



Australian Government

MSTTX3012 Identify and deal with mechanical and low voltage electrical faults in textile machinery

Release: 1

MSTTX3012 Identify and deal with mechanical and low voltage electrical faults in textile machinery

Modification History

Release 1. New Unit supersedes the following units:

- LMTTX3018A Undertake electronic fault finding on textile machinery
- LMTTX3019A Identify and correct mechanical faults in looms and other weaving equipment

Not equivalent

Application

This unit of competency covers the skills and knowledge required to identify and deal with routine mechanical and low voltage electronic faults in textile machinery. It includes repair or replacement of the faulty component or referral to other personnel.

The unit of competency applies to identifying and correcting mechanical faults and rectifying low voltage electrical problems in textile manufacturing machinery.

It does not include 240 Volt or higher equipment and circuits or higher level engineering skills. Work covered by engineering requirements and restricted electrical licences will require additional training to meet licence requirements.

Discretion and judgement may be required, for both self and others, in planning and selecting processes, procedures or outcomes.

Work may be conducted in a variety of environments including operational workplace activities, restricted space, hazardous, controlled or exposed conditions and day or night conditions.

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

Pre-requisite Unit

Nil

Competency Field

Textile production

Unit Sector

Not applicable

Elements and Performance Criteria

Elements describe the essential outcomes.

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

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|---|---|--|
| 1 | Determine job requirements | 1.1 Follow standard operating procedures (SOPs) |
| | | 1.2 Comply with work health and safety (WHS) requirements at all times |
| | | 1.3 Use appropriate personal protective equipment (PPE) in accordance with SOPs |
| | | 1.4 Identify job requirements from specifications, drawings, job sheets or work instructions |
| | | |
| 2 | Identify mechanical or low voltage electrical faults | 2.1 Consult operator to determine machine operation and condition prior to breakdown |
| | | 2.2 Conduct visual check of textile machinery and product to identify any obvious damage or faulty components |
| | | 2.3 Consult engineering drawings, product specifications and operation manual, where necessary |
| | | 2.4 Use appropriate test equipment to test circuits, sensors and other components to determine if fault is electronic in nature |
| | | 2.5 Identify and isolate faulty components |
| | | |
| 3 | Assess and correct mechanical faults | 3.1 Use tools and equipment to adjust machine in accordance with workplace procedures |
| | | 3.2 Dismantle parts and assess for disposal, reconditioning or continued use |
| | | 3.3 Recondition parts where required or fit, adjust and test replacement parts according to manufacturer specifications and workplace requirements |
| | | 3.4 Check equipment for correct operation and advise operator of any special requirements as a consequence of the repair |
| | | 3.5 Assess machine condition and estimate schedule |

required for overhaul and recondition work

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|---|--|-----|--|
| 4 | Assess and repair low voltage electrical faults | 4.1 | Assess condition of wiring and repair wiring faults according to workplace procedures |
| | | 4.2 | Dismantle faulty system components according to manufacturer/site specifications and SOPs |
| | | 4.3 | Assess and replace or adjust faulty electronic equipment components |
| | | 4.4 | Consult and/or refer repair to relevant personnel, where required |
| 5 | Check textile equipment for correct operation | 5.1 | Operate equipment to determine if working correctly |
| | | 5.2 | Produce sample, as required, to determine that all sensors work and program instructions and product specifications are followed |
| | | 5.3 | Advise operator of any special requirements as a consequence of the repair |
| | | 5.4 | Document repair or replacement according to standard procedures |

Foundation Skills

This section describes those required skills (language, literacy and numeracy) that are essential to performance.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for 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.

Workplace procedures include one or more of the following:

- requirements prescribed by legislation, awards, agreements and conditions of employment
- SOPs

- work instructions
- PPE
- 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
- WHS practices

Australian Standards include:

- the relevant industry or Australian Standards that are current at the time this unit is being undertaken

Repair wiring faults includes one or more of the following:

- isolating wiring faults
- replacing cables/wires of appropriate size and insulation quality
- preparing components, terminals and connections according to industry and enterprise requirements
- preparing wiring terminations
- testing circuit components for correct operation in accordance with standard operating procedures

Machine settings include one or more of the following:

- electronic settings
- automated setting
- mechanical settings

WHS practices:

WHS practices must include hazard identification and control, risk assessment and implementation of risk reduction measures specific to the tasks described by this unit, and include one or more of the following:

- manual handling techniques
- SOPs
- PPE
- safe materials handling
- taking of rest breaks
- ergonomic arrangement of workplaces
- following marked walkways
- safe storage of equipment
- housekeeping
- reporting accidents and incidents

- other WHS practices relevant to the job and enterprise

Unit Mapping Information

Release 1. New Unit supersedes the following units:

- LMTTX3018A Undertake electronic fault finding on textile machinery
- LMTTX3019A Identify and correct mechanical faults in looms and other weaving equipment

Not equivalent

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=a203ec5c-de7d-406b-b3e1-8f1a9b76e92e>

Assessment Requirements for MSTTX3012 Identify and deal with mechanical and low voltage electrical faults in textile machinery

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria, and include:

- reading and following work instructions, standard operating procedures (SOPs), safe work practices
- applying relevant standards
- correctly interpreting production specifications, schematics and manufacturer instructions of identified machinery
- using appropriate hand and power tools and test equipment
- fault-finding in low voltage electronic circuit and components
- identifying mechanical faults and determining appropriate repair strategies
- dismantling, repairing and/or replacing mechanical components of textile equipment according to manufacturer specifications and workplace procedures on at least two (2) occasions
- using test equipment to determine whether faults are electronic
- assessing and repairing wiring faults according to workplace procedures on at least two (2) occasions
- dismantling, replacing or adjusting electronic components of textile equipment according to manufacturer specifications and workplace procedures on at least two (2) occasions
- performing sample runs and analysing results to determine if equipment is working correctly
- identifying and making appropriate readjustments to electronic controls and systems
- undertaking or scheduling machine overhaul or reconditioning
- applying workplace procedures
- maintaining accurate records.

Knowledge Evidence

Evidence must be provided that demonstrates knowledge of:

- safe work practices and procedures and use of personal protective equipment (PPE)
- relevant Australian Standards

- textile machinery:
 - spinning
 - carding
 - tufting
 - winding
 - weaving
 - knitting
 - dyeing
 - sewing
 - finishing
 - packing
- role and relationship of electronic components found in textile machinery input devices, programmable logic controllers (PLCs), computers and other processors, display devices, sensors, timers, cables and wiring, cable harnesses, control systems and loom operation
- textile terminology and textile processes
- setting up and adjustment requirements for the textile equipment in the enterprise and the range of textiles or garments produced
- machine components and maintenance schedule
- mechanical and electrical tools and equipment:
 - hand and power tools
 - analogue and digital measuring equipment
 - grinders
 - analogue and digital electronic measuring equipment
 - mechanical measuring equipment and gauges
- quality requirements for the enterprise and product
- equipment manufacturer specifications
- work health and safety (WHS) and environmental requirements for enterprise activities
- workplace procedures and reporting processes
- fibre and yarn characteristics affecting machine performance, for example, yarn strength, sizing, ambient conditions and count
- faults that are caused by electronic equipment, such as control systems and sensors
- operation of identified spinning, tufting, carding, knitting, sewing, dyeing, finishing and ancillary equipment
- workplace procedures
- recording and reporting practices.

Assessment Conditions

- Assessors must:
 - satisfy the assessor competency requirements that are in place at the time of the assessment, as set by the VET regulator

- have vocational competency in Identifying and dealing with mechanical and low voltage electrical faults in textile machinery, at least to the level being assessed, with relevant industry knowledge and experience.
- Assessment should occur in operational workplace situations. Where this is not possible, or where personal safety or environmental damage are limiting factors, assessment must occur in a sufficiently rigorous simulated environment reflecting realistic operational workplace conditions. This must cover all aspects of workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications associated with this unit.

Links

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