



Australian Government

MEA303 Remove and install aircraft pneumatic system components

Release: 2

MEA303 Remove and install aircraft pneumatic system components

Modification History

Release 2. Equivalent to MEA303 Remove and install aircraft pneumatic system components with amended prerequisite codes.

Application

This unit of competency requires application of hand skills and the use of maintenance publications to remove and install aircraft pneumatic system components from pressurisation systems, air cycle air conditioning systems and fire-extinguishing systems of fixed and rotary wing aircraft during scheduled and unscheduled maintenance.

The unit of competency is part of the Mechanical Certificate IV (Aircraft Maintenance Stream) training pathways and may also be part of a Structures Certificate IV 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

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. Remove pneumatic system components | 1.1 Pneumatic system is rendered safe and prepared in accordance with the applicable maintenance manual and isolation tags are fitted, where necessary, to ensure personnel safety |
| | 1.2 Removal of components is carried out in accordance with the 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) |
| | 1.3 Required maintenance documentation is completed and processed in accordance with standard enterprise procedures |
| | 1.4 Removed components are tagged, sealed and packaged in accordance with specified procedures |
| 2. Install pneumatic system components | 2.1 Components to be installed are checked to confirm correct part numbers, serviceability and modification status |
| | 2.2 Installation is carried out to pneumatic system in accordance with the applicable maintenance manual while observing all relevant WHS requirements, including the use of MSDS and items of PPE |
| | 2.3 Required maintenance documentation is 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.

Pneumatic components include:

- Filters, valves, pumps, motors, actuators and regulators
- Gauges (direct reading), temperature sensors, pressurisation controllers and temperature controllers
- Heat exchangers, pressure vessels, condensers, compressors, expansion turbines and humidifiers
- Rigid and flexible pipelines, hoses and fittings
- Ducting
- Fire-extinguishers, including those containing ozone depleting substances (ODS) or synthetic greenhouse gas (SGG) extinguishing agents (e.g. BCF) (where applicable to the enterprise)

Procedures and requirements include:

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

Unit Mapping Information

Release 2. Equivalent to MEA303 Remove and install aircraft pneumatic 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 MEA303 Remove and install aircraft pneumatic 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, including the use of MSDS and PPE
- using relevant maintenance documentation and aircraft manuals to:
 - locate and correctly remove and install components in pneumatic systems, including fire-extinguishing systems
 - locate and correctly remove and install components in air cycle air conditioning systems
 - locate and correctly remove and install components in pressurisation systems
 - correctly remove and install rigid and flexible pipelines
 - correctly remove and install ducting
- observing regulations governing the handling and custody of fire-extinguishers containing ODS or SGG extinguishing agents (e.g. BCF).

It is essential that system cleanliness requirements and safety precautions applicable to the system being maintained are fully observed, understood and complied with.

Evidence of transferability of skills and knowledge related to removal and installation is essential. This may be demonstrated through application across a number of aircraft systems or aircraft types, but must cover a sufficient range of tasks to demonstrate familiarity with attachment methods, connection hardware and couplings peculiar to each type of system, and of safe handling of heavy components.

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 attachment methods
- connection hardware and couplings
- standard trade practices relating to tool usage and installation/securing of aircraft hardware
- how to locate and correctly remove and install components of:
 - pneumatic systems
 - air cycle air conditioning system components

- pressurisation system components
- fire-extinguishers, including the effect of ODS or SGG extinguishing agents and regulations covering special precautions and handling requirements for BCF fire-extinguishers
- electrical circuit isolation and plug removal and installation
- WHS procedures relating to pneumatic, air conditioning and pressurisation systems
- how to obtain MSDS
- the selection and use of items of PPE
- relevant maintenance manuals
- relevant regulatory requirements and standard procedures, including those relating to the handling and control of halon fire-extinguishers.

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 general-purpose tools, test and ground support equipment found in most routine situations would be used where appropriate.
- An understanding of system operation as it relates to the work must be demonstrated 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 routine supervision on one (1) item from each from the following groups:
 - filters, valves, pumps, motors, actuators and regulators
 - gauges (direct reading), temperature sensors, pressurisation controllers and temperature controllers
 - heat exchangers, pressure vessels, condensers, compressors, expansion turbines and humidifiers
 - rigid and flexible pipelines, hoses and fittings
 - ducting
 - fire-extinguishers, including those containing ODS or SGG extinguishing agents (e.g. BCF) (may be omitted where not applicable to enterprise).
- 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).
- Where the unit is to be used for CASA licensing purposes the Assessor must also meet the criteria specified in the CASR Part 147 Manual of Standards.

- Individuals being assessed who have already attained MEA355 Maintain light aircraft air cycle air conditioning systems, and/or MEA3000 Maintain small piston engine aircraft pressurisation systems, will have satisfied the requirements of this unit with regard to common Range of Conditions variables. The Log of Industrial Experience and Achievement records relating to MEA355 Maintain light aircraft air cycle air conditioning systems and MEA3000 Maintain small piston engine aircraft pressurisation systems, may be accepted as also meeting the evidence requirements for this unit in the applicable common areas.

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