



Australian Government

Assessment Requirements for MEM04043 Develop and manufacture precision models

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MEM04016 Develop and manufacture precision models (Release 2).

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include:

- following work instructions, standard operating procedures (SOPs) and safe work practices
- planning finished model design by interpreting customer specifications (verbal or written) for finish, quality and form, and selecting appropriate materials
- undertaking calculations for contraction allowances, clearances and tapers to establish model parameters
- designing and manufacturing datum boards, jigs and fixtures as required
- determining sequence of manufacture on at least two occasions, including build-up on datum board, marking out and areas to be numerical control (NC) or computer numerical control (CNC) machined
- selecting and using appropriate machines and machining process on at least two occasions
- selecting and using hand and power tools to shape, produce, fashion and manufacture model to fine tolerances to specifications on at least two occasions, ensuring that surface finish is appropriate to the type of model
- checking specifications on at least two occasions by using appropriate measuring techniques, including coordinate measuring and machine checking
- recording all deviations or modifications to original tooling design or specifications in accordance with SOPs.

Note: Where a volume and/or frequency is not specified, demonstration must be provided at least once.

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)
- consequences of selecting inappropriate materials
- types of processes requiring models
- calculus, engineering calculations and formulae for developing and manufacturing precision models
- properties and uses of datum boards, datum holes or datum faces

- reasons for developing the sequence of manufacture
- different types of machines and machining processes and their operations
- checking procedures and devices, such as coordinate measuring and machine checking
- procedures for recording deviations or modifications to original design or specifications.
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Assessment Conditions

- Assessors must:
 - have vocational competency in the development and manufacture of precision models 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 that 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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Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>