



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **LMFFM3032B Produce and maintain cutting tools**

**Revision Number: 1**

## LMFFM3032B Produce and maintain cutting tools

### Modification History

Not applicable.

### Unit Descriptor

|                        |   |
|------------------------|---|
| <b>Unit descriptor</b> | This unit covers the competency to select and machine materials, to produce and maintain profile knives, and to maintain router cutters, straight knives and profile cutter heads used in woodworking machinery |
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### Application of the Unit

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| <b>Application of the unit</b> |  |
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### Licensing/Regulatory Information

Not applicable.

### Pre-Requisites

|                           |     |  |
|---------------------------|-----|--|
| <b>Prerequisite units</b> | Nil |  |
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### Employability Skills Information

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| <b>Employability skills</b> | This unit contains employability skills. |
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## Elements and Performance Criteria Pre-Content

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| <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 development, quality, materials, equipment, and quantities<br>1.2. Workplace health and safety requirements, including personal protection needs, are observed throughout the work<br>1.3. Material for machining is selected and inspected for quality<br>1.4. Machines, grinding tools and accessories are identified and checked for safe and effective operation<br>1.5. Procedures are determined for minimising waste material<br>1.6. Procedures are identified for maximising energy efficiency while completing the job   |
| 2. Set up machines  | 2.1. Machine settings and adjustments are made in accordance with job requirements and machine and tool manufacturer instructions<br>2.2. Grinding operations are checked for accuracy and quality of finished work<br>2.3. Necessary adjustments are made to machine settings  |
| 3. Operate machines | 3.1. Machine start-up procedure is carried out in accordance with manufacturers' instructions<br>3.2. Tooling is machined in accordance with manufacturers' instructions, safe handling procedures and standard workplace operating procedures<br>3.3. Machine is operated in accordance with its designed capacity and purpose, and to manufacturers' recommendations<br>3.4. Machine operation is monitored to ensure product quality and output<br>3.5. Waste quantities are checked and minimised<br>3.6. Items that do not meet quality requirements are repaired, recycled or discarded according to workplace procedures<br>3.7. Problems with the required work and/or the operation of the machine are identified and reported to appropriate persons<br>3.8. Daily routine lubrication and adjustments to the machines are made |

| <b>ELEMENT</b>                               | <b>PERFORMANCE CRITERIA</b>   |
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| 4. Clean up work area and maintain equipment | 4.1. Material that can be reused is collected and stored<br>4.2. Waste and scrap are removed following workplace procedures<br>4.3. Equipment and work area are cleaned and inspected for serviceable condition in accordance with workplace procedures<br>4.4. Unserviceable equipment is tagged and faults identified in accordance with workplace<br>4.5. Operator maintenance is completed in accordance with manufacturers' specifications and site procedures |

## 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 cutting tool operations, work orders, plans and safety procedures
- communicate ideas and information to enable confirmation of work requirements and specifications, coordination of work with site supervisor, other workers and customers, and the reporting of work outcomes and problems
- plan and organise activities, including the preparation and layout of the worksite 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 area and estimate material requirements
- use pre-checking and inspection techniques to anticipate production and maintenance problems, avoid reworking and avoid wastage
- use the limited workplace technology related to cutting tool operations, including tools, equipment and measuring devices

#### Required knowledge

- the types, characteristics, uses and limitations of grinding machines
- cutter development geometry and principles
- characteristics, properties and limitations of cutter steels
- grinding practices and techniques
- types, characteristics and limitations of grinding adhesives and processes
- workplace guidelines regarding acceptable tolerance levels
- workplace safety policies and procedures
- procedures for reporting machinery faults and material defects

## 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

- Interpret work order and locate and apply relevant information
- Apply safe handling requirements for equipment, products and materials, including use of personal protective equipment
- Read and interpret cutting lists and job specifications to prepare for work
- 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
- Complete the following:
  - develop and produce a set of two matching profile cutters, and
  - produce a set of profile cutters from a template the candidate has manufactured, or
  - maintain a router cutter and solid profile cutter head
- Conduct operator maintenance on the machines/ equipment
- Work effectively with others
- Modify activities to cater for variations in workplace context and environment

#### Resource Implications

Access to grinding machinery as identified in the Range Statement, standard operating procedures, and unprocessed materials.

#### Method of Assessment

Assessment methods must confirm consistency of performance over time and in a range of workplace relevant contexts.

Assessment should be by direct observation of tasks and questioning on underpinning knowledge.

Assessment should be conducted over time and may be

| <b>EVIDENCE GUIDE</b>        |   |
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|                              | in conjunction with assessment of other units of competency.  |
| <b>Context of Assessment</b> | Assessment may occur on the job or in a workplace simulated facility with relevant process equipment, materials, work instructions and deadlines. |



## Range Statement

| <b>RANGE STATEMENT</b>   |  |
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| <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> |  |
| <b>Machines are to include:</b>  | <ul style="list-style-type: none"> <li>• either a tool and cutter grinder or a profile grinder and also may include: a straight knife grinder and a bench or pedestal grinder</li> </ul>   |
| <b>Unit scope</b>  | <p>The work involves the identification of cutter design requirements, the geometrical development of cutter profiles, the inspection and identification of maintenance requirements, the selection and matching of abrasives for job requirements, the production of templates, the production and maintenance of detailed cutter profiles and the maintenance of straight cutters for a range of woodworking machines</p>  |
| <b>Unit context</b>  | <ul style="list-style-type: none"> <li>• OH&amp;S requirements include legislation, building codes, material safety management systems, hazardous substances and dangerous goods code and local safe operating procedures</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 skills in the set up and operation of machines</li> </ul> |
| <b>Materials are to include:</b>   | <ul style="list-style-type: none"> <li>• high speed steel and tungsten carbide</li> <li>• and may include other combination materials</li> </ul>   |
| <b>Personal protective equipment</b>   | <p>Personal protective equipment is to include that prescribed under legislation, regulations and enterprise policies and practices</p>  |
| <b>Information and procedures</b>  | <ul style="list-style-type: none"> <li>• Workplace procedures relating to the use of tools and equipment</li> <li>• Work instructions, including job sheets, cutting lists, plans, drawings and designs</li> </ul>   |

| <b>RANGE STATEMENT</b> |  |
|------------------------|--|
|                        | <ul style="list-style-type: none"> <li>• Workplace procedures relating to reporting and communication</li> <li>• Manufacturers' specifications and operational procedures</li> </ul> |

### Unit Sector(s)

|                    |                  |
|--------------------|------------------|
| <b>Unit sector</b> | Furniture Making |
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### Competency field

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| <b>Competency field</b> |  |
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### Co-requisite units

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| <b>Co-requisite units</b> |  |  |
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