



Australian Government

Department of Education, Employment and Workplace Relations

LMTTX3011A Set up, adjust and maintain circular knitting machines

Revision Number: 1

LMTTX3011A Set up, adjust and maintain circular knitting machines

Modification History

Not applicable.

Unit Descriptor

Unit descriptor This unit covers the skills and knowledge required to set up, adjust and maintain circular knitting 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 circular knitting machines for warp and weft knitting and the repair, adjustment, maintenance and testing of machines 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 circular knitting 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 machines for knitting operations including product change	1.1 Production and pattern specifications are interpreted to determine required machine settings for knitted product 1.2 Documentation relating to machine settings, operation and maintenance is interpreted, referenced and applied according to the needs of the task 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 Yarn is checked and threaded for production 1.6 Knitting operators are instructed of any special operating requirements
2 Test machine settings	2.1 Knitting machine is operated in accordance with manufacturer's and workplace instructions to test settings against specifications and operational standards 2.2 Knitted product or sample is examined to identify required adjustments to machine settings or pattern 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 knitting problems	3.1 Knitting machine operation is monitored to assess operational efficiency and safe operation in accordance with OHS procedures 3.2 Discuss the nature and extent of machine or knitting faults with operator 3.3 Knitting product is assessed to identify knit faults 3.4 Yarn is examined to assess possible impact on operational problems 3.5 Problems and faults are identified and analysed to determine root cause 3.6 Fault diagnosis is established and strategy for repair including replacement of yarn or parts is determined 3.7 Knitting machine is returned to optimal performance through repair of faulty operation or replacement of yarn or machine parts 3.8 Knitting machine is tested and sample produced to ensure problems have been fixed
4 Communicate	4.1 Records are maintained and reports prepared where necessary

ELEMENT**PERFORMANCE CRITERIA**

operational
information

- 4.2 Adjustments to machines and patterns are documented and discussed with appropriate personnel
- 4.3 Operational instructions are documented

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Demonstrates knowledge of:

- circular knitting methods and the various types of knit effects
- yarn twist and application
- fibre types and their method of production
- fibre parameters
- yarn counts
- pattern specifications
- factors affecting machine performance: yarn strength, sizing, ambient conditions
- machine manufacturer specifications
- common knitting machine faults and methods of
- 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 circular knitting machines
- test, analyse and prepare samples
- interpret and document a simple range of knit patterns
- read, interpret and follow information on work specifications, standard operating procedures and work instructions and other reference material
- undertake preventative maintenance to circular knitting machines including servicing according to manufacturer instructions and regular checking for worn or damaged 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 knit machine safely and correctly • perform sample runs and analyse results • identify and make appropriate readjustments • 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.

Pattern specifications may include

- circular knitting design
- colour
- pattern
- size
- stitch gauge
- tension
- weft knits
- warp knits, including tricot, milanese and raschel knitting
- plain, purl, and double knits
- sock knitting
- full garment

Machine settings may include

- electronic settings
- automated setting
- mechanical settings

Knitted product may include

- knitted fabric
- hosiery
- jumpers
- socks
- shirts

Yarns may be

- wool
- nylon
- acrylic
- polypropylene
- polyester
- cotton
- viscose
- blends

OHS practices 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:

- 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 • reporting accidents and incidents • other OHS practices relevant to the job and enterprise
Faults may include	• holes • foreign matter • creasing • lines • runs • yarn breakages • incorrect yarn tension or joins • incorrect creeling or beaming of warp and weft • short rows • mechanical breakdown • fluid power fault • electrical or electronic faults • poor feeding and threading of needle/s • dirty or oily marks • sinker lines
Repairs include	Repairs may include the following depending on the nature of the fault and workplace practices in the enterprise. Depending on the fault, particular repairs may require additional training in general engineering, fluid power and control systems. • correcting creeling, beaming and threading faults • joining of yarn and tensioning • removal and replacement of faulty parts • setting of clearances, limits and fits • resetting or reprogramming of controls and sensors • repair or replacement of pneumatic or hydraulic components

Unit Sector(s)

Sector Textile Production