



Australian Government

Department of Education, Employment and Workplace Relations

MEM18058C Modify electronic equipment

Release: 1

MEM18058C Modify electronic equipment

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers modifying and recommissioning equipment.
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Application of the Unit

Application of the unit	This unit applies to modifications of electronic equipment including minor adjustments and alteration requirements through to experimental and development modifications of a complex nature and can include replacement and/or alterations of system equipment, sub-assemblies, PCBs and components etc. on analog and digital electronic equipment and systems. Where drafting skills are required, then Unit MEM09003B (Prepare basic engineering drawing) or Unit MEM09004B (Perform electrical/electronic detail drafting) should be considered. Unit MEM05002B (Perform high reliability soldering and desoldering) must also be selected if soldering of components is required to advanced or military specifications, where the reliability of electrical connections is critical, or where surface mounted devices are being soldered/de-soldered. This unit has dual status and is to be regarded as both a Specialisation band A unit and Specialisation band B unit for progression to C5 (AQF level V). Band: A Unit Weight: 4
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Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		
Path 1	MEM12004B	Perform precision electrical/electronic measurement
	MEM18001C	Use hand tools
	MEM18002B	Use power tools/hand held operations
	MEM18056B	Diagnose and repair analog equipment and components
	MEM18065B	Diagnose and repair digital equipment and components

Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Modify equipment	1.1.Modification requirements are determined and understood by reference to circuit diagrams, schematics, equipment manuals and /or consultation with technical authority where appropriate. 1.2.Equipment is isolated to standard operational procedures. 1.3.Equipment is removed from system, if required, using correct and appropriate techniques and equipment. 1.4.Modification is carried out to equipment/sub-assembly/component in accordance with specifications or application requirements using correct and appropriate techniques and equipment. 1.5.Sub-assembly is refitted to equipment, if required, using correct and appropriate techniques and equipment.
2. Return equipment to service	2.1.Where required, circuit diagrams, schematics, equipment manuals etc. are amended to reflect modifications undertaken. 2.2.Checks and tests are undertaken to specifications using correct and appropriate techniques, test equipment and tools. 2.3.Equipment/system is recommissioned using correct and appropriate techniques and procedures. 2.4.Equipment/system is checked for operational compliance with specifications.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- obtaining relevant circuit diagrams, schematics, manuals
- isolating, tagging and verifying isolated equipment
- removing and refitting sub-assembly/equipment from the system

REQUIRED SKILLS AND KNOWLEDGE

- carrying out modifications to specification
- amending circuit diagrams, schematics, equipment manuals, specifications affected by the modifications
- recommissioning electronic equipment
- testing, checking modified electronic equipment to ensure conformance to specifications
- entering routine and familiar information onto proforma and standard workplace forms
- locating, reading and interpreting information on written job instructions, specifications, drawings, charts, lists and other reference documentation

Required knowledge

Look for evidence that confirms knowledge of:

- system concept including software/hardware systems, feasibility analysis and circuit analysis
- diagnostic skills and implications relative to the modification
- modification requirements
- sources of technical advice
- procedures for isolating and removing equipment from the system
- specifications applicable to the modification
- permits/approvals required
- tools and equipment necessary to carry out the modification
- specialised fitting requirements
- the electronic equipment specifications
- procedures and test equipment application
- procedures for recommissioning electronic equipment
- operational specification of the equipment/system
- safe work practices and procedures
- relevant hazards and control measures related to the competency

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to modify electronic equipment. Competency in this unit cannot be claimed until all prerequisites have been satisfied.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.

Context of and specific resources for assessment

This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by an individual working alone or as part of a team. The assessment environment should not disadvantage the candidate.

This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with modifying electronic equipment, or other units requiring the exercise of the skills and knowledge covered by this unit.

Method of assessment

Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency. The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

EVIDENCE GUIDE**Guidance information for assessment****Range Statement****RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Modifications

Minor adjustments and alterations requirement to experimental and development modifications of a complex nature and can include replacement and /or alterations of system equipment, sub-assemblies, PCBs and components on analog and digital electronic systems

Test equipment

Continuity testers, ammeters, voltmeters, cathode ray oscilloscopes, frequency counters, signal generators, digital probes etc.

Unit Sector(s)**Unit sector****Co-requisite units****Co-requisite units**

Competency field

Competency field	Maintenance and diagnostics
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