



Australian Government

MEA287 Repair or overhaul aircraft oxygen system components

Release: 2

MEA287 Repair or overhaul aircraft oxygen system components

Modification History

Release 2. Equivalent to MEA287 Repair or overhaul aircraft oxygen system components with amended prerequisite codes.

Application

This unit of competency requires application of hand skills, maintenance publications, test equipment and knowledge of oxygen component maintenance and hygiene requirements to repair and overhaul aircraft oxygen system components from fixed and rotary wing aircraft that are repaired or overhauled in aviation maintenance workshops during scheduled or unscheduled maintenance. Work may be performed individually or as part of a team.

This unit of competency is part of the Avionic 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

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. Determine requirements | 1.1 Component defect reports (removal tags) or customer order are correctly interpreted and matched by part and serial numbers |
| | 1.2 System components are inspected and/or operated through prescribed test procedures to establish serviceability or confirm defects, as required |
| | 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 correctly identified and documented |
| 2. Troubleshoot oxygen system components | 2.1 Available information from maintenance records and test results is used, where necessary, to assist in fault determination |
| | 2.2 Logical processes are used to ensure efficient and accurate troubleshooting |
| | 2.3 Specialist advice is obtained, where required, to assist with, or confirm, the fault and rectification requirement |
| | 2.4 System component faults are located and the causes of the faults are clearly identified |
| | 2.5 Fault rectification requirements are determined to assist in planning the repair |
| 3. Dismantle and inspect oxygen system components | 3.1 System component parts are dismantled in accordance with maintenance manuals while observing all relevant work health and safety (WHS) requirements |
| | 3.2 Component parts are assessed for serviceability in accordance with the relevant maintenance documentation |
| | 3.3 Parts requiring specialist repair are tagged and repair instructions are accurately specified |
| | 3.4 Parts lists are compiled and processed in accordance with |

		standard enterprise procedures
4.	Repair and/or modify oxygen system components	4.1 System component parts are repaired or replaced in accordance with the relevant maintenance documentation 4.2 Modification of components or parts is undertaken, where required, by relevant manufacturer's bulletins or procedures
5.	Assemble, test and adjust oxygen system components	5.1 Assembly of component parts is carried out within specified tolerances and in accordance with the appropriate maintenance documents 5.2 System components are adjusted or calibrated to operate within prescribed specifications 5.3 Finished components are tagged, sealed and packaged in accordance with specified procedures 5.4 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.

Oxygen system components and related activities include:	• Pressure vessels (testing and charging) • Regulators, control valves and indicators • Chemical oxygen generators • Product hygiene
Procedures and requirements include:	• Industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Mapping Information

Release 2. Equivalent to MEA287 Repair or overhaul aircraft oxygen system components

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 MEA287 Repair or overhaul aircraft oxygen system components

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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
- using approved repair/overhaul procedures and processes relating to oxygen components
- recognising the serviceability state and repair or overhaul requirements for oxygen pressure cylinders, valves, gauges, chemical generators, regulators, masks, pipes, hoses and fittings, and liquid dry breathing oxygen (LDBO) converters
- applying logic processes, and using test equipment and appropriate wiring diagrams and manuals to isolate component faults
- performing component testing to isolate/confirm component fault and assess post-repair/overhaul serviceability
- correctly disassembling, inspecting component parts, repairing/replacing/modifying component parts and assembling oxygen components
- applying product hygiene procedures.

The underlying skills inherent in this unit should be transferable across a range of repair or overhaul applications associated with oxygen system components. It is essential that the maintenance procedures are interpreted and applied to ensure quality and safety standards are fully observed, understood and complied with. Capability to interpret inspection procedures and specifications (allowable limits) and apply them in practice is critical.

Evidence of transferability of skills and knowledge related to repair is essential. This may be demonstrated through application across a representative range of oxygen 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 and system operation
- the basic function and operation of oxygen components to enable testing for fault isolation/confirmation, to determine repair or overhaul requirements, and serviceability status post-repair or overhaul
- basic principles/functions relating to oxygen components and associated with:
 - pressure sensitive devices (bellows and controllers)

- vacuum system generation
- atmosphere and its properties.

Assessment Conditions

- Competency should be assessed in the work environment, or simulated work environment, using tools and equipment specified in maintenance manuals. It is also expected that applicable general and special-purpose tools and test equipment would be used where appropriate.
- Ability to assess component serviceability and interpret parts requirements will be necessary to supplement the required evidence. The application of testing procedures should also clearly indicate knowledge of system operation before undertaking any action. Knowledge of system operation and the relationship of individual components will be necessary to supplement evidence of ability to troubleshoot component faults. 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 routine supervision across the following groups:
 - pressure vessels (testing and charging)
 - regulators, control valves and indicators
 - chemical oxygen generators
 - product hygiene.
- 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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