



Australian Government

Department of Education, Employment and Workplace Relations

MEM07006B Perform lathe operations

Release: 1

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Modification History

There are no notes for this unit.

Unit Descriptor

This unit covers performing machining operations on a lathe to required tolerances and specifications using all types of accessories.

Application of the Unit

This unit applies to the production of components using centre lathes and lathe accessories, precision measuring equipment and cutting tools on a range of standard engineering materials. It does not include taper turning attachment, copy turning attachment or multi-start threads. Work is performed to established processes, practices and specifications. Cutting tools are selected using International Standard Organisation (I.S.O) standards or according to standard operating procedure as appropriate. Work is performed to drawings, sketches, specifications and instructions 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 worn.
2 Determine job requirements	2.1 Drawings are interpreted, sequence of operation is determined and tooling is selected to produce component to specification.
3 Mount job	3.1 Job is set up using instruments such as dial test indicators, and digital read-out equipment.
4 Perform turning operations	4.1 Speeds and feeds are calculated using appropriate mathematical techniques and reference material. 4.2 The full range of accessories on a centre lathe are used including three and four jaw chucks, centres, face plate, steadies, cross slide and tailstock. 4.3 Turning operations are performed to specification.
5 Check components for conformance with specifications	5.1 Components are 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 lathe 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 centre lathe 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 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, 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:

interpreting technical drawings/specifications in relation to turning

setting up jobs using appropriate equipment

calculating and setting cutting feeds and speeds appropriate to the job

checking that job is concentric, running true etc.

safely operating lathes

performing turning operations

Required knowledge

Look for evidence that confirms knowledge of:

sequence of operations to achieve the job requirements

tool type and geometry to achieve the required specifications and for work pieces of different materials

numerical operations, geometry and calculations/formulae within the scope of this unit

the consequences of varying speeds and feeds from the optimum rates calculated

characteristics of different materials and their effects on cutting speeds and feeds

application of lathe accessories

techniques, tools and equipment to measure materials and machined components

use and application of personal protective equipment

safe work practices and procedures

hazards and control measures associated with lathe operations

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	Cutting tools, boring bars, drills, reamers, thread chasers, tapping heads, taps etc.
Instruments	Manual and digital micrometers, vernier calipers, dial indicators, scribing blocks
Speeds and feeds	Setting up machine, changing gears and speeds, use of lead screw, calculations
Accessories	Three and four jaw chucks, centres, face plate, steadies, cross slide, tailstock
Turning operations	Manual parallel and taper turning, internal and external turning including boring drilling, reaming, single start thread cutting, parting off

Unit Sector(s)

Unit Weight

4

Band

A

Competency field

Machine&process operations

Related units

None