



Australian Government

MEA313 Inspect, test and troubleshoot piston engine systems and components

Release: 1

MEA313 Inspect, test and troubleshoot piston engine systems and components

Modification History

Release 1 - New unit of competency

Application

This unit of competency requires application of hand skills, the use of maintenance publications, and knowledge of piston engine and system theory to inspect, test and troubleshoot fixed and rotary wing aircraft piston engines and engine system components during the performance of scheduled or unscheduled maintenance. Maintenance may be performed individually or as part of a team.

The unit is part of the Mechanical Certificate IV (Aircraft Maintenance Stream) training pathway.

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).

Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen maintenance certification licence under Civil Aviation Safety Regulation (CASR) Part 66, in accordance with the licensing provisions in the Companion Volume Implementation Guide.

Pre-requisite Unit

MEA306 Remove and install engine systems and components

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. Inspect piston engine system and components | 1.1 Isolation tags already attached to the system or related systems are checked and aircraft/engine configured for safe system inspection and operation in accordance with |
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- applicable maintenance manual
- 1.2 Piston engine and/or components are visually or physically checked for external and internal signs of defects in accordance with applicable maintenance manual 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. Test piston engine system
 - 2.1 Aircraft and engine system are correctly prepared in accordance with applicable maintenance manual and connected to appropriate test equipment
 - 2.2 Built-in system test functions and status displays are activated, where applicable, outputs recorded and interpreted
 - 2.3 Assistance is provided with engine and/or system operation during prescribed test procedures to establish serviceability and correct function in accordance with applicable maintenance manual
 3. Prepare for troubleshooting
 - 3.1 Relevant maintenance documentation and modification status, including system defect reports, where relevant, are used to identify an unserviceability
 4. Troubleshoot piston engine system
 - 4.1 Available information from maintenance documentation and inspection and test results is used, where necessary, to assist in fault determination
 - 4.2 Maintenance manual fault diagnosis guide and logical processes are used to ensure efficient and accurate troubleshooting to line replacement level
 - 4.3 Specialist advice is obtained, where required, to assist with the troubleshooting process
 - 4.4 Piston engine system faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required
 - 4.5 Fault rectification requirements are determined to assist in planning the repair

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.

Piston engines and engine systems include:

- Engine (all types), main components and accessories/drives
- Control system, including full authority digital engine control (FADEC) (where FADEC is applicable to the enterprise)
- Ignition and starter systems
- Fuel, air systems and super/turbo chargers
- Oil system
- Industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Procedures and requirements include:

Unit Mapping Information

Release 1 – equivalent to MEA313C Inspect, test and troubleshoot piston engine systems and components

Links

Companion Volume implementation guides are found in VETNet -

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