



Australian Government

UEERA0063 Recover, pressure test, evacuate, charge and leak test refrigerants - appliances

Release: 1

UEERA0063 Recover, pressure test, evacuate, charge and leak test refrigerants - appliances

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 refrigerants, conduct pressure and leak tests, and evacuate and charge refrigerants in a self-contained appliance. This includes flammable and non-flammable refrigerants.

Competency in this unit requires the ability to work safely, prepare for and implement the recovery of refrigerants, undertake pressure and leak testing, perform evacuations and charging of refrigeration appliances as well as completing all required documentation.

Individuals will typically work independently to safely handle refrigerants used in appliances.

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 may 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 require a licence or permit to practice in the workplace where work is carried out on electrical installations which are designed to operate at voltages greater than 50 volt (V) alternating current (a.c.) or 120 V direct current (d.c.).

Competency development activities in this unit are subject to regulations directly related to licensing. Where a licence or permit to practice is not held, a relevant contract of training, such as an Australian Apprenticeship, is required.

Additional and/or other conditions may apply in some jurisdictions subject to regulations related to electrical 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 refrigerants, pressure and leak test, evacuate and charge refrigeration appliance

2 Recover refrigerants, pressure and leak test, evacuate and charge refrigeration appliance

PERFORMANCE CRITERIA

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

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| 1.1 | WHS/OHS hazards, risk control methods, relevant standards, codes and legislation are obtained and applied in accordance with workplace procedures |
| 1.2 | Safety hazards which have not previously been identified are noted and risk control measures implemented in accordance with workplace procedures |
| 1.3 | Extent of work to be completed is determined from documentation and/or discussion with supervisor/appropriate person/s in accordance with workplace procedures |
| 1.4 | Work is sequenced in accordance with job schedule and workplace procedures |
| 1.5 | Appropriate person/s is consulted, as required, to ensure work is coordinated with others |
| 1.6 | Refrigerants, lubricants and cleaning materials are obtained in accordance with workplace procedures |
| 1.7 | Tools, equipment and testing devices are obtained in accordance with workplace procedures and checked for operational safety |
| 2.1 | Checks are carried out to ensure system or component parts are isolated, when necessary, in accordance with workplace procedures and WHS/OHS requirements |

- 2.2 Circuits, machines and plant are checked as being isolated, where necessary, in accordance with workplace procedures and WHS/OHS requirements
 - 2.3 Refrigerant is removed from appliance safely and is placed into labelled containers in accordance with workplace procedures and regulatory requirements
 - 2.4 Precautions are taken in accordance with workplace procedures to prevent damage to components while pressure testing appliance
 - 2.5 Pressure testing is conducted in accordance with workplace procedures using dry nitrogen at a pressure relative to refrigerant used
 - 2.6 Leaks are located and rectified using testing methods appropriate to the appliance under test in accordance with workplace procedures
 - 2.7 Appliance is evacuated to required level and is cleaned of all moisture and other contaminants in accordance with workplace procedures
 - 2.8 A 'drop test' is used to test effectiveness of evacuation in accordance with workplace procedures using an appropriate electronic vacuum gauge
 - 2.9 Components and lubricants are checked and maintained in accordance with workplace procedures and manufacturer specifications
 - 2.10 Appliance is charged with appropriate refrigerant in accordance with workplace procedures and manufacturer specifications
 - 2.11 Problematic situations are resolved in accordance with workplace procedures and are referred to a supervisor
 - 2.12 Appliance is pressure and leak tested, evacuated and charged without waste of materials or damage to apparatus, the surrounding environment and/or services using relevant sustainable energy practices in accordance with workplace procedures
- 3 Complete and report on refrigerants recovery pressure and leak test and evacuate and charge work**
- 3.1 Worksite and equipment are cleaned and made safe in accordance with workplace procedures

- 3.2 Contaminated refrigerant is dealt with in accordance with workplace procedures and legislative/regulatory requirements
- 3.3 Completion of work is documented and an appropriate person/supervisor is notified in accordance with workplace procedures

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.

Recovering, pressure testing, evacuating, charging and leak testing refrigerants must include testing and charging refrigeration or air conditioning appliances using vacuum measuring instruments and include the following:

- recovering refrigerant from an existing appliance that may contain contaminants
- pressure and leak testing a newly installed or repaired appliance
- evacuating an appliance in preparation for charging with refrigerant
- charging an appliance with refrigerant with minimal loss
- flammable and non-flammable refrigerants

Unit Mapping Information

This unit replaces and is equivalent to UEENEEJ162A Recover, pressure test, evacuate, charge and leak test refrigerants - appliances.

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 UEERA0063 Recover, pressure test, evacuate, charge and leak test refrigerants - appliances

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 legislation, industry standards, codes of practice and regulations
- applying relevant work, health and safety (WHS)/occupational health and safety (OHS) requirements, including:
 - applying safe working practices
 - identifying hazards
 - implementing safe handling procedures
 - using risk control measures
- completing and reporting on work activities
- preparing to recover refrigerants, pressure and leak test, evacuate and charge refrigeration appliances
- recovering refrigerants, pressure and leak testing, evacuating and charging refrigerant appliance, including:
 - completing documentation
 - conducting pressure testing at appropriate pressure level without damaging components
 - dealing with unplanned events/situations in accordance with workplace procedures in a manner that minimises risk to personnel and equipment
 - evacuating system to required level
 - evacuating system to required standard using vacuum measuring instruments
 - locating and rectifying leaks
 - removing and storing refrigerant
 - using flammable and non-flammable refrigerants
 - selecting materials and equipment
- using manufacturer specifications and manuals.

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:

- flammable and non-flammable refrigerants
- recover, pressure and leak test, evacuate and charge refrigerant appliances, including:
 - refrigerant properties
 - safe handling practices
 - refrigeration oil recovery and reclaim procedures
 - pressure testing
 - leak detection
 - evacuation and dehydration
 - refrigerant and oil charging
 - system contamination
 - refrigeration component replacement
- relevant legislation, industry standards, codes of practice and regulations
- relevant manufacturer specifications
- relevant risk mitigation processes, including:
 - safe working practices
 - potential hazards
 - risk control measures
- relevant WHS/OHS legislated requirements
- relevant workplace documentation
- relevant workplace policies and procedures.

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, industry standards, equipment specifications, regulations, codes of practice and operation manuals.

Links

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