



Australian Government

Department of Education, Employment and Workplace Relations

MEM05005B Carry out mechanical cutting

Release: 1

MEM05005B Carry out mechanical cutting

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers setting up and operating a range of mechanical cutting and holing equipment.
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Application of the Unit

Application of the unit	<p>This unit applies to sawing, shearing, cropping and/or holing and includes setting up and operating a range of equipment. Examples of machines that could be covered include guillotines, croppers, cold saws, band saws, automatic saws etc. Typical applications of this unit may include cutting for manufacture, production cutting and cutting of materials selected from stores in a maintenance environment.</p> <p>This unit does not cover hand or hand held power tools used for cutting e.g. circular saws, nibblers and side grinder. These skills are covered by Unit MEM18001C (Use hand tools) and Unit MEM18002B (Use power tools/hand held operations).</p> <p>This unit does not include the skills required for operational maintenance of the equipment used; these skills are covered by Unit MEM07001B (Perform operational maintenance of machines/equipment).</p> <p>For repair and welding of band saw blades where blade repair unit is not attached to the machine, refer to Unit MEM05013C (Perform manual production welding).</p> <p>Band: A</p> <p>Unit Weight: 2</p>
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Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		
Path 1	MEM12023A	Perform engineering measurements
	MEM18001C	Use hand tools

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. Determine job requirements	1.1. Job requirements and specifications are determined from job sheets and/or instructions. 1.2. Appropriate method/machine is selected to meet specifications. 1.3. Machine is loaded and adjusted for operation consistent with standard operating procedures.
2. Select/set up machine tooling	2.1. Tooling is selected to match job requirements. 2.2. Tooling is correctly installed using standard operating procedures. 2.3. Machine is set up and adjusted using standard operating procedures.
3. Operate mechanical cutting machine	3.1. Appropriate stops and guards are set and adjusted as required. 3.2. Material is secured and correctly positioned using measuring equipment as necessary. 3.3. Machine is started and stopped safely to standard operating procedures. 3.4. Machine is operated to cut/hole material to specifications using standard operating procedures.
4. Check material for conformance to specification	4.1. Material is checked against specification. Machine and/or tooling is adjusted as required and in process adjustments carried out as necessary. 4.2. Material is cut and/or holed to within workplace tolerances. 4.3. Material is used in most economical way. 4.4. Codes and standards are observed.

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:

- loading and adjusting cutting machines

REQUIRED SKILLS AND KNOWLEDGE

- selecting machines and tooling
- installing cutting tool
- setting up and adjusting cutting machine
- securing and correctly positioning materials
- cutting and holing materials
- applying relevant codes and standards
- reading and interpreting routine information on written job instructions, specifications and standard operating procedures
- following oral instruction
- measuring materials to specified workplace tolerances and within the machine range
- clarifying routine task-related information

Required knowledge

Look for evidence that confirms knowledge of:

- the characteristics of cutting methods and machines
- effect of materials on the machine tooling, tooling defects and adjustments
- effect of adjustments on the dimensions of the cut material
- applicable tolerances
- methods of marking out materials to ensure minimum wastage
- any applicable industry standards, national/Australian standards, NOHSC guides, State/Territory regulatory codes of practice/standard
- use and application of personal protective equipment for mechanical 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 carry out mechanical cutting on a range of 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 carrying out mechanical 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****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.

Machine	Guillotines, croppers, cold saws, band saws, automatic saws etc.
Tooling	Tooling to suit guillotines, croppers, cold saws, band saws, automatic saws etc.
Stops and guards	All safety equipment/stops/guards on guillotines, croppers, cold saws, band saws, automatic saws etc.
Material	Ferrous and non-ferrous metals and non-metallic products
Codes and standards	Legislative and regulatory requirements, industry and enterprise codes and standards

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

Co-requisite units		

Competency field

Competency field	Fabrication
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