



Australian Government

Department of Education, Employment and Workplace Relations

PMBPROD285A Operate computer controlled equipment

Revision Number: 1

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Modification History

Not applicable.

Unit Descriptor

Unit descriptor

This competency covers the operation, and monitoring of computer controlled machine or process and the solving of routine and non routine problems.

Application of the Unit

Application of this unit

This competency is typically performed by operators applying knowledge of materials, product purpose and processes to the operation of a range of NC, CNC and robot-operated machines or processes to make machined products that meet precise specifications.

The competencies covered by this unit would be demonstrated by an individual working alone or as part of a team.

The operator will:

- start up machine, to procedures
- operate machine/process to specification
- monitor machine/process operation
- detect problems and take appropriate action
- resolve technical difficulties in consultation with appropriate technical advisers.
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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisites

This unit has **no** prerequisites.

Employability Skills Information

Employability Skills

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

ELEMENT	PERFORMANCE CRITERIA
Elements describe the essential outcomes of a unit of competency	Performance Criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT ELEMENT	PERFORMANCE CRITERIA Performance Criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the Evidence Guide.
1. Obtain job instructions	1.1 Identify work requirements from production plan or request. 1.2 Check product, materials and equipment meet requirements for job(s). 1.3 Recognise requirements which may not be in accordance with usual practice. 1.4 Ask questions of appropriate person to confirm unusual practice. 1.5 Ensure housekeeping is to requirements. 1.6 Identify hazards associated with the job and take appropriate action.
2. Start up equipment, to procedures	2.1 Complete pre-start checks as required. 2.2 Start equipment as required.
3. Operate computer controlled equipment	3.1 Select and verify installed program is in accordance with job instructions. 3.2 Operate computer controlled equipment to procedures. 3.3 Identify and report malfunction. 3.4 Check production samples for compliance to specification. 3.5 Make adjustments to remedy faults and non-conformity as required. 3.6 Shut down equipment as required.
4. Monitor machine/process.	4.1 Monitor tool wear 4.2 Replace preset tools and adjust tool offsets in program as required.
5. Respond to routine problems to procedures.	5.1 Recognise known faults that occur during the operation. 5.2 Identify and take action on causes of routine faults. 5.3 Log problems as required. 5.4 Identify non-routine process and quality problems and take appropriate action.

Required Skills and Knowledge

This describes the essential skills and knowledge and their level required for this unit.

Application of the knowledge of the materials, equipment and process sufficient to recognise material and equipment conditions which may lead to out of specification production.

Knowledge of organization procedures, quality requirements at each production stage and relevant regulatory requirements along with the ability to implement them within appropriate time constraints and work standards.

Application of the knowledge of managing risks using the hierarchy of controls applied to the operation of computer controlled machines/processes.

Application of approved hazard control, safety procedures and the use of PPE in relation to handling materials, equipment operation and cleanup/

Knowledge of and skills in the operation of computer controlled machine/processes, sufficient for consistent production of quality products including:

- procedures for accessing computer controlled programs installed in the machine controller
- procedures for verifying the correct computer controlled program
- computer-controlled machine operating procedures
- typical equipment malfunctions
- procedures for reporting equipment malfunctions
- measuring instruments/techniques
- examples of tool wear and the effect on product or part specifications
- procedures to be followed once tool wear has been detected
- replacing preset tools
- adjustments to tool offsets
- the procedures for reporting product or part deviations
- effect of adjustments on part or product specifications.

Language, literacy and numeracy requirements

This unit requires the ability to read, interpret and follow information on written job instructions, specifications, standard operating procedures, charts, lists, drawings and other applicable reference documents

Writing is required to the level of completing workplace forms, and production reports.

Mathematical calculations are required such as for determining where to cut or bore into the work piece.

Evidence Guide

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, required skills and knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

A holistic approach should be taken to the assessment.

Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the Elements, Performance Criteria and skills and knowledge.

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

It is essential that competence is demonstrated in the knowledge and skills defined in this unit. These may include the ability to:

- competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge
- apply the competency in new and different situations and contexts
- identify and take appropriate action on problems and potential problems.

Consistent performance should be demonstrated. For example, look to see that:

- the process runs consistently and smoothly
- all safety procedures are always followed.

Assessment method and context

Assessment will occur on computer controlled equipment and will be undertaken in a work-like environment.

Competence in this unit may be assessed:

- by using direct observation, supervisor reports, project work, samples and questioning
- in a situation allowing for the generation of evidence of the ability to recognise, anticipate and solve problems
 - by using a suitable simulation and/or a range of case studies/scenarios
 - through a combination of these techniques.

In all cases it is expected that practical assessment will be combined with targeted questioning to assess the underpinning knowledge and theoretical assessment will be combined with appropriate practical/simulation or similar assessment. Assessors need to be aware of any cultural issues that may affect responses to questions.

Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Specific resources for assessment

This section should be read in conjunction with the Range Statement for this unit of competency. Resources required include suitable access to an operating plant or equipment that allows for appropriate and realistic simulation. A bank of case studies/scenarios and questions will also be required to the extent that they form part of the assessment method. Questioning may take place either in the workplace, or in an adjacent, quiet facility such as an office or lunchroom. No other special resources are required.

Access must be provided to appropriate learning and/or assessment support when required. Where applicable, physical resources should include equipment modified for people with disabilities.

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. Add any 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.

Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.

Context

This competency applies to all computer controlled machines/processes within the industry. A typical example might be a computer-controlled router such as might be used for trimming, shaping or making signs.

Procedures

All operations are performed in accordance with procedures.

Procedures include all relevant workplace procedures, work instructions, temporary instructions and relevant industry and government codes and standards.

Tools and equipment

This unit of competency includes use of equipment and tools such as:

- NC/CNC machines such as routers etc.
- components of NC/CNC equipment (eg machine control unit)
- relevant PPE

Hazards

Typical hazards include:

- noise
- debris
- heavy loads
- hazardous materials
- moving equipment
- equipment operations.

Problems

'Respond to routine problems' means 'apply known solutions to a limited range of predictable problems'. Typical process and product problems may include:

- machine malfunction
- tool wear
- cutting errors.

Appropriate action for problems outside of area of responsibility may be reported to an appropriate person.

Appropriate action for solving problems within area of responsibility includes asking questions and seeking assistance from appropriate persons/sources.

Variables

Key variables to be monitored include:

- speed
- output rate
- product integrity and general conformance to specification.
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Unit Sector(s)

Not applicable.