



Australian Government

Department of Education, Employment and Workplace Relations

MEA303C Remove and install aircraft pneumatic system components

Revision Number: 1

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Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit is part of the Aeroskills Mechanical AME Certificate IV training pathways and may also be part of a Structures Certificate IV training pathway. It covers the competencies required for the removal and installation of components in pneumatic systems of both fixed and rotary wing aircraft. Where a CASA licensing outcome is sought this unit forms part of the CASA requirement for the granting of the chosen Aircraft Maintenance Engineer Licence under CASR Part 66, in accordance with the licensing provisions in Section 3, Assessment Guidelines.
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Application of the Unit

Application of the unit	This unit requires application of hand skills and the use of maintenance publications to remove and install aircraft pneumatic system components. Applications include fixed and rotary wing aircraft.
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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	MEA101B	Interpret occupational health and safety practices in aviation maintenance

Prerequisite units		
	MEA103B	Plan and organise aviation maintenance work activity
	MEA105B	Apply quality standards applicable to aviation maintenance processes
	MEA107B	Interpret and use aviation maintenance industry manuals and specifications
	MEA108B	Complete aviation maintenance industry documentation
	MEA109B	Perform basic hand skills, standard trade practices and fundamentals in aviation maintenance

Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
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. 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. 2.3. Required maintenance documentation is completed and processed in accordance with standard enterprise procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- Application of relevant occupational health and safety (OHS) practices including the use of Material Safety Data Sheets (MSDS) and personal protective equipment (PPE)
- The use of 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

Required knowledge

Look for evidence that confirms 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 ozone-depleting properties of halons and special precautions and handling requirements for BCF fire extinguishers
- Electrical circuit isolation and plug removal and installation
- OHS 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

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to apply hand skills and use maintenance publications to remove and install aircraft pneumatic system components while applying all relevant safety precautions.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The underlying skills inherent in this unit should be transferable into other units that require similar techniques. 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. 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.

A person cannot be assessed as competent until it can be demonstrated to the satisfaction of the workplace assessor that the relevant elements of the Unit of Competency are being achieved under routine supervision on one item from each of Groups 1 to 6 in the Range Statement. This shall be established via the records in the Log of Industrial Experience and Achievement or, where appropriate, an equivalent Industry .

Context of and specific resources for assessment

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

EVIDENCE GUIDE	
	would be used where appropriate.
Method of assessment	
Guidance information for assessment	

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Note

Range statements listed below are numbered to facilitate specification of the assessment requirements included in the Evidence Guide.

Pneumatic components

Components may include:

1. Filters, valves, pumps, motors, actuators, regulators
2. Gauges (direct reading), temperature sensors, pressurisation controllers, temperature controllers
3. Heat exchangers, pressure vessels, condensers, compressors, expansion turbines, humidifiers
4. Rigid and flexible pipelines, hoses and fittings
5. Ducting
6. Fire extinguishers including those containing halons (e.g. BCF)

Application

Application of this unit may relate to:

- Scheduled or unscheduled maintenance activities
- Individual or team related activities
- Pneumatic systems, including pressurisation, air cycle air conditioning systems and fire extinguishing systems

Procedures and requirements

Refer to industry standard procedures specified by manufacturers, regulatory authorities or the enterprise

Unit Sector(s)

Unit sector

Competency field

Competency field	Aviation maintenance
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Co-requisite units

Co-requisite units		