



Australian Government

MEM18066 Diagnose and repair microprocessor-based equipment

Release: 1

MEM18066 Diagnose and repair microprocessor-based equipment

Modification History

Release 1. Supersedes and is equivalent to MEM18066B Diagnose and repair microprocessor-based equipment

Application

This unit of competency defines the skills and knowledge required to locate, replace/repair faulty components in microprocessor-based equipment.

It applies to situations in which the individual has sufficient information and access to microprocessor components to diagnose the functioning of elements within the microprocessor and requires an understanding of machine and assembly language and address and bus systems.

Where diagnosis of analog components is required unit MEM18056 Diagnose and repair analog equipment and components should also be selected.

Where routine fault finding within microprocessor systems is required unit MEM18057 Maintain/service analog/digital electronic equipment should also be selected.

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

Band: B

Unit Weight: 6

Pre-requisite Unit

MEM05001	Perform manual soldering/desoldering - electrical/electronic components
MEM09002	Interpret technical drawing
MEM11011	Undertake manual handling
MEM12004	Perform precision 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

MEM18057	Maintain/service analog/digital electronic equipment
MEM18065	Diagnose and repair digital equipment and 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, drawings, job sheets or work instructions
2	Locate fault	2.1	Determine equipment function and principles by reference to schematics, circuit diagrams, flow charts and equipment manuals
		2.2	Run built-in test functions and interpret results
		2.3	Reproduce fault symptoms and verify using fault-finding techniques
		2.4	Identify faulty or defect component/s and/or isolate fault cause
3	Replace/repair faulty components	3.1	Remove faulty component using appropriate tools and techniques
		3.2	Repair/replace faulty component/s in accordance with site/manufacturers' recommended procedures

Elements describe the essential outcomes.

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

- 3.3 Re-fit repaired/replaced component/s
- 3.4 Check and test equipment for compliance to specifications utilising correct and appropriate test procedures and equipment

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.

Equipment includes one (1) or more of the following:

- digital hardware
- sub-assemblies of systems
- discrete equipment used in computer, communication, consumer audio/video, electronic appliances, scanning systems, security/fire systems, power supplies and test equipment

Fault-finding techniques include one (1) or more of the following:

- signal injection
- substitution
- monitoring
- measurement
- heating/cooling
- sound
- visual
- touch
- smell
- use of inbuilt software and hardware diagnostics

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:

- continuity testers
- ammeters
- voltmeters
- cathode ray oscilloscopes
- frequency counters
- signal generators
- digital probes
- pulse generators
- computer and computer software
- data analysers

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

- discrete component assemblies
- individual components, including:
 - resistors
 - switching devices
 - capacitors
 - transformers
 - solenoids
 - tubes
 - semi-conductors
 - transistors
 - ICs
 - digital timers
 - gate arrays
 - transmitters
 - converters
 - microprocessors

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>