Return to service commercial refrigeration equipment	5.1	Reassemble components and test for correct operation and assess against specification
		5.2	Charge the system safely with correct refrigerant and in accordance with procedures and regulatory requirements, where appropriate
		5.3	Verify correct operation of the equipment
		5.4	Complete maintenance records/service reports according to SOPs and legislative 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.

Test equipment includes one (1) or more of the following:

- multimeter
- ammeter
- insulation resistance tester
- refrigeration gauge set

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.

- vacuum pump
- service gauges
- thermometer

**Preventative
maintenance tasks
include one (1) or more
of the following:**

- overhaul of major system components
- cleaning of major system components
- test operation of all safety devices

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM18094B Service and repair commercial refrigeration

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 MEM18094 Service and repair commercial refrigeration

Modification History

Release 1. Supersedes and is equivalent to MEM18094B Service and repair commercial refrigeration

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, drawings and relevant legislation with respect to servicing and repairing commercial refrigeration
- selecting and using appropriate tools, techniques and test equipment necessary to check and assess commercial and supermarket equipment and components for conformance with specifications
- carrying out preventative maintenance tasks according to manufacturers' specifications using refrigeration techniques/practices
- identifying and localising faulty components and confirming malfunction by inspection/testing, and making required adjustments to achieve specifications
- removing the refrigerant from the system and containing in accordance with procedures and regulatory requirements, where required
- removing/dismantling and reassembling faulty components and selecting replacement parts from manufacturers' catalogues to meet the required specifications
- undertaking calculations and numerical operations associated with servicing and repairing commercial refrigeration
- charging the system and verifying correct operation of the equipment to meet specifications, where required
- completing all maintenance records/reports in accordance with SOPs.

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)
- frequency and reason for preventative maintenance
- variations in component identities
- operation and characteristics of range of components
- procedures for refrigeration systems evacuation, recovery containment and storage for refrigerants

- tools, techniques, equipment and procedures necessary to check and test refrigeration system components
- tools, techniques, equipment and procedures for adjusting refrigeration systems
- procedures for obtaining authorisation of adjustments outside of operational specifications
- effect of poor repair practices
- process to select replacement parts
- codes and regulations relevant to the refrigeration/air conditioning industry, including environmental and ozone and greenhouse substance legislation.

Assessment Conditions

- Assessors must:
 - have vocational competency in servicing and repairing commercial refrigeration 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.

Links

Companion Volume implementation guides are found in VETNet -

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