



Australian Government

Department of Education, Employment and Workplace Relations

MEM07007B Perform milling operations

Release: 1

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Modification History

There are no notes for this unit.

Unit Descriptor

This unit covers performing milling operations on a range of milling machines.

Application of the Unit

This unit applies to a range of milling machines including vertical, horizontal and universal types, a range of precision measuring equipment and cutting tools.

Work is performed to established processes, practices and to drawings, sketches, specifications and instructions as appropriate. Cutting tools are selected using International Standard Organisation (I.S.O) standards or according to standard operating procedure as appropriate.

Licensing/Regulatory Information

Pre-Requisites

Path 1	MEM07005B Perform general machining
	MEM09002B Interpret technical drawing
	MEM12023A Perform engineering measurements
	MEM18001C Use hand tools

Employability Skills Information

Elements and Performance Criteria Pre-Content

Elements are the essential outcomes of the unit of competency.

Together, performance criteria specify the requirements for competent performance. Text in *italics* is explained in the range statement following.

Elements and Performance Criteria

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, the sequence of operations is determined and tooling is selected to produce component to specification. 2.2 Cutting parameters are determined.
3 Perform milling operations	3.1 Milling operations are carried out to produce components to specification. 3.2 Operations are undertaken using conventional and/or climb milling techniques and a variety of cutters including slab, gang, end, shell, slot, form, slitting. 3.3 The full range of standard accessories is used including dividing heads and rotary tables as required.
4 Check components for conformance to specification	4.1 Component is checked for conformance to specification using appropriate techniques, tools and equipment.

Required Skills and Knowledge

Evidence Guide

The evidence guide specifies the evidence required to demonstrate achievement in the unit of competency as a whole. It must be read in conjunction with the unit descriptor, performance criteria, range statement and the assessment guidelines for the Metal and Engineering Training Package

Overview of assessment requirements

A person who demonstrates competency in this unit must be able to perform milling operations. Competency in this unit cannot be claimed until all prerequisites have been satisfied.

Context of 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.

Interdependent assessment

This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with milling operations 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 should not require language, literacy and numeracy skills beyond those required in this unit. 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, standards, manuals and reference materials.

Consistency of performance

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.

Required skills

Look for evidence that confirms skills in:

setting up jobs using appropriate equipment

calculating and setting cutting feeds and speeds appropriate to the job

interpreting drawings and job instructions/specifications

milling components to specification

visually and dimensionally checking components for conformance to specification

Required knowledge

Look for evidence that confirms knowledge of:

safety hazards associated with milling machines

sequence of operations to achieve the job requirements

cutter types and tooling geometry

consequences of varying speeds and feeds from the optimum rates calculated

effects of different materials on cutting speeds and feeds

conventional and climb milling techniques and their applications

the application of each of the following: slab, gang, shell, slot, form, and slitting

applications requiring the use of dividing

heads and rotary tables when milling components

the procedures for using dividing heads and rotary tables on milling machines

appropriate techniques, tools and equipment to measure milled components

use and application of personal protective equipment

safe work practices and procedures

Range Statement

The range statement provides information about the context in which the unit of competency is carried out. The variables and scope cater for different work requirements, work practices and knowledge between States, Territories and the Commonwealth, and between organisations and workplaces. The range statement relates to the unit as a whole and provides a focus for assessment. Text in *italics* in the performance criteria is explained here.

The following variables may be present and may include, but are not limited to, the examples listed under the scope. All work is undertaken to relevant legislative requirements, where applicable

Variable	Scope
Drawings	Engineering drawings to AS 1100/1102
Tooling	Slab, gang, end, shell, slot, form, slitting cutters
Cutting parameters	Setting up machine, feed and speed calculations
Accessories	Dividing heads and rotary tables

Unit Sector(s)

Related units

None

Competency field

Machine&process operations

Band

A

Unit Weight

4