



Australian Government

Department of Education, Employment and Workplace Relations

MEM05037B Perform geometric development

Release: 1

MEM05037B Perform geometric development

Modification History

There are no notes for this unit.

Unit Descriptor

This unit covers marking out general fabrications using geometric development.

Application of the Unit

This unit applies in jobbing workshops and involves the development of templates and general fabricating based on using geometrical layout techniques.

Licensing/Regulatory Information

Pre-Requisites

Path 1

MEM12023A Perform engineering
measurements

MEM12024A Perform computations

MEM09002B Interpret technical drawing

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 Transfer dimensions from a detail drawing to work	1.1 Specifications and work requirements are determined and understood using correct and appropriate calculations. 1.2 Development is carried out to specifications or standard operating procedures using appropriate tools and equipment. 1.3 Datum points are correctly established and marked appropriate to task requirements.
2 Make templates as required	2.1 Appropriate template material is chosen. 2.2 Templates are produced to specification. 2.3 Correct storage procedures are followed including labelling and identification to standard operating procedures.
3 Develop patterns as required	3.1 Parallel line, radial line and triangulation development methods are chosen and applied. 3.2 Allowances for fabrication and assembly are correctly determined and transferred.
4 Interpret relevant codes, standards and symbols	4.1 Relevant standards/codes and symbols are interpreted. 4.2 Requirements of standards/codes are interpreted and applied to materials and processes.
5 Estimate quantities of materials from detail drawings	5.1 Materials are correctly identified. 5.2 Quantities are estimated from drawings. 5.3 Material wastage is minimised.

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 mark out general fabrications using geometric development. 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 applying geometric development 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:

performing geometric calculations

carrying out geometric development

establishing datum points

producing templates to specification

labelling and storing templates

developing patterns

making fabrication and assembly allowances

determining material and component quantities

minimising material wastage

Required knowledge

Look for evidence that confirms knowledge of:

specifications of work

tools and equipment

development preparation

datum points

materials used for the preparation of templates

manufacturing allowance considerations

template development, labelling, identification and storage requirements

development methods and applications

fabrication and assembly allowances

sources of data on fabrication

relevant standards and codes

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
Template material	Steel plate, perspex, timber, cardboard, paper etc.
Storage procedures	Including labelling, identification, e.g. template lofts
Development methods	Parallel line, radial line and triangulation
Allowances	Thickness, bend, pitch, angle, circumference, perimeter
Standards/codes and symbols	All work carried out in accordance with legislative and regulatory requirements

Unit Sector(s)

Band

A

Competency field

Fabrication

Unit Weight

6

Related units

For skills required for marking out activities associated with general engineering and maintenance functions, see the following units:

Unit MEM07005B (Perform general machining)

Unit MEM12006B (Mark off/out [general engineering])

Unit MEM18006B (Repair and fit engineering components)