



Australian Government

**UEERA0095 Recover refrigerant from
stationary self-contained end of life
decommissioned equipment**

Release: 1

UEERA0095 Recover refrigerant from stationary self-contained end of life decommissioned equipment

Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology Training Package.

Application

This unit involves the skills and knowledge required to recover refrigerant from stationary self-contained end of life decommissioned equipment. It applies to those engaged in the scrapping, recycling and/or disposal of stationary self-contained refrigeration and air conditioning equipment.

It includes working safely and recovering non-flammable and flammable refrigerants from stationary self-contained end of life decommissioned refrigeration and air conditioning equipment into designated cylinders for disposal using relevant tools and equipment. It also includes applying the legal requirements to handle refrigeration and air conditioning equipment and to handle, store and dispose of refrigerants. It does not include the recovery of ammonia or carbon dioxide (CO₂) refrigerants.

Refrigerants to be recovered may be flammable, non-flammable or a mixture of both and difficult to accurately identify. To prevent the possibility of ignition, the equipment and procedures used to recover the refrigerant should be those required for flammable refrigerants when the refrigerant has been identified as flammable or it is unknown.

To undertake this unit, the learner must have a Trainee Refrigerant Handling Licence as it includes work on refrigeration and air conditioning equipment that carries the risk of a fluorocarbon refrigerant being emitted.

The skills and knowledge described in this unit require a national Refrigerant Handling Licence as it includes work on refrigeration and air conditioning equipment that carries the risk of a fluorocarbon refrigerant being emitted while decanting the refrigerant or manufacturing, installing, commissioning, servicing, maintaining or decommissioning refrigeration and air conditioning equipment.

The skills and knowledge described in this unit may, in some jurisdictions, also require a licence or permit to practice in the workplace subject to regulations for undertaking refrigeration and air conditioning work. Practice in the workplace and during training is also subject to work health and safety (WHS)/occupational health and safety (OHS) regulations.

Pre-requisite Unit

UEECD0007 Apply work health and safety regulations, codes and practices in the workplace

Competency Field

Refrigeration and air-conditioning

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1. Prepare to recover refrigerant

2. Recover refrigerant from decommissioned stationary refrigeration/air conditioning equipment

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

- 1.1 WHS/OHS procedures for refrigerant recovery are identified and applied in accordance with workplace procedures and regulatory requirements
- 1.2 WHS/OHS risk control measures and workplace procedures are followed in preparation for work
- 1.3 Refrigeration/air conditioning systems are inspected, including refrigerant access points and refrigerant type, and the nature of work to be undertaken is confirmed in accordance with scope of work and manufacturer specifications
- 1.4 Materials, tools, equipment, testing devices, signage and personal protective equipment (PPE) required to recover the refrigerant are identified, obtained and checked for correct operation in accordance with the refrigerant type and flammability
- 2.1 Recovery equipment is connected to the system through service gauge lines using tools and fittings to prevent/minimise refrigerant loss in accordance with workplace procedures, manufacturer instructions and regulatory requirements
- 2.2 Recovery cylinder weight and pressure is measured and recorded to ensure refrigerant recovered is accepted in accordance with workplace procedures and regulatory requirements

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| | 2.3 | Refrigerant is recovered from system by operating and monitoring the recovery equipment in accordance with manufacturer instructions |
| | 2.4 | Recovery equipment, including service gauge lines and recovery cylinder, are shut down and disconnected when the refrigerant is recovered in accordance with manufacturer instructions |
| | 2.5 | Recovery cylinder weight is measured and the quantity of the refrigerant recovered is recorded in accordance with regulatory requirements |
| 3. Complete work and relevant documentation | 3.1 | Worksite, tools and equipment are cleaned, checked and made safe in accordance with workplace procedures and manufacturer instructions |
| | 3.2 | Tools, equipment and recovery cylinder refrigerant are securely stored in accordance with regulatory requirements and workplace procedures |
| | 3.3 | WHS/OHS issues are reported to relevant person/s in accordance with workplace procedures |
| | 3.4 | Documentation is completed and provided to relevant person/s in accordance with workplace procedures and regulatory requirements |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the UEE Electrotechnology Training Package Companion Volume Implementation Guide.

Work environments must include the following:

- scrapping, recycling and/or disposal of decommissioned stationary self-contained refrigeration and air conditioning equipment

Recovery equipment and procedures must:

- be the same as for a flammable refrigerant if:
 - refrigerant is unknown; or,
 - there is a suspicion that it is flammable

Standards must include the following:	• refrigerant handling codes of practice • AS/NZS ISO 817 Refrigerants – Designation and safety classification • AS/NZS 5149.4 Refrigerating systems and heat pumps - Safety and environmental requirements - Operation, maintenance, repair and recovery
Legislation must include the following:	• Ozone Protection and Synthetic Greenhouse Gas Legislation Amendment Act (or Bill) and regulations • federal/state/territory WHS/OHS legislation • federal/state/territory transport of dangerous goods legislation
Documentation, including reporting formats, must include the following:	• Australian Refrigeration Council’s (ARC) reporting requirements • equipment manufacturer’s specifications and instructions • Australian Institute of Refrigeration, Air Conditioning and Heating (AIRAH) Refrigerant Guide • AIRAH’s Flammable Refrigerants Safety Guide and Fact Sheets
Equipment and tools must include a minimum of the following:	• one decommissioned stationary refrigeration unit and one decommissioned stationary air conditioning unit: • one unit must contain non-flammable refrigerant and one unit must contain flammable refrigerant • refrigeration hand tools • recovery units and cylinders suitable for the non-flammable refrigerants • recovery units and cylinders suitable for the flammable refrigerants • soap/water ‘bubbles’ leak detection fluid
Measuring and test equipment must include the following:	• refrigerant pressure/temperature chart • scales for weighing recovery cylinder • digital thermometers • manifold gauges suitable for the refrigerant types
Safety systems and PPE must include the following:	• PPE suitable for handling refrigerants, including safety glasses, gloves and safety shoes • safety data sheets (SDS) for refrigerants • safe work method statements (SWMS)
Software/systems must include the following:	• refrigeration/air conditioning manufacturer websites to access equipment specifications

Unit Mapping Information

No equivalent unit

Links

Companion Volume implementation guides are found in VETNet - -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6>

Assessment Requirements for UEERA0095 Recover refrigerant from stationary self-contained end of life decommissioned equipment

Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions on at least two separate occasions and include:

- applying environment protection and sustainable energy and resources principles and practices
- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements and workplace procedures and practices, including:
 - correct use of personal protective equipment (PPE)
 - applying risk control measures
- cleaning, checking and making safe the worksite, tools and equipment
- completing relevant documentation and reporting to relevant person/s
- complying with relevant legislative, regulatory/licensing, standards and code requirements, manufacturer recommendations/instructions and industry practices
- fitting access valves to the system and connecting service gauges
- identifying the refrigeration/air conditioning unit's refrigerant access points and the refrigerant type from the equipment nameplate or manufacturer specifications
- identifying, obtaining and checking relevant equipment, tools and materials required to work with non-flammable and flammable refrigerants, including:
 - recovering unit and recovery cylinder
 - servicing gauges
 - using refrigeration hand tools
- measuring and recording the quantity of the refrigerant recovered
- measuring and recording the recovery cylinder's weight to ensure it can accept the refrigerant to be recovered
- recovering flammable and non-flammable refrigerant from refrigeration or air conditioning systems using appropriate equipment and tools
- storing tools, equipment and recovery cylinder securely.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of

the requirements of the elements, performance criteria and range of conditions and include knowledge of:

- leak detectors and 'bubbles' leak detection procedure
- recovery cylinders, including:
 - care and maintenance
 - identifying service access valves
 - leak testing with 'bubbles'
 - ratings for various applications, including non-flammable and flammable refrigerants
 - relevant documentation and records
 - safe handling, storage and transportation
 - tare and refrigerant weight
 - types, markings and labelling
- refrigerants, including:
 - current refrigerants used, including R12, R134a, R22, R407C, R410a, hydrocarbons and flammable synthetics (R32)
 - environmental issues
 - identifying the refrigerants from system's nameplate and manufacturer specifications
 - indicators that the unit may contain flammable refrigerant
- refrigerant oils, including:
 - absorption of refrigerant
 - types
- recovery units, including:
 - basic operation of unit
 - care and maintenance
 - identifying service access valves
 - non-flammable and flammable refrigerant recovery procedures
 - non-flammable and flammable refrigerant types
 - safety precautions
- service gauges, including:
 - manifold gauges:
 - basic types and use for recovering refrigerant
 - care and maintenance
 - hose shut-off valves and adaptors
 - system access fittings:
 - fitting bullet valves and piercing pliers
 - hazards and related safe working practices
 - types
 - typical locations, connection and operation
 - using service gauges:
 - pressure readings

- service gauge manifold hose fitting
- service gauge manifold hose removal
- working safely with refrigerants and refrigerant oils, including:
 - relevant PPE and safety signage
 - relevant workplace and WHS/OHS procedures, including risk assessment and control measures
 - safe handling procedures
 - flammable and non-flammable refrigerant handling reporting requirements
 - relevant legislation, standards and codes
 - safety data sheets (SDS).

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must occur in workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated workplace operational situations that replicate workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or other simulations
- relevant and appropriate materials, tools, equipment and personal protective equipment (PPE) currently used in industry
- applicable documentation, including workplace procedures, equipment specifications, regulations, codes of practice and operation manuals.

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