



Australian Government

Department of Education, Employment and Workplace Relations

MEM09005B Perform basic engineering detail drafting

Release: 1

MEM09005B Perform basic engineering detail drafting

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers producing drawings to Australian Standard 1100 or equivalent where the critical dimensions and associated tolerances and design specifications are predetermined.
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Application of the Unit

Application of the unit	Manual drafting or drawing equipment is used or where a CAD (Computer Aided Design) 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. Band: A Unit Weight: 8
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Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		
Path 1	MEM09002B	Interpret technical drawing
	MEM09003B	Prepare basic engineering drawing

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. Prepare assembly, layout and detail drafting	1.1. Drawings are prepared in plane orthogonal, isometric projection or equivalent including auxiliary views and sections to Australian Standard 1100. 1.2. Layout, assembly and component drawings are prepared from specification. 1.3. Drawings are dimensioned and labelled using supplied tolerances in accordance with Australian Standard 1100. 1.4. Drawings are produced to specification in accordance with standard operating procedures. 1.5. Standard symbols to Australian Standard 1100 or equivalent are used to specify requirements.
2. Determine component and/or material requirement	2.1. Components and/or materials are selected from supplier/manufacturers' catalogues using design specifications.

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 drawings using appropriate projections and views in accordance with AS1100 or equivalent, see above note in the range statement
- producing layout, assembly and component drawings in conformance with specification
- inserting all relevant dimensions, tolerances and instructions in the drawing
- producing drawings to specification
- appropriately using standard symbols in accordance with AS1100 or equivalent in the drawings produced
- obtaining component specifications in accordance with work place procedures
- reading, interpreting and following information written job instructions, specifications, standard operating procedures, charts, lists, drawings and other applicable reference documents
- planning and sequencing operations
- checking and clarifying task related information

REQUIRED SKILLS AND KNOWLEDGE

- checking for conformance to specifications
- undertaking numerical operations, geometry and calculations/formulae within the scope of this unit

Required knowledge

Look for evidence that confirms knowledge of:

- appropriate projection for the drawing purpose
- reasons for selecting the chosen projection
- reasons for including auxiliary views in drawings
- requirements of AS1100 or equivalent with respect to dimensions, tolerances and labels
- procedures for producing component, layout and/or assembly drawings
- drawing specifications
- common symbols used in drawings to AS1100 or equivalent
- design specifications of the component
- appropriate components and materials from supplier/manufacturers' catalogues
- reasons for selecting the chosen components and/or materials
- 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 basic engineering 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 basic engineering 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

AS1100.100 is an extensive work and its application would usually be in line with standard operating procedures; interpretation would be under guidance particularly in respect to any geometric tolerancing

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

Co-requisite units		

Competency field

Competency field	Drawing, drafting and design
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