



Australian Government

UEECD0019 Fabricate, assemble and dismantle utilities industry components

Release: 1

UEECD0019 Fabricate, assemble and dismantle utilities industry 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 fabricate, assemble and dismantle utilities industry components using fitting and metal fabrication techniques.

It includes the safe use of hand tools, fixed and portable power tools; cutting, shaping, joining and fixing; using metallic and non-metallic materials; dismantling and assembling equipment; mechanical measurement and marking out; and, reading drawings/diagrams.

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

Competency Field

Cross Discipline

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Prepare for dismantling, assembling and fabrication work

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) procedures for a given work area are identified and applied in accordance with workplace procedures

- 1.2 WHS/OHS risk control measures and workplace procedures are followed in preparation for the work
 - 1.3 Work instructions and relevant workplace procedures, industry standards, codes of practice and regulations for dismantling, assembling and fabrication are identified and applied
 - 1.4 Scope of work to be undertaken is obtained from relevant documentation and from work supervisor
 - 1.5 Advice is sought from work supervisor to ensure work is coordinated effectively with other persons
 - 1.6 Materials required for work are identified and obtained in accordance with workplace procedures
 - 1.7 Tools, equipment and measuring devices needed to carry out the work are obtained and checked for correct operation and safety
- 2 **Dismantle and assemble utilities industry apparatus**
 - 2.1 WHS/OHS risk control measures and workplace procedures for dismantling and assembling apparatus are followed
 - 2.2 Circuits/apparatus/plant are checked and isolation confirmed in accordance with WHS/OHS workplace requirements and procedures
 - 2.3 Relevant tools are selected and used correctly and safely in accordance with manufacturer instructions and workplace procedures
 - 2.4 Relevant manufacturer guides and instructions are followed when dismantling and assembling apparatus
 - 2.5 Apparatus components are marked or tagged correctly during dismantling to ensure correct and efficient reassembly in accordance with workplace procedures
 - 2.6 Dismantled components and parts are stored to protect them against loss or damage in accordance with manufacturer instructions and workplace procedures
 - 2.7 Apparatus is dismantled and assembled without waste of materials and energy, damage to apparatus, the surrounding environment or services
 - 2.8 Unplanned events are referred to supervisor for

directions in accordance with workplace procedures

2.9 Quality checks are carried out in accordance with workplace procedures

2.10 Worksite is tidied, tools and equipment cleaned and securely stored in accordance with workplace procedures

2.11 Work supervisor is notified of dismantling and assembling apparatus completion in accordance with workplace procedures

3 Fabricate utilities industry components

3.1 WHS/OHS risk control measures and workplace procedures for fabricating components are followed

3.2 Circuits/apparatus/plant are checked and isolated in accordance WHS/OHS workplace requirements and procedures

3.3 Relevant tools and equipment are selected, used correctly and safely in accordance with manufacturer instructions and workplace procedures

3.4 Drawings, diagrams and instructions for fabrication of mechanical components are followed in accordance with workplace procedures

3.5 Component dimensions are determined directly by measuring, or by calculation from information supplied in job drawings and instructions

3.6 Mechanical components are fabricated by measuring, marking out, cutting, joining and fixing accurately using relevant equipment and tools, minimising waste of materials and energy and/or damage to the surrounding environment or services

3.7 Unplanned events are referred to supervisor for directions in accordance with workplace procedures

3.8 Quality checks are carried out in accordance with workplace procedures

3.9 Worksite is tidied, tools and equipment cleaned and securely stored in accordance with workplace procedures

3.10 Work supervisor is notified of fabrication completion 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.

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| Hand tools must include: | <ul style="list-style-type: none">• drills and drilling with different types of drills used in the electrotechnology industry• tools for holding, cutting, driving, shaping, breaking and bending materials• tools for cutting metallic and non-metallic material |
| Relevant workplace policies and procedures must include: | <ul style="list-style-type: none">• circuits/apparatus/plant isolation procedures• workplace referral and reporting procedures |
| Sheet metal work must include: | <ul style="list-style-type: none">• application of a range of fabrication material types• use of tools for cutting, bending, folding and punching sheet metals |
| Tapping and threading must include: | <ul style="list-style-type: none">• tools for cutting internal and external threads to materials used for electrotechnology work |
| Workshop planning processes and materials must include: | <ul style="list-style-type: none">• metallic and non-metallic materials used in the electrotechnology industry and their application |

Unit Mapping Information

This unit replaces and is equivalent to UEENEEE102A Fabricate, assemble and dismantle utilities industry 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 UEECD0019 Fabricate, assemble and dismantle utilities industry 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 relevant work health and safety (WHS)/occupational health and safety (OHS) requirements
- applying sustainable energy work practices to reduce waste when marking out
- complying with relevant electrical regulations and legislations
- consulting with work supervisor
- correctly marking, tagging and storing components during dismantling
- dealing with unplanned events in accordance with workplace procedures in a manner that minimises risk to personnel and equipment
- drawing freehand mechanical components showing all information needed for its manufacture/fabrication
- fabricating, dismantling, assembling utilities industry components, including:
 - applying safety procedures when using holding and cutting tools
 - cutting a thread on metallic components
 - demonstrating safe use of a bench drill
 - dismantling electrical, electronic, instrumentation or refrigeration/air conditioning piece of equipment using correct procedures
 - assembling electrical, electronic, instrumentation or refrigeration/air conditioning piece of equipment using correct procedures
 - drilling metallic and non-metallic components
 - fabricating components using sheet metal and fabrication tools
- following manufacturer guides and instructions
- following work instructions
- holding and cutting materials accurately
- interpreting and completing workplace documentation
- interpreting mechanical drawings/diagrams and instructions used in the electrotechnology industry
- joining components using correct method and equipment
- laying out a drawing of mechanical components using engineering drawing convention

- marking out, cut, bend, drill and join sheet metal
- measuring, calculating and marking out a project accurately in accordance with workplace procedures
- selecting and using portable power tools correctly and safely
- selecting and using relevant hand tools correctly and safely
- tapping and threading metallic and/or non-metallic components
- using vernier calipers and micrometers to measure components
- maintaining a clean worksite and equipment
- modifying metal enclosures
- demonstrating safe drilling practices
- modifying plastic enclosures
- performing quality checks
- planning for dismantling, assembling and fabrication work.

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:

- mechanical drawing interpretation and sketching, including:
 - industry drawing standards of mechanical components
 - abbreviations and symbols used in drawing of mechanical components
 - interpretation of mechanical drawings commonly used in the electrotechnology industry (orthogonal projection, third angle - detail and assembly drawings, and pictorial views)
 - laying out a drawing of mechanical components using engineering drawing convention
 - freehand drawings of mechanical components showing all information needed for its manufacture/fabrication
- workshop planning and materials, including:
 - methods used to work safely in an industrial work environment
 - typical non-electrical hazards in the workplace
 - control measures for dealing with hazards identified
 - type of metallic and non-metallic materials used in the electrotechnology industry and application of the common materials
 - planning process
- measuring and marking out, including:
 - reasons for measuring and marking out
 - sustainable energy work practices related to reducing waste when marking out
- holding and cutting materials, including:
 - procedures for using a range of tools for cutting, shaping, and finishing metallic and non-metallic materials
 - safety procedures when using holding and cutting tools

- drills and drilling, including:
 - types of drills used in the electrotechnology industry
 - drilling metallic and non-metallic components
 - safe use of a bench drill
- tapping and threading including type and size of commonly used threads used in electrotechnology work
- general hand tools used in electrotechnology work
- joining techniques, including:
 - machine screws
 - welding, brazing or soldering techniques
- portable power tools in electrotechnology work, including:
 - applications of portable power tools
 - using portable power tools
 - fabricating components using power tools
 - requirements for testing and tagging cord connected electrical equipment
- compressed gas operated tools in electrotechnology work
- sheet metal work, including:
 - types of sheet metal materials used in the electrotechnology work
 - names and applications of the types of fabrication materials
 - techniques used in fabricating sheet metal, including cutting, bending, drilling/punching, joining and cutting mitres
 - marking out, cutting, bending, drilling and/or cutting and/or punching holes, joining and cutting mitred joints using sheet metal
 - sustainable energy work practices to reducing waste when fabricating using sheet metal
- low tolerance measurement, including:
 - tolerance
 - techniques in using vernier callipers and micrometers
- dismantling and assembly techniques, including procedures for ensuring the safe treatment of dismantled components
- relevant tools for specific tasks, including:
 - tapping and threading
 - general hand tools used in electrotechnology work
 - joining
 - portable electric power tools
 - dismantling and assembly techniques
 - measuring and marking out
 - holding and cutting metallic and non-metallic materials
 - sheet metal work

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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