



Australian Government

**MEA394 Repair and/or overhaul aircraft
piston engine crankcase assembly
components**

Release: 1

MEA394 Repair and/or overhaul aircraft piston engine crankcase assembly components

Modification History

Release 1 - New unit of competency

Application

This unit of competency requires application of hand skills, theory knowledge and maintenance publication procedures to repair and overhaul aircraft piston engine crankcase assembly components.

Applications include components from fixed and rotary wing aircraft piston engines. Work can be performed individually or as a member of a team.

The unit is part of the Mechanical Certificate IV (Component Workshop 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).

Pre-requisite Unit

MEA101	Interpret work health and safety practices in aviation maintenance
MEA103	Plan and organise aviation maintenance work activity
MEA105	Apply quality standards applicable to aviation maintenance processes
MEA107	Interpret and use aviation maintenance industry manuals and specifications
MEA108	Complete aviation maintenance industry documentation
MEA109	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. | Determine requirements | 1.1 | Component defect reports (removal tags) or customer order are correctly interpreted and matched by part and serial numbers |
| | | 1.2 | Crankcase assembly components are inspected and/or operated through prescribed test procedures to establish serviceability and confirm defects, if necessary, while observing relevant work health and safety (WHS) procedures, including the use of material safety data sheets (MSDS) and personal protective equipment (PPE) |
| | | 1.3 | Modification status is clearly established to assist in determining the overhaul requirements for the components |
| | | 1.4 | Extent of overhaul or repair is identified and documented in accordance with standard enterprise procedures |
| 2. | Dismantle and inspect piston engine crankcase assembly components/parts | 2.1 | Crankcase assembly component parts are dismantled in accordance with maintenance manual and/or enterprise procedures while observing relevant WHS procedures, including the use of MSDS and PPE |
| | | 2.2 | Component parts are assessed for serviceability in accordance with the relevant maintenance documentation |
| | | 2.3 | Parts requiring specialist repair are tagged and repair instructions are specified in accordance with standard enterprise procedures |
| | | 2.4 | Parts requiring non-destructive testing (NDT) are prepared for testing in accordance with the relevant maintenance documentation |
| | | 2.5 | Parts lists are compiled and processed in accordance with standard enterprise procedures |

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| 3. | Repair and/or modify piston engine crankcase assembly components or parts | 3.1 | Component parts are repaired or replaced in accordance with the relevant maintenance documentation |
| | | 3.2 | Modification of components is undertaken where required by reference to relevant manufacturer's bulletins or procedures, regulatory requirements and/or customer requirements while observing relevant WHS procedures, including the use of MSDS and PPE |
| 4. | Assemble, test and adjust piston engine crankcase assembly components | 4.1 | Crankcase assembly component parts are assembled within specified tolerances and in accordance with the appropriate maintenance documents while observing relevant WHS procedures, including the use of MSDS and PPE |
| | | 4.2 | Components are tested, adjusted or calibrated to operate within prescribed specifications |
| | | 4.3 | Crankcase assembly is prepared for engine reassembly |
| | | 4.4 | Where components are not to be assembled into an engine the finished components are tagged, sealed and packaged in accordance with standard enterprise procedures |
| | | 4.5 | Required maintenance documentation and modification records are completed and processed in accordance with standard enterprise 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.

Piston engine crankcase assembly components include:

- Crankshaft, gears, con rods and counterweights
- Camshaft, hydraulic tappets/cam followers and gears
- Propeller shaft, reduction drive gear and quill shaft
- Component gear drives/trains
- Crankcase castings, bearings, component mounting pads and studs
- Oil system components
- Supercharger and turbocharger components (where applicable to the enterprise)
- Propeller governor (where applicable to the enterprise)

Testing and adjustment:

- Complex testing and adjusting of components, where required, will be carried out under supervision at the appropriate level

Procedures and requirements include:

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

Unit Mapping Information

Release 1 – equivalent to MEA394A Repair and/or overhaul aircraft piston engine crankcase assembly components

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=ce216c9c-04d5-4b3b-9bcf-4e81d0950371>