



Australian Government

MEA362 Maintain aircraft vapour cycle air conditioning systems

Release: 1

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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 vapour cycle air conditioning systems to inspect, test and troubleshoot systems, and to remove and install mechanical and electrical system components during the performance of scheduled or unscheduled maintenance. Maintenance may be performed individually or as part of a team.

Compliance with applicable regulations is required where refrigerant evacuation and recharging is performed.

Applications include all aircraft vapour cycle air conditioning systems and components.

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

Where a Civil Aviation Safety Authority (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

MEA201	Remove and install miscellaneous aircraft electrical hardware/components
MEA246	Fabricate and/or repair aircraft electrical components or parts

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.

1. Inspect vapour cycle air conditioning systems
 - 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 applicable maintenance manual
 - 1.2 Vapour cycle air conditioning systems 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 vapour cycle air conditioning systems
 - 2.1 Aircraft and system are correctly prepared in accordance with applicable maintenance manual
 - 2.2 Vapour cycle air conditioning system is tested in accordance with prescribed test procedures to establish serviceability and correct function in accordance with applicable maintenance manual
3. Troubleshoot vapour cycle air conditioning systems
 - 3.1 Available information from maintenance documentation and inspection and test results is used, where necessary, to assist in fault determination
 - 3.2 Maintenance manual fault diagnosis guide and logical processes are used to ensure efficient and accurate troubleshooting to line replacement level
 - 3.3 Specialist advice is obtained, where required, to assist with the troubleshooting process
 - 3.4 Vapour cycle air conditioning system faults are located and the causes of the faults are clearly identified and correctly recorded in maintenance documentation, where required
 - 3.5 Fault rectification requirements are determined to assist in planning the repair
4. Remove vapour cycle air conditioning system components
 - 4.1 Aircraft and vapour cycle air conditioning system is rendered safe in accordance with the applicable maintenance manual and isolation tags are fitted, where necessary, to ensure the safety of personnel and freedom from damage during component removal
 - 4.2 Where refrigerant evacuation is necessary, evacuation is performed in accordance with regulatory requirements and maintenance manual procedures

- 4.3 Component removal is carried out in accordance with the applicable maintenance manual while observing all relevant WHS requirements, including the use of MSDS and items of PPE
 - 4.4 Component is tagged and prepared for transport or storage in accordance with the specified procedures
 - 4.5 Required maintenance documentation is completed and processed in accordance with standard enterprise procedures
5. Install vapour cycle air conditioning system components
 - 5.1 Component to be installed is checked to confirm correct part or model numbers, modification status and serviceability
 - 5.2 Installation is carried out in accordance with the applicable maintenance manual while observing all relevant WHS requirements, including the use of MSDS and items of PPE
 - 5.3 Vapour cycle air conditioning system is recharged with refrigerant, where necessary, in accordance with maintenance manual procedures and regulatory requirements
 - 5.4 Vapour cycle air conditioning system is tested for correct function and freedom from refrigerant leaks if system recharging has been performed
 - 5.5 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.

Vapour cycle air conditioning systems include:

- Refrigeration system compressor, condenser, receiver dryer, thermal expansion valve and evaporator
- Magnetic clutch and drive system (belt, power take-off, electric motor, hydraulic motor or pneumatic as applicable)
- Condenser extension and retraction system
- Blower
- Throttle system shutoff
- Temperature control system

Procedures and requirements include:

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

Unit Mapping Information

Release 1 – equivalent to MEA362A Maintain aircraft vapour cycle air conditioning systems

Links

Companion Volume implementation guides are found in VETNet -

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