



**Australian Government**

# **AURETU106 Diagnose complex faults in air conditioning and HVAC systems**

**Release: 1**

# AURETU106 Diagnose complex faults in air conditioning and HVAC systems

## Modification History

Release	Comments
Release 1	This version first released with AUR Automotive Retail, Service and Repair Training Package Version 6.0

## Application

This unit describes the skills and knowledge required to diagnose complex faults in air conditioning and heating, ventilation and air conditioning (HVAC) systems and identify the repair action necessary to restore system performance. The systems used vary based on the work context. It involves confirming the existence of a fault, developing a diagnostic testing strategy, diagnosing the cause of the fault, reporting conclusions and making repair recommendations.

Complex faults are outside the normal scope of a technician's diagnosis and repair work. They include intermittent faults, multi-system faults, faults introduced as a result of system repairs, and indirect faults caused by the influence of external systems, requiring the application of complex diagnostic processes to resolve.

The unit applies to those who work in an automotive service and repair industry. The air conditioning and HVAC systems include those of agricultural machinery, heavy commercial vehicles, light vehicles, marine vessels or mobile plant machinery.

Licensing requirements apply to this unit. Users are advised to check with the relevant regulatory authority. An Australian Refrigeration Council accredited (ARCTick) Refrigerant Handling licence is required for those carrying out this work.

## Unit Sector

Electrical Technical – Air Conditioning and HVAC

## Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Identify and confirm the work requirement	1.1 Identify job requirements from workplace instructions 1.2 Confirm nature of fault according to workplace procedures

ELEMENT	PERFORMANCE CRITERIA
	1.3 Identify hazards and environmental issues associated with diagnosis activity, assess potential risks and implement control measures in line with workplace policies and procedures
2. Prepare to diagnose complex faults	2.1 Identify required information for diagnosis activity 2.2 Analyse diagnostic options and develop testing strategy, including, diagnostic method sequence, tests and testing processes 2.3 Identify tools and equipment required for testing strategy and establish serviceability according to workplace procedures
3. Apply diagnostic procedures	3.1 Implement diagnostic tests set out in testing strategy according to manufacturer and workplace procedures, and workplace health and safety requirements 3.2 Verify and report diagnostic findings using reliable alternative process according to manufacturer specifications and workplace procedures 3.3 Develop and report recommendations for necessary repairs according to workplace procedures 3.4 Communicate findings to workplace supervisor and customer and confirm next steps
4. Complete work processes	4.1 Conduct final inspection according to workplace procedures and confirm vehicle is ready for repair process or return to customer 4.2 Clear work area and dispose of or recycle materials according to workplace procedures 4.3 Complete documentation according to workplace procedures

## Foundation Skills

*This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.*

SKILL	DESCRIPTION
Learning	<ul style="list-style-type: none"> <li>• Locates required sources of information efficiently</li> <li>• Develops own approach to a task, including steps to confirm findings</li> <li>• Applies diagnostic skills to different vehicles, vessels or machinery</li> </ul>

<b>SKILL</b>	<b>DESCRIPTION</b>
Reading	<ul style="list-style-type: none"> <li>Organises and interprets technical information from manufacturer and workshop literature when seeking air conditioning and HVAC system specifications and procedures</li> </ul>
Oral communication	<ul style="list-style-type: none"> <li>Clarifies instructions</li> <li>Obtains information from customers and supervisors</li> </ul>
Numeracy	<ul style="list-style-type: none"> <li>Measures air conditioning and HVAC system components and uses mathematical operations, including addition and subtraction, to calculate tolerances and deviations from manufacturer specifications</li> </ul>
Planning and organising	<ul style="list-style-type: none"> <li>Plans own work requirements</li> <li>Prioritises actions to achieve required outcomes</li> <li>Ensures tasks are completed within workplace timeframes</li> </ul>
Technology	<ul style="list-style-type: none"> <li>Uses specialised diagnostic equipment, including: <ul style="list-style-type: none"> <li>manifold and gauge sets</li> <li>leak detectors</li> <li>digital multimeters</li> <li>thermometers.</li> </ul> </li> </ul>

## Unit Mapping Information

Supersedes and is equivalent to AURETU006 Diagnose complex faults in air conditioning and HVAC systems.

## Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>