



Australian Government

MEM23151 Commission and optimise performance of HVACR systems

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MEM23151A Commission and optimise performance of HVACR systems.

Application

This unit of competency defines the skills and knowledge required to commission and optimise a heating, ventilation, air conditioning and refrigeration (HVACR) system and associated plant and equipment.

It applies to HVACR technicians in manufacturing, servicing and maintenance organisations who are required to commission HVACR systems, and as part of the commissioning process, ensure optimal performance.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

MEM23004 Apply technical mathematics

MEM23006 Apply fluid and thermodynamics principles in engineering

MEM23140 Determine operational parameters for building HVAC hydronic systems

MEM23154 Analyse and service HVACR systems

Competency Field

Engineering science

Elements and Performance Criteria

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Prepare HVACR system for commissioning	1.1 Obtain and implement work health and safety (WHS) and environmental requirements for the work area 1.2 Determine system operating parameters by reviewing system specifications and component technical data 1.3 Identify correct building codes and local government regulations using appropriate resources

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	1.4 Prepare industry standard report on system performance levels using organisational procedures 1.5 Consult appropriate personnel are to ensure the work is coordinated effectively with others involved on the work site 1.6 Obtain equipment, resources and testing devices needed for the work in accordance with organisational procedures
2. Commission and optimise complex HVACR systems	2.1 Set up and connect testing and measuring devices appropriately for task and to manufacturer specifications 2.2 Measure and adjust equipment components and controls as required 2.3 Undertake required measurements and tests and analyse results to provide optimum system performance in accordance with system specifications and regulatory requirements 2.4 Provide solutions to unplanned situations consistent with organisational procedures 2.5 Ensure commissioning is carried out efficiently without waste of materials or damage to equipment and surroundings
3. Complete and report commissioning activities	3.1 Verify that plant and equipment are operating to specification 3.2 Document adjustment settings and notify appropriate personnel in accordance with organisational procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

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.

WHS requirements	relevant legislation
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include:	• protective equipment • material safety management systems • hazardous substances and dangerous goods code • local safe operation procedures • awards provisions.
Environmental requirements include:	• relevant legislation, regulations and codes • correct handling and disposal of liquid and solid waste • elimination or minimisation of gas, fume, vapour and smoke emissions, including fugitive emissions • dust elimination, minimisation and control • minimisation of energy and water use • elimination or control of excessive noise • use and recycling of refrigerants.
Appropriate personnel include:	• supervisor, leading hand, foreman or manager • engineer • technician • trainer or mentor • team member • customer.
Plant and equipment include:	• control system • chiller • boiler • cooling tower • heat exchanger.
Resources include:	• reference manuals • scientific calculator • appropriate manuals • stationery.
Organisational procedures include:	• use of tools and equipment • instructions, including job sheets, plans, drawings and designs • reporting and communication • manufacturer specifications • operational procedures • industry standards.
Equipment includes:	• computer workstation and software, either stand alone or networked • test apparatus • appropriate tools of trade, equipment and materials.

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM23151A Commission and optimise performance of HVACR systems.

Links

Companion Volume Implementation Guides are available on VETNet -

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