



**Australian Government**

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

# **LMTTX3015A Set up, adjust and maintain tufting looms**

**Revision Number: 1**

## **LMTTX3015A Set up, adjust and maintain tufting looms**

### **Modification History**

Not applicable.

### **Unit Descriptor**

**Unit descriptor** This unit covers the skills and knowledge required to set up, adjust and maintain tufting looms used in the production of tufted textile products (such as carpets) in a textile enterprise including set up for production, problem solving, repairs and preventative maintenance.

## Application of the Unit

### Application of the Unit

This unit applies to the setting up of tufting machines and related equipment for production and the maintenance repair, adjustment and testing of tufting looms and related equipment to ensure efficient working order. Discretion and judgement may be required, for both self and others, in planning and selecting processes, procedures or outcomes

This unit does not cover all repair and adjustment functions associated with tufting looms. In particular skills associated with general engineering (fitting), electrical and electronic systems, and fluid power systems may be required according to the nature of the set up, repair or adjustment, and the workplace practices of a particular enterprise.

Work may be conducted in a variety of environments, such as operational workplace activities, restricted space, hazardous, controlled or exposed conditions.

The application of this unit is according to OHS practices of the enterprise and workplace practices, which may include:

- requirements prescribed by legislation, awards, agreements and conditions of employment
- standard operating procedures
- work instructions
- oral, written and visual communication
- quality practices, including responsibility for maintenance of own work quality and contribution to quality improvement of team or section output
- housekeeping
- tasks related to environmental protection, waste disposal, pollution control and recycling

This unit requires the application of skills associated with planning and organising of resources and machinery for the required work, as well as applying skills and knowledge of machines and equipment to ensure production outcomes are met. Initiative and enterprise, and problem solving are key skills required to ensure operational efficiency of machines. This unit also requires an ability to communicate in writing and verbally with others.

## Licensing/Regulatory Information

Not applicable.

## **Pre-Requisites**

### **Prerequisites**

## **Employability Skills Information**

**Employability Skills** This unit contains employability skills.

## **Elements and Performance Criteria Pre-Content**

Not applicable.

## Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Set up <i>machines</i> for tufting operations	<p>1.1 <i>Specifications and production requirements</i> are interpreted to determine machine settings</p> <p>1.2 Documentation relating to machine settings, operation and maintenance is interpreted, referenced and applied according to the needs of the task</p> <p>1.3 Tools appropriate for the loom or <i>machine</i> are selected, prepared and used in a safe and effective manner to set up machine for operation</p> <p>1.4 Loom is set up for operation according to required specifications, including fixing of required attachments, in order to run at optimum quality and efficiency levels</p> <p>1.5 <i>Loom settings</i> are checked to meet production requirements</p> <p>1.6 Tufting <i>yarn</i> beams are identified, checked and <i>joined</i> into the loom according to manufacturer specifications</p> <p>1.7 Tufting operators are instructed of any special operating requirements</p>
2 Test machine settings	<p>2.1 Tufting machine is operated in accordance with manufacturer and workplace instructions to test settings against specifications and operational standards</p> <p>2.2 Yarn sample is produced and examined to identify required adjustments to machine settings or pattern specifications</p> <p>2.3 Quality tests are conducted or organised as required to ensure optimal production outcomes are achieved</p> <p>2.4 Required adjustments are identified and documented and machine settings adjusted accordingly</p> <p>2.5 Operation is monitored in all production stages</p>
3 Diagnose and fix tufting problems	<p>3.1 Tufting machine operations are monitored to assess operational efficiency in accordance with <i>OHS procedures</i></p> <p>3.2 Yarn is assessed to identify <i>faults</i> and to assess impact on operational problems</p> <p>3.3 Problems and faults are identified and analysed to determine root cause</p> <p>3.4 Diagnosis is established and strategy for repair or replacement of machine components is developed</p> <p>3.5 Tufting machine is returned to optimal performance through repair of faulty operation</p> <p>3.6 Tufting machine is operated to ensure problems have been fixed</p>
4 Communicate operational	<p>4.3 Records are maintained and reports prepared where necessary</p> <p>4.3 Adjustments to machines and patterns are documented and</p>

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b>
information	discussed with appropriate personnel 4.3 Operational instructions are documented

## Required Skills and Knowledge

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

Demonstrates knowledge of:

- tufting methods and the various types of yarn outcomes
- yarn twist and application
- fibre types and their method of production
- fibre parameters
- yarn counts
- factors affecting machine performance: yarn strength, sizing, ambient conditions
- yarn quality indicators
- machine manufacturer specifications
- safety and environmental aspects of relevant enterprise activities
- OHS practices, including hazard identification and control measures
- quality practices
- workplace practices
- recording and reporting practices

Demonstrates skills to:

- set and operate tufting machines
- test, analyse and prepare samples
- read, interpret and follow information on work specifications, standard operating procedures and work instructions and other reference material
- maintain accurate records
- communicate within the workplace
- sequence operations
- meet specifications
- clarify and check task-related information
- carry out work according to OHS practices

## 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 Training Package.

<b>Critical aspects of evidence to be considered</b>	Demonstrates skills and knowledge to: <ul style="list-style-type: none"><li>• interpret production specifications accurately</li><li>• set and operate tufting machine safely and correctly</li><li>• perform sample runs and analyse results</li><li>• identify and make appropriate readjustments</li><li>• determine root cause of operational problems</li><li>• solve operational problems</li><li>• apply workplace health and safety policies in production operations</li><li>• maintain accurate records</li></ul>
<b>Consistency in performance</b>	Consistently applies skills and knowledge when: <ul style="list-style-type: none"><li>• organising work</li><li>• completing tasks</li><li>• identifying improvements</li><li>• using workplace practices</li><li>• using OHS practices</li><li>• recording and reporting accidents and incidents</li><li>• assessing operational readiness of equipment used and work processes</li><li>• recognising and adapting to cultural differences in the workplace, including modes of behaviour and interactions</li><li>• completing work systematically with attention to detail without damage to goods and equipment</li></ul>
<b>Resource implications</b>	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
<b>Context for assessment</b>	Assessment may occur on the job or in an appropriately simulated environment.
<b>Interdependent Assessment</b>	This unit may be assessed independently or in combination with other relevant units.

## 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, if used 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/regulatory requirements All work must comply with relevant Federal and State or Territory legislative or regulatory requirements.

Specifications and production requirements may include

- beaming
- primary backing
- backing type and specifications
- yarn type and specifications
- pile height
- beat up
- level loop
- cut pile
- cut and pile
- loop pile
- colour
- pattern
- size
- stitch rate
- tension
- hard twist pile
- blends
- frieze (textured/bulk)
- Saxony (plush)
- Berber (thick yarns)
- sisal/cord (textured)

Machines may include

- winding machines
- finishing equipment
- other ancillary equipment

Yarn may be

- wool
- nylon
- acrylic
- polypropylene
- polyester
- blends

Joined may include

- splicing



Loom settings may include	<ul style="list-style-type: none"><li>• weavers knot</li><li>• double weavers knot</li><li>• electronic settings</li><li>• automated setting</li><li>• mechanical settings</li></ul>
OHS practices	<p>OHS practices must include hazard identification and control, risk assessment and implementation of risk reduction measures specific to the tasks described by this unit, and may include:</p> <ul style="list-style-type: none"><li>• manual handling techniques</li><li>• standard operating procedures</li><li>• personal protective equipment</li><li>• safe materials handling</li><li>• taking of rest breaks</li><li>• ergonomic arrangement of workplaces</li><li>• following marked walkways</li><li>• safe storage of equipment</li><li>• housekeeping</li><li>• reporting accidents and incidents</li><li>• other OHS practices relevant to the job and enterprise</li></ul>
Faults may include	<ul style="list-style-type: none"><li>• holes</li><li>• j-cutting</li><li>• low-cut yarn</li><li>• incorrect yarn height</li><li>• foreign matter</li><li>• creasing of primary backing or carpet</li><li>• lines in carpet</li><li>• marks</li><li>• broken looper</li><li>• choppy face</li></ul>

## Unit Sector(s)

**Sector** Textile Production