



Australian Government

Department of Education, Employment and Workplace Relations

MEM05009C Perform automated thermal cutting

Release: 1

MEM05009C Perform automated thermal cutting

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers setting up and using single and multi-headed automated thermal cutting machines.
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Application of the Unit

Application of the unit	This unit applies to setting up and operating automated thermal cutting machines used in heavy engineering for plate and pipe cutting on automated single or multi-head machines. Cutting media would include fuel gases, oxy acetylene, plasma arc, laser etc. Powder marking and magnetic, photoelectric tracing devices or numerically controlled (NC) machines may be used. Band: A Unit Weight: 2
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Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		
Path 1	MEM12023A	Perform engineering measurements

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. Set up material	1.1. Material is set up, including correct procedures for stack cutting and nesting to minimise waste.
2. Set up and use automated cutting machine	2.1. Appropriate cutting medium is selected and set to specification. 2.2. Process requirements are determined from specifications or instructions. 2.3. Machine is set up safely to specifications using standard operating procedures. 2.4. Correct program is selected and loaded to standard operating procedure. 2.5. Machine datum are established to specifications.
3. Use automated thermal cutting machine	3.1. Where required, cutting medium is ignited following standard operating procedures. 3.2. Machine is started using correct sequence and procedure. 3.3. Powder marking and other tracing devices are used as required to standard operating procedures. 3.4. Correct shut-down procedure is observed in accordance with standard operating procedures.

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:

- setting up materials and machines
- using thermal cutting machines
- reading and interpreting routine information on written job instructions, specifications and standard operating procedures
- following oral instruction

Required knowledge

Look for evidence that confirms knowledge of:

REQUIRED SKILLS AND KNOWLEDGE

- material set-up procedures.
- advantages of stack cutting and nesting
- procedures for establishing machine datum
- hazards associated with igniting cutting media
- safety precautions to be taken when starting and shutting down the machine.
- procedures for using powder marking and other tracing devices.
- use and application of personal protective equipment for automated thermal cutting
- safe work practices and procedures

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 set up and use single and multi-headed automated thermal cutting machines. 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 performing automated thermal cutting 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	
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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.

Material	Ferrous and non-ferrous
Cutting medium	Includes fuel gases, oxy acetylene, plasma arc, laser etc.
Machine	Single or multi-headed machines including NC driven equipment etc.
Correct program	Programs on numerically controlled (NC) machines are selected and loaded according to predetermined instructions
Tracing devices	Powder marking and magnetic, photoelectric tracing devices

Unit Sector(s)

Unit sector	
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Co-requisite units

Co-requisite units	
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Co-requisite units		

Competency field

Competency field	Fabrication
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