



Australian Government

MEM05038 Perform advanced geometric development - cylindrical/rectangular

Release: 2

MEM05038 Perform advanced geometric development - cylindrical/rectangular

Modification History

Release 2. Quantum of hours of workplace practice removed. Supersedes and is equivalent to MEM05038 Perform advanced geometric development – cylindrical/rectangular (Release 1).

Release 1. Supersedes and is equivalent to MEM05038B Perform advanced geometric development – cylindrical/rectangular.

Application

This unit of competency defines the skills and knowledge required to mark out complex cylindrical/rectangular fabrications and reflects advanced skills required to calculate parallel line developments.

Where the skills required are for marking out activities associated with general engineering and maintenance functions, one or more of the following units should also be selected as appropriate:

- MEM07005 Perform general machining
- MEM12006 Mark off/out (general engineering)
- MEM18006 Perform precision fitting of engineering components
- MEM18014 Manufacture press tools and gauges.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Band: A

Unit Weight: 2

Pre-requisite Unit

MEM05037	Perform geometric development
MEM09002	Interpret technical drawing
MEM12023	Perform engineering measurements
MEM12024	Perform computations
MEM12026	Perform advanced trade calculations in a manufacturing, engineering or related environment
MEM13015	Work safely and effectively in manufacturing and engineering

MEM14006	Plan work activities
MEM16006	Organise and communicate information

Competency Field

Fabrication

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

1	Determine job requirements	1.1	Follow standard operating procedures (SOPs)
		1.2	Comply with work health and safety (WHS) requirements at all times
		1.3	Use appropriate personal protective equipment (PPE) in accordance with SOPs
		1.4	Identify job requirements from specifications, drawings, job sheets or work instructions
2	Mark off/out light/heavy gauge fabrications	2.1	Determine and apply specifications and work requirements using appropriate calculations
		2.2	Carry out development to specifications or procedures using appropriate tools and equipment
		2.3	Establish and indicate datum points
		2.4	Determine and mark allowances
3	Make templates as required	3.1	Select template material appropriate to the marking out requirements
		3.2	Produce templates to meet specifications
		3.3	Determine and transfer allowances
		3.4	Produce templates to specification

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

		3.5	Follow correct storage procedures, including labelling and identification to procedures
4	Develop patterns as required	4.1	Select and apply parallel line, radial line and triangulation development methods, as appropriate, to the work requirements
		4.2	Determine and transfer allowances
5	Interpret relevant codes, standards and symbols	5.1	Interpret relevant standards/codes and symbols
		5.2	Interpret and apply requirements of standards/codes to materials and processes
6	Estimate quantities of materials from engineering drawings	6.1	Identify materials
		6.2	Estimate quantities from drawings
		6.3	Optimise material use and ensure wastage is minimised

Foundation Skills

This section describes those required skills (reading, writing, oral communication and numeracy) that are essential to workplace performance in this unit of competency.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Light gauge fabrications include one (1) or more

- square/rectangular ventilation ducting
- air conditioning
- cylindrical components

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

of the following:

and include one (1) or more of the following:

- hoppers
- chutes
- other items involving compound bends and double offsets

Heavy gauge fabrications include one (1) or more of the following:

- ducting
- extraction
- piping
- cylindrical components

and include one (1) or more of the following:

- hoppers
- chutes
- other items involving compound bends and double offsets

Allowances include one (1) or more of the following:

- thickness
- bend, pitch
- angle
- circumference
- perimeter

Template material includes one (1) or more of the following:

- steel plate
- perspex
- timber

Templates produced include (1) one or more of the following:

- rolling
- bending
- pressing
- drilling
- profiling

Storage procedures include one or more of the following:

- labelling
- identification (e.g. template lofts)

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**Development methods
include the following:**

- parallel line
- radial line
- triangulation

Unit Mapping Information

Release 2. Supersedes and is equivalent to MEM05038 Perform advanced geometric development – cylindrical/rectangular (Release 1).

Release 1. Supersedes and is equivalent to MEM05038B Perform advanced geometric development – cylindrical/rectangular.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>