



Australian Government

AURETU104 Diagnose and repair air conditioning and HVAC components

Release: 1

AURETU104 Diagnose and repair air conditioning and HVAC components

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 and repair faults in the air conditioning systems, including heating, ventilation and air conditioning (HVAC) systems, fitted to a range of vehicles and machinery for passenger convenience and comfort. The systems used vary based on the work context. It involves preparing for the task, sourcing a diagnostic testing strategy, diagnosing the cause of the fault, carrying out the repair, performing post-repair testing, and completing workplace processes and documentation.

The unit applies to those who work in an automotive service and repair industry. Automotive air conditioners, in addition to 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 diagnose and repair air conditioning and HVAC system	1.1 Identify job requirements from workplace instructions 1.2 Identify required information for diagnosis activity 1.3 Select diagnostic options and source testing strategy to identify cause of fault using workplace and manufacturer procedures 1.4 Identify hazards and environmental issues associated with

ELEMENT	PERFORMANCE CRITERIA
	diagnose and repair activity, assess potential risks and implement control measures in line with workplace policies and procedures 1.5 Identify tools and equipment required for testing strategy and establish serviceability according to workplace procedures
2. Diagnose air conditioning and HVAC system	2.1 Carry out diagnostic tests set out in testing strategy according to manufacturer and workplace procedures, and workplace health and safety requirements 2.2 Identify cause of fault through examination of diagnostic test results 2.3 Confirm and report cause of fault according to workplace procedures 2.4 Develop and report recommendations for necessary repairs according to workplace procedures
3. Operate recovery equipment	3.1 Identify vehicle refrigerant with a refrigerant identifier or analyser 3.2 Weigh recovery cylinder and record available capacity and tare weight of cylinder 3.3 Connect recovery equipment to vehicle according to manufacturer specifications, workplace procedures, workplace health and safety and environmental requirements 3.4 Recover refrigerant and transfer into designated recovery cylinder using recovery equipment according to manufacturer specifications, workplace procedures, and workplace health safety and environmental requirements
4. Repair air conditioning and HVAC system	4.1 Identify required information for repair activity 4.2 Identify required repair tools, equipment and materials required for repair activity and establish serviceability according to workplace procedures 4.3 Carry out repairs according to workplace and manufacturer procedures, manufacturer specifications, workplace health and safety and environmental requirements 4.4 Recharge system with required refrigerant gas according to manufacturer specifications, workplace procedures and workplace health and safety and environmental requirements 4.5 Carry out post-repair testing according to workplace procedures, workplace health and safety and environmental requirements
5. Complete work processes	5.1 Conduct final inspection according to workplace procedures and confirm vehicle is ready for use 5.2 Clear work area and dispose of or recycle materials

ELEMENT	PERFORMANCE CRITERIA
	according to workplace procedures 5.3 Complete Australian Refrigeration Council accredited (ARCTick) service decal sticker and workplace 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.

SKILLS	DESCRIPTION
Learning	- Locates required sources of information efficiently - Develops a sequenced plan for a specific task
Reading	Interprets text, symbols and wiring diagrams relating to diagnostic and repair information from manufacturer specifications and workplace instructions and procedures
Oral communication	- Clarifies instructions - Obtains information from customers and supervisors
Numeracy	- Matches refrigerant types and identification numbers to workplace instructions, parts lists, manufacturer specifications, code of practice and regulatory requirements - Interprets weight measurements, including tare and gross weights - Interprets readings on pressure gauges - Measures temperatures and pressures and uses mathematical operations, to calculate deviations from manufacturer specifications
Planning and organising	- Plans own work requirements - Prioritises actions to achieve required outcomes - Ensures tasks are completed within workplace timeframes
Technology	Uses specialised equipment.

Unit Mapping Information

Supersedes and is equivalent to AURETU004 Diagnose and repair 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>