



Australian Government

Department of Education, Employment and Workplace Relations

FDFOP2045A Operate pumping equipment

Revision Number: 1

FDFOP2045A Operate pumping equipment

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency covers the skills and knowledge required to inspect, operate and monitor pumps and related equipment.
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Application of the Unit

Application of the unit	This unit has application in a food production environment. It typically targets the production worker responsible for applying basic operating principles to the operation and monitoring of pumping equipment. This unit should be selected where an operator requires an understanding of the operating principles and components of pumps/the pumping system and related equipment in order to carry out work requirements. When applied to the pharmaceutical industry, relevant Good Manufacturing Practice (GMP) codes apply and reference to food safety is replaced by GMP.
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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare pumps for operation	1.1. Pre-start checks on pumps and related equipment are carried out 1.2. Appropriate settings are selected to meet safety and production requirements 1.3. Condition of pumps and related equipment is monitored and maintenance requirements are identified and reported according to workplace reporting requirements
2. Monitor pump operation	2.1. Pumps and related equipment are started and monitored to identify variation in operating conditions 2.2. Corrective action is taken as required to maintain pump operation within equipment capacity and operating parameters
3. Complete pump operations	3.1. Pumps are prepared for cleaning and/or maintenance 3.2. Work is conducted in accordance with workplace environmental guidelines

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Ability to:

- access workplace information to identify pumping requirements
- select, fit and use personal protective clothing and/or equipment
- confirm supply of materials to be pumped and necessary services
- conduct pre-start checks, such as inspecting pump flanges, gaskets and seals to identify any signs of wear, checking related valve assemblies to identify any signs of leaks, cancelling isolation or lockouts as required (where pumps have variable settings, this involves selecting appropriate settings and confirming that related pipework is correctly configured for pumping requirements)
- monitor and adjust pump operation as required, such as identifying variation in amperage and adjusting pump speeds/flow rates to meet pumping requirements
- monitor supply and flow of materials to and from the pump
- follow isolation and lock out/tag out procedures as required to take pumps and related equipment off-line in preparation for cleaning and/or maintenance within level of responsibility (preparation of equipment may include flushing or pigging related lines and pipework, and removal of faceplate)
- respond to and/or report pump equipment failure within level of responsibility
- locate stop and reset functions on pumps
- maintain work area to meet housekeeping standards
- operate pumps using process control systems according to enterprise procedures
- conduct routine pump maintenance according to enterprise procedures
- clean pumps and related equipment according to enterprise procedures
- use oral communication skills/language competence to fulfil the job role as specified by the organisation, including questioning, active listening, asking for clarification and seeking advice from supervisor
- work cooperatively within a culturally diverse workforce

Required knowledge

Knowledge of:

- basic operating principles of pumps and related equipment, including main pump components, status and purpose of guards, pump system configuration, including valves, taps and pipework
- the effect of pumping system design on operating performance, including flow resistance, pressure and head
- operating capacities of pumps used in the work area, including different pump types as required to perform pumping operations where relevant

REQUIRED SKILLS AND KNOWLEDGE

- effect of raw material characteristics on pump performance, including variables such as soluble solids, temperature and viscosity
- effect of pump operating parameters on product/materials pumped
- corrective action required where pump operation is outside specified operating parameters
- typical equipment faults and related causes, including signs and symptoms of faulty equipment and early warning signs of potential problems
- services required
- isolation, lock out and tag out procedures and responsibilities
- operational health and safety (OHS) hazards and controls
- procedures and responsibility for reporting problems
- environmental issues and controls, including action required in the event of significant leaks or spills
- basic operating principles of process control where relevant, including the relationship between control panels and systems and the physical equipment
- routine pump maintenance requirements and procedures where relevant
- cleaning procedures where relevant

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Assessment must be carried out in a manner that recognises the cultural and literacy requirements of the assessee and is appropriate to the work performed. Competence in this unit must be achieved in accordance with food safety standards and regulations.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of ability to:

- conduct pre-start checks on pumps
- start, operate, monitor and adjust pumps to achieve required quality outcomes
- take corrective action in response to typical faults and inconsistencies
- complete workplace records as required
- apply safe work practices and identify OHS hazards and controls
- safely shut down equipment
- apply food safety procedures.

Context of and specific resources for assessment

Assessment must occur in a real or simulated workplace where the assessee has access to:

- personal protective clothing and equipment
- work procedures including advice on safe work practices, food safety, quality and environmental requirements
- information on equipment capacity and operating parameters
- pumps, related equipment and services
- materials to be pumped
- routine preventative maintenance schedule as required
- cleaning procedures, materials and equipment as required.

Method of assessment

This unit should be assessed together with core units and other units of competency relevant to the function or work role. Examples could be:

- FDFOP2004A Clean and sanitise equipment
- FDFOP2008A Operate a bulk liquid transfer process

EVIDENCE GUIDE	
	• FDFOP2011A Conduct routine maintenance • FDFOP2030A Operate a process control interface.
Guidance information for assessment	To ensure consistency in one's performance, competency should be demonstrated on more than one occasion over a period of time in order to cover a variety of circumstances, cases and responsibilities, and where possible, over a number of assessment activities.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Policies and procedures	Work is carried out according to company policies and procedures, regulatory and licensing requirements, legislative requirements, and industrial awards and agreements
Workplace information	Workplace information may include: • standard operating procedures (SOPs) • specifications • production schedules and instructions • manufacturers' advice • standard forms and reports
Pumps	Pumps may include but are not limited to: • centrifugal pumps • reciprocating or positive displacement pumps • diaphragm pumps • helical screw pumps • electrical submersible pumps
Related equipment	Related equipment may include: • valves • gauges • flow meters • pipework • screens • filters
Pump operation	Pump operation may require: • the use of process control screens and systems

Unit Sector(s)

Unit sector	Operational
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Competency field

Competency field	
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Co-requisite units

Co-requisite units		