



Australian Government

Department of Education, Employment and Workplace Relations

MEM12006B Mark off/out (general engineering)

Release: 1

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Modification History

There are no notes for this unit.

Unit Descriptor

This unit covers marking off/out by transferring dimensions from engineering drawings, prints or plans etc.

Application of the Unit

This unit applies to marking off/out techniques used for the transfer of dimensions from engineering drawings, prints or plans.

Marking off/out is undertaken using appropriate tools and equipment; templates are produced as required. Marking off/out techniques may apply to a range of materials and shapes.

The task may be performed in a workshop or in situ.

Licensing/Regulatory Information

Pre-Requisites

Path 1

MEM09002B Interpret technical drawing

MEM12023A Perform engineering measurements

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 Determine job requirements	<p>1.1 Drawings, job instructions and specifications are interpreted and understood.</p> <p>1.2 Appropriate methods and sequencing are selected consistent with proposed manufacturing process using standard operating procedures.</p>
2 Transfer dimension	<p>2.1 All marking off/out is carried out to specifications using appropriate tools and equipment.</p> <p>2.2 Datum points are correctly established.</p> <p>2.3 Dimensions are transferred and correct and appropriate calculations are used where required.</p>

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 off/out in a general engineering situation. 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 marking off/out in a general engineering situation 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:

determining job requirements

transferring dimensions

applying method and sequence of marking out

making templates as required

establishing datum points

reading and interpreting routine information on written job instructions, specifications and standard operating procedures. May include drawings

performing calculations using formulae

locating, reading and interpreting information on written job instructions, specifications, drawings, charts, lists and other reference documentation

checking and clarifying strategies

Required knowledge

Look for evidence that confirms knowledge of:

drawings, job instructions and specifications

procedures for marking off/out

tools, equipment and techniques related to the task

purpose of establishing datum points

method of determining/calculating dimensions

use and application of personal protective equipment

safe work practices and procedures

relevant hazards and control measures related to the competency

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
Marking off/out	Engineering components, jigs and fixtures, castings, templates, dies and tooling etc.
Tools and equipment	Marking out tables, surface tables, rotary tables, dividing heads etc., vee blocks, cylinder squares, sine bars and the like, vernier height gauges, protractors, straight edge and set squares, hammers, scribes, centre punch, marking medium etc.

Unit Sector(s)

Unit Weight

4

Related units

This unit is not intended to cover the skills used in a simple transfer of a dimension or marking a location point associated with general engineering and maintenance functions. For these skills see Unit MEM07005B (Perform general machining), Unit MEM18006B (Repair and fit engineering components) or Unit MEM18014B (Manufacture tools, gauges and dies). Where a higher level of calculation, measurement or precision work is required, see Unit MEM30012A (Use mathematical techniques and perform simple statistical computations), Unit MEM12003B (Perform precision mechanical measurement) or Unit MEM18003C (Use tools for precision work) respectively.

For marking out structural fabrications and shapes, refer Unit MEM12007C (Mark off/out structural fabrications and shapes).

This unit covers the marking out skills only. When the manufacture of templates is required, other appropriate units may need to be selected.

Competency field

Measurement

Band

A