



**Australian Government**

# **MEM05005 Carry out mechanical cutting**

**Release: 1**

# MEM05005 Carry out mechanical cutting

## Modification History

Release 1. Supersedes and is equivalent to MEM05005B Carry out mechanical cutting

## Application

This unit of competency defines the skills and knowledge required to set up and operate a range of mechanical cutting and holing equipment.

Typical applications of this unit include cutting for manufacture, production cutting and cutting materials in a maintenance environment.

Where the interpretation of technical drawings is required unit MEM09002 Interpret technical drawing should also be selected.

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

Where operational maintenance of equipment is required unit MEM07001 Perform operational maintenance of machines/equipment should also be selected.

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

**Band: A**

**Unit Weight: 2**

## Pre-requisite Unit

|          |                                                              |
|----------|--------------------------------------------------------------|
| 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 | <b>Determine job requirements</b>         | 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, sketches, job sheets or work instructions |
|   |                                           | 1.5 Plan use of material to minimise waste                                                   |
|   |                                           |                                                                                              |
| 2 | <b>Select/set up machine tooling</b>      | 2.1 Select appropriate method/machines to meet specifications                                |
|   |                                           | 2.2 Load machines and adjust for operation according to SOPs                                 |
|   |                                           | 2.3 Select and install tooling to match job requirements                                     |
|   |                                           | 2.4 Set up and adjust machines according to SOPs                                             |
|   |                                           |                                                                                              |
| 3 | <b>Operate mechanical cutting machine</b> | 3.1 Set appropriate stops and guards and adjust as required                                  |
|   |                                           | 3.2 Secure and position material as required                                                 |
|   |                                           | 3.3 Operate machine to cut/hole material to meet specifications                              |
|   |                                           | 3.4 Check material and adjust machine and/or tooling as required against specifications      |
|   |                                           | 3.5 Check material for conformance to specifications                                         |

## 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.

**Machines include one or (1) more of the following:**

- guillotines
- croppers
- cold saws
- band saws
- automatic saws
- abrasive saws

**Tooling includes one (1) or more of the following:**

- guillotine blades
- cropper punches and dies
- cold saw blades
- band saw blades
- automatic saw blades

**Materials include one (1) or more of the following:**

- ferrous
- non-ferrous
- non-metallic products

**Stops and guards include the following:**

- all safety equipment/stops/guards

## Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM05005B Carry out mechanical cutting

## 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 MEM05005 Carry out mechanical cutting

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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
- selecting appropriate cutting machine and tooling and loading material to match job requirements
- setting up and safely operating equipment
- securing and positioning material using a graduated measuring device and adjusting as required in conformance with specifications
- adjusting machine/tooling as required using material in most economical way
- checking material against specifications.

## 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)
- 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.

## Assessment Conditions

- Assessors must:
  - have vocational competency in carrying out mechanical cutting 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

- Where possible assessment must occur in operational workplace situations. Where this is not possible or where personal safety or environmental damage are limiting factors, assessment must occur in a sufficiently rigorous simulated environment that reflects realistic operational workplace conditions. This must cover all aspects of workplace performance, including environment, 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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