



Australian Government

UEEEEC0060 Repairs basic electronic apparatus faults by replacement of components

Release: 1

UEEEEC0060 Repairs basic electronic apparatus faults by replacement of components

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 replace electronic components, cabling and sub-systems of electronic apparatus.

It includes safe working practices, testing, dismantling and assembling apparatus, using equipment and tools correctly (including soldering equipment) and disconnecting and reconnecting components to repair electronic apparatus faults.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

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

UEECD0019 Fabricate, assemble and dismantle utilities industry components

Competency Field

Electronics and Communications

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Prepare to repair electronic apparatus

PERFORMANCE CRITERIA

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

1.1 Work health and safety (WHS)/occupational health and safety (OHS) requirements and workplace procedures for a given work area are identified and applied

- 1.2 Hazards are identified, risks are assessed and control measures and workplace procedures are implemented
 - 1.3 Nature of the repair is obtained from relevant documentation or work supervisor to determine the scope of work to be undertaken
 - 1.4 Advice is sought from work supervisor to ensure work is coordinated effectively with others
 - 1.5 Materials required for work are obtained in accordance with workplace procedures
 - 1.6 Tools, apparatus, equipment and testing devices needed to carry out the work are obtained and checked for correct operation and safety in accordance with workplace procedures
- 2 **Repair electronic apparatus**
 - 2.1 WHS/OHS risk control measures and workplace procedures are followed
 - 2.2 Need to inspect, test or measure live work is determined and conducted in accordance with WHS/OHS workplace procedures and regulatory requirements
 - 2.3 Circuits/apparatus are checked as being isolated as required in accordance with WHS/OHS workplace procedures and regulatory requirements
 - 2.4 Apparatus is dismantled in accordance with manufacturer specifications and supervisor instructions
 - 2.5 Apparatus component parts are correctly tagged during dismantling to ensure correct and efficient reassembly and stored to protect against loss or damage in accordance with workplace procedures
 - 2.6 Repairs are conducted using the correct tools/soldering equipment and without damage to other components, sub-systems, apparatus or circuits in accordance with workplace procedures, industry standards and regulatory requirements
 - 2.7 Apparatus is re-assembled in correct sequence, with all components and parts replaced, secured and connected in accordance with manufacturer specifications, industry standards and workplace procedures
 - 2.8 Unplanned events are referred to supervisor for

		directions in accordance with workplace procedures
	2.9	Apparatus repairs are completed without waste of materials or damage to apparatus, the surrounding environment or services using sustainable energy practices
3 Complete and report repair work activities	3.1	WHS/OHS work completion risk control measures and workplace procedures are followed
	3.2	Repaired apparatus is inspected, prepared in accordance with workplace procedures and forwarded to relevant person/s for testing
	3.3	Work area is cleaned and made safe in accordance with workplace procedures
	3.4	Work supervisor is notified of the completion of the repair 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.

Repairing basic electronic apparatus faults must be demonstrated in relation to:

- carrying out repair on electronic apparatus, limited to replacement or repair of components, including sub-systems in which the fault has been previously established
- a cable to be correctly terminated using a solderless termination technique
- soldering and de-soldering

Repairs must include at least two of the following:

Unit Mapping Information

This unit replaces and is equivalent to UEENEEH102A Repairs basic electronic apparatus faults by replacement of components.

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 UEEEC0060 Repairs basic electronic apparatus faults by replacement of components

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 problem-solving techniques
- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements, including:
 - applying safe working practices
 - using risk control measures
 - checking tools, equipment and testing devices for correct operation and safety
 - checking circuits/apparatus are isolated
- carry out basic repairs to electronic apparatus, including:
 - following work instructions and manufacturer instructions for access to components
 - removing at least three different types of components specified in the work instructions
 - replacing components to manufacturer specifications
 - terminating electronic cables using solderless termination techniques
 - de-soldering and soldering without damage to components
 - reassembling the apparatus correctly
 - dealing with unplanned events in accordance with workplace procedures
- communicating effectively with others
- completing and reporting repair work activities
- complying with relevant electrical regulations and industry standards
- consulting work supervisor as required
- maintaining a clean worksite and equipment
- reading, interpreting and completing workplace documentation
- reassembling the apparatus correctly
- correctly tagging, inspecting and storing components during dismantling.

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:

- electronic soldering equipment and techniques, including:
 - workshop hazards and safety associated with soldering
 - quality concepts
 - electronic soldering equipment
 - the soldering process
 - lead-free solder
- printed circuit board soldering techniques, including:
 - electronic component mounting
 - solder rework of printed circuit boards
 - faulty solder joints
- soldering electronic cables, including:
 - effects and prevention of electrostatic discharge (ESD)
- electronic component basics, including:
 - types of components
 - the physical features and primary characteristic of components
 - marking and codes on components
 - handling static sensitive components
- electronic cable overview and coaxial cable, including:
 - coaxial cables types and characteristics
 - coaxial cable termination
- performance copper cables, including:
 - twisted pair voice and data cables
 - insulation displacement connector
 - colour codes
 - terminating performance cables
- electronic apparatus components, including:
 - fault finding
 - testing
 - replacement
- relevant electronic cables, electronic apparatus and components, including:
 - fault-finding techniques
 - safe storage of dismantled components and parts
 - techniques to dismantle and re-assemble
 - techniques to safely and correctly identify, replace and repair
 - techniques to tag components during dismantling process
- relevant electrical regulations, industry standards and codes of practice
- relevant manufacturer specifications
- relevant WHS/OHS legislated requirements
- relevant work instructions

- relevant workplace documentation
- relevant workplace policies and procedures
- risk mitigation processes.

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.

Links

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