



Australian Government

MEM07013 Perform machining operations using horizontal and vertical boring machines

Release: 2

MEM07013 Perform machining operations using horizontal and vertical boring machines

Modification History

Release 2. Quantum of hours of workplace practice removed. Supersedes and is equivalent to MEM07013 Perform machining operations using horizontal and vertical boring machines (Release 1).

Release 1. Supersedes and is equivalent to MEM07013B Perform machining operations using horizontal and/or vertical boring machines.

Application

This unit of competency defines the skills and knowledge required to perform horizontal and vertical boring operations on standard engineering materials using cutting tools and precision measuring instruments.

Where the selection and use of power tools/hand held operations is required unit MEM18002 Use power tools/hand held operations should also be selected.

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

Band: A

Unit Weight: 4

Pre-requisite Unit

MEM07005	Perform general machining
MEM09002	Interpret technical drawing
MEM11011	Undertake manual handling
MEM12023	Perform engineering measurements
MEM12024	Perform computations
MEM13015	Work safely and effectively in manufacturing and engineering
MEM14006	Plan work activities
MEM16006	Organise and communicate information
MEM18001	Use hand tools

Competency Field

Machine and process operations

Elements and Performance Criteria

Elements describe the essential outcomes.

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

- | | | |
|---|-----------------------------------|--|
| 1 | Determine job requirements | 1.1 Follow standard operating procedures (SOPs) |
| | | 1.2 Comply with work health and safety (WHS) requirements at all times |
| | | 1.3 Use appropriate personal protective equipment (PPE) in accordance with SOPs |
| | | 1.4 Identify job requirements from specifications, drawings, job sheets or work instructions |
| | | |
| 2 | Prepare to undertake work | 2.1 Determine sequence of operations to meet job specifications |
| | | 2.2 Select tools to produce component to specification using International Standard Organisation (ISO) or SOPs |
| | | 2.3 Determine cutting parameters |
| | | |
| 3 | Perform boring operations | 3.1 Carry out horizontal and vertical boring operations to drawing specifications |
| | | 3.2 Check components for compliance with specifications |
| | | 3.3 Rectify non-compliant product in accordance with SOPs |

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.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, accessibility of the item, and local industry and regional contexts) are included.

Horizontal boring machines include one (1) or more of the following:

- table type
- floor type

Vertical boring machines include one (1) or more of the following:

- double column
- single column

Horizontal and vertical boring operations include one (1) or more of the following:

- parallel line and taper boring
- facing
- turning
- drilling
- reaming

Unit Mapping Information

Release 2. Supersedes and is equivalent to MEM07013 Perform machining operations using horizontal and vertical boring machines (Release 1).

Release 1. Supersedes and is equivalent to MEM07013B Perform machining operations using horizontal and/or vertical boring machines.

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 MEM07013 Perform machining operations using horizontal and vertical boring machines

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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
- identifying and interpreting specifications, charts, lists, drawings and other applicable reference documents to carry out boring operations
- selecting, mounting and positioning cutting tools
- calculating and selecting cutting parameters, including speeds and feeds
- performing horizontal and vertical boring operations to specified cutting parameters
- checking components for conformance to specifications using precision measuring instruments
- rectifying non-compliant product.

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)
- reasons for selecting the chosen sequence of boring operations
- geometry of cutting tools for a range of materials
- calculations for determining cutting parameters and checking tolerances
- consequences of varying the speeds and feeds from the optimum rates
- procedures and techniques for carrying out horizontal and vertical boring operations
- appropriate techniques, tools and equipment to measure machined components
- tools, techniques and equipment for checking components for conformance to specifications and rectifying non-compliant components.

Assessment Conditions

- Assessors must:
 - have vocational competency in performing machining operations using horizontal and vertical boring machines 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.

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