

LMFFM3021B	Set up, operate and maintain drilling machines
Unit descriptor	This unit covers the competency to set up, operate and maintain drilling machines using their full technical potential and capacities. It encompasses and builds on the drilling machines and tasks covered in unit <i>LMFFM2010A Set up, operate and maintain basic static machines</i> .
Employability skills	This unit contains employability skills.
Unit sector	Furniture Making

ELEMENT	PERFORMANCE CRITERIA
Elements describe the essential outcomes of a unit of competency.	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.
1. Prepare for work	<ul style="list-style-type: none"> 1.1. Work instructions are used to determine job requirements, including design, quality, materials, equipment, and quantities 1.2. Cutting list and job specifications are read and interpreted 1.3. Workplace health and safety requirements, including personal protection needs, are observed throughout the work 1.4. Material for machining is selected and inspected for quality 1.5. Drilling machines, cutting tools and jigs are identified and checked for safe and effective operation 1.6. Procedures are determined for minimising waste material 1.7. Procedures are identified for maximising energy efficiency while completing the job
2. Set up machines	<ul style="list-style-type: none"> 2.1. Safety equipment, including emergency stops, gauges, guards and controls are checked 2.2. Drill settings and adjustments are made in accordance with job requirements and machine and tool manufacturer instructions 2.3. Trial runs are conducted to check drill operation, accuracy and quality of finished work 2.4. Necessary adjustments are made to drill settings
3. Operate machines	<ul style="list-style-type: none"> 3.1. Drill start-up procedure is carried out in accordance with manufacturers' instructions 3.2. Material to be drilled is positioned in accordance with manufacturers' instructions, tooling requirements, safe handling procedures and standard workplace operating procedures 3.3. Drill is operated in accordance with its designed capacity and purpose, and to manufacturers' recommendations 3.4. Drill operation is monitored to ensure product quality and output 3.5. Items that do not meet quality requirements are recycled or discarded according to workplace

	<p>procedures</p> <p>3.6. Problems with the required work and/or the operation of the drill are identified and reported to appropriate persons</p>
4. Clean up work area and maintain equipment	<p>4.1. Equipment and work area are cleaned and inspected for serviceable condition in accordance with workplace procedures</p> <p>4.2. Unserviceable equipment is tagged and faults identified in accordance with workplace</p> <p>4.3. Operator maintenance is completed in accordance with manufacturers' specifications and site procedures</p> <p>4.4. Tooling is maintained in accordance with workplace procedures</p>

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

- collect, organise and understand information related to drilling 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 drill depths and estimate material requirements
- use pre-checking and inspection techniques to anticipate drilling problems, avoid reworking and avoid wastage
- use the workplace technology related to drilling, including tools, equipment and measuring devices

Required knowledge

- the types, characteristics, uses and limitations of drilling machines
- drilling processes and techniques
- characteristics of materials and uses of products produced
- workplace guidelines regarding acceptable tolerance levels
- workplace safety policies and procedures
- procedures for reporting machinery faults and material defects

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. Bold italicised wording in the Performance Criteria is detailed below. 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.

Drilling machines are to include:	<ul style="list-style-type: none"> • single-head multi-spindle machines and may include: single-head • single-spindle vertical and horizontal machines and multi-head multi-spindle machines
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Material to be machined may include but is not limited to:	<ul style="list-style-type: none"> • solid timber • manufactured board • metal • glass
Unit scope	<p>Work involves reading and interpreting working drawing and manufacturers' hardware specification, drilling pattern selection, cutter fitting to meet job specification and the adjustment and use of pressures and stops</p>
Unit context	<ul style="list-style-type: none"> • OH&S requirements include legislation, building codes, material safety management systems, hazardous substances and dangerous goods code and local safe operating procedures • Work is carried out in accordance with legislative obligations, environmental legislation, relevant health regulations, manual handling procedures and organisation insurance requirements • Work requires individuals to demonstrate some discretion, judgement and problem solving skills in the set up and operation of machines • Competency may be demonstrated in workplaces involved in the manufacture of solid timber furniture, domestic furniture, commercial furniture, kitchen and bathroom cabinets and/or furniture components
Tools and equipment are to include machine-specific tools and may include, but not be limited to:	<ul style="list-style-type: none"> • screwdrivers • hammers • spanners • jigs and fixtures
Materials are to include:	<ul style="list-style-type: none"> • drilling machine consumables • oils and lubricants and trial materials
Personal protective equipment	<p>Personal protective equipment is to include that prescribed under legislation, regulations and enterprise policies and practices</p>
Information and procedures	<ul style="list-style-type: none"> • Workplace procedures relating to the use of tools and equipment • Work instructions, including job sheets, cutting lists, plans, drawings and designs • Workplace procedures relating to reporting and communication • Manufacturers' specifications and operational procedures

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 the relevant Training Package.	
Critical Aspects of Evidence	<ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> ◦ minimise the risk of injury to self or others ◦ prevent damage to goods, equipment and products ◦ maintain required production output and product quality • Identify, set up and operate at least the two different types of drills, a single-head multi-spindle machine and at least one other from the Range Statement (including the use of safety cut-outs and guards), and their application to a variety of materials • Conduct operator maintenance on the machines and associated equipment • Work effectively with others • Modify activities to cater for variations in workplace context and environment
Resource Implications	Access to drilling machinery as identified in the Range Statement, standard operating procedures, and unprocessed materials.
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.</p>
Context of Assessment	Assessment may occur on the job or in a workplace simulated facility with relevant process equipment, materials, work instructions and deadlines.