



Australian Government

Department of Education, Employment and Workplace Relations

MEM07013B Perform machining operations using horizontal and/or vertical boring machines

Release: 1

MEM07013B Perform machining operations using horizontal and/or vertical boring machines

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers performing horizontal/vertical boring operations.
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Application of the Unit

Application of the unit	<p>This unit applies to a range of boring operations, using precision measuring instruments and standard engineering materials and cutting tools.</p> <p>Band: A Unit Weight: 4</p>
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Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		
Path 1	MEM07005C	Perform general machining
	MEM09002B	Interpret technical drawing
	MEM12023A	Perform engineering measurements
	MEM18001C	Use hand tools

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. Observe safety precautions	1.1. Correct safety procedures are observed and protective clothing and safety glasses are worn.
2. Determine job requirements	2.1. Drawings are interpreted, sequence of operations is determined and tools are selected to produce component to specification using International Standard Organisation or standard operating procedures. 2.2. Cutting parameters are determined.
3. Perform boring operations	3.1. Horizontal and vertical boring operations are carried out including parallel line and taper boring, facing, turning, drilling and reaming to drawing specifications.
4. Check component for conformance to specification	4.1. Components are checked for conformance to specification using appropriate techniques, tools and equipment.

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:

- reading, interpreting and following information on written job instructions, specifications, quality and standard operating procedures, charts, lists, drawings and other applicable reference documents
- planning and sequencing operations
- checking and clarifying task-related information
- preparing an operational work plan
- selecting, mounting and positioning cutting tools
- calculating and selecting cutting parameters, including speeds and feeds
- performing horizontal and/or vertical boring operations

Required knowledge

Look for evidence that confirms knowledge of:

- reasons for selecting the chosen sequence of operations

REQUIRED SKILLS AND KNOWLEDGE
<ul style="list-style-type: none">• geometry for cutting tools for a range of materials• calculations for determining cutting parameters and checking tolerances within the scope of this unit• 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 components• hazards and control measures associated with horizontal and/or vertical boring, including housekeeping• use and application of personal protective equipment• 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 machining operations using horizontal and/or vertical boring machines. 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 the performance of machining operations using horizontal and/or vertical boring machines 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,

EVIDENCE GUIDE	
	standards, manuals and reference materials.
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
<p>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.</p>	
Horizontal boring machines	Table type, floor type
Vertical boring machines	Double column, single column

Unit Sector(s)

Unit sector	
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Co-requisite units

Co-requisite units		

Competency field

Competency field	Machine and process operations
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