



**Australian Government**

# **AURETU105 Retrofit automotive air conditioning and HVAC systems**

**Release: 1**

# AURETU105 Retrofit automotive 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 retrofit automotive air conditioning systems, including heating, ventilation and air conditioning (HVAC) systems, fitted to a range of vehicles and machinery. It involves preparing for the task, selecting the correct de-gas procedure, carrying out the retrofit and associated modifications, performing post-retrofit testing, and completing workplace processes and documentation. Air conditioning systems may contain a mixture of both natural and flammable synthetic refrigerants that are difficult to accurately identify and safely recover. To minimise the possibility of ignition, the procedures and equipment used when recovering refrigerants must be those required for flammable refrigerants.

The unit applies to those who work in the automotive service and repair industry. Automotive air conditioners, including HVAC systems, include those in agricultural machinery, heavy commercial vehicles, light vehicles or mobile plant machinery.

Licensing requirements apply to this unit. Users are advised to check with 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. Prepare to retrofit system	1.1 Identify job requirements from workplace instructions 1.2 Identify required information for retrofit activity, including manufacturer specifications and Australian automotive code of practice

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b>
	<p>1.3 Identify refrigerant required according to workplace procedures and workplace health and safety and environmental requirements</p> <p>1.4 Identify retrofit option required for the job</p> <p>1.5 Identify hazards and environmental issues, assess potential risks and implement control measures in line with workplace procedures</p> <p>1.6 Identify tools and equipment required for inspect and servicing activity and establish serviceability according to workplace procedures</p>
2. De-gas system	<p>2.1 De-gas system according to manufacturer specifications, Australian automotive code of practice, workplace procedures, and workplace health and safety and environmental requirements</p> <p>2.2 Refrigerant is recovered into required refrigerant recovery cylinder according to manufacturer specifications, Australian automotive code of practice, workplace procedures, and workplace health and safety and environmental requirements</p> <p>2.3 Measure oil recovered and determine replacement volume</p>
3. Retrofit system	<p>3.1 Carry out air conditioning retrofit procedures according to manufacturer specifications, Australian automotive code of practice, workplace procedures, and workplace health safety and environmental requirements</p> <p>3.2 Pressure test system and confirm there are no leaks according to manufacturer specifications, Australian automotive code of practice, workplace procedures, and workplace health and safety and environmental requirements</p> <p>3.3 Evacuate system according to manufacturer specifications, Australian automotive code of practice, workplace procedures, and workplace health and safety and environmental requirements</p> <p>3.4 Re-gas system with refrigerant gas and lubricating oil according to manufacturer specifications, Australian automotive code of practice, and workplace procedures</p> <p>3.5 Carry out post-retrofit testing according to workplace procedures</p>
4. Complete work processes	<p>4.1 Conduct final inspection according to workplace procedures and confirm vehicle is ready for use</p> <p>4.2 Clear work area and dispose of or recycle materials according to workplace procedures</p> <p>4.3 Complete Australian Refrigeration Council accredited (ARctick) service decal sticker and workplace</p>

ELEMENT	PERFORMANCE CRITERIA
	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> </ul>
Reading	<ul style="list-style-type: none"> <li>• Interprets text, symbols and diagrams relating to retrofit and associated modification information from manufacturer specifications, and workplace instructions and procedures</li> <li>• Interprets key requirements of Australian automotive code of practice relating to retrofitting air conditioning and HVAC systems</li> </ul>
Writing	<ul style="list-style-type: none"> <li>• Fills out workplace documentation legibly, including ARCTick stickers, when reporting test findings, making retrofit recommendations, and recording parts and material used</li> </ul>
Oral communication	<ul style="list-style-type: none"> <li>• Listens to workplace instructions and asks questions to clarify job requirements</li> </ul>
Numeracy	<ul style="list-style-type: none"> <li>• Matches refrigerant types and identification numbers to workplace instructions, vehicle and component part lists, and code of practice requirements</li> <li>• Interprets weighting measurements, including tare and gross weights</li> <li>• Interprets readings on digital and analogue pressure gauges</li> <li>• Measures temperatures and pressures, and uses basic mathematical operations, including addition and subtraction, to calculate 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>

<b>SKILL</b>	<b>DESCRIPTION</b>
Technology	<ul style="list-style-type: none"><li>• Uses workplace technology and tools.</li></ul>

## Unit Mapping Information

Supersedes and is equivalent to AURETU005 Retrofit and modify 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>