



Australian Government

MEM27031 Perform engine top-end overhaul

Release: 2

MEM27031 Perform engine top-end overhaul

Modification History

Release 2. Quantum of hours of workplace practice removed. Supersedes and is equivalent to MEM27031 Perform engine top-end overhaul (Release 1).

Release 1. Supersedes and is equivalent to MEM18034B Perform engine top-end overhaul.

Application

This unit of competency defines the skills and knowledge required to dismantle, clean and assess parts, record and interpret measurements and recondition the cylinder head.

It includes all types of engines and work associated with the reconditioning of cylinder heads, including determining the causes of failures, replacement of inserts, guides and injector sleeves, grinding of valves and seats, and crack/twist/bend testing. The reconditioning of original parts, crack repairs using non-welding techniques and sizing and fitting of replacement parts are also included.

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

Band: A

Unit Weight: 8

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.

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|---|---|-----|--|
| 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 | Dismantle clean and assess parts | 2.1 | Interpret characteristics of surface finishes and wear patterns associated with valve operating mechanisms and cylinder head |
| | | 2.2 | Disassemble cylinder head and ancillary components according to manufacturer recommendations |
| | | 2.3 | Check parts for abnormal wear or defects and identify components for reuse or replacement |
| | | 2.4 | Select appropriate cleaning solution/procedure, clean parts and store ready for reassembly |
| | | 2.5 | Rack or set out parts according to their original location in the engine |
| | | 2.6 | Obtain and record measurements using appropriate measuring equipment |
| | | 2.7 | Interpret readings regarding replacement or reuse and determine appropriate under/oversize of replacement parts |

Elements describe the essential outcomes.

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

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| 3 | Recondition cylinder head | 3.1 | Pressure test cylinder head for serviceability |
| | | 3.2 | Measure and record spring tensions, valve and guide dimensions and surface flatness |
| | | 3.3 | Remove cylinder head according to manufacturer specifications |
| | | 3.4 | Use grinding and cleaning equipment in reconditioning the cylinder head |
| | | 3.5 | Apply operational parameters of cylinder head components in determining whether components are to be reconditioned or replaced |
| | | 3.6 | Replace injector sleeves, sealing washers, plugs and capping |

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

No range of conditions provided for this unit.

Unit Mapping Information

Release 2. Supersedes and is equivalent to MEM27031 Perform engine top-end overhaul (Release 1).

Release 1. Supersedes and is equivalent to MEM18034B Perform engine top-end overhaul.

Links

Companion Volume implementation guides are found in VETNet -

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