



Australian Government

Department of Education, Employment and Workplace Relations

LMTTX3017A Set up, adjust and maintain industrial sewing machines

Revision Number: 1

LMTTX3017A Set up, adjust and maintain industrial sewing machines

Modification History

Not applicable.

Unit Descriptor

Unit descriptor This unit covers the skills and knowledge required to set up, adjust and maintain industrial sewing machines used in a textile enterprise including set up for production and the conduct of sample runs, problem solving, repair and preventative maintenance.

Application of the Unit

Application of the Unit

This unit applies to the setting up of industrial sewing machines for production and the repair, adjustment, maintenance and testing of machines to ensure efficient working order. The unit covers operator controlled single station industrial sewing machines and high volume automatic and manually operated hem, selvedge and embroidery sewing machines.

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 maintenance, repair and adjustment functions associated with industrial sewing machines. 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 and 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 industrial sewing machine for production operation or product change	1.1 Production specifications and work orders are interpreted to determine optimum sewing machine settings for product and operator. 1.2 Documentation relating to machine settings, operation and maintenance is interpreted, referenced and applied according to the needs of the task and operator 1.3 Tools appropriate for the machine and task are selected, prepared and used in a safe and effective manner to set up machine for operation 1.4 Machine is set up according to required specifications for operation or product change including fixing of required attachments and to run at optimum quality and efficiency levels 1.5 Needle or needles are threaded, checked and tension set for planned sewing operations 1.6 Oil reservoir and lubrication system is checked prior to operation 1.7 Fabric feed system is checked prior to operation 1.6 Sewing machine operators are instructed of any special operating requirements
2 Test industrial sewing machine settings	2.1 Sewing machine is operated in accordance with manufacturer's and workplace instructions to test settings against specifications and operational standards 2.2 Sewn product or sample is examined to confirm desired sewing motion and stitch is achieved and to identify required adjustments to machine settings or production specifications 2.3 Quality tests are conducted or organised as required to ensure optimal production outcomes are achieved 2.4 Required adjustments are identified and documented and machine settings adjusted accordingly
3 Diagnose and fix sewing problems	3.1 Industrial sewing machine operation is monitored to assess operational efficiency and safe operation in accordance with OHS procedures 3.2 Discuss the nature and extent of sewing faults with operator 3.3 Sewn product is assessed to identify sewing faults 3.4 Problems and faults are identified and analysed to determine root cause 3.5 Fault diagnosis is established and strategy for repair is determined 3.6 Sewing machine is returned to optimal performance through readjustment of settings or repair or replacement of faulty machine parts

ELEMENT	PERFORMANCE CRITERIA
	3.7 Sewing machine is tested and sample produced to ensure problems have been fixed
4 Communicate operational information	4.1 Records are maintained and reports prepared where necessary 4.2 Adjustments to machines are documented and discussed with appropriate personnel 4.3 Instructions to operators are given and documented

Required Skills and Knowledge

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

Demonstrates knowledge of:

- sewing methods and the various types of sewing operations, lock, chain, overlock cover and other types of stitches,
- fabrics and knit effects
- threads
- pattern specifications
- factors affecting machine performance, including thread strength, dust and other contaminants, lubrication, needle condition, operator skill, ambient conditions
- machine manufacturer specifications and adjustment methods
- 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 up and operate industrial sewing machines
- read, interpret and follow information on work specifications, standard operating procedures and work instructions and other reference material
- undertake preventative maintenance to industrial sewing machines including servicing according to manufacturer instructions and regular checking for worn or damaged parts
- diagnose the cause of faulty operation and undertake appropriate repair or replacement of parts
- 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.

Critical aspects of evidence to be considered

Demonstrates skills and knowledge to:

- interpret production specifications accurately
- set and operate industrial sewing machine safely and correctly
- perform sample runs and analyse results
- identify and make appropriate re-adjustments
- determine root cause of operational problems
- solve operational problems
- apply workplace health and safety policies in production operations
- maintain accurate records

Consistency in performance

Consistently applies skills and knowledge when:

- organising work
- completing tasks
- identifying improvements
- using workplace practices
- using OHS practices
- recording and reporting accidents and incidents
- assessing operational readiness of equipment used and work processes
- recognising and adapting to cultural differences in the workplace, including modes of behaviour and interactions
- completing work systematically with attention to detail without damage to goods and equipment

Resource implications

Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.

Context for assessment

Assessment may occur on the job or in an appropriately simulated environment.

Interdependent Assessment

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.
Industrial sewing machine may include	Industrial sewing machines include: • lockstitch and chain stitch table mounted machines with power being from a motor mounted under the table and connected to the sewing machine by a pulley • overlock table mounted sewing machines and sergers with power being from a motor mounted under the table and connected to the sewing machine by a pulley • high volume automatic and manually operated hem, selvedge and embroidery sewing machines
Machine settings may include	• gaps • tolerances • clearances • tension • needle speed and timing • air cooling and lubrication system settings • direction • feed rate • other settings depending on the industrial sewing machine settings depending on the machine model and function and production requirements
OHS procedures	OHS procedures 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: • manual handling techniques • standard operating procedures • personal protective equipment • safe materials handling • taking of rest breaks • ergonomic arrangement of workplaces • following marked walkways • safe storage of equipment • housekeeping

Faults may include	• reporting accidents and incidents • other OHS practices relevant to the job and enterprise • contamination • incorrect thread tension • mechanical breakdown • electrical or electronic fault • poor feeding and threading of needle/s • dirty or oily marks on thread or fabric • incorrect stitch • thread, lint or debris in rotary hook, bobbin case, needleplate and feed dog and the motor and oil reservoir • puckering • thread breakages • uneven thread delivery including loop stitches and slip stitches • poor lubrication and cooling resulting in needle overheating and fabric burn
Repairs include	Repairs may include the following depending on the nature of the fault and workplace practices in the enterprise: • correcting threading faults • tensioning • removal and replacement of faulty or worn parts • setting of clearances, limits and fits • re-setting or re-programming of controls and sensors • repair or replacement of pneumatic or hydraulic components Depending on the fault, particular repairs may require additional training in general engineering, fluid power and control systems.

Unit Sector(s)

Sector	Textile Production
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