



Australian Government

Department of Education, Employment and Workplace Relations

MEM18028B Maintain engine lubrication systems

Release: 1

MEM18028B Maintain engine lubrication systems

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers assessing lubrication system operations and repairing or replacing faulty components.
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Application of the Unit

Application of the unit	Lubrication system testing would require the obtaining of flow, temperature and pressure measurements. Band: A Unit Weight: 2
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Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		
Path 1	MEM09002B	Interpret technical drawing
	MEM12023A	Perform engineering measurements
	MEM18001C	Use hand tools
	MEM18002B	Use power tools/hand held operations
	MEM18055B	Dismantle, replace and assemble engineering components

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. Assess lubrication system operation	1.1.Relevant information is obtained and correctly interpreted prior to any testing. 1.2.Checks are undertaken safely and to prescribed procedures. 1.3.Flows, pressures and temperatures are correctly determined and recorded. 1.4.Faults are correctly isolated to component level and appropriate corrective action is determined. 1.5.Lubricant fluid characteristics, terminology and applications are understood. 1.6.Test equipment is used correctly. 1.7.Results of spectrographic or laboratory analysis are correctly evaluated and recommendations are made regarding adjustments to future maintenance activities. 1.8.Auxiliary lubrication systems are assessed for correct operation.
2. Rectify faulty components	2.1.Replacement components are correctly selected using manufacturers' data. 2.2.Components are removed and refitted to engine by following prescribed procedures. 2.3.Final adjustments are made that bring system in line with specifications. 2.4.Test and rectification activities are accurately recorded. 2.5.Engine is free of lubricant leaks after repair work is carried out. 2.6.Component wear and clearances are correctly determined using appropriate test equipment and manufacturers' recommendations.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

REQUIRED SKILLS AND KNOWLEDGE

Look for evidence that confirms skills in:

- reading, interpreting and following information on written job instructions, specifications, standard operating procedures, charts, lists, drawings and other applicable reference documents
- planning and sequencing operations
- checking task-related information
- checking for conformance to specification
- checking the lubrication system
- determining and recording oil flows, pressures and temperatures
- identifying faulty components
- using test equipment
- obtaining/interpreting the results of lubricating oil tests
- checking auxiliary lubrication systems for correct operation where appropriate
- selecting replacement components
- removing, refitting and adjusting lubrication system components
- reporting and recording test and work activities
- checking lubrication system components for wear and clearance
- undertaking calculations and numerical operations within the scope of this unit

Required knowledge

Look for evidence that confirms knowledge of:

- the operation of the lubrication system
- the procedures for testing/checking lubrication
- hazards and control measures associated with checking and rectifying lubrication systems, including housekeeping
- the tests to be undertaken and equipment and techniques to be used to determine oil flows, pressures and temperatures
- the procedures for recording lubrication system test results
- the specifications of the lubrication system components
- the appropriate corrective action for faulty components
- the characteristics of lubricants and application of a variety of lubricants
- the procedures and reasons for analysing lubricating oil samples
- the likely causes of a range of out of specification test results
- the appropriate corrective action to be taken
- the implications of out of specification test results on maintenance schedules and requirements
- the reasons for installing auxiliary lubrication systems on diesel plant and equipment
- the operation of the auxiliary lubrication system
- the procedures for removing/replacing lubrication system components

REQUIRED SKILLS AND KNOWLEDGE

- the procedures for adjusting lubrication systems
- the procedures for recording test and repair activities
- the procedures for checking lubrication systems for leaks
- the measuring equipment/techniques used to determine lubrication system component wear and clearances
- 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 maintain engine lubrication systems. 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 maintaining engine lubrication systems, 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. 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.

Faults

Typical symptoms of faults would be lubrication pressures/temperatures that are too low/high; excessive or too little consumption/flow, etc.

Test equipment

Pressure/temperature and/or flow meters

Adjustments

May include setting of bypass/regulating/relief valves to specified pressures of flows

Unit Sector(s)

Unit sector	
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Co-requisite units

Co-requisite units		

Competency field

Competency field	Maintenance and diagnostics
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