



Australian Government

UEERA0037 Establish the basic operating conditions of vapour compression systems - appliances

Release: 1

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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 establish the operating condition of a vapour compression system in a self-contained refrigerated appliance.

Competency in this unit requires the ability to work safely; prepare for and establish operational conditions of vapour compression systems, including determining refrigerant pressures and relevant air temperatures using measurement and calculation methods; as well as completing all required documentation.

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 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 determine operating conditions of vapour compression system

2 Determine operating condition of a vapour compression system

PERFORMANCE CRITERIA

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

- 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 reported in accordance with workplace procedures, and advice on risk control measures is sought from supervisor
- 1.3** Details on work are obtained from documentation and/or from supervisor to establish the scope of work to be completed
- 1.4** Advice is sought from supervisor, as required, to ensure work is coordinated with others
- 1.5** Sources of materials required for work are identified and accessed in accordance with workplace procedures
- 1.6** Tools, equipment and testing devices to establish the operating conditions of appliance's vapour compression system are obtained and checked for operational safety
- 2.1** Measuring systems operating parameters are used in accordance with workplace procedures and WHS/OHS requirements
- 2.2** Appliance vapour compression system is checked and isolated, where necessary, in accordance with workplace procedures and WHS/OHS requirements
- 2.3** Actual and specified range of operating conditions of vapour compression system is established from measured and calculated values in accordance with workplace procedures
- 2.4** Unplanned situations are responded to in accordance with workplace procedures and discussed with relevant person/supervisor in a manner that minimises risk to personnel and equipment

- 2.5 Operating conditions of vapour compression system are determined without damage to appliance, circuits, the surrounding environment and/or services using relevant sustainable energy practices in accordance with workplace procedures
- 3 Complete work and report activities**
- 3.1 Worksite and equipment are cleaned and made safe in accordance with workplace procedures
- 3.2 Operating condition of a vapour compression system is documented in accordance with workplace procedures, including identification of any parameter that is not within the specified range for the system
- 3.3 Supervisor is notified of completion of work 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.

- Determining operating conditions of a vapour compression system must include the following:
- suction and discharge pressures
 - ambient, evaporator and condensing temperatures
 - evaporator and condenser temperature difference

Unit Mapping Information

This unit replaces and is equivalent to UEENEEJ195A Establish the basic operating conditions of vapour compression systems - 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 UEERA0037 Establish the basic operating conditions of vapour compression systems - appliances

Modification History

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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 risk control measures
 - identifying hazards
 - implementing safe working practices
- completing work and reporting requirements
- determining operating conditions of appliance vapour compression systems, including:
 - selecting and using appropriate measuring devices
 - recording measurements
 - using calculation methods
 - identifying conditions of refrigerant at various locations in appliance vapour compression system
 - documenting operating conditions
 - dealing with unplanned events/situations in accordance with workplace procedures in a manner that minimises risk to personnel and equipment
- using manufacturer specifications.

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:

- operating conditions of vapour compression systems used in refrigerated appliances, including:
 - domestic refrigeration
 - vapour compression system
 - heat

- temperature and relative humidity
- sensible and latent heat
- pressure
- refrigerant conditions
- vapour compression cycle
- leak detectors
- service gauges
- refrigeration compressors
- condensers and related components
- evaporators and related components
- common refrigerant metering devices
- basic operating conditions
- 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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