



Australian Government

MEM05053 Set and edit computer controlled thermal cutting machines

Release: 2

MEM05053 Set and edit computer controlled thermal cutting machines

Modification History

Release 2. Quantum of hours of workplace practice removed. Supersedes and is equivalent to MEM05053 Set and edit computer controlled thermal cutting machines (Release 1).

Release 1. Supersedes and is equivalent to MEM05053A Set and edit computer controlled thermal cutting machines.

Application

The unit of competency defines the skills and knowledge required to set up and edit any computer or numerically controlled thermal cutting machine or process and applications, including NC/CNC thermal cutting machines and industrial robots performing thermal cutting.

Where manual heating and thermal cutting is required, unit MEM05007 Perform manual heating and thermal cutting should also be selected.

Where advanced manual thermal cutting, gouging and shaping is required unit MEM05008 Perform advanced manual thermal cutting, gouging and shaping should also be selected.

Where setting and editing other computer controlled machines is required unit MEM07016 Set and edit computer controlled machines and processes should also be selected.

Where the selection and use of power tools/hand held operations is required unit MEM18002 Use power tools/hand held operations should also be selected.

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

Band: 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 C7 (AQF level IV).

Unit Weight: 4

Pre-requisite Unit

MEM05009	Perform automated thermal cutting
MEM09002	Interpret technical drawing
MEM11011	Undertake manual handling
MEM12023	Perform engineering measurements
MEM13015	Work safely and effectively in manufacturing and engineering
MEM16006	Organise and communicate information

MEM18001 Use hand tools

Competency Field

Fabrication

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	Set work holding fixtures/devices/tools and gas and nozzle controls	2.1	Select correct ancillary devices and attach to machine using SOPs
		2.2	Prepare machine to accept work holding devices
		2.3	Set work holding fixtures/devices/tools to zero or a datum using appropriate setting devices
		2.4	Set gas and nozzle controls according to type and thickness of material to be cut and to minimise distortion
3	Trial program	3.1	Trial program observing all safety procedures
		3.2	Check sample cut for compliance with specifications
		3.3	Edit program to ensure job conforms to specification
4	Complete setting	4.1	Replace worn or damaged nozzles, regulators and work holding devices/tools, where appropriate, or take other

Elements describe the essential outcomes.

process

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

corrective action in accordance with SOPs

- 4.2 Instruct operator, if necessary, ensuring that all safety procedures and devices are in place

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.

- Program editing includes the following:**
- identifying and accessing program in edit mode in situ in order to make changes associated with:
 - gas mixtures
 - nozzle or work piece feed speed
 - operational sequence

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>

Assessment Requirements for MEM05053 Set and edit computer controlled thermal cutting machines

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria on at least two (2) occasions and include:

- following work instructions, standard operating procedures (SOPs) and safe work practices
- preparing thermal cutting machine for work according to the thickness of material and minimisation of distortion
- trialling program by checking sample cut for compliance and undertaking program editing to ensure job conforms with specifications
- instructing operator, if necessary, including ensuring all safety procedures and devices are in place
- replacing worn or damaged nozzles, regulators, fixtures, devices and tools.

Knowledge Evidence

Evidence required to demonstrate the required knowledge for this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include knowledge of:

- safe work practices and procedures and use of personal protective equipment (PPE)
- ancillary equipment and its applications
- procedures for attaching the ancillary device(s) to the NC/CNC machine
- work holding devices, their application and procedures for mounting them
- location of work holding fixtures/devices/tools relative to the machine zero or datum
- operating procedures
- safety features and equipment
- measuring devices/ techniques for checking the parts or product
- effects of changes to gas mixtures and nozzle or work piece speed
- impact of changes to the sequence of operations on the part or product to be produced
- procedures for editing programs via the machine controller
- sequence of operations of the machine/process
- corrective action to be taken for worn or damaged tooling.

Assessment Conditions

- Assessors must:
 - have vocational competency in setting and editing computer controlled thermal cutting machines at least to the level being assessed with relevant industry knowledge and experience
 - satisfy the assessor requirements in the *Standards for Registered Training Organisations 2015* or its replacement and comply with the *National Vocational Education and Training Regulator Act 2011*, its replacement or equivalent legislation covering VET regulation in a non-referring state/territory as the case requires.
- Assessment must occur in a functioning workplace. Where assessment in the workplace would be unsafe, impractical or threatens the environment, assessment must occur in a sufficiently rigorous simulated environment that reflects the circumstances that would be experienced in a functioning workplace. Assessment must cover all aspects of workplace performance, including task skills, task management skills, contingency management skills and job role environment skills.
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications.
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

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