



**Australian Government**

**MEM18009 Perform precision levelling and  
alignment of machines and engineering  
components**

**Release: 2**

# MEM18009 Perform precision levelling and alignment of machines and engineering components

## Modification History

Release 2. Quantum of hours of workplace practice removed. Supersedes and is equivalent to MEM18009 Perform precision levelling and alignment of machines and engineering components (Release 1).

Release 1. Supersedes and is equivalent to MEM18009B Perform levelling and alignment of machines and engineering components.

## Application

This unit of competency defines the skills and knowledge required to undertake levelling and alignment measurements/readings and perform levelling and/or alignment and adjustment tasks on machines and engineering components.

It applies to the setting up and use of precision levelling and alignment devices and where all adjustments are performed according to designated procedures in conformance to specifications.

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

**Band: A**

**Unit Weight: 4**

## Pre-requisite Unit

MEM09002	Interpret technical drawing
MEM11011	Undertake manual handling
MEM12023	Perform engineering measurements
MEM12024	Perform computations
MEM13015	Work safely and effectively in manufacturing and engineering
MEM14006	Plan work activities
MEM16006	Organise and communicate information
MEM18001	Use hand tools
MEM18002	Use power tools/hand held operations

MEM18003	Use tools for precision work
MEM18006	Perform precision fitting of engineering components
MEM18055	Dismantle, replace and assemble engineering components

## Competency Field

Maintenance and diagnostics

## Elements and Performance Criteria

Elements describe the essential outcomes.

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

<b>1 Determine job requirements</b>	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
<b>2 Undertake levelling and alignment measurements/readings</b>	2.1	Determine task requirements by inspection of equipment to be levelled and/or aligned
	2.2	Select the correct appropriate levelling and/or alignment procedure
	2.3	Select correct and appropriate levelling or alignment devices/equipment and set up to procedures or manufacturers' recommendation
	2.4	Apply and utilise principles of levelling and alignment
	2.5	Take measurements/readings and record
<b>3 Perform levelling and/or alignment</b>	3.1	Perform levelling realignment calculations using method appropriate for the levelling/alignment application

Elements describe the essential outcomes.

**tasks**

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

- 3.2 Level equipment to specifications using appropriate tools, equipment and techniques
- 3.3 Complete levelling and alignment task to specifications
- 3.4 Complete any records required by SOPs

## 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.

**Levelling and/or alignment procedures include one (1) or more of the following:**

- face and rim
- reverse indicator
- use of jacking bolts and shimming material
- use of levelling equipment
- thermal expansion checks

**Equipment includes one (1) or more of the following**

- machines
- components
- assemblies
- sub-assemblies

**Levelling and alignment devices/equipment include one (1) or more of the following:**

- precision levels
- spirit levels
- line levels
- optical levels
- electronic levels
- laser levels
- dial indicators
- special type dial indicator fixtures

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.

- magnetic bases
- straight edges
- feeler gauges
- bench centres
- vee blocks
- plumb line
- folding wedges
- straight edges
- shimpack materials
- dumpy levels

## Unit Mapping Information

Release 2. Supersedes and is equivalent to MEM18009 Perform precision levelling and alignment of machines and engineering components (Release 1).

Release 1. Supersedes and is equivalent to MEM18009B Perform levelling and alignment of machines and engineering components.

## Links

Companion Volume implementation guides are found in VETNet -

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