



Australian Government

MSFFM3045 Set up, operate and maintain computer numerically controlled (CNC) machining and processing centres

Release: 1

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Modification History

Release 1. Changes to code, application, elements, performance criteria, assessment requirements. Foundation skills added. Range of conditions removed. Assessment requirements changed.

Application

This unit describes the skills and knowledge required to set up, operate and maintain CNC machining and processing centres to manufacture products.

Workers with this competency follow established procedures, using discretion, judgment and problem solving to identify and resolve routine product and machine issues.

No licensing or certification requirements exist at the time of publication. Relevant legislation, industry standards and codes of practice within Australia must be applied.

Competency Field

Wood machining

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Prepare for task	1.1 Determine task requirements from work documentation 1.2 Identify and follow work health and safety requirements 1.3 Select material for machining and confirm it meets task and workplace quality requirements 1.4 Identify and confirm procedures for waste minimisation and energy efficiency

2. Set up for machining and processing	2.1 Set CNC program to meet task requirements 2.2 Confirm operational readiness of safety equipment and emergency stops, gauges, guards and controls prior to machine start-up 2.3 Complete machining and processing settings and adjustments in accordance with task requirements and machining and processing and tool manufacturer instructions 2.4 Check and confirm safe and effective operation of machines, cutting tools and jigs 2.5 Complete trial runs to check machine operation, accuracy and quality of finished work 2.6 Make final adjustments to CNC programs and equipment in accordance with task requirements and workplace procedures
3. Operate machining and processing centres	3.1 Operate machining and processing centres in accordance with its designed capacity and purpose, and to manufacturer recommendations 3.2 Monitor machine operation to ensure product quality and output 3.3 Check waste quantities and make adjustments to minimise waste 3.4 Identify items that do not meet quality requirements and recycle or discard in accordance with workplace procedures 3.5 Recognise problems with product or machine operation and resolve or report to appropriate persons in accordance with workplace procedures 3.6 Follow authorised changes in working procedures
4. Finalise task	4.1 Clean work area, safely dispose of waste and identify items for recycling in accordance with workplace procedures and environmental standards 4.2 Clean machinery, complete routine maintenance and leave in safe mode in accordance with workplace procedures 4.3 Identify, tag and report faulty equipment in accordance with workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

- Reading skills to interpret familiar workplace procedures, work documentation involving drawings and product specifications
- Writing skills to communicate information in familiar workplace documents

- Numeracy skills to measure and calculate lengths, areas and quantities and estimate material requirements
- Technology skills to use software features of CNC machinery.

Other foundation skills essential to performance are explicit in the performance criteria of this unit.

Unit Mapping Information

Release 1. Supersedes and is equivalent to MSFFM3022 Set up, operate and maintain CNC machining and processing centres.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0601ab95-583a-4e93-b2d4-cfb27b03ed73>

Assessment Requirements for MSFFM3045 Set up, operate and maintain computer numerically controlled (CNC) machining and processing centres

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Performance Evidence

There must be evidence the candidate has completed the tasks outlined in the elements and performance criteria of this unit, and demonstrated the ability to:

- set up, operate and complete operator maintenance on at least 1 CNC machining and processing centre to complete detailed profiling. This must include at least 3 different shapes and, for each of these shapes, using each of the following methods:
 - development and application of sub-program
 - development and application of parametric program
 - application of CAD/CAM functions.
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Knowledge Evidence

There must be evidence the candidate has knowledge of:

- workplace procedures for
 - work health and safety
 - quality assurance and tolerance levels
 - reporting of machinery faults and material defects
- uses of CNC machining and processing centres:
 - three axis machining centres
 - multi-tasking machining centres
 - flat-bed routers and mortice
- tools and equipment associated with CNC centres:
 - stand-alone or integral computing systems
 - machine-specific tools
- personal protective equipment (PPE) required for CNC machining and processing
- CNC practices and techniques, including workflow process
- characteristics of materials to be machined and processed and uses of products produced:
 - materials
 - solid timber

- manufactured board
- products:
 - vacuum formed doors
 - widening joints
 - framed construction
 - drawers and laminating veneers.

Assessment Conditions

Skills must have been demonstrated in the workplace or in a simulated environment that reflects workplace conditions and contingencies. The following conditions must be met for this unit:

- use of suitable facilities, equipment and resources required for performance evidence, including:
 - work documentation
 - unprocessed materials for processing
 - CNC controlled equipment
 - PPE
 - workplace procedures.

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors.

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