



Australian Government

Department of Education, Employment and Workplace Relations

MEM18025B Service combustion engines

Release: 1

MEM18025B Service combustion engines

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers checking and assessing engine consumable fluids and components for serviceability, performing the servicing procedures and reporting what has been done.
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Application of the Unit

Application of the unit	<p>This unit applies to the assessment and replacement of engine consumable fluids and components and the carrying out of servicing activities to predetermined procedures or manufacturers' specifications, including minor running adjustments.</p> <p>Servicing activities may include obtaining and dispatching samples for spectrographic or laboratory analysis. Adjustments are limited to 'running adjustments' typical of which are belt tensions, shroud clearances, linkage adjustments, etc.</p> <p>This unit should not be selected if Unit MEM18055B (Dismantle, replace and assemble engineering components) has already been selected.</p> <p>Band: A</p> <p>Unit Weight: 2</p>
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Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		
Path 1	MEM18001C	Use hand tools

Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Check and assess items for serviceability	1.1.Engine consumable fluids and components are correctly assessed for condition. 1.2.Replacement fluids/items are correctly identified using manufacturers' data. 1.3.Abnormal appearance/condition of engine consumables fluids and components is identified and reported to appropriate authority. 1.4.Lubricant, cooling system additives and filtering principles are understood.
2. Perform servicing procedures	2.1.Engine fluids are drained, flushed and replaced with correct fluid and/or additives, and to the correct level/concentration according to manufacturers' recommendations. 2.2.Engine consumable components are removed and replaced according to manufacturers' recommended procedures. 2.3.Engine is free of lubricant, water and air leaks after servicing work. 2.4.Hoses, wiring, ducts etc. are correctly secured and clear of moving parts after servicing work. 2.5.Minor running adjustments are made to specification. 2.6.Test samples of fluids are correctly obtained from system as determined by standard operating procedures.
3. Report activities	3.1.Servicing activities are accurately recorded on report sheet/proforma, or accurate oral report is given.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- reading, interpreting and following information on written job instructions,

REQUIRED SKILLS AND KNOWLEDGE

- specifications, standard operating procedures, charts, lists, drawings and other applicable reference documents
- checking items removed from the engine for serviceability and conformance to specifications
 - planning and sequencing operations
 - checking task-related information
 - identifying and reporting on fluids and items which have abnormal appearance
 - flushing engine fluids from the engine and cleaning the engine of any residual fluids
 - replacing engine fluids with the correct fluids to the correct levels
 - removing and replacing engine consumable fluids and components
 - checking the engine for lubricant, water and air leaks after servicing
 - securing wires, hoses and ducts after servicing
 - making minor running adjustments
 - obtaining test samples
 - undertaking calculations and numerical operations within the scope of this unit
 - recording and reporting service activities

Required knowledge

Look for evidence that confirms knowledge of:

- common defects that can be identified from the appearance of fluids and items
- the procedures for reporting items/fluids with abnormal appearance
- the principles of operation of the lubrication and cooling systems
- the function of filters
- the purpose of a range of additives
- the procedures for draining and flushing fluids from the engine including the reasons for ensuring any residual/spilt fluids are removed from the engine
- the appropriate grade and type of replacement fluid
- the procedures for replacing engine fluids
- the correct proportions of additive to be used
- the procedures for removing/replacing engine consumable fluids and components
- the procedures for checking serviced engines for leaks
- the methods of fastening/securing wires, hoses, ducts, etc.
- the procedures for undertaking minor running adjustments
- the specifications pertaining to those adjustments
- the procedures for taking test samples
- the procedures for reporting service activities
- hazards and control measures associated with servicing combustion engines
- safe work practices and procedures

Evidence Guide

EVIDENCE GUIDE	
<p>The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.</p>	
<p>Overview of assessment</p>	<p>A person who demonstrates competency in this unit must be able to service combustion engines. Competency in this unit cannot be claimed until all prerequisites have been satisfied.</p>
<p>Critical aspects for assessment and evidence required to demonstrate competency in this unit</p>	<p>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.</p>
<p>Context of and specific resources for assessment</p>	<p>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.</p> <p>This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with servicing combustion engines or other units requiring the exercise of the skills and knowledge covered by this unit.</p>
<p>Method of assessment</p>	<p>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.</p>

EVIDENCE GUIDE

Guidance information for assessment	
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Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Engine consumable fluids and components

These include components and fluids that are designed to be replaced or restored as their effectiveness diminishes, or where they are wearing/failing. Typically they would include filters, coolants, lubricants, hydraulic and other fluids, additives etc, simple drive belts and coolant hoses

Running adjustments

These are limited to straightforward adjustments typical of which are belt tensions, shroud clearances, linkage adjustments, etc.

Unit Sector(s)

Unit sector	
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Co-requisite units

Co-requisite units	

Co-requisite units		

Competency field

Competency field	Maintenance and diagnostics
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