



Australian Government

UEEIC0026 Provide solutions to fluid circuit operations

Release: 1

UEEIC0026 Provide solutions to fluid circuit operations

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 provide the solution to fluid circuit operations.

It includes identifying and providing the solution to fluid circuit operation problems, completing work and documenting solutions to the operation of fluid-controlled circuits. It also includes applying problem-solving procedures, using measuring instruments, applying appropriate circuit theorems, and providing solutions derived from measurements and calculations and justification for solutions.

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

UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications

Competency Field

Instrumentation & Control

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Identify fluid circuit

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

operation problem		are identified and applied
	1.2	Hazards are identified, risks are assessed and control measures implemented
	1.3	Circuit problems are identified from documentation and consultation with supervisor to determine scope of work
	1.4	Advice is sought from supervisor to ensure work is coordinated effectively with relevant person/s
	1.5	Sources of materials required for work are identified in accordance with workplace procedures
	1.6	Tools, equipment and testing devices required for work are obtained in accordance with workplace procedures and checked for correct operation and safety
2 Provide solutions to fluid circuit problem	2.1	WHS/OHS risk control work measures and procedures are followed
	2.2	Need to test or measure live circuits are determined in accordance with workplace procedures
	2.3	Circuits are checked and isolated in accordance with workplace procedures
	2.4	Fluid circuit problems are solved using measured and calculated values
	2.5	Unplanned situations are responded to in accordance with workplace procedures and approval of relevant person/s in a manner that minimises risk to personnel and equipment
	2.6	Problems are solved using sustainable energy principles without wasting materials, damaging apparatus circuits, the surrounding environment or services in accordance with workplace procedures
3 Complete work and document solutions to fluid circuit problem	3.1	WHS/OHS work completion risk control measures and procedures are followed
	3.2	Worksite is cleaned and made safe in accordance with workplace procedures
	3.3	Solutions used to solve circuit problems are justified and documented in accordance with workplace procedures

- 3.4** Work completion is documented and relevant person/s 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.

- Fluid power circuits as they apply to problems related to engineering diagnosis and development work functions must include two of the following types of circuit problems:
- determining the operating parameters of an existing circuit
 - altering an existing circuit to comply with specified operating parameters
 - developing circuits to comply with a specified function and operating parameters
- Pumps and associated control equipment must include the following:
- hydraulic
 - pneumatic

Unit Mapping Information

This unit replaces and is equivalent to UEENEEI125A Provide solutions to fluid circuit operations.

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 UEEIC0026 Provide solutions to fluid circuit operations

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 appropriate circuit theorems and providing solutions derived from measurements and calculations and justification for such solutions
- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements, including implementing risk control measures
- applying sustainable energy principles and practices
- completing work and documenting solutions to problem
- dealing with unplanned events/situations in accordance with workplace procedures in a manner that minimises risk to personnel and equipment
- documenting justification of solutions
- identifying fluid circuit operations
- isolating work area
- obtaining tools, equipment and testing devices
- preparing to provide solutions to fluid circuit problems
- providing solutions to circuit problems from measurements and calculations, including:
 - operation and construction of a basic hydraulic circuit
 - operation and construction of pneumatic circuit
- providing solutions to fluid circuit problems
- sourcing work materials
- testing or measuring live circuits
- using established problem-solving methods
- working with and referring to others to solve problems.

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:

- common terms and definitions used in fluid power systems

- applications of fluid power
- Pascal's law relevant to force transfer, multiplication and intensification
- mathematical relationships involving:
 - temperature and volume (Charles law)
 - pressure and volume (Boyles law)
- fluid power principles relevant to components and the identification of components
- operation of fluid power components
- interpretation of fluid system operation from circuit diagrams
- operation and construction of basic pneumatic circuit
- operation and construction of a basic hydraulic circuit
- routing maintenance procedures
- safety requirements
- fluid circuit operation problems
- relevant circuit theorems, measurements and calculations, including providing solutions derived from measurements
- relevant job safety assessments or risk mitigation processes, including risk control measures
- relevant manufacturer specifications
- relevant tools, equipment and measuring devices
- relevant WHS/OHS legislated requirements
- relevant workplace documentation
- relevant workplace policies and procedures
- sustainable energy principles and practices
- terms and their definitions used in fluid power systems.

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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