



Australian Government

UEPMNT304 Maintain mechanical pumps

Release: 2

UEPMNT304 Maintain mechanical pumps

Modification History

Release 2. Minor release to update superseded pre-requisite units.

Release 1. This is the first release of this unit of competency in the UEP Generation Training Package.

Application

This unit involves the skills and knowledge required to undertake the installation and maintenance of mechanical pumps (no more than basic alignment). Pump maintenance, including installation, is undertaken to ensure optimal performance of equipment and plant in a power generation facility.

Competency in this unit requires the ability to plan work, remove mechanical pumps for maintenance, maintain mechanical pumps, replace and/or install mechanical pumps and to report on all completed work tasks. Individuals will, in general, work under supervision in an electrical, electronic and/or mechanical equipment repair workshop or on site.

Power generation maintenance personnel are typically trained and authorised to receive permits to work.

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

Note: Workplace practice

The application of the skills and knowledge described in this unit may require a licence or training permit to practice in the workplace where work is carried out on gas and electrical installations. Additional conditions may apply under state and territory legislative and regulatory licensing requirements.

Pre-requisite Unit

MEM09002 Interpret technical drawing

MEM12023 Perform engineering measurements

MEM18001 Use hand tools

MEM18002 Use power tools/hand held operations

MEM18003 Use tools for precision work

MEM18006 Perform precision fitting of engineering components

MEM18055 Dismantle, replace and assemble engineering components

Competency Field

Maintenance

Unit Sector

Electricity generation

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Plan and prepare for work

PERFORMANCE CRITERIA

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

- 1.1** Requirements including scope of work and assigned roles are identified and confirmed with appropriate personnel or by site inspection, in accordance with workplace procedures
- 1.2** Work, Health and Safety (WHS)/Occupational Health and Safety (OHS) regulations, legislative requirements, industry standards, codes of practice, manufacturers' specifications, environmental obligations and workplace procedures are reviewed in preparation for work
- 1.3** Resources are obtained and inspected for compliance with job specification
- 1.4** Relevant plans, drawings and manuals are selected and used, in accordance with workplace procedures
- 1.5** Correct materials and components for work are obtained and inspected, in accordance with workplace procedures, for compliance with job specification
- 1.6** Work is planned, sequenced and prioritised, in accordance with workplace procedures
- 1.7** Potential hazards are identified and risk control measures are selected and implemented, in accordance with workplace procedures
- 1.8** Work area is prepared, in accordance with workplace procedures

2 Remove mechanical

- 2.1** Isolations are confirmed, where appropriate, in accordance with workplace procedures and site

pumps for maintenance		requirements
	2.2	Mechanical pump is disconnected, in accordance with the workplace procedures
	2.3	Mechanical pump is removed, in a manner which will assist in replacement, in accordance with workplace procedures
	2.4	Mechanical pump is inspected for abnormalities, in accordance with workplace procedures
3 Maintain mechanical pumps	3.1	Maintenance is performed, in accordance with manufacturers' specification and workplace procedures
	3.2	Mechanical pump is dismantled, in accordance with manufacturers' specification and workplace procedures
	3.3	Sketches are made, data is noted and components are marked for identification or reassembly, in accordance with workplace procedures
	3.4	New components are inspected for compliance, in accordance with workplace procedures and manufacturers' specifications
	3.5	Dimensional inspection is performed, with precision measuring devices, in accordance with workplace procedures, to ensure compliance with manufacturers' specifications and results are recorded
	3.6	Mechanical pump is reassembled, applying appropriate principles and techniques, in accordance with workplace procedures and manufacturers' specifications
	3.7	Modifications and/or alterations to mechanical pump are undertaken, in accordance with workplace procedures
4 Replace or install mechanical pumps	4.1	Equipment is prepared for pump replacement, in accordance with workplace procedures
	4.2	Mechanical pump is replaced, in accordance with workplace procedures and manufacturers' specification
	4.3	Mechanical pump is levelled, aligned, coupled and connected, in accordance with workplace procedures
	4.4	All fastenings are torqued, in accordance with workplace procedures and manufacturers' specifications

- 4.5 Machinery and/or plant, including mechanical pump, are given a test run, and are monitored and adjusted, as required, in accordance with workplace procedures and manufacturers' specifications
- 5 **Complete work**
 - 5.1 Work is completed, and appropriate personnel are notified, in accordance with workplace procedures
 - 5.2 Work area is cleared of waste, cleaned, restored and secured, in accordance with workplace procedures
 - 5.3 Tools and equipment are maintained and stored, in accordance with workplace procedures
 - 5.4 Work completion details are finalised, 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 Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to UEPMT304B Maintain mechanical pumps.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=1715b9fa-e7bd-441c-bb8d-cf22c9c825a8>

Assessment Requirements for UEPMNT304 Maintain mechanical pumps

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all the requirements of the elements, performance criteria and range of conditions on at least two separate occasions and includes:

- applying Work, Health and Safety (WHS)/Occupational Health and Safety (OHS) requirements including:
 - emergency procedures
 - hazard identification
 - risk control measures
 - safe working practices
- applying coupling levelling and alignment techniques
- communicating with personnel
- completing work in line with schedules
- determining data analysis techniques and tools
- dismantling and reassembling techniques
- identifying resources and materials
- implementing legislation, industry standards, codes of practice and regulations
- interpreting technical drawings, manufactures' specifications and manuals
- manufacturing and installing seals and gaskets
- recognising worn or damaged components
- removing and maintaining mechanical pumps
- replacing or installing mechanical pumps
- selecting materials and components
- using precision measuring equipment
- using removal and maintenance techniques and procedures
- using tools including specialised tools and jigs
- utilising permit to work system
- working with defined tolerances

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all the requirements of the elements, performance criteria and range of conditions and includes knowledge of:

- data analysis techniques and tools
- defined tolerances
- dismantle and reassemble techniques
- legislation, industry standards, codes of practice and regulations
- maintenance of mechanical pumps
- manufacture and installation of seals and gaskets
- manufacturers' specifications and manuals
- materials and components
- permit to work system
- precision measuring equipment
- resources and materials
- technical drawings
- techniques for coupling, levelling and alignment
- tools including specialised tools and jigs
- WHS/OHS legislated requirements including:
 - emergency procedures
 - hazard identification
 - risk control measures
 - safe working practices
- workplace documentation,
- workplace policies and procedures
- worn or damaged components

Assessment Conditions

As a minimum, assessors must satisfy applicable regulatory requirements, which include requirements in the Standards for Registered Training Organisations current at the time of assessment.

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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.

Assessment must occur in workplace operational situations. Where this is not appropriate, assessment must occur in simulated workplace operational situations that reflect workplace conditions. Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or other simulations

- applicable documentation including workplace procedures, industry standards, equipment specifications, regulations, codes of practice and operation manuals.
- relevant and appropriate materials, tools, equipment and personal protective equipment currently used in industry

Links

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