



Australian Government

AURETU102 Recover vehicle refrigerants

Release: 1

AURETU102 Recover vehicle refrigerants

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 recover vehicle air conditioner refrigerants in designated recovery cylinders for disposal according to safety and environmental procedures while observing critical precautions, given that refrigerant may be flammable.

The unit applies to those who work as vehicle dismantlers, automotive parts recycling contractors, and vehicle body repairers in automotive service and repair workplaces who are required to recover automotive air conditioning refrigerants. Automotive air conditioners, including heating, ventilation and air conditioning (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 the relevant regulatory authority. An Australian Refrigeration Council accredited (ARCtick) Restricted Refrigerant Recoverer 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 recover refrigerant	1.1 Identify job requirements from workplace instructions 1.2 Obtain and interpret refrigerant recovery information, including Australian automotive code of practice 1.3 Identify hazards and environmental issues, assess potential risks and implement control measures in line with workplace policies and procedures 1.4 Identify vehicle air conditioning system, components and

ELEMENT	PERFORMANCE CRITERIA
	refrigerant service ports for refrigerant recovery 1.5 Identify equipment, personal protective equipment (PPE) and firefighting equipment for refrigerant recovery and establish serviceability according to workplace procedures
2. Operate recovery equipment	2.1 Identify vehicle refrigerant with a refrigerant identifier or analyser 2.2 Weigh recovery cylinder and record available capacity and tare weight of cylinder 2.3 Connect recovery equipment to vehicle according to manufacturer specifications, workplace procedures, workplace health and safety and environmental requirements 2.4 Recover refrigerant and transfer into designated recovery cylinder using recovery equipment according to manufacturer specifications, workplace procedures, and workplace health safety and environmental requirements
3. Complete work processes	3.1 Record quantity and details of recovered refrigerant according to workplace procedures and regulatory requirements 3.2 Clear work area according to workplace procedures 3.3 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.

SKILL	DESCRIPTION
Learning	Locates required sources of information efficiently
Reading	Interprets text, symbols and diagrams in workplace and safe operating procedures and manufacturer specifications
Oral communication	Asks questions to clarify job requirements
Numeracy	- Matches refrigerant types and identification numbers to workplace procedures and code of practice requirements - Interprets weight measurements, including tare and gross weights - Interprets readings on digital and analogue pressure gauges - Completes numerical data in documentation and charts

SKILL	DESCRIPTION
Planning and organising	- Plans own work requirements - Prioritises actions to achieve required outcomes - Ensures tasks are completed within workplace timeframes
Technology	Uses workplace technology and tools

Unit Mapping Information

Supersedes and is equivalent to AURETU002 Recover vehicle refrigerants.

Links

Companion Volume Implementation Guide is found on VETNet -

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

Assessment Requirements for AURETU102 Recover vehicle refrigerants

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Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- recover and identify vehicle refrigerants from three different vehicles or machinery, in which the work must involve one of the following refrigerant types:
 - synthetic greenhouse and ozone depleting (SGOD) refrigerant
 - hydrocarbon (HC) refrigerant
 - hydrofluorocarbon (HFC) refrigerant
 - a mixture of SGOD and HC refrigerant.

In the course of the above work, the candidate must use the following equipment:

- refrigerant hose and coupler
- refrigerant recovery unit
- refrigerant scales
- refrigerant identifier or analyser
- designated and appropriately labelled recovery cylinders.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- methods to locate and interpret information required to recover vehicle refrigerants, including:
 - Australian automotive code of practice: Control of refrigerant gases during manufacture, installation, servicing or de-commissioning of motor vehicle air conditioners
- workplace procedures required to recover vehicle refrigerants, including:
 - recovering vehicles and refrigerants
 - establishing the serviceability of tools and equipment

- documentation procedures
- housekeeping procedures, including:
 - examination of tools and equipment
 - storage of equipment
 - safe shut down and disconnecting recovery equipment
 - safe storage of refrigerant
 - identification, tagging and isolation of faulty equipment
 - safe disposal of materials
 - recycling procedures
- workplace health and safety (WHS) requirements relating to safety requirements for recovering vehicle refrigerants, including procedures for:
 - managing risk of frostbite while working with refrigerants at boiling point
 - working with system lubricants, including carcinogenic oils
 - handling flammable refrigerants
 - selecting and using personal protective equipment (PPE)
 - identifying firefighting equipment
 - identifying refrigerant and oil type, including:
 - service decal sticker
 - testing refrigerant
 - types and location of service ports
 - handling, storing and transporting refrigerant cylinders and recovery cylinders, including:
 - pressure ratings
 - pressure relief devices
 - outlet connection type
- environmental requirements associated with refrigerant recovery and refrigerant waste disposal, including procedures for:
 - preventing loss of refrigerant to the atmosphere
 - storing and transporting refrigerants
- key features of various types of refrigerants and oils found in automotive vehicle and equipment HVAC systems, including:
 - synthetic SGOD refrigerants, such as:
 - chlorofluorocarbons (CFC)
 - hydrofluorocarbons (HFC)
 - HC refrigerants
 - mineral and synthetic refrigerant oils
- key features of refrigerant recovery equipment, including:
 - manifold and gauge set
 - recovery unit
 - types of recovery cylinders

- refrigerant analyser
- vacuum recovery equipment and scales
- procedures for recovering automotive refrigerant, including:
 - testing refrigerant to determine its type
 - connecting manifold and gauge set and recovery unit, including types and location of service ports
 - identifying recovery cylinder suitable to the refrigerant
 - operating recovery unit, including weighing recovery cylinder before and after recovery
 - disconnecting and storing recovery unit and cylinder
- work completion procedures for recovering vehicle refrigerant, including:
 - work area clean-up and maintenance requirements
 - workplace regulatory documentation to be completed
- procedures for completing ARCTick decal sticker, including:
 - name of service organisation
 - ARCTick business authority number
 - quantity of refrigerant added
 - refrigerant and oil type
 - service date
 - technician name and licence number.

Assessment Conditions

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to vehicle refrigerant that they have recovered from HVAC systems, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive workplace, parts recycling yard or simulated workplace
- workplace instructions
- PPE and firefighting equipment required when recovering vehicle refrigerants
- Australian automotive code of practice: Control of refrigerant gases during manufacture, installation, servicing or de-commissioning of motor vehicle air conditioners
- three different vehicles or machinery with refrigerant to be recovered
- refrigerant recovery equipment designed for safe operation, including:
 - hose and vehicle couplings
 - refrigerant scales

- refrigerant identifier or analyser
- vehicle refrigerant designated and labelled recovery cylinders
- appropriate hand tools for refrigerant recovery.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards; and hold an Australian Refrigerant Council (ARC) Refrigerant Handling licence.

Links

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