



Australian Government

MEM12020 Set and operate coordinate measuring machines

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MEM12020B Set and operate coordinate measuring machines

Application

This unit of competency defines the skills and knowledge required to set and operate a range of coordinate measuring machines (CMM).

Appropriate levels of measurement, computer operations and drawing skills should be selected with this unit.

Where interpretation of technical drawings is required unit MEM09002 Interpret technical drawing should also be selected.

Where a selection and use of tools is required unit MEM18001 Use hand tools should also be selected.

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

Band: A

Unit Weight: 2

Pre-requisite Unit

MEM13015 Work safely and effectively in manufacturing and engineering

MEM16006 Organise and communicate information

Competency Field

Measurement

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

Elements describe the essential outcomes.		Performance criteria describe the performance needed to demonstrate achievement of the element.	
		1.3	Use appropriate personal protective equipment (PPE) in accordance with SOPs
		1.4	Interpret drawing information and a range of tolerances that apply to components and establish datums
2	Set up/orient components	2.1	Undertake pre-start checks in accordance with SOPs
		2.2	Observe correct safety procedures and check all equipment for safe operation
		2.3	Determine the most appropriate method of clamping/support to minimise distortion and maximise measuring access
		2.4	Set up and orient component/fixture/clamping devices
3	Select and activate part programs	3.1	Identify and verify part program, as required
		3.2	Activate selected part program in accordance with SOPs
4	Prepare CMM	4.1	Determine probe configuration according to specifications
		4.2	Adjust probe configuration on CMM according to SOPs
		4.3	Check probe angles for compliance and adjust, as required
		4.4	Re-calibrate CMM
		4.5	Align probes manually for one-off components
5	Measure components	5.1	Edit part program to compensate for errors or changes to component specifications
		5.2	Measure components and check for conformance to specification

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

5.3 Produce data/report

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.

CMMs include one (1) or more of the following:

- manual machines
- machines fitted with microprocessors
- horizontal vertical and gantry tie machines

Probes include one (1) or more of the following:

- solid trigger probes
- electronic trigger probes

Measure components include the following:

- those which can be measured directly and those that require measurements to be constructed mathematically

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>