



Australian Government

Assessment Requirements for MEM04016 Develop and manufacture precision models

Release: 2

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Modification History

Release 2. Quantum of hours of workplace practice removed. Supersedes and is equivalent to MEM04016 Develop and manufacture precision models (Release 1).

Release 1. Supersedes and is equivalent to MEM04016C Develop and manufacture precision models.

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
- planning finished model design by reading, interpreting customer's specifications (verbal or written) for finish, quality and form, and selecting appropriate material
- 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, including build-up on datum board, marking out and areas to be NC/CNC machined
- selecting and using appropriate machines and machining process
- selecting and using hand and power tools as needed to shape, produce, fashion and manufacture model to fine tolerances according to specification ensuring that surface finish is appropriate to the type of model
- checking specifications by using appropriate measuring techniques, including coordinate measuring and machine checking
- recording all deviations or modifications to original tool design, prints or plans according to SOPs.

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
- various processes requiring models
- calculus, engineering calculations and formulae relating to developing and manufacturing precision models
- properties and uses of datum boards, datum holes or datum faces

- reasons for developing the sequence of manufacture
- range of machines and machining processes and their operations
- various checking procedures and devices, such as coordinate measuring and machine checking
- procedures for recording deviation or modification to original drawings or specifications.

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.
- Assessment must occur in a functioning workplace. Where assessment in the workplace would be unsafe, impractical or threatens the environment, assessment must occur in a sufficiently rigorous simulated environment that reflects the circumstances that would be experienced in a functioning workplace. Assessment must cover all aspects of workplace performance, including 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.

Links

The MEM Metal and Engineering Training Package Companion Volume Implementation Guide is available from VETNet -

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