



Australian Government

MEA392A Disassemble aircraft piston engines

Release 1

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Modification History

Release 1 - New unit of competency. Covers components of MEA388A - Not equivalent

Unit Descriptor

This unit of competency is part of the Mechanical Certificate IV (Component Workshop Maintenance Stream) training pathway. It covers the competencies required to disassemble aircraft piston engines during repair and/or overhaul. The unit is used in workplaces that operate under the airworthiness regulatory systems of the Australian Defence Force (ADF) and the Civil Aviation Safety Authority (CASA).

Application of the Unit

This unit requires application of hand skills, theory knowledge and maintenance publication procedures to disassemble aircraft piston engines during workshop repair and/or overhaul. Applications include fixed and rotary wing aircraft piston engines and components.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

MEA101B	Interpret occupational health and safety practices in aviation maintenance
MEA103B	Plan and organise aviation maintenance work activity
MEA105C	Apply quality standards applicable to aviation maintenance processes
MEA107B	Interpret and use aviation maintenance industry manuals and specifications
MEA108B	Complete aviation maintenance industry documentation
MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

This unit contains employability skills

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. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

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| 1 | Determine requirements | 1.1 Engine defect reports (removal tags) or customer order are correctly interpreted and matched by part and serial numbers

1.2 Piston engine is inspected in accordance with maintenance publications to establish serviceability state and confirm defects, if necessary

1.3 Piston engine build status is determined and quick engine change (QEC) components are recorded in accordance with standard enterprise procedures

1.4 Modification status and engine operating hours are clearly established from the engine log book to assist in determining the repair or overhaul requirements for the engine

1.5 Extent of overhaul or repair is identified and documented in accordance with standard enterprise procedures |
| 2 | Disassemble piston engine | 2.1 Where applicable, QEC components are removed from the engine, maintenance requirements are determined, and necessary documentation is raised and packaged with the components

2.2 Any removed QEC components not requiring maintenance are correctly labelled and stored for reinstallation

2.3 Engine is installed in work stand and engine is cleaned

2.4 Engine is disassembled in accordance with maintenance publication and/or enterprise procedures

2.5 Removed components are cleaned, tagged and inspected for serviceability in accordance with |

enterprise procedures

- 2.6 Components that are not to be reinstalled are disposed of in accordance with enterprise procedures and action is initiated to obtain replacement components
- 2.7 Components to be re-fitted are processed for detailed inspection, repair/overhaul and/or modification, as required

Required Skills and Knowledge

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

Required skills

Required skills include:

- applying relevant work health and safety (WHS) procedures, including the use of material safety data sheets (MSDS) and personal protective equipment (PPE)
- using relevant maintenance documentation, enterprise procedures, specifications and aircraft/component manuals to:
 - recognise state of serviceability and overhaul or repair requirements for piston engines
 - accurately and efficiently troubleshoot unserviceabilities and document the causes for piston engines and components
 - dismantle and inspect piston engine component parts for serviceability
 - identify and initiate procurement for piston engine component parts/hardware that are discarded
 - identify and process engine components that require detailed inspection, repair, overhaul or modification

Required knowledge

Required knowledge includes:

- how to obtain relevant MSDS
- the use of applicable items of PPE
- WHS procedures
- fault diagnosis techniques
- system and component operation
- engine cleaning and disassembly procedures and component inspection for serviceability, including identification of life expired components
- enterprise documentation requirements

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 apply hand skills and component theory knowledge and use maintenance publications to disassemble piston engines while applying all relevant safety precautions.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of transferability of skills and knowledge related to repair and overhaul is essential. This may be demonstrated through application across a number of different piston engines. Ability to assess component serviceability and interpret parts requirements will be necessary to supplement the required evidence. Capability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical. Knowledge of system operation and the relationship of individual components will be necessary to supplement evidence of ability to troubleshoot component faults before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards. A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the unit of competency are being achieved under routine supervision on a representative range of the engine types maintained by the enterprise. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry Evidence Guide.
Context of and specific resources for assessment	Competency should be assessed in the work environment, or simulated work environment, using tools and equipment specified in maintenance documentation. It is also expected that general purpose tools and test equipment found in most routine situations would be used where appropriate.
Method of assessment	

Guidance information for assessment	
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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. 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.

Piston engine	Piston engines may include the engine assembly and components that comprise a quick engine change unit. Engine types include all cylinder arrangements and fuel types (aviation gasoline, two stroke or diesel)
Application	Application of this unit may relate to: • scheduled or unscheduled maintenance • individual or team-related activities
Procedures and requirements	Procedures and requirements refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Aviation maintenance

Custom Content Section

Not applicable.