



Australian Government

**MEM27020 Apply knowledge of large
combustion engine operations to service and
maintenance tasks**

Release: 1

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Modification History

Release 1: New unit

Application

This unit of competency defines the skills and knowledge required to identify engine features and operations essential for large engine servicing and maintenance tasks.

It includes identifying and assessing large combustion engines, the equipment powered by the engines, and the operations the equipment is required to perform and applying this information to engine service and maintenance tasks.

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

Band: A

Unit Weight: 2

Pre-requisite Unit

MEM09002	Interpret technical drawing
MEM13015	Work safely and effectively in manufacturing and engineering
MEM16006	Organise and communicate information

Competency Field

Fixed and Mobile Plant

Elements and Performance Criteria

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

1	Prepare for service and maintenance task	1.1	Follow standard operating procedures (SOPs)
		1.2	Comply with work health and safety (WHS) requirements at all times

Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
	1.3 Use appropriate personal protective equipment (PPE) in accordance with SOPs
	1.4 Identify job requirements from specifications, job sheets or work instructions
2 Identify engine type and any special features for relevance to service and maintenance task	2.1 Locate sources of information on equipment, engine, systems and components
	2.2 Identify engine type and configuration
	2.3 Locate and identify ignition, starting, air, fuel, coolant, exhaust and lubrication system components
	2.4 Identify engine components and sensors
	2.5 Identify fuel, oil and coolant specifications for engine and check against service records
	2.6 Identify environmental controls and features
3 Review equipment systems and accessories for relevance to service and maintenance task	3.1 Identify equipment systems requiring engine power
	3.2 Identify other equipment systems and accessories
	3.3 Review operator records and service history for information relevant to engine service and maintenance
	3.4 Review manufacturer instructions for recommended engine operation
	3.5 Assess contamination risk to oil, fuel, coolant and lubrication systems
4 Confirm or adjust service and maintenance job requirement	4.1 Review original job specification against results of checks of engine and equipment specifications, service and operator records
	4.2 Confirm job specification or recommend adjustments

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.

The large diesel engines covered by this unit are used in one or more of the following:

- mobile plant
- agriculture
- forestry
- rail
- marine
- other transport operations
- power generation
- air and gas compression
- stand by power
- other industry sectors using large combustion engines

Engine powered equipment systems include one (1) or more of the following:

- hydraulic and pneumatic systems for accessories
- mechanical and traction drives
- alternators and generators
- heating, ventilation, air conditioning and refrigeration HVAC/R equipment
- air compressors

Environmental controls and features include the following:

- components and systems designed to minimise noise pollution or visual impact of mobile and stationary equipment and engines

Engine consumables include one (1) or more of the following:

- filters
- coolants
- lubricants
- hydraulic and other fluids
- additives
- simple drive belts
- coolant hoses

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>