



Australian Government

AURETU002 Recover vehicle refrigerants

Release: 1

AURETU002 Recover vehicle refrigerants

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes 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.

It applies to those working 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.

Competency Field

Electrical

Unit Sector

Technical - Air Conditioning and HVAC

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Prepare for refrigerant	1.1 Job requirements are determined from workplace instructions

Elements Elements describe the essential outcomes.	Performance Criteria Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
recovery	1.2 Refrigerant recovery workplace procedures and relevant <i>code of practice</i> are accessed and interpreted 1.3 Hazards associated with the work are identified and risks are managed 1.4 Vehicle air conditioning system, components and refrigerant service ports are identified for refrigerant recovery 1.5 <i>Recovery equipment</i> , personal protective equipment (PPE) and firefighting equipment, are checked for serviceability according to manufacturer specifications and workplace procedures
2. Operate recovery equipment	2.1 Vehicle refrigerant is identified with a refrigerant identifier or analyser 2.2 Designated recovery cylinder is weighed to determine available capacity, and tare weight of cylinder is recorded 2.3 Recovery equipment is connected to vehicle according to manufacturer specifications, workplace procedures, and <i>safety and environmental requirements</i> 2.4 Refrigerant is recovered and transferred into designated recovery cylinder using recovery equipment according to manufacturer specifications, workplace procedures, and safety and environmental requirements 2.5 Problems are responded to appropriately and escalated according to workplace procedures
3. Complete work processes	3.1 Quantity and details of recovered refrigerant are recorded according to workplace procedures and regulatory requirements 3.2 Recovery equipment, hoses and recovery cylinder are shut down and disconnected, and cylinders capped, according to workplace procedures 3.3 Refrigerant is stored in designated recovery cylinder according to workplace procedures 3.4 Recovery equipment and tools are checked and stored, and faulty equipment is identified, tagged and isolated according to workplace procedures

Foundation Skills

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

Skills	Description
Learning skills to:	locate appropriate sources of information efficiently.
Reading skills to:	- interpret text, symbols and diagrams in workplace and safe operating procedures and manufacturer specifications - interpret critical precautions of the Australian automotive code of practice relating to automotive refrigerant recovery.
Writing skills to:	legibly and accurately enter information in regulatory reports and fill out other required workplace documentation.
Oral communication skills to:	ask questions to clarify job requirements.
Numeracy skills to:	- match refrigerant types and identification numbers to workplace procedures and code of practice requirements - interpret weight measurements, including tare and gross weights - interpret readings on digital and analogue pressure gauges - complete numerical data in documentation and charts.
Planning and organising skills to:	plan own work requirements and prioritise actions to achieve required outcomes and ensure tasks are completed within workplace timeframes.
Technology skills to:	use workplace technology and tools, such as refrigerant analyser, vacuum recovery equipment, and scales.

Range of Conditions

This section specifies 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. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Code of practice</i> must include:	Australian automotive code of practice: Control of refrigerant gases during manufacture, installation, servicing or de-commissioning of motor vehicle air conditioners.
<i>Recovery equipment</i> must include:	- refrigerant hose and coupler - refrigerant recovery unit - refrigerant scales - refrigerant identifier or analyser - designated and appropriately labelled recovery cylinders.
<i>Safety and environmental requirements</i> must include:	- work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for: - working with refrigerants at boiling point given risk of frostbite

	• working with system lubricants, including carcinogenic oils • handling flammable refrigerants • selecting and using PPE • identifying firefighting equipment • environmental requirements, including procedures for: • preventing loss of refrigerant to the atmosphere • storing and transporting refrigerants.
--	---

Unit Mapping Information

Equivalent to AURETU2002 Recover vehicle refrigerants

Links

Companion Volume implementation guides are found in VETNet -

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

Assessment Requirements for AURETU002 Recover vehicle refrigerants

Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standard defined in the unit's elements, performance criteria, range of conditions and foundation skills:

- recover 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
 - a mixture of SGOD and HC refrigerant.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to safety requirements for recovering vehicle refrigerants, including procedures for:
 - working with refrigerants at boiling point given risk of frostbite
 - working with system lubricants, including carcinogenic oils
 - handling flammable refrigerants
 - selecting and using personal protective equipment (PPE)
 - identifying firefighting equipment
- environmental requirements associated with refrigerant recovery and refrigerant waste disposal, including procedures for:
 - preventing loss of refrigerant to the atmosphere
 - storing and transporting refrigerants
- Australian automotive code of practice: Control of refrigerant gases during manufacture, installation, servicing or de-commissioning of motor vehicle air conditioners

- key features of various types of refrigerants and oils found in automotive vehicle and equipment HVAC systems, including:
 - synthetic SGOD refrigerants, including:
 - chlorofluorocarbons (CFC)
 - hydrofluorocarbons (HCFC)
 - HC refrigerants
 - mineral and synthetic refrigerant oils
- types, application and operation of refrigerant recovery equipment, including:
 - manifold and gauge set
 - recovery unit
 - types of recovery cylinders
- 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 appropriate 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
- completing workplace documentation, including Australian Refrigeration Council accredited (ARCtick) service decal sticker.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements and hold an Australian Refrigerant Council (ARC) Refrigerant Handling licence.

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.

Links

Companion Volume implementation guides are found in VETNet -

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

Companion Volume implementation guides are found in VETNet -

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