



Australian Government

Department of Education, Employment and Workplace Relations

MEM09007B Perform advanced mechanical detail drafting

Release: 1

MEM09007B Perform advanced mechanical detail drafting

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers producing mechanical assembly, mechanical layout and detail drawings to AS1100 or equivalent.
------------------------	--

Application of the Unit

Application of the unit	<p>Skills covered by this unit are applied individually or in a team environment where comprehensive responsibility for the production of the drawing is exercised, and critical dimensions and associated tolerances are determined where required.</p> <p>Manual drafting and drawing equipment is used or where a CAD system is used, Unit MEM09009C (Create 2D drawings using computer aided design system) and/or Unit MEM09010C (Create 3D models using computer aided design system) should also be considered.</p> <p>Band: B</p> <p>Unit Weight: 4</p>
--------------------------------	---

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		
Path 1	MEM09002B	Interpret technical drawing
	MEM09003B	Prepare basic engineering drawing
	MEM09005B	Perform basic engineering detail drafting
	MEM09006B	Perform advanced engineering detail drafting

Employability Skills Information

Employability skills	This unit contains employability skills.
-----------------------------	--

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.
---	--

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare mechanical assembly, layout drawings	1.1. All drawings are produced to Australian Standard 1100 or equivalent. 1.2. Dimensions of various components are determined and inserted and appropriate symbols for limits and fits, surface texture and geometric tolerances are included.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit.
Required skills
<p>Look for evidence that confirms skills in:</p> <ul style="list-style-type: none"> • producing all drawings in accordance with AS1100 or equivalent, see above notes in range statement • representing the function of each component within the assembly/layout in accordance with design specifications/operational requirements • manufacturing, fabricating and assembling all components in accordance with the specifications contained in the drawings • where appropriate, orientating all components correctly to surrounding structures and services • where appropriate, modifying drawings to ensure conformance to specification AS1100 or equivalent, and/or changes to production, assembly and fabrication requirements and/or the availability of standard hardware items etc. • reading, interpreting and following information on written job instructions, specifications, standard operating procedures, charts, lists, drawings and other applicable reference documents • planning sequencing operations • checking and clarifying task related information • checking for conformance to specifications • undertaking numerical operations, geometry and calculations/formulae within the scope of this unit
Required knowledge
<p>Look for evidence that confirms knowledge of:</p> <ul style="list-style-type: none"> • function of each component within the assembly/layout

REQUIRED SKILLS AND KNOWLEDGE

- manufacturing, fabrication and assembly procedures to be used in producing the components/assemblies
- reason for ensuring that all components are correctly orientated to existing or proposed structures and services
- reasons for updating/modifying drawings to incorporate changes to specifications, production, assembly and fabrication methods and availability of standard hardware items, etc.
- hazards and control measures associated with performing advanced mechanical detail drafting, including housekeeping
- 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 advanced mechanical detail drafting. 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 advanced mechanical detail drafting 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.

Australian Standard 1100 or equivalent	Complete familiarity with AS 1100.101 or similar and its application is required in the respective field
---	--

Unit Sector(s)

Unit sector	
--------------------	--

Co-requisite units

Co-requisite units	

Competency field

Competency field	Drawing, drafting and design
-------------------------	------------------------------