



**Australian Government**

# **MSFUP3014 Set up, operate and maintain computer numerically controlled (CNC) cutting machines**

**Release: 1**

# MSFUP3014 Set up, operate and maintain computer numerically controlled (CNC) cutting machines

## Modification History

Release 1 - New unit of competency

## Application

This unit of competency covers setting up, operating, adjusting, monitoring and maintaining CNC machines used in the cutting of upholstery materials.

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

## Pre-requisite Unit

## Competency Field

## Unit Sector

Upholstery

## Elements and Performance Criteria

Elements describe the essential outcomes.

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

|                         |     |                                                                                                                         |
|-------------------------|-----|-------------------------------------------------------------------------------------------------------------------------|
| 1      Prepare for work | 1.1 | Work instructions are used to determine job requirements including design, quality, materials, equipment and quantities |
|                         | 1.2 | Work health and safety (WHS) requirements, including personal protection needs, are observed throughout the work        |
|                         | 1.3 | Appropriate CNC cutting program and settings are determined                                                             |
|                         | 1.4 | Material for cutting 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                                                         |
| 2 | Set up machines                      | 2.1 | CNC cutting program is set to job requirements                                                                                               |
|   |                                      | 2.2 | Machine settings and adjustments are made in accordance with job requirements and machine and tool manufacturer 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 CNC cutting 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, including machine operation/production, are identified and reported in accordance with workplace procedures |
|   |                                      | 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 re-used is collected and stored                                                                                         |
|   |                                      | 4.3 | Waste and scrap are removed following workplace procedures                                                                                   |
|   |                                      | 4.4 | Equipment and work area are cleaned and inspected for serviceable condition in accordance with workplace procedures                          |
|   |                                      | 4.5 | Unserviceable equipment is tagged and faults identified in accordance with workplace procedures                                              |
|   |                                      | 4.6 | Operator maintenance is performed on equipment and tooling is maintained in accordance with workplace                                        |

## procedures

### Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency. Detail on appropriate performance levels for each furnishing unit of competency in reading, writing, oral communication and numeracy utilising the Australian Core Skills Framework (ACSF) are provided in the Furnishing Training Package Implementation Guide.

### Range of Conditions

Specifies different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Range is restricted to essential operating conditions and any other variables essential to the work environment.

- |                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Unit context includes:</b>                  | <ul style="list-style-type: none"><li>• WHS requirements, including legislation, building codes, material safety management systems, hazardous and dangerous goods codes, and local safe operating procedures or equivalent</li><li>• work is carried out in accordance with legislative obligations, environmental legislation, relevant health regulations, manual handling procedures and organisation insurance requirements</li><li>• work requires individuals to demonstrate some discretion, judgement and problem solving</li></ul> |
| <b>CNC machines include:</b>                   | <ul style="list-style-type: none"><li>• fabric cutting machines</li><li>• leather cutting machines</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Upholstery materials include:</b>           | <ul style="list-style-type: none"><li>• fabrics</li><li>• leather</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Personal protective equipment includes:</b> | <ul style="list-style-type: none"><li>• that prescribed under legislation, regulations and enterprise policies and practices:<ul style="list-style-type: none"><li>• safety glasses/goggle</li><li>• hair nets</li><li>• ear muffs/plugs</li><li>• gloves</li><li>• footwear and protective clothing</li></ul></li></ul>                                                                                                                                                                                                                     |
| <b>Information and procedures include:</b>     | <ul style="list-style-type: none"><li>• workplace procedures relating to the use of tools and equipment</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                            |

- work instructions, including job sheets, cutting lists, plans, drawings and designs
- workplace procedures relating to reporting and communication
- manufacturer specifications and operational procedures

## Unit Mapping Information

Supersedes and is equivalent to LMFUP3014B Set up, operate and maintain CNC cutting machines.

## 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 MSFUP3014 Set up, operate and maintain computer numerically controlled (CNC) cutting machines**

## **Modification History**

Release 1 - New unit of competency

## **Performance Evidence**

- Interpret work order and locate and apply relevant information
- Apply safe handling requirements for equipment, products and materials, including use of personal protective equipment
- Identify materials used in the work process
- Follow work instructions, operating procedures and inspection processes to:
  - minimise the risk of injury to self or others
  - prevent damage to goods, equipment and products
  - maintain required production output and product quality
- Set up and program a CNC machine for the cutting task, load fabric and operate machine to accurately cut components for an upholstered furnishing item
- Use mathematical ideas and techniques to correctly complete measurements, calculate area and estimate material requirements
- Communicate ideas and information to enable confirmation of work requirements and specifications and the reporting of work outcomes and problems, interpret basic plans and follow safety procedures
- Avoid backtracking, work flow interruptions or wastage
- Work with others and in a team by recognising dependencies and using cooperative approaches to optimise work flow and productivity

## **Knowledge Evidence**

- Work flow in relation to the operation of CNC machines
- Identification of machines, processes and procedures, including maintenance requirements
- Procedures for reporting materials, product or equipment faults
- Quality requirements of components produced
- Characteristics of materials used and uses of products produced
- Workplace safety system requirements related to the operation of CNC machines

## **Assessment Conditions**

- Assessors must:
  - hold training and assessment competencies as determined by the National Skills Standards Council (NSSC) or its successors

- have vocational competency in the furnishing industry at least to the level being assessed with broad industry knowledge and experience, usually combined with a relevant industry qualification
- be familiar with the current skills and knowledge used and have relevant, current experience in the furnishing industry.
- Assessment methods must confirm consistency of performance over time rather than a single assessment event and in a range of workplace relevant contexts.
- Assessment must be by observation of relevant tasks with questioning on underpinning knowledge and, where applicable, multimedia evidence, supervisor's reports, projects and work samples.
- Assessment is to be conducted on single units of competency or in conjunction with other related units of competency. Foundation skills are integral to competent performance in the unit and should not be assessed separately.
- Assessment must occur on the job or in a workplace simulated facility with relevant process, equipment, materials, work instructions and deadlines.
- Access is required to CNC cutting machines, standard operating procedures, unprocessed materials and work orders.

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