



Australian Government

Department of Education, Employment and Workplace Relations

MEM18027C Overhaul engine fuel system components

Release: 1

MEM18027C Overhaul engine fuel system components

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers cleaning and assessing parts, recording and interpreting measurements, and reconditioning and setting up the equipment.
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Application of the Unit

Application of the unit	<p>This unit refers typically to the work undertaken on large stationary or mobile diesel engines and would entail the rebuilding/setting up of fuel pumps, governors, injectors and associate equipment.</p> <p>Fuel system types typically include port and helix, sleeve metering, unit injection, distributor and pressure/time.</p> <p>All work is undertaken to manufacturers' specifications and standard operating procedures.</p> <p>Band: A</p> <p>Unit Weight: 8</p>
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Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		
Path 1	MEM09002B	Interpret technical drawing
	MEM12023A	Perform engineering measurements

Prerequisite units		
	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. Clean and assess parts	1.1. Components are disassembled according to manufacturers' recommendations. 1.2. Specialised tools are used correctly. 1.3. Parts are assessed visually for abnormal wear or defects. 1.4. Characteristics of surface finishes and wear patterns associated with pumps/governors/injectors are understood. 1.5. Appropriate cleaning method/solution and procedures are selected. 1.6. Parts are correctly protected and stored ready for reassembly. 1.7. Parts are made identifiable according to their original location in the pump/injector and protected and stored as required for reassembly.
2. Record and interpret measurements	2.1. Measurements are accurately obtained and recorded. 2.2. Measurements and part condition is correctly interpreted when determining reuse/replacement.
3. Recondition and set up equipment	3.1. Fuel system and governing functions, characteristics, applications and terminology are understood. 3.2. Components identified as faulty are reconditioned and replaced. 3.3. Components are assembled according to manufacturers' specifications. 3.4. Test equipment is used correctly. 3.5. Components are tested and set to specifications.

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: <ul style="list-style-type: none"> reading, interpreting and following information on written job instructions, specifications, standard operating procedures, charts, lists, drawings and other

REQUIRED SKILLS AND KNOWLEDGE

- applicable reference documents
- planning and sequencing operations
- checking task-related information
- dismantling the engine fuel system components
- using specialised tools and test equipment
- visually checking parts for abnormal wear or defects
- storing fuel system parts
- identifying parts according to their original location in the pump/injector
- identifying parts to be reused/replaced
- measuring fuel system components
- recording measurements
- obtaining specifications, parts lists, etc. of fuel system components
- replacing, reconditioning and assembling faulty components
- testing and setting to specification fuel system components
- undertaking calculations and numerical operations within the scope of this unit
- checking for conformance to specification

Required knowledge

Look for evidence that confirms knowledge of:

- the sequence for disassembling engine fuel components
- specialised tools required and their application
- common defects, examples and causes of abnormal wear
- the characteristics of surface finishes and wear patterns for fuel system components
- the method of cleaning fuel system components
- the appropriate solvents for cleaning fuel systems
- the procedures for cleaning, protecting and storing fuel system components
- the procedures for marking fuel system components in readiness for reassembly
- the measuring instruments to be used to measure fuel system components and reasons for selecting the chosen measuring instruments
- the procedures for recording fuel system component measurements
- the principles of operation of diesel fuel systems
- the procedures for reconditioning and/or replacing faulty fuel system components
- the procedures for assembling and testing fuel system components
- the specifications of the fuel system components
- the tools, techniques and equipment required to carry out fuel system component tests
- the procedures for setting fuel system components
- hazards and control measures associate with overhauling engine fuel system components, including housekeeping
- safe work practices and procedures

Evidence Guide

EVIDENCE GUIDE

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.

Overview of assessment

A person who demonstrates competency in this unit must be able to overhaul engine fuel system components. Competency in this unit cannot be claimed until all prerequisites have been satisfied.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

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.

Context of and specific resources for assessment

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.

This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with overhauling engine fuel system components, or other units requiring the exercise of the skills and knowledge covered by this unit.

Method of assessment

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.

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.

Governors

Governor types include mechanical, pneumatic, hydraulic and electronic

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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