



Australian Government

MEM09007 Perform advanced mechanical detail drafting

Release: 1

MEM09007 Perform advanced mechanical detail drafting

Modification History

Release 1. Supersedes and is equivalent to MEM09007B Perform advanced mechanical detail drafting

Application

This unit of competency defines the skills and knowledge required to use manual drafting or drawing equipment to produce mechanical assembly and layout detail drawings to AS 1100 Technical drawing or equivalent.

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.

Where a computer-aided design (CAD) system is used unit MEM09009 Create 2-D drawings using computer-aided design system and unit MEM09010 Create 3-D models using computer-aided design system, should also be selected as appropriate.

Where advanced structural detail drafting skills are required, unit MEM09008 Perform advanced structural detail drafting should be selected.

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

Band: B

Unit Weight: 4

Pre-requisite Unit

MEM09002	Interpret technical drawing
MEM09003	Prepare basic engineering drawing
MEM09005	Perform basic engineering detail drafting
MEM09006	Perform advanced engineering detail drafting
MEM12023	Perform engineering measurements
MEM12024	Perform computations
MEM13015	Work safely and effectively in manufacturing and engineering
MEM16006	Organise and communicate information

Competency Field

Drawing, drafting and design

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

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|---|---|
| 1 Determine job requirements | <ul style="list-style-type: none">1.1 Follow standard operating procedures (SOPs)1.2 Comply with work health and safety (WHS) requirements at all times1.3 Identify job requirements job sheets or other associated work instructions |
| 2 Prepare mechanical detail drawings | <ul style="list-style-type: none">2.1 Produce all drawings to AS 1100 Technical drawing or equivalent2.2 Determine dimensions of various components and insert appropriate symbols for limits and fits, surface texture and geometric tolerances |

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.

Unit Mapping Information

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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 MEM09007 Perform advanced mechanical detail drafting

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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
- producing mechanical detail drawings to AS 1100 Technical drawing or equivalent including undertaking numerical operations, geometry and formula and calculations
- inserting appropriate symbols for all aspects of drawings including limits and fits, surface texture and geometric tolerances
- determining dimensions for various components to meet requirements.

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
- the application of AS1100 Technical drawings or equivalent to mechanical detail drawings
- function of each component within the assembly or layout
- manufacturing, fabrication and assembly procedures to be used in producing the components or assemblies
- reason for ensuring that all components are correctly orientated to existing or proposed structures and services
- reasons for updating or modifying drawings to incorporate changes to specifications, production, assembly and fabrication methods and availability of standard hardware items.

Assessment Conditions

- Assessors must:
 - have vocational competency in performing advanced mechanical detail drafting 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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