



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **MEM07012B Perform complex grinding operations**

**Release: 1**

## MEM07012B Perform complex grinding operations

### Modification History

Not Applicable

### Unit Descriptor

<b>Unit descriptor</b>	This unit covers performing complex grinding operations.
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### Application of the Unit

<b>Application of the unit</b>	<p>This unit applies to high precision operations such as jig grinding, grinding eccentrics, thread grinding, gauges, shapes and forms etc. Work includes the use of a range of precision measuring instruments. Grinding operations are performed on a variety of materials to achieve high levels of precision for dimensions and finish.</p> <p><b>Band: A</b></p> <p><b>Unit Weight: 4</b></p>
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### Licensing/Regulatory Information

Not Applicable

### Pre-Requisites

<b>Prerequisite units</b>		
<b>Path 1</b>	MEM07005C	Perform general machining
	MEM07008D	Perform grinding operations
	MEM09002B	Interpret technical drawing
	MEM12003B	Perform precision mechanical measurement

<b>Prerequisite units</b>		
	MEM12023A	Perform engineering measurements
	MEM18001C	Use hand tools

## Employability Skills Information

<b>Employability skills</b>	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 are determined from specifications, and sequence of operations is determined.
2. Set up work	2.1. Grinding wheels are selected and dressed to form and size as required. 2.2. Work is set up to required level of accuracy as per specifications.
3. Perform complex grinding	3.1. Specialised grinding operations are performed on components such as jigs, tools and dies, eccentrics, threads, gauge shapes and forms.
4. Check components for conformance to specification	4.1. Components are checked for conformance to specification using appropriate techniques, tools and equipment.

## 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:

- preparing an operational work plan
- dressing grinding wheel to form and size
- performing specialised grinding operations
- reading, interpreting and following information on written job instructions, specifications, charts, lists, drawings and other applicable reference documents
- planning and sequencing operations
- checking and clarifying information
- entering routine and familiar information onto proformas and standard workplace forms
- checking for conformance to specifications
- using precision measurement equipment within the scope of this unit
- measuring components to specified tolerances
- performing numerical operations, geometry and calculations/formulae for specialised complex grinding operations

#### Required knowledge

**REQUIRED SKILLS AND KNOWLEDGE**

Look for evidence that confirms knowledge of:

- reasons for selecting the chosen sequence of operations
- function and application of work holding devices/accessories appropriate to complex grinding
- appropriate techniques, tools and equipment to measure machined components
- hazards and control measures associated with complex grinding, including housekeeping
- use and application of personal protective equipment
- 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 perform complex grinding operations. 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 complex grinding operations 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**

<b>Guidance information for assessment</b>	
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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.

<b>Grinding wheels</b>	Wheel selection criteria includes shape and grit/bond composition
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**Unit Sector(s)**

<b>Unit sector</b>	
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**Co-requisite units**

<b>Co-requisite units</b>		

## Competency field

Competency field	Machine and process operations
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