



Australian Government

Department of Education, Employment and Workplace Relations

LMFFDT4017A Set up and operate a wood turning lathe to produce off-centre work

Revision Number: 1

LMFFDT4017A Set up and operate a wood turning lathe to produce off-centre work

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the skills and knowledge required to maintain, set up and operate a woodturning lathe and holding devices used to produce off-centre work for the production of furniture and building work.
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Application of the Unit

Application of the unit	<p>This unit supports the attainment of skills and knowledge required for competent workplace performance in the wide variety of furniture maker operations. The competency applies to a work room and on site environment and involves application of skills and knowledge at the highly skilled craftsman or artisan level. These skills and knowledge are to be used within the scope of the individual's job and authority.</p> <p>This unit requires employability skills in planning and organising, technology use and problem solving in order to correctly set up wood turning lathe to perform specific woodwork operations. Communication skills are used to access and interpret work requirements and self management is applied to ensure ongoing performance of lathe is maintained.</p>
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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

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

Elements describe the essential outcomes of a unit of competency.	Performance Criteria describe the required performance needed to demonstrate achievement of the Element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the Range Statement. Assessment of performance is to be consistent with the Evidence Guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for work	1.1. Applicable legislative, OHS and organisational requirements and instructions relevant to lathe operations are verified and complied with 1.2. Work instructions are used to determine job requirements including design, quality, materials, equipment and quantity 1.3. Material for turning is selected and inspected for safety 1.4. The wood lathe, holding devices, tools and gauges are identified and checked for safe and efficient operations 1.5. Procedures are determined for minimising waste 1.6. Procedures are identified for maximising energy efficiency while completing the job
2. Set up machines with holding devices	2.1. Lathe speed is selected in accordance with job requirements, safety considerations and manufacturers' recommendations 2.2. Holding devices are mounted in accordance with job requirements and safety considerations 2.3. Necessary gauges and tools are selected for job
3. Operate lathe	3.1. Lathe start up instructions are carried out in accordance with manufacturer instructions 3.2. Material is mounted in lathe in accordance with manufacture instructions, safe handling procedures and standard workplace operating procedures 3.3. Lathe is operated in accordance with its designed capacity, purpose and to manufacturers' recommendations 3.4. Lathe operation is monitored to ensure produce quality and output 3.5. Waste quantities are checked and minimised 3.6. Items that do not meet quality requirements are repaired, recycled or discarded according to workplace procedures 3.7. Problems with the required work and/or operation of the machine are identified and reported to the appropriate person
4. Clean up work area and maintain equipment	4.1. Materials that can be reused are collected and stored 4.2. Waste and scraps are removed following workplace procedures 4.3. Equipment and work area are cleaned and inspected for serviceable condition in accordance with workplace procedures 4.4. Unserviceable equipment is tagged and faults identified in accordance with workplace procedures 4.5. Operator maintenance is completed in accordance with manufacturer specifications and workplace

Required Skills and Knowledge

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 work orders, basic 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
- interpret and apply technical and quality information in the identification, selection and maintenance of wood turning tools
- interpret, apply and elaborate on specifications for wood turning products
- work with others and in a team by recognising dependencies and using cooperative approaches to optimise work flow and productivity
- use pre-checking and inspection techniques which relate to hand carving to avoid re-work and wastage
- identify the most appropriate tool, the specifications and the methods for maintaining the high precision needs throughout the wood turning sequence
- recognise and respond to circumstances outside instructions or previously recognised personal competence
- adapt designs to incorporate the impact of wood carving operations on the intended materials
- plan and organise activities including the preparation and layout of the worksite and the obtaining of equipment and materials to avoid any back tracking, work flow interruptions or wastage
- use mathematical ideas and techniques to correctly complete measurements, calculate area and estimate other material requirements
- clarify and confirm work instructions
- plan work within given task parameters
- accept responsibility for given tasks
- set, monitor and satisfy personal work goals
- satisfy the competency requirements for the job
- maintain current knowledge of wood turning tools and materials
- maintain current knowledge of equipment installation techniques
- seek learning opportunities
- use the limited workplace technology related to the selection and high precision use of wood turning tools and equipment.

Required knowledge

- State or Territory OHS legislation, regulations, standards and codes of practice relevant to wood turning
- terminology covering wood turning operations and materials

REQUIRED SKILLS AND KNOWLEDGE

- types, characteristics, used and limitations of timber species for wood turning
- techniques for the design and documentation of specifications for wood turned products
- organisational and site standards, requirements, policies and procedures for turning of wood
- types, characteristics, uses, limitations and maintenance requirements of the range of tools used in wood turning
- processes for evaluating the quality of wood turning tools in terms of specifications, safety, maintainability and commercial reputation
- the range of commonly used wood turning techniques
- established communication channels and protocols
- problem identification and resolution
- workplace safety requirements and OHS legislation
- work flow within the workplace.

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, the Range Statement and the Assessment Guidelines for the relevant Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- Comply with legislation, regulations, standards, codes of practice and established safe practices and procedures for the use of hand tools
- Interpret product design and locate and apply relevant information
- Apply safe handling requirements for equipment, products and materials, including use of personal protective equipment
- Follow work instructions, operating procedures and inspection practices to:
 - prevent damage to goods, equipment and products
 - maintain required production output and product quality
 - minimise the risk of injury to self and others
- Identify, set up and maintain holding devices, safe speed selection and balance limitations to complete the following:
 - freehand turn articles between centres that have multiple axis
 - complete a minimum of eight hand turned articles to detail between centres
 - manufacture templates and gauges
 - scroll cut material prior to turning
 - complete a minimum of four hand turned articles to detail with grain at 90° to the axis of the lathe
- Work effectively with others
- Modify activities to cater for variations

Context of, and specific resources for assessment

- The application of competency is to be assessed in the workplace or simulated workplace
- Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints
- Assessment of essential underpinning knowledge, other than confirmatory questions, will usually be conducted in an off-site context
- Assessment is to comply with relevant regulatory or Australian Standards requirements
- The following resources should be made available:
 - workplace location or simulated workplace

EVIDENCE GUIDE	
	<ul style="list-style-type: none"> • eight significant wood turning requirements including design brief or specification • a range of optional timbers • range of quality wood turning tools • materials for the preparation of the product for finishing
Method of assessment	<ul style="list-style-type: none"> • Assessment must satisfy the endorsed assessment guidelines of the Furnishing Industry Training Package • Assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge • Assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application • Assessment may be applied under project related conditions (real or simulated) and require evidence of process • Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances • Assessment may be in conjunction with assessment of other related units of competency
Guidance information for assessment	

Range Statement

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.

Legislative requirements	<ul style="list-style-type: none"> are to be in accordance with applicable legislation from all levels of government that affect organisational operation requirements may include but not be limited to award and enterprise agreements, industrial relations, Australian Standards, confidentiality and privacy, OHS, the environment, equal opportunity, anti-discrimination, relevant industry codes of practice, duty of care and heritage
OHS requirements	<ul style="list-style-type: none"> are to be in accordance with Commonwealth, State or Territory legislation and regulations, organisational safety policies and procedures requirements may include but not be limited to the use of personal protective equipment and clothing, fire fighting equipment, first aid equipment, hazard and risk control and elimination, control of hazardous materials and substances, manual handling, including lifting and carrying
Organisational requirements	<ul style="list-style-type: none"> may include but not be limited to legal, organisational and site guidelines, policies and procedures relating to own role and responsibility, quality assurance, procedural manuals, quality and continuous improvement processes and standards, OHS, emergency and evacuation, ethical standards, recording and reporting, access and equity principles and practices, equipment use, maintenance and storage, environmental management (waste disposal, recycling and re-use guidelines)
Lathes	<ul style="list-style-type: none"> are to be manually operated using hand held tools
Instructions	<ul style="list-style-type: none"> may include but not be limited to workplace procedures relating to the use and operation of tools and equipment, production planning figures, workplace instructions including job sheets, plans, specifications, drawings and designs, workplace procedures relating to reporting and communications, and manufacturer instructions for the use of equipment and materials
Procedures	<ul style="list-style-type: none"> may include but not be limited to drawing articles from plans or samples, manufacturing pencil and scratch gauges, freehand grinding of tools and the set up and operation of the lathe to produce turned components

RANGE STATEMENT**Holding devices**

- are to be specific to the job and are to include faceplates, scroll checks and function checks

Unit Sector(s)**Unit sector**

Furniture design and technology.

Competency field**Competency field****Co-requisite units****Co-requisite units**