Australian Government

MEM18085 Install, service and repair domestic air conditioning and refrigeration appliances

Release: 1

MEM18085 Install, service and repair domestic air conditioning and refrigeration appliances

Modification History

Release 1. Supersedes and is equivalent to MEM18085A Install, service and repair domestic air conditioning and refrigeration appliances

Application

This unit of competency defines the skills and knowledge required to install, service and repair domestic air conditioning and refrigeration appliances to relevant standards, codes and local regulations and is limited to domestic air conditioning and refrigeration systems only.

It includes the application of safe working practices, following standard procedures to perform functional checks, test system performance and carry out straightforward maintenance.

This unit refers to plug-in appliances only.

Where interpretation of technical drawings is required unit MEM09002 Interpret technical drawing 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

MEM05006	Perform brazing and/or silver soldering
MEM11011	Undertake manual handling
MEM12002	Perform electrical/electronic measurement
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.	
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, job sheets or work instructions
2	**Install and remove domestic refrigeration and air conditioning appliances**	2.1	Identify appliance location and site in accordance with customer requirements, regulations, standards, codes of practice and industry guidelines
		2.2	Prepare site and install and secure appliance in accordance with manufacturer instructions and industry best practice
		2.3	Check operation of the appliance in accordance with manufacturer instructions
		2.4	Dispose of waste materials and products in accordance with Commonwealth and state/territory legislation, environmental and industry codes of practice
3	**Determine operating condition of appliances**	3.1	Identify refrigerant used in equipment and protect from ignition sources if refrigerant is flammable
		3.2	Carry out established procedures and standard electrical tests to determine actual operating condition

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		3.3	Follow established work health and safety (WHS) risk control measures and procedures to enable the system to be isolated and checked, where necessary
		3.4	Determine the basic refrigeration operating conditions and check for correct operation and safety using appropriate tools, equipment and testing devices
		3.5	Follow industry codes of practice and manufacturer service instructions
4	**Carry out routine maintenance**	4.1	Identify safety hazards and record and implement established risk control measures
		4.2	Perform routine maintenance procedure in accordance with manufacturer and client scheduling
		4.3	Maintain routine maintenance records and record faults
5	**Fault find and troubleshoot faults**	5.1	Select equipment and testing devices needed to determine fault
		5.2	Apply standard test procedures to determine faults against equipment specifications
		5.3	Record test data and record faults, as required
6	**Replace, repair or service faulty components**	6.1	Disconnect plug in appliance electrically
		6.2	Replace electrical components in accordance with manufacturer recommendations
		6.3	Select and prepare refrigeration system replacement components
		6.4	Recover refrigerant, store and dispose of in accordance with Commonwealth and state/territory legislation and industry codes of practice
		6.5	Install refrigeration system components in accordance with industry best practice, standards and codes

Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
7 **Return to service domestic refrigeration and air conditioning appliances**	7.1 Identify standard electrical tests to identify electrical faults before operating
	7.2 Start appliance and operate in accordance with manufacturer standards
	7.3 Carry out standard tests to confirm system performance to manufacturer specifications
	7.4 Record appliance operating data, as required
	7.5 Ensure worksite is cleaned and left in presentable condition in accordance with original presentation, client requirements, industry standards and organisational 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.

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Routine maintenance includes the following:	• electrical testing of the appliance • polarity testing • cleaning condensers • clearing drains • checking temperatures • pressures • component operation • air flow and system capacity • cleaning filters
Standard electrical tests include:	• earth continuity, insulation resistance, and circuit resistance to meet electrical equipment regulations and codes (AS/NZS 3000:2007 Electrical Installations (known as the Australian/New Zealand Wiring Rules) • testing of supply voltage and the appliance or individual component current draw
Tools, equipment and testing devices include one (1) or more of the following:	• refrigeration gauge manifold • Schraeder access valves; quick connect couplings, thermometer/thermocouple temperature measuring devices • analog and digital vacuum measuring gauges • digital scales • refrigerant recovery unit • vacuum pump • electronic leak detectors • refrigerant containers/cylinders
Industry best practice includes:	• pipe fabrication techniques and industry best practice for pipe brazing
Standard refrigeration return to service procedures include one (1) or more of the following:	• leak detection • evacuation • refrigerant charging of domestic air conditioning and refrigeration plug-in appliances

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Commonwealth, state and territory legislation, regulations, standards, codes of practice and industry guidelines include one (1) or more of the following:	• Ozone Protection and Synthetic Greenhouse Gas Legislation Amendment Bill 2003 • air conditioning residential best practice guidelines (AIRAH) • AIRAH flammable refrigerant fact sheets and guide • state/territory and local building regulations • codes of practice for domestic refrigeration and air conditioning. (HB40)
System performance includes one (1) or more of the following:	• pressure • temperature • sub-cooling • superheating • evaporator coil to air temperature difference

Domestic refrigeration and air conditioning appliances include:	• self-contained plug in appliances primarily designed for domestic and residential situations, including one or more of the following:
	  • refrigerators - single door, two door and two door side by side
	  • freezers - chest and vertical door using, for example, refrigeration systems with cyclic defrost, frost-free with electric and hot-gas defrost, and manual defrost
	  • air conditioners (window and wall mounted self-contained room air conditioners)

Unit Mapping Information

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Links

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