



Australian Government

MEM05086 Set and edit computer controlled thermal cutting machines

Release: 1

MEM05086 Set and edit computer controlled thermal cutting machines

Modification History

Release 1. Unit code changed. Changes to elements and performance criteria and performance evidence. Supersedes and is not equivalent to MEM05053 Set and edit computer controlled thermal cutting machines.

Application

This unit of competency has been developed for post trade engineering fabrication training and the recognition of post trade skills in setting and editing computer controlled thermal cutting machines.

It defines the skills and knowledge required to select and set appropriate work holding fixtures, determine and set thermal cutting nozzle controls, and to trial and complete the setting of the machine as defined by the unit in conjunction with its prerequisites.

Where advanced manual thermal cutting, gouging and shaping is required, the unit MEM05071 Perform advanced manual thermal cutting, gouging and shaping should also be selected.

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

Where the selection and use of power tools/handheld operations is required, the 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.

Unit Weight: 4

Pre-requisite Unit

MEM05007 Perform manual heating and thermal cutting

MEM05009 Perform automated thermal cutting

MEM05071 Perform advanced manual thermal cutting, gouging and shaping

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

MEM16008 Interact with computing technology

MEM18001 Use hand tools

Competency Field

Fabrication

Elements and Performance Criteria

Elements	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 Set up machine according to SOPs 2.2 Prepare machine to accept work holding devices 2.3 Replace worn or damaged nozzles, regulators and work holding devices/tools or take other corrective action in accordance with SOPs 2.4 Set work holding fixtures, devices or tools to zero or a datum using appropriate setting devices 2.5 Set gas and nozzle controls according to type and thickness of material to be cut and to minimise distortion
3. Trial and complete program	3.1 Trial program observing all safety procedures 3.2 Check sample cut for compliance with specifications 3.3 Edit program and complete setting process to ensure job conforms to specification 3.4 Save edited program and complete any required records in accordance with SOPs

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

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:	accessing program in edit mode in situ in order to make changes associated with: • gas mixtures • nozzle or work piece feed speed • operational sequence.
Computer controlled thermal cutting machines include one or more of the following:	• fuel/gas machines • plasma machines • laser machines.

Unit Mapping Information

No equivalent unit

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 MEM05086 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 and include the ability to:

- follow work instructions, standard operating procedures (SOPs) and safe work practices
- identify and interpret job specifications, drawings, and other applicable work instructions for information relevant to set and edit computer controlled thermal cutting machines
- prepare computer controlled thermal cutting machine for work according to the thickness of material and minimisation of distortion on at least two occasions
- replace worn or damaged nozzles, regulators, fixtures, devices and tools
- trial programs by checking sample cut for compliance and undertaking program editing to ensure job conforms with specifications on at least two occasions

Note: Where a volume and/or frequency is not specified, demonstration must be provided at least once.

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)
- machine set up procedures
- work holding devices, their application and procedures for mounting them
- location of work holding fixtures, devices and tools relative to the machine zero or datum
- computer controlled thermal cutting machine operating procedures
- computer controlled thermal cutting machine safety features and equipment
- measuring devices and/or 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 and/or process
- corrective action to be taken for worn or damaged tooling.
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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.
- Knowledge assessment may be either verbal or written but must adequately reflect the knowledge requirements of the unit in a functioning workplace.
- 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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