



Australian Government

Department of Education, Employment and Workplace Relations

LMFPPF3003B Set up and operate CNC machines

Revision Number: 1

LMFPF3003B Set up and operate CNC machines

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the competency to set up and operate CNC machines to produce components for picture frames.
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Application of the Unit

Application of the unit	
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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	Nil	

Employability Skills Information

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

<p>Elements describe the essential outcomes of a unit of competency.</p>	<p>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.</p>
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for work	1.1. Work instructions are used to determine job requirements, including; design, quality, materials, equipment and quantities 1.2. Workplace health and safety requirements, including personal protection needs, are observed throughout the work 1.3. Determine appropriate CNC program and settings 1.4. Material for machining is selected and inspected for appropriate quality 1.5. Machines, cutting tools and jigs are checked for safe and effective operation 1.6. Procedures are determined for minimising waste material and for maximising energy efficiency while completing the job 1.7. Safety equipment, including emergency stops, gauges, guards and controls are checked 1.8. Personal protective equipment is selected and used according to OHS procedures
2. Set up machines	2.1. CNC program is set to job requirements 2.2. Machine settings and adjustments are made in accordance with job requirements and machine and tool manufacturers' instructions 2.3. Trial runs are conducted to check machine operation and quality of finished work 2.4. Final adjustments are made to CNC programs and equipment according to workplace procedures
3. Operate machine	3.1. Machines are operated and monitored to ensure product quality and output 3.2. Waste quantities are checked and minimised 3.3. Problems with the required work are identified and reported to appropriate persons 3.4. Any authorised changes in working procedures are followed 3.5. Daily routine lubrication and adjustments for the equipment are completed
4. Complete work and maintain equipment	4.1. Items that do not meet quality requirements are repaired, recycled or discarded according to workplace procedures 4.2. Material that can be reused is collected and stored

ELEMENT	PERFORMANCE CRITERIA
	<p>4.3. Waste and scrap are removed following workplace procedures</p> <p>4.4. Equipment and work area are cleaned and inspected for serviceable condition in accordance with workplace procedures</p> <p>4.5. Unserviceable equipment is tagged and faults identified in accordance with workplace</p> <p>4.6. Equipment and tooling are maintained in accordance with workplace procedures</p>

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

- collect, organise and understand information related to work orders, basic plans, and safety procedures
- communicate ideas and information to enable confirmation of work requirements and specifications, coordination of work with work supervisor, other workers and customers, and the reporting of work outcomes and problems
- plan and organise activities, including the preparation and layout of the work area and the obtaining of equipment and materials to avoid any back tracking, workflow interruptions or wastage
- work with others and in a team by recognising dependencies and using cooperative approaches to optimise workflow and productivity
- use mathematical ideas and techniques to correctly complete measurements, calculate quantities and estimate material requirements
- use pre-checking and inspection techniques to anticipate cutting problems, avoid re-working and wastage
- use the workplace technology related to the operation of CNC machines, including programs, development of computer applications within the industry and precision measuring devices

Required knowledge

- workflow in relation to the operation of CNC machines
- identification of machines, processes and procedures
- procedures for reporting materials, product or equipment faults
- characteristics of materials used and uses of products produced
- workplace safety system requirements related to the operation of CNC machines

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.

Critical aspects of evidence

- Identify and operate CNC machine, including the use of safety cut outs and guards
- Apply safe handling requirements for equipment, products and materials, including use of personal protective equipment, safety and environmental protection equipment
- Interpret work order and locate and apply relevant information to set up, operate, adjust and monitor equipment used to produce components for picture frames.
- Follow work instructions, operating procedures and inspection practices to:
 - minimise the risk of injury to self and others
 - prevent damage to goods, equipment and products
 - maintain required production output and product quality
- As a minimum, in flat, traditional and reverse profiles (all 3), set up and demonstrate the operation of EITHER:
 - CNC mat board cutter in cutting the following patterns:
 - single and double
 - regular, oval, custom/regular
 - multi-holed; AND/OR
 - CNC mitre saws and CNC V-nailers to cut and join the following frames (at least one of them being a multi-angle frame) up to a width of 100 mm
 - synthetic
 - timber
 - aluminium
- Work effectively with others
- Modify activities to cater for variations in workplace contexts and environment

Resource implications

CNC machines, standard operating procedures, unprocessed materials and appropriate work area.

EVIDENCE GUIDE	
Method of assessment	<p>Assessment methods must confirm consistency of performance over time and in a range of workplace relevant contexts.</p> <p>Assessment should be by direct observation of tasks and questioning on underpinning knowledge.</p> <p>Assessment should be conducted over time and may be in conjunction with assessment of other units of competency which form a part of the job role.</p>
Context of assessment	<p>Assessment may occur on the job or in a workplace simulated facility with relevant CNC equipment, materials, work instructions and deadlines.</p>

Range Statement

RANGE STATEMENT	
<p>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.</p>	
Unit scope	<p>This unit covers work involved in the set up, operation, adjustment and monitoring of computer numerical controlled (CNC) machines used in the production of picture frame components such as mat boards and frame mouldings and the joining of frames.</p>
Unit context	<ul style="list-style-type: none"> • OHS requirements may include legislation, standards, material safety management systems and local safe operating procedures • Work is carried out in accordance with statutory requirements, environment legislation, manual handling procedures and relevant regulations and organisation insurance requirements • Work requires individuals to demonstrate some discretion, judgement and problem solving skills in the set up and operation of machines • Work may be performed in workplaces which are involved in the framing of a wide range of items, including, but not limited to: original artwork, reproductions, photographs, documents and three-dimensional items
CNC machines	<p>CNC machines used in the manufacture of picture frame components include, but are not limited to:</p> <ul style="list-style-type: none"> • CNC mat cutting machines • CNC mitre saws and CNC V-nailers
Material to be machined may include but is not limited to:	<ul style="list-style-type: none"> • mat boards • solid timber • composites • metal and alloy extrusion and synthetics
Personal protection equipment	<p>Personal protective equipment is to include that prescribed under legislation, regulations and</p>

RANGE STATEMENT	
	enterprise policies and practices.
Information and procedures	<ul style="list-style-type: none"> • Machine and tooling manufacturer specifications and operational procedures • Workplace procedures relating to the setting and operation of machinery • Work instructions, including job sheets, cutting lists, programs, plans, drawings and designs • Workplace procedures relating to reporting and communication

Unit Sector(s)

Unit sector	Picture Framing
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Competency field

Competency field	
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Co-requisite units

Co-requisite units		