



Australian Government

MEA333 Maintain aircraft piston engine components or parts

Release: 2

MEA333 Maintain aircraft piston engine components or parts

Modification History

Release 2. Equivalent to MEA333 Maintain aircraft piston engine components or parts with amended prerequisite codes.

Application

This unit of competency requires application of hand skills and use of maintenance documentation to dismantle, inspect, maintain and assemble aircraft piston engine components or parts during scheduled or unscheduled maintenance under the guidance of a qualified person. Work under the guidance of a qualified person may be performed individually or as part of a team.

Applications include piston engine components or parts in a workshop.

The unit is part of a Mechanical Certificate II training pathway. Achievement of this unit will contribute towards the attainment of units MEA392 Disassemble aircraft piston engines, MEA393 Repair and/or overhaul aircraft piston engine cylinder assembly components, MEA394 Repair and/or overhaul aircraft piston engine crankcase assembly components and MEA395 Reassemble aircraft piston engines.

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).

Pre-requisite Unit

MEA107	Interpret and use aviation maintenance industry manuals and specifications
MEA154	Apply work health and safety practices in aviation maintenance
MEA155	Plan and organise aviation maintenance work activities
MEA156	Apply quality standards during aviation maintenance activities
MEA157	Complete aviation maintenance industry documentation
MEA158	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Competency Field

Aviation maintenance

Unit Sector

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. Prepare to dismantle inspect, maintain and assemble piston engine components or parts | 1.1 Maintenance and/or repair requirements as defined by the qualified person, standard enterprise procedures and the relevant maintenance documentation are understood |
| | 1.2 Tagging and repair instructions are accurately specified in accordance with standard enterprise procedures and as directed by a qualified person for parts requiring specialist repair |
| | 1.3 Appropriate materials, tools, equipment and assembly or fabrication jigs, where applicable, are selected and prepared for the particular maintenance and repair requirements in accordance with standard enterprise procedures and relevant maintenance documentation |
| 2. Dismantle, inspect, maintain and assemble aircraft piston engine components or parts | 2.1 Components are removed and/or disassembled in accordance with standard enterprise procedures, relevant maintenance documentation and qualified person guidance while observing all relevant work health and safety (WHS) requirements, including the use of material safety data sheets (MSDS) and items of personal protective equipment (PPE) |
| | 2.2 Routine maintenance, repair or modification procedures are carried out, as approved by relevant manufacturers' bulletins or procedures, in accordance with required standard enterprise procedures and specifications while observing all relevant WHS requirements, including the use of MSDS and items of PPE |
| | 2.3 Component parts are assembled within specified tolerances and in accordance with standard enterprise procedures and the appropriate maintenance documents |
| | 2.4 Where applicable, and as required by the qualified person, assistance is provided in the final adjustment and testing of components to confirm serviceability |
| 3. Complete maintenance, repair or modification | 3.1 Required documentation is completed and processed in accordance with standard enterprise procedures |

activities

- 3.2 Maintained/repaired or modified components are tagged, sealed and packaged within specified procedures

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

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| Routine work: | <ul style="list-style-type: none">• Is carried out using basic operational knowledge and a defined range of skills ('routine' work is that which follows a customary or regular course or procedure) |
| Work outcomes | <ul style="list-style-type: none">• Are achieved by applying known solutions chosen from a limited range of pre-determined options consistent with standard enterprise procedures. This includes accepting responsibility for own work in terms of quality of outcomes using pre-determined specifications of quality |
| Scope of work: | <ul style="list-style-type: none">• Note that the scope of any repair or modification and the procedure to be followed will be provided by the qualified person, and will be within the scope of the unit of competency MEA158 Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance |
| Maintain includes: | <ul style="list-style-type: none">• Removal and installation, cleaning, inspection for wear or damage and consequent replacement of parts, and routine adjustment and lubrication where applicable, in accordance with standard enterprise procedures |
| Components to be maintained include: | <ul style="list-style-type: none">• Hoses, pipes, ducts and components of:<ul style="list-style-type: none">• cooling systems• engine cylinder assemblies• engine crankcase assemblies• accessory drives• lubrication systems |

Procedures and requirements include:

- Industry procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Mapping Information

Release 2. Equivalent to MEA333 Maintain aircraft piston engine components or parts.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=ce216c9c-04d5-4b3b-9bcf-4e81d0950371>

Assessment Requirements for MEA333 Maintain aircraft piston engine components or parts

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Performance Evidence

Evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria under the specified conditions of assessment, and must include:

- applying relevant WHS practices, including the use of MSDS and PPE
- using relevant maintenance documentation, specifications and aircraft/component manuals to:
 - recognise state of serviceability and standard/routine maintenance and repair requirements for the range of engine components listed in the Range of Conditions
 - identify requirements under the guidance of a qualified person and complete repairs and/or modifications
- correctly tagging, sealing and packaging completed components.

The underlying skills inherent in this unit should be transferable across a range of maintenance and repair applications associated with engine components. It is essential that the relevant standard enterprise procedures are interpreted and applied to ensure quality and safety standards are achieved.

This shall be demonstrated through application across a number of different aircraft components as listed in the Assessment Conditions.

Knowledge Evidence

Evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- component operation at a basic level
- standard/routine repair procedures and processes
- relevant WHS practices
- how to obtain MSDS
- use of PPE.

For the purpose of this unit, basic knowledge is defined as the level of knowledge required to:

- remove, install and maintain components such as hoses, pipes and ducts etc
- dismantle and maintain engine assemblies and sub-assemblies
- apply unit MEA158 Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance, skills to repair or modify components of sub-assemblies and systems listed in the Range of Conditions.

Assessment Conditions

- 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 applicable general and special-purpose tools found in most routine situations would be used where appropriate.
- Ability to assess component serviceability under qualified person guidance and interpret parts requirements will be necessary before undertaking any action. The work plan should take account of applicable safety and quality requirements in accordance with the industry and regulatory standards.
- The following conditions of assessment represent the requirements of the Regulators (ADF and CASA) and maintenance stakeholders and must be rigorously observed.
- A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements and performance criteria of the unit of competency are being achieved under qualified person guidance on a representative range of components or parts, as follows:
 - cooling systems
 - engine cylinder assemblies
 - engine crankcase assemblies
 - accessory drives
 - lubrication systems.
- This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry Evidence Guide (for details refer to the Companion Volume Assessment Guidelines).
- Assessors must satisfy the requirements of the National Vocational Education and Training Regulator (Australian Skills Quality Authority, or its successors).

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